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AGRICULTURAL EXPERIMENT STATION

NEW HAVEN, CONN.

S. N. SPRING, Forester,

IN CO-OPERATION WITH THE

FOREST SERVICE,

U. S. DEPARTMENT OF AGRICULTURE,

HENRY S. GRAVES, Forester.

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WOOD-USING INDUSTRIES  
OF CONNECTICUT

BY

ALBERT H. PIERSON,

Statistician in Forest Products,

U. S. FOREST SERVICE.



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### NOTE.

The investigation upon which this report is based was undertaken by the Forest Service in coöperation with the Connecticut Agricultural Experiment Station, the work being done under the direction of S. N. Spring, State Forester, and O. T. Swan, Engineer in Forest Products, in charge of the Office of Wood Utilization, United States Department of Agriculture, Washington, D. C. The statistics were compiled from data collected in 1911, covering a period of one year. By the terms of the coöperative agreement, the Experiment Station is authorized to publish the findings of the investigation.

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# Wood-Using Industries of Connecticut.

## INTRODUCTION.

Connecticut is one of the most densely populated states of the Union. Its 4,990 square miles are occupied by over a million inhabitants. A very large percentage of its people reside within two score manufacturing centers and depend directly upon industrial employment for a livelihood. The various industries include nearly 10,000 factories, with an invested capital of more than a third of a billion dollars, an annual output worth a like sum, and a payroll of some millions. A considerable number of these factories convert the raw material of the forest into finished products. The report of the lumber cut of the United States in 1910, prepared by the Bureau of the Census in coöperation with the Forest Service, United States Department of Agriculture, shows that the Connecticut sawmills cut over 222,945,000 board feet in that year. Part of the lumber made in the State is shipped away, and of the total domestic consumption probably one-fourth is utilized in rough lumber and in general construction. The total consumed by the Connecticut wood-using industries in 1910, including lumber purchased from other states, amounted to 110,051,323 feet.

The amount of wood taken from the forests in forms other than lumber has been only roughly estimated, but the quantity of lumber annually milled in Connecticut has been determined for some years. This is the first attempt to follow the lumber from the sawmill through the factories. The information here presented shows the relations between the wood-using industries of Connecticut and her forests. It also shows to what extent the State's native resources are drawn upon to meet home requirements, and to what extent manufacturers draw from outside.

This report is intended to answer the question of what becomes of the seventy-two or seventy-three million feet of rough lumber that are used each year in Connecticut's wood-using factories. It also discusses properties of the various woods that fit them for use in certain industries and the products made from these woods. It gives the average cost of lumber delivered at the factory, both home-grown and shipped-in material. The prices given, it must be remembered, are not market prices, but are merely an average computed from many different grades and forms of each kind of wood reported.

## KINDS OF WOOD.

There are fifty-eight kinds of wood used by Connecticut manufacturers. Twenty-six of them are from timber grown wholly or partially within the State. The remainder are obtained either from other states, from Canada, or from foreign countries. Table I shows that of the woods listed forty-eight are domestic and ten foreign-grown species. The first column of the table gives the common names of the different species used and the second column gives the botanical names.

It will be noted that the above table gives the kinds of wood consumed by Connecticut wood manufacturing establishments arranged in order of quantity used. White pine heads the list, supplying one-fifth of all the raw material. Over 60 per cent. of the white pine goes to box makers at a lower price, delivered, than is paid by fourteen other industries using this wood. The most costly grades of white pine are demanded by the ship builders and the manufacturers of musical instruments. Chestnut is the most important hardwood used and comes second in the amount consumed. It forms a larger proportion of the forest than any other commercial tree. Why the lumber regions of other states are called on for a little over two-thirds of the chestnut needed is a difficult matter to explain. Nearly one-half of the chestnut consumed by the factories goes into pianos and cabinet organs, the larger part of it into piano cases. No other wood reported is used by a larger number of industries than tulip poplar. Nineteen of the twenty-six report using it. A study of the table brings out the fact that 50 per cent. of the white oak used is home-grown. Boat building uses more of it than any other industry.

It is surprising that 75 per cent. of the hickory used by the manufacturers of Connecticut grows in the State; for it would seem that the supply of a wood so useful and produced so near the place of consumption would have long since been completely exhausted. Dogwood is not called for in large quantities, but, like white birch, often called gray birch, the demand is met entirely by home-grown wood, as is also the demand for aspen, pitch pine, and applewood. Over 90 per cent. of the butternut or white walnut used is cut in the State. Loblolly, which leads the Southern pines, is sometimes sold with shortleaf pine as

North Carolina pine; and since it is often difficult to separate the two, they have been classed rather arbitrarily. It is a matter of interest that longleaf pine occupies eighth place in Table I. Most of the cypress consumed come from the Carolinas. The Florida wood is also in demand, but Louisiana cypress is reported only in small quantities.

The two general classes into which woods are divided by users are hardwoods and softwoods. This classification is not based absolutely on hardness or softness, but is an arbitrary distinction which has come into general use because it is convenient and holds true generally. The broadleaf trees are hardwoods; the needle-leaf species are softwoods.

### THE PINES.

The eight species of pine used in Connecticut make up over 40 per cent. of the total consumption. With the exception of the white and pitch pine, the supply is obtained entirely from other states.

#### WHITE PINE.

White pine (*Pinus strobus*) furnishes 25 per cent. of the lumber used in manufacturing. It is found from New England westward to Manitoba, southward to northern Illinois, and in the Appalachian regions southward to northern Georgia. In virgin forests the white pine often attains great size, but much the greater part of the timber now being cut in New England is second growth and often small. Because the wood is light, soft, and easily worked, it has always been in great demand. Only about one-fifth of the amount used is grown in Connecticut. A little more than 90 per cent. of the total quantity made into wood products is reported by the box makers and the manufacturers of sash, doors, blinds, and other planing mill products.

#### LOBLOLLY PINE.

The most important of the yellow pines used by Connecticut manufacturers is loblolly (*Pinus taeda*). It comprises 6 per cent. of the total and comes from Virginia and North Carolina. It makes rapid growth and takes possession of abandoned fields in a surprisingly short time. The wood is generally rather brittle and coarse-grained, its texture being much affected by the con-

TABLE I. CONSUMPTION OF WOOD IN CONNECTICUT FACTORIES—BY SPECIES.

Rank	SPECIES		Quantity used annually		Cost f. o. b. factory		Grown in Conn. Per cent. (Quantity)	Grown outside Conn. Per cent. (Quantity)
	Common name	Botanical name	Feet b. m.	Per cent.	Average per 1000 ft.	Total		
1	White Pine	<i>(Pinus strobus)</i>	26,988,150	24.52	\$ 28.14	\$759,558.68	20.07	79.93
2	Chestnut	<i>(Castanea dentata)</i>	7,244,700	6.58	25.82	187,053.66	35.34	64.66
3	Yellow poplar or whitewood	<i>(Liriodendron tulipifera)</i>	6,914,366	6.28	47.57	328,882.91	9.52	90.48
4	Loblolly pine	<i>(Pinus taeda)</i>	6,843,263	6.22	27.00	184,785.31	....	100.00
5	Bald cypress	<i>(Taxodium distichum)</i>	6,736,555	6.12	41.03	276,407.32	....	100.00
6	Spruce	<i>(Picea species)</i>	6,423,144	5.84	24.30	156,084.28	....	100.00
7	*White oak	<i>(Quercus alba)</i>	5,498,875	5.00	56.41	310,194.21	44.05	55.95
8	Longleaf pine	<i>(Pinus palustris)</i>	5,358,951	4.87	36.10	193,438.61	....	100.00
9	*Red oak	<i>(Quercus rubra)</i>	3,682,185	3.35	41.20	151,701.19	23.50	76.50
10	Shortleaf pine	<i>(Pinus echinata)</i>	3,622,800	3.29	23.32	84,488.50	....	100.00
11	Basswood	<i>(Tilia americana)</i>	3,559,598	3.23	40.37	143,702.70	2.84	97.16
12	*Hard maple	<i>(Acer saccharum)</i>	3,201,111	2.91	34.72	111,131.94	22.64	77.36
13	Ash	<i>(Fraxinus species)</i>	2,995,198	2.72	52.17	156,256.54	26.72	73.28
14	Hickory	<i>(Hicoria species)</i>	2,818,265	2.56	31.65	89,201.35	73.17	26.83
15	Sugar pine	<i>(Pinus lambertiana)</i>	1,723,370	1.57	66.67	114,902.35	....	100.00
16	Yellow birch	<i>(Betula lutea)</i>	1,525,800	1.39	30.10	45,919.40	32.80	67.20
17	Cotton gum	<i>(Nyssa aquatica)</i>	1,426,476	1.30	19.05	27,173.17	....	100.00
18	Water gum	<i>(Nyssa biflora)</i>	1,250,000	1.14	17.00	21,250.00	....	100.00
19	*Rock elm	<i>(Ulmus racemosa)</i>	1,044,000	.95	38.49	40,185.90	18.34	81.66
20	Paper birch (white birch)	<i>(Betula papyrifera)</i>	1,010,750	.92	24.89	25,153.00	5.10	94.90
21	*Mahogany	<i>(Swietenia mahagoni)</i>	901,369	.82	174.28	157,094.64	....	100.00
22	Black cherry	<i>(Prunus serotina)</i>	796,800	.72	63.62	50,692.50	19.11	80.89
23	Red gum	<i>(Liquidambar styraciflua)</i>	792,505	.72	45.28	35,887.73	....	100.00
24	*Soft maple	<i>(Acer rubrum)</i>	708,000	.64	27.17	19,236.00	29.94	70.06
25	Beech	<i>(Fagus atropunicea)</i>	691,200	.63	31.70	21,908.00	52.18	47.82
26	Douglas fir	<i>(Pseudotsuga taxifolia)</i>	688,180	.63	46.92	32,288.90	....	100.00
27	Sweet birch	<i>(Betula lenta)</i>	674,070	.62	49.51	33,371.54	5.93	94.07
28	Black walnut	<i>(Juglans nigra)</i>	648,650	.59	89.63	58,137.25	.31	99.69
29	*Boxwood	<i>(Buxus sempervirens)</i>	634,890	.58	49.19	31,227.60	....	100.00
30	Hemlock	<i>(Tsuga canadensis)</i>	553,000	.50	14.08	7,788.00	72.88	27.12



31	Western yellow pine .....	( <i>Pinus ponderosa</i> ) .....	400,000	.36	45.00	18,000.00	....	100.00
32	White birch (gray birch) ...	( <i>Betula populifolia</i> ) ....	309,500	.28	17.54	5,428.00	100.00	....
33	Cocobola .....	( <i>Platymiscium</i> species) .	273,360	.25	176.67	48,294.00	....	100.00
34	Pitch pine .....	( <i>Pinus rigida</i> ) .....	270,900	.25	17.53	4,749.80	100.00	....
35	White cedar .....	( <i>Chamaecyparis thyoides</i> )	267,700	.24	56.72	15,185.00	....	100.00
36	*Lignum-vitæ .....	( <i>Guajacum officinale</i> ) ..	257,348	.23	91.90	23,650.00	....	100.00
37	Rosewood .....	( <i>Dalbergia</i> species) ....	234,092	.21	225.40	52,763.80	....	100.00
38	Soft (white) elm .....	( <i>Ulmus americana</i> ) ....	211,900	.19	38.25	8,104.70	15.67	84.33
39	Western white pine .....	( <i>Pinus monticola</i> ) .....	126,000	.11	47.38	5,970.00	....	100.00
40	Persimmon .....	( <i>Diospyros virginiana</i> )..	120,000	.11	17.50	2,100.00	....	100.00
41	Western red cedar .....	( <i>Thuja plicata</i> ) .....	116,500	.11	45.32	5,280.00	....	100.00
42	Dogwood .....	( <i>Cornus florida</i> ) .....	100,000	.09	24.00	2,400.00	100.00	....
43	Hackmatack .....	( <i>Larix laricina</i> ) .....	88,225	.08	73.53	6,487.41	....	100.00
44	Cottonwood .....	( <i>Populus deltoides</i> ) ....	72,500	.07	16.03	1,162.50	....	100.00
45	Ebony .....	( <i>Diospyros</i> species) ....	42,677	.04	264.94	11,307.00	....	100.00
46	Butternut .....	( <i>Juglans cinerea</i> ) .....	42,500	.04	22.49	956.00	92.94	7.06
47	Redwood .....	( <i>Sequoia sempervirens</i> ) .	37,000	.03	46.22	1,710.00	....	100.00
48	*Spanish cedar .....	( <i>Cedrela odorata</i> ) .....	32,000	.03	115.59	3,699.00	....	100.00
49	Locust .....	( <i>Robinia pseudacacia</i> ) ..	32,000	.03	98.63	3,156.00	....	100.00
50	Sitka spruce .....	( <i>Picea sitchensis</i> ) .....	25,000	.02	47.00	1,175.00	....	100.00
51	Northern white cedar .....	( <i>Thuja occidentalis</i> ) ...	10,000	.01	30.00	300.00	....	100.00
52	Teak .....	( <i>Tectona grandis</i> ) .....	8,000	.01	287.50	2,300.00	....	100.00
53	Sycamore .....	( <i>Platanus occidentalis</i> ) .	4,000	†....	26.25	105.00	75.00	25.00
54	*Circassian walnut .....	( <i>Juglans regia</i> ) .....	3,900	†....	287.44	1,121.00	....	100.00
55	Apple wood .....	( <i>Malus malus</i> ) .....	3,500	†....	26.43	92.50	100.00	....
56	Aspen .....	( <i>Populus tremuloides</i> )..	3,000	†....	15.00	45.00	100.00	....
57	Red cedar .....	( <i>Juniperus virginiana</i> )..	3,000	†....	65.00	195.00	....	100.00
58	*White mahogany .....	( <i>Tabebuia donnell-smithii</i> )	500	†....	250.00	125.00	....	100.00
Totals .....			110,051,323	100.00	\$37.08	\$4,080,064.89	16.61	83.39

\* Several species are probably included besides the one for which the botanical name is given.

† Less than 1-100 of one per cent.

ditions under which it is grown. It is used for a great variety of purposes where strength and resistance to decay are not essential. Loblolly is used extensively in Connecticut in competition with spruce and white pine.

#### LONGLEAF PINE.

Over 5,000,000 feet of longleaf pine are consumed annually by the wood-using industries of Connecticut. Longleaf (*Pinus palustris*) is the most important structural pine grown in the South. Shortleaf and longleaf pine form the bulk of the cut of lumber in the Gulf States. The wood is hard, strong, and generally shows narrow rings of growth. Three-fourths of the consumption of this wood reported in Connecticut is by builders of ships and boats.

#### SHORTLEAF PINE.

Next in importance is the shortleaf pine (*Pinus echinata*). Much of it is sold in Connecticut mixed with loblolly, as North Carolina pine or as Virginia pine. Its range extends throughout the Southern States, but west of the Mississippi River is the region where it grows most abundantly and attains its largest size. The entire quantity reported was consumed by the manufacturers of sash, doors, blinds, general mill work, and planing-mill products.

#### SUGAR PINE.

One and three-quarter million feet of this western white pine (*Pinus lambertiana*) was used in Connecticut. It is found in heavy stands in southern Oregon and in California. The wood is light, soft, and easily worked. These qualities make it valuable for the same purposes as those for which the eastern white pine is employed. Only the higher grades of the wood are shipped to the East. An average price of \$66.67 per thousand is obtained for it in Connecticut.

#### WESTERN YELLOW PINE.

This species (*Pinus ponderosa*) is native to every State west of the Great Plains and ranges from southern British Columbia to northern Mexico. The wood is variable in color, running from pale yellow to an orange-brown. It is usually fine-grained and,

although naturally heavier and much more resinous than white pine, is occasionally sold as a substitute for that species.

#### PITCH PINE.

Of the eastern yellow pines only one species, pitch pine (*Pinus rigida*), grows within the limits of Connecticut. The wood is of medium weight and hardness and rather coarse-grained. The tree has a large proportion of sapwood and is decidedly resinous. Its principal use is in boxes and crates.

#### IDAHO WHITE PINE.

This species (*Pinus monticola*) is a true white pine and, like the eastern white pine, has five needles in a cluster. It is a native of the northern Rocky Mountain region. As it is light, soft, and easy to work, it is readily adaptable to all purposes for which eastern white pine is used.

#### SPRUCE.

From the reports received, it has not been possible to determine what species of spruce is used in each case. Doubtless most of that reported is red spruce (*Picea rubens*). This is an upland tree found from New Brunswick to the high peaks of North Carolina. Two other species are found in the East; black spruce (*Picea mariana*), which is a swamp tree and is found much farther north than red spruce; and white spruce (*Picea canadensis*), found in New England, northern New York, the Lake States, South Dakota, Montana, British Columbia, and northwest to Alaska. Sitka spruce, the largest spruce in the United States, is native to the Pacific Coast States of the northwest. Only a very small quantity of this species reaches Connecticut.

#### HEMLOCK.

The eastern hemlock (*Tsuga canadensis*) is found from Nova Scotia to Minnesota across the northern tier of states, and follows the Appalachian highland south to northern Georgia. Connecticut supplied more of this wood to its wood-using industries than was brought in from other states. It is a light, strong, coarse wood, useful for many purposes, but is used principally for cheap finish and for boxes and crates.

## CYPRESS.

Cypress, or bald cypress (*Taxodium distichum*) is a swamp tree of the southern coastal region. The wood has great durability, does not shrink nor warp badly, and is practically tasteless. These qualities make it desirable for many special purposes. Although the planing mills consume the largest quantities of the wood, it is in great demand by the manufacturers of tanks, ships and boats.

## THE CEDARS.

A number of woods are known as cedar. Those used in Connecticut are probably the southern white cedar (*Chamaecyparis thyoides*), with a range extending from southern Maine to Florida, chiefly near the Atlantic coast in swamps and best developed in New Jersey and southward; the northern white cedar, or arborvitæ (*Thuja occidentalis*), growing in the north-eastern part of the United States, now most abundant in the Lake States; the red cedar, sometimes called juniper (*Juniperus virginiana*), growing in all states east, and in several west, of the Mississippi River, but now most abundant in Tennessee and southward; and western red cedar, often called giant arborvitæ (*Thuja plicata*), common in the northwestern part of the United States. The southern white cedar is employed in Connecticut chiefly for boat planking. The northern white cedar serves well for the same purpose, although it is a smaller tree, and because of wind-shakes and other defects is not so well adapted for lumber. The western red cedar—the largest cedar in this country—is used more for shingles than for any other purpose. All cedars are classed as durable in contact with the soil. The red cedars are so named on account of the color of the heartwood, and the white cedars because of the lack of such color. The red cedar from the South is in much demand for clothes chests because of its odor, which is said to be repellent to moths.

## TAMARACK.

The Tamarack (*Larix laricina*) is a northern tree. In Connecticut it is often called hackmatack. The wood is rather coarse-grained but hard, strong, and durable. One of its chief

uses in the State is for small ship knees. The roots are the part of the tree reported as used in Connecticut, and most of it comes from Maine, where it grows in cold swamps. The best ship knees are developed above old beaver dams, where the made soil rests on heavy clay which roots can not penetrate. When they reach the clay they turn at right angles, forming the desired crooks.

### DOUGLAS FIR.

Just as longleaf pine is the important construction timber furnished by the Southern States, so Douglas fir (*Pseudotsuga taxifolia*) is the great construction wood furnished by the Northwestern and Pacific States. It is sold under a number of different names in various parts of the country, being known also as Oregon pine, red fir, Oregon fir, Washington pine, and Douglas spruce. The wood is very strong and stiff, and on account of the great size of the timbers that can be cut, and its relative cheapness at the point of production, Douglas fir has forced its way into Eastern markets in competition with longleaf pine. It takes stain and paint well, holds nails firmly, and on the Pacific Coast is much used for doors. Its use for interior finish is just beginning in the Eastern States, but appears to be increasing.

### THE OAKS.

Although the industries of Connecticut demand a larger amount of softwoods than of hardwoods, many kinds of the latter are also used. Among the principal hardwoods employed by the manufacturers of Connecticut are the oaks, which are separated into two general classes by wood workers—white oaks and red oaks. The user naturally does not make so close a distinction as the botanist, but the white oaks and the red oaks are generally separated in the factories. The user bases the distinction on the relative quality of the woods, for the white oaks are as a class harder, tougher, stronger and more durable than the red oaks. The botanist's classification is based on differences in flower, fruit, and leaf.

### WHITE OAK.

The most important tree in the white oak group is that which nearly always bears the name white oak (*Quercus alba*). It is

common throughout the eastern half of the United States, and is a valuable forest tree of Connecticut. The wood is stiff, strong, hard, and resists decay well. It will take a number of styles of color finish, ranging from pale green, brown, or gray mission, to the golden which is so much admired in furniture and interior work. Its prominent medullary rays (the bright streaks in the wood radiating from the heart outward) fit it for quarter sawing, by which as much as possible of the surface of the rays is exposed to view. Lumber classed as white oak in Connecticut includes several species which are distinguished from one another while the trees are standing, but not usually separated in the lumber yard or factory. Among these are burr oak (*Quercus macrocarpa*), cow oak (*Quercus michauxii*), post oak (*Quercus minor*), swamp white oak (*Quercus platanoides*), and sometimes chestnut oak (*Quercus prinus*). The three last are native and abundant in Connecticut. Eighteen industries in the State report the use of white oak, nearly one-fourth of the total quantity going into the construction of ships and boats.

TABLE II. CONNECTICUT INDUSTRIES USING WHITE OAK.

NAME OF INDUSTRY	Quantity		Cost	
	Feet b. m.	Per cent.	Average per 1000	Total
Ships and boats .....	1,296,625	23.6	\$ 40.39	\$52,370.31
Sash, doors, blinds and general mill work .....	932,700	16.9	72.47	67,593.00
Planing mill products .....	824,000	15.0	73.60	60,650.00
Vehicles and vehicle parts ....	633,400	11.5	32.44	20,548.15
Musical instruments .....	362,900	6.6	109.05	39,573.50
Miscellaneous .....	290,000	5.3	64.83	18,800.00
Clocks .....	262,300	4.8	47.35	12,420.00
Chairs .....	242,000	4.4	39.92	9,660.00
Fixtures .....	234,200	4.3	73.80	17,285.00
Handles .....	147,000	2.7	30.72	4,516.00
Wooden ware .....	92,200	1.7	21.82	2,012.00
Sporting and athletic goods ...	57,000	1.0	20.18	1,150.00
Electrical machinery and appa- ratus .....	43,300	.8	20.38	882.50
Agricultural implements .....	35,000	.6	19.57	685.00
Machinery and apparatus, not electrical .....	30,000	.5	35.33	1,060.00
Furniture .....	11,250	.2	74.56	838.75
Shuttles, bobbins and spools ..	4,000	.1	25.00	100.00
Laundry appliances .....	1,000	*	50.00	50.00
	5,498,875	100.0	\$56.41	\$310,194.21

\* Less than .1 of 1%.

## RED OAK.

Of the score or more oaks in the red oak group, one species may be taken as typical of all. This is generally known, both at the mill and in the woods, as red oak, although it is occasionally called black or Spanish oak. Its botanical name is *Quercus rubra*. Other members of the group familiar to the manufacturers of Connecticut are black or yellow oak (*Quercus velutina*) and scarlet oak (*Quercus coccinea*). Thirteen industries in the State report the use of red oak. The largest users are clock makers. Many manufacturers report oak without stating whether it is white or red. In fact, the oak lumber which reaches factories is apt to be a mixture of many species, difficult to separate and distinguish.

TABLE III. CONNECTICUT INDUSTRIES USING RED OAK.

NAME OF INDUSTRY	Quantity		Cost	
	Feet b. m.	Per cent.	Average per 1000	Total
Clocks .....	1,481,000	40.2	\$30.22	\$44,750.00
Planing mill products .....	818,500	22.2	58.61	47,972.75
Sash, doors, blinds and general mill work .....	384,485	10.4	54.83	21,081.24
Vehicles and vehicle parts ....	199,500	5.4	30.21	6,026.50
Miscellaneous .....	189,500	5.2	47.82	9,062.50
Chairs .....	143,000	3.9	55.38	7,920.00
Fixtures .....	140,000	3.8	45.32	6,345.00
Electrical machinery and appa- ratus .....	96,700	2.6	20.35	1,967.50
Agricultural implements .....	93,000	2.5	19.32	1,797.00
Furniture .....	80,000	2.2	23.69	1,895.00
Boxes and crates .....	24,000	.7	16.67	400.00
Musical instruments .....	24,000	.7	97.04	2,390.00
Prof. and scientific instruments	8,500	.2	18.20	154.70
	3,682,185	100.0	\$41.20	\$151,701.19

## CHESTNUT.

In Connecticut, chestnut is more used than any other hardwood, and more than one-third of the supply is State-grown. The annual sawmill output of chestnut in the State is larger than the combined cut of all other hardwoods. Nineteen industries report its use, as appears in Table IV. Musical instrument makers demand nearly as much as do all the other industries combined, but most of the chestnut that goes into musical instruments comes

from outside the State. The wood is light, rather strong, and has a handsome grain when properly finished. The tree is found in the northeastern part of the United States, south of southern Maine. It is liable to attack by several diseases; and just now is being destroyed in much of its northern range by a fungus which induces what is commonly called the chestnut bark disease.\* Much chestnut timber is infested with boring insects, which cause the small holes in so-called "wormy chestnut."

TABLE IV. CONNECTICUT INDUSTRIES USING CHESTNUT.

NAME OF INDUSTRY	Quantity		Cost	
	Feet b. m.	Per cent.	Average per 1000	Total
Musical instruments .....	3,559,000	49.1	\$21.58	\$76,815.50
Planing mill products .....	839,500	11.6	46.48	39,017.00
Sash, doors, blinds and general mill work .....	683,480	9.4	37.61	25,704.15
Ships and boats .....	546,645	7.6	23.54	12,866.71
Miscellaneous .....	440,000	6.1	22.68	9,980.00
Clocks .....	285,000	3.9	19.02	5,420.00
Fixtures .....	245,500	3.4	23.20	5,696.50
Prof. and scientific instruments	161,000	2.2	18.07	2,910.00
Boxes and crates .....	142,500	2.0	14.82	2,111.50
Wooden ware .....	135,000	1.9	13.56	1,830.00
Furniture .....	78,000	1.1	22.27	1,737.00
Machinery and apparatus, not electrical .....	44,975	.6	23.84	1,072.30
Patterns .....	20,000	.3	22.00	440.00
Laundry appliances .....	17,500	.2	22.29	390.00
Agricultural implements .....	15,000	.2	20.00	300.00
Vehicles and vehicle parts .....	12,800	.2	25.00	320.00
Handles .....	10,000	.1	18.00	180.00
Printing materials .....	5,800	.1	35.00	203.00
Electrical machinery and appa- ratus .....	3,000	*	20.00	60.00
	7,244,700	100.0	\$25.82	\$187,053.66

\* Less than .1 of 1%.

### TULIP POPLAR.

This tree is usually called white wood in Connecticut, but is more generally known as the tulip tree, because of its tulip-shaped flower, from which it derives its botanical name, *Liriodendron*

\* Those interested, and who wish further information concerning the chestnut-bark disease, are referred to Farmers' Bulletin, No. 467 of the United States Department of Agriculture, "The Control of the Chestnut Bark Disease"; also to the 1911-12 Report of the Botanist, Connecticut Agricultural Experiment Station.



*tulipifera*. It grows in Connecticut, and was formerly more abundant and of larger size than at present. Few trunks larger than eighteen inches are now cut in the State. The best lumber comes from West Virginia, Kentucky, Tennessee, and western North Carolina and Virginia. The wood is of fine texture and hold paint better than almost any other American wood. It is light, rather soft, has only medium strength, seasons well, but is liable to warp unless carefully seasoned and worked. It is one of the best panel woods, but when wide pieces are used the best results are secured by three or five-ply veneers. In exposed situations this wood resists decay fairly well. There is great difference between the heartwood and the sapwood; the former is often of a yellow color, hence the name, yellow poplar, often applied to it. The sapwood is light in color, and unless quickly seasoned, is liable to turn blue, which color is due to a fungus. As appears from Table V, nineteen Connecticut industries use yellow poplar, nine-tenths of which is brought in from other states. Musical instruments makers are the largest users. The highest price is paid by pattern makers.

TABLE V. CONNECTICUT INDUSTRIES USING TULIP POPLAR, OR WHITEWOOD.

NAME OF INDUSTRY	Quantity		Cost	
	Feet b. m.	Per cent.	Average per 1000	Total
Musical instruments .....	2,113,500	30.6	\$46.72	\$98,748.50
Planing mill products .....	1,404,500	20.3	57.45	81,267.50
Clocks .....	1,050,000	15.2	35.32	37,082.50
Sash, doors, blinds and general mill work .....	590,690	8.6	60.35	35,684.15
Vehicles and vehicle parts ...	575,225	8.3	61.70	35,490.00
Boxes and crates .....	396,365	5.7	23.94	9,490.63
Miscellaneous .....	205,000	3.0	38.20	7,830.00
Fixtures .....	161,500	2.3	43.34	7,001.00
Printing materials .....	140,000	2.0	21.00	2,940.00
Patterns .....	44,380	.6	91.76	4,072.30
Furniture .....	43,000	.6	22.00	946.00
Handles .....	38,600	.6	22.96	886.20
Cigar boxes .....	33,000	.5	46.85	1,546.00
Machinery and apparatus, not electrical .....	30,776	.5	64.05	1,971.18
Wooden ware .....	29,600	.4	32.74	969.00
Prof. and scientific instruments	25,000	.4	75.00	1,875.00
Ships and boats .....	15,230	.2	49.29	794.95
Electrical machinery and appa- ratus .....	10,000	.1	22.00	220.00
Shuttles, bobbins and spools ..	8,000	.1	20.00	160.00
	6,914,366	100.0	\$47.57	\$328,882.91

## BASS WOOD.

This tree (*Tilia americana*) occurs in northeastern United States and follows the Appalachian highland southward. Half of the present total cut is credited to Wisconsin and Michigan. It is not abundant in Connecticut. The wood is light in color and weight, is rather tough, but soft, and without conspicuous grain. In this State the makers of clocks and musical instruments use much more of it than is consumed by all other industries combined. (See Table VI.)

TABLE VI. CONNECTICUT INDUSTRIES USING BASSWOOD.

NAME OF INDUSTRY	Quantity		Cost	
	Feet b. m.	Per cent.	Average per 1000	Total
Musical instruments .....	1,500,000	42.1	\$48.35	\$72,530.00
Clocks .....	1,400,000	39.3	32.64	45,700.00
Boxes and crates .....	268,000	7.5	31.79	8,520.00
Prof. and scientific instruments	137,600	3.9	41.61	5,726.11
Machinery and apparatus, not electrical .....	84,518	2.4	50.56	4,273.49
Handles .....	76,800	2.2	41.43	3,181.80
Sash, doors, blinds and general mill work .....	44,000	1.2	50.98	2,243.00
Printing materials .....	15,000	.4	31.00	465.00
Wooden ware .....	9,000	.3	20.00	180.00
Vehicles and vehicle parts ....	8,375	.2	31.76	266.00
Fixtures .....	7,305	.2	39.88	291.30
Cigar boxes .....	4,000	.1	55.50	222.00
Miscellaneous .....	3,000	.1	20.00	60.00
Furniture .....	2,000	.1	22.00	44.00
	3,559,598	100.0	\$49.37	\$143,702.70

## THE MAPLES.

Connecticut manufacturers report the use of hard and soft maple. Either of these names may include more than one species, but generally hard maple is the sugar tree (*Acer saccharum*), and soft maple is the red maple (*Acer rubrum*). Woodsmen easily distinguish these in the forest by their general appearance. The United States Census, in its annual report of lumber cut, makes no distinction, and although the total sawmill output of the United States probably includes a dozen species of maple, it is all listed under the one name "maple." Rock maple is

not a distinct species, but the name is usually applied to the hard or sugar maple. Eighteen industries in Connecticut use maple, the largest users being the musical instrument makers, with chair manufacturers next. (See Table VII.) Nearly 23 per cent. of the hard maple, and nearly 30 per cent. of the soft maple manufactured into commodities, grows in the State.

TABLE VII. CONNECTICUT INDUSTRIES USING MAPLE.

NAME OF INDUSTRY	Quantity		Cost	
	Feet b. m.	Per cent.	Average per 1000	Total
Musical instruments .....	1,190,500	30.46	\$42.15	\$50,184.50
Chairs .....	685,000	17.52	30.69	21,025.00
Handles .....	576,100	14.74	22.17	12,771.20
Woodenware and novelties ....	240,500	6.15	25.00	6,013.00
Planing mill products .....	223,000	5.71	40.54	9,040.50
Carpenters' tools .....	190,000	4.86	25.92	4,925.00
Agricultural implements .....	167,000	4.27	16.12	2,692.00
Sash, doors, blinds and general mill work .....	131,550	3.37	47.00	6,183.00
Vehicles and vehicle parts.....	91,645	2.34	28.25	2,588.70
Clocks .....	80,000	2.05	28.00	2,240.00
Miscellaneous .....	64,000	1.64	33.44	2,140.00
Ship and boat building .....	63,000	1.61	31.43	1,980.00
Fixtures .....	60,500	1.55	45.00	2,722.50
Shuttles, spools and bobbins ..	50,200	1.28	40.06	2,011.00
Boxes and crates .....	40,000	1.02	28.63	1,145.00
Printing materials .....	33,136	.85	48.57	1,609.34
Machine parts .....	18,930	.48	51.45	973.95
Butchers' blocks .....	2,050	.05	35.73	73.25
Furniture .....	2,000	.05	25.00	50.00
	3,909,111	100.00	\$33.35	\$130,367.94

### THE ASHES.

Three species of ash are native to Connecticut. Each is named from the color of its wood or bark. They are white ash (*Fraxinus americana*), black ash (*Fraxinus nigra*), and red ash (*Fraxinus pennsylvanicum*). The Connecticut manufacturers probably use all three species, but report only two kinds, white and brown. The latter probably includes all that is not white ash, and possibly some of that, for the distinction seems to be based on the color of the wood without much regard to species. The brown ash reported is used chiefly for interior house finish and for planing-mill products, while the white ash goes into vehicles. Sixteen industries report ash, but more is used in vehicle making than in

any other industry. (See Table VIII.) Ash is valuable chiefly because it is strong, stiff, and hard. It has enough figure to give it value in furniture making, stairwork, and inside finish.

TABLE VIII. CONNECTICUT INDUSTRIES USING ASH.

NAME OF INDUSTRY	Quantity		Cost	
	Feet b. m.	Per cent.	Average per 1000	Total
Vehicles and vehicle parts . . . .	1,132,465	37.8	\$59.13	\$66,967.71
Planing mill products . . . . .	660,000	22.0	58.08	38,332.00
Sash doors, blinds and general mill work . . . . .	590,965	19.7	58.00	34,313.27
Miscellaneous . . . . .	206,000	6.9	20.02	4,125.00
Handles . . . . .	93,900	3.1	30.40	2,854.90
Shuttles, bobbins and spools . .	82,000	2.8	25.12	2,060.00
Agricultural implements . . . .	81,000	2.7	21.88	1,772.00
Sporting and athletic goods . . .	40,000	1.4	25.00	1,000.00
Boxes and crates . . . . .	33,000	1.1	27.58	910.00
Printing materials . . . . .	31,000	1.0	61.32	1,901.00
Machinery and apparatus, not electrical . . . . .	20,868	.7	48.00	1,001.66
Musical instruments . . . . .	6,000	.2	54.00	324.00
Ships and boats . . . . .	5,500	.2	40.00	220.00
Furniture . . . . .	5,000	.2	53.00	265.00
Wooden ware . . . . .	4,000	.1	35.00	140.00
Prof. and scientific instruments	3,500	.1	20.00	70.00
	2,995,198	100.0	\$52.17	\$156,256.54

### HICKORY.

As in the case of ash, a number of species of hickory are used without much attempt to distinguish them. Four or five species grow in Connecticut, and its sawmills cut more of this wood than do those of any other New England State. The country's chief supply, however, comes from the middle and lower Mississippi Valley. Hickory has been called the indispensable wood because for some purposes no satisfactory substitute has been found. It is strong, tough, elastic and hard, and has no equal for long, slender handles, as well as for buggy spokes, poles and shafts. Eleven industries in Connecticut report its use. (See Table IX.) More than three-fourths of the total is consumed by makers of vehicles and handles.

TABLE IX. CONNECTICUT INDUSTRIES USING HICKORY.

NAME OF INDUSTRY	Quantity		Cost	
	Feet b. m.	Per cent.	Average per 1000	Total
Vehicles and vehicle parts . . .	1,172,365	41.6	\$41.85	\$49,062.85
Handles . . . . .	987,400	35.0	23.00	22,709.00
Shuttles, spools and bobbins . . .	444,000	15.7	26.65	11,832.50
Prof. and scientific instruments	105,500	3.7	24.93	2,630.00
Agricultural implements . . . . .	50,000	1.8	22.30	1,115.00
Boxes and crates . . . . .	25,000	.9	14.00	350.00
Sash, doors, blinds and general mill work . . . . .	13,000	.5	76.54	995.00
Sporting and athletic goods . . .	13,000	.5	25.00	325.00
Ships and boats . . . . .	3,500	.1	25.00	87.50
Miscellaneous . . . . .	2,500	.1	25.00	62.50
Furniture . . . . .	2,000	.1	16.00	32.00
	2,818,265	100.0	\$31.65	\$89,201.35

## THE BIRCHES.

Five species of birch grow in Connecticut: sweet birch (*Betula lenta*), yellow birch (*Betula lutea*), paper birch (*Betula papyrifera*), river birch (*Betula nigra*), and white birch, frequently called gray birch (*Betula populifolia*). Three of these are extensively used, but only two, yellow birch and sweet birch, are of importance in Connecticut. The birch employed for furniture and interior finish for houses is mostly the yellow. Paper birch is the best spool wood. Indians and traders formerly made canoes of its bark, and it has not yet wholly gone out of use for that purpose. The richly colored heartwood of the sweet and yellow birches gives them value for industrial purposes. The sweet birch is so called because of the sweet flavor of the inner bark. Musical instrument makers are the largest users of the wood in Connecticut; but much is made into doors. Nine industries in the State report birch, but generally the particular species used is not stated. (See Table X.)

## THE GUMS.

Connecticut manufacturers use three gum woods, two of which grow in the State. Cotton gum or tupelo (*Nyssa aquatica*) and water gum (*Nyssa biflora*) are not native to the State, but black gum or pepperidge (*Nyssa sylvatica*) is a common tree,

TABLE X. CONNECTICUT INDUSTRIES USING BIRCH.

NAME OF INDUSTRY	Quantity		Cost	
	Feet b. m.	Per cent.	Average per 1000	Total
Handles .....	654,000	18.58	\$19.13	\$12,513.00
Musical instruments .....	627,000	17.81	40.89	25,636.00
Woodenware and novelties ...	557,600	15.84	22.32	12,446.00
Chairs .....	500,000	14.20	30.10	15,050.00
Shuttles, spools and bobbins...	310,250	8.81	31.70	9,835.00
Sash, doors, blinds and general millwork .....	290,330	8.25	54.10	15,705.18
Agricultural implements .....	198,000	5.63	16.40	3,248.00
Planing mill products .....	171,000	4.86	52.74	9,019.00
Machinery and apparatus—elec- trical .....	70,000	1.99	20.00	1,400.00
Clocks .....	43,000	1.22	45.12	1,940.00
Miscellaneous .....	28,500	.81	19.72	562.00
Furniture .....	25,000	.71	21.84	546.00
Printing materials .....	20,000	.57	58.20	1,164.00
Fixtures .....	14,440	.41	37.66	542.76
Vehicles and vehicle parts ...	10,500	.30	22.86	240.00
Ship and boat building .....	500	.01	50.00	25.00
	3,520,120	100.00	\$31.21	\$109,871.94

while red gum (*Liquidambar styraciflua*) is occasionally found in the southwestern corner. No native gum wood is reported, however, the cotton and water gums and red gum of commerce coming from the South. Water gum, like the native black gum, is known as one of the most difficult domestic woods to split unless frozen. Red gum is popular as a material for furniture and finish, and lumbermen speak of it as two kinds of lumber, sap, and red or heart. The same tree produces both, but some trees are nearly all sap, while others may be nearly all heart. When cut in rotary veneer around the log a figure closely resembling Circassian walnut is often shown, which makes it valuable for table tops and panels. In Connecticut the makers of fire-arms use more than 20,000 feet of red gum yearly for gun and pistol stocks as a substitute for black walnut. The largest use of gum in the State is for sash, doors, blinds, and general millwork. (See Table XI.)

#### THE ELMS.

Three species of elm are used by Connecticut manufacturers: white elm (*Ulmus americana*), slippery elm (*Ulmus pubescens*),

TABLE XI. CONNECTICUT INDUSTRIES USING RED GUM.

NAME OF INDUSTRY	Quantity		Cost	
	Feet b. m.	Per cent.	Average per 1000	Total
Sash, doors, blinds and general mill work .....	231,505	29.2	\$50.40	\$11,668.23
Planing mill products .....	210,500	26.6	45.21	9,517.50
Firearms .....	210,000	26.5	44.50	9,345.00
Miscellaneous .....	40,000	5.1	34.00	1,360.00
Musical instruments .....	35,000	4.4	45.00	1,575.00
Clocks .....	27,000	3.4	32.91	888.50
Cigar boxes .....	17,000	2.1	45.88	780.00
Fixtures .....	14,000	1.8	34.00	476.00
Furniture .....	5,000	.6	43.00	215.00
Electrical machinery and appa- ratus .....	2,500	.3	25.00	62.50
	792,505	100.0	\$45.28	\$35,887.73

and cork elm (*Ulmus racemosa*), the last not being found in the State. Little effort is made to separate the species. Rock elm is a name given to hard, tough wood, but it does not apply to any particular species; it may be any one of the three. Musical instrument makers use about one-half of the elm reported used in the State. The rest is divided among a number of industries. (See Table XII.) Cigar boxes took 93,500 feet, although elm is rarely reported by that industry.

TABLE XII. CONNECTICUT INDUSTRIES USING ELM.

NAME OF INDUSTRY	Quantity		Cost	
	Feet b. m.	Per cent.	Average per 1000	Total
Musical instruments .....	638,000	50.80	\$41.18	\$26,270.00
Vehicles and vehicle parts .....	256,000	20.38	26.72	6,840.90
Boxes and crates .....	156,000	12.42	43.88	6,845.00
Cigar boxes .....	93,500	7.44	52.41	4,900.00
Woodenware and novelties .....	50,000	3.98	25.00	1,250.00
Chairs .....	20,000	1.59	40.00	800.00
Sash, doors, blinds and general mill work .....	18,700	1.49	43.61	815.50
Agricultural implements .....	10,000	.80	18.00	180.00
Handles .....	6,000	.48	20.00	120.00
Ship and boat building .....	3,500	.28	54.29	190.00
Miscellaneous .....	3,000	.24	20.00	60.00
Furniture .....	1,200	.10	16.00	19.20
	1,255,900	100.00	\$38.45	\$48,290.60

## CHERRY.

Practically all of the cherry lumber of this country comes from a single species (*Prunus serotina*), generally known as wild or black cherry. The fine color of the heartwood gives it much value for many purposes. Twelve industries in Connecticut report its use, but nearly half goes into professional and scientific instruments, the next largest use being for handles. The best original stands of cherry in the United States were found through western New York, southward through Pennsylvania and West Virginia. It is not an important timber tree in Connecticut, but small quantities are cut by many mills. (See Table XIII.)

TABLE XIII. CONNECTICUT INDUSTRIES USING CHERRY.

NAME OF INDUSTRY	Quantity		Cost	
	Feet b. m.	Per cent.	Average per 1000	Total
Prof. and scientific instruments	375,000	47.1	\$ 57.50	\$21,562.50
Handles .....	120,000	15.1	20.17	2,420.00
Planing mill products .....	100,000	12.6	97.50	9,750.00
Musical instruments .....	89,000	11.2	88.65	7,896.00
Printing materials .....	45,000	5.6	81.78	3,680.00
Chairs .....	25,000	3.1	120.00	3,000.00
Wooden ware .....	20,000	2.5	20.00	400.00
Sash, doors, blinds and general mill work .....	13,000	1.6	112.31	1,460.00
Fixtures .....	6,500	.8	45.23	294.00
Patterns .....	1,300	.2	120.00	156.00
Vehicles and vehicle parts ....	1,000	.1	20.00	20.00
Ships and boats .....	1,000	.1	60.00	60.00
	796,800	100.0	\$63.62	\$50,692.50

## BEECH.

The one species of beech native to this country is common east of the Mississippi River. The wood is hard, heavy, and strong, and is used extensively for carpenter's tools and scientific instruments. It polishes well, but is apt to check in seasoning. Over 50 per cent. of the amount used in Connecticut is grown in the State.

## BLACK WALNUT.

This wood is cut in more than thirty states, but is no longer abundant anywhere. Very large trees once grew in Connecticut,



and a small amount is still cut in the sawmills of the State. It has dropped from the important place it once held as a furniture and cabinet wood, partly because of scarcity and partly because of change in fashion. An important use for walnut in Connecticut is for gun stocks. Its handsome color, sufficient strength, and medium weight fit it for that product. The heartwood of butternut (*Juglans cinerea*) resembles black walnut in grain, but is not so dark in color. It grows in Connecticut but is not plentiful.

#### OTHER NATIVE WOODS.

Small amounts of several other native hardwoods are used in Connecticut, besides those already mentioned. For example, persimmon and dogwood are regarded as the best shuttle woods of this country. Dogwood grows abundantly in the State, but usually the commercial supply of both woods comes from regions further south, as does the small amount of cottonwood also reported.

#### FOREIGN WOODS.

Mahogany is imported in large quantities, and made into furniture, finish, and musical instruments. The true mahogany, a tropical American tree (*Swietenia mahagani*), is found in the United States only in the extreme south of Florida. There are other woods which in commerce pass for mahogany. One of the most widely used comes from Africa, another from the United States of Colombia, and others from the Philippines and from India.

Spanish cedar, from Cuba, Mexico and Central America, appears to have no general use in this country, except for cigar boxes. Its aromatic odor, subdued pleasing color, lightness, the ease with which it may be worked, together with its comparative cheapness, make it a favorite with cigar-box makers. It is surprising that more Spanish cedar was not reported, as cigar making is an important industry in Connecticut, and cigar boxes are in great demand.

Several other foreign hardwoods are purchased by Connecticut manufacturers. Boxwood from the West Indies is substituted for the more costly Turkish boxwood. Cocobola comes from Central America and northern South America; rosewood from

Brazil; lignum-vitæ from the West Indies; ebony from Madagascar and Ceylon, and teak from British India and Burma.

### INDUSTRIES.

The various woods demanded by the Connecticut manufacturers are listed and discussed on the preceding pages. The industries using these woods, the extent to which they are used, and the qualities which make them valuable will next be considered. There are twenty-six Connecticut industries listed in Table XIV.

TABLE XIV. CONSUMPTION OF WOOD

Rank	INDUSTRY	Quantity used annually		Average cost per 1000 ft. f. o. b. factory
		Feet b. m.	Per cent.	
1	Boxes and crates .....	24,411,090	22.18	\$21.11+
2	Planing mill products .....	23,011,000	20.91	37.33+
3	Sash, doors, blinds and general millwork .....	17,299,570	15.72	42.87
4	Musical instruments .....	11,811,927	10.73	49.13—
5	Ships and boats .....	7,084,354	6.44	40.93—
6	Clocks .....	4,761,590	4.33	35.81+
7	Vehicles and vehicle parts .....	4,392,010	3.99	48.55—
8	Handles .....	3,484,320	3.17	33.31
9	Carpenters' tools .....	2,190,531	1.99	68.47—
10	Woodenware and novelties .....	1,746,800	1.59	24.55+
11	Miscellaneous .....	1,686,000	1.53	38.66—
12	Chairs .....	1,622,500	1.47	35.92+
13	Fixtures .....	1,036,245	.94	48.70
14	Shuttles, spools, bobbins, etc. ....	1,023,450	.93	27.65
15	Electrical apparatus .....	793,000	.72	36.17—
16	Agricultural implements .....	741,000	.67	21.89—
17	Firearms .....	603,431	.55	67.11
18	Machine .....	554,751	.50	39.90
19	Patterns .....	512,905	.47	65.73—
20	Furniture .....	489,238	.45	35.93+
21	Printing materials .....	289,936	.26	41.26—
22	Cigar boxes .....	209,500	.19	60.94
23	Tanks .....	154,825	.14	39.51+
24	Sporting and athletic goods .....	110,300	.10	22.68+
25	Laundry appliances .....	29,000	.03	27.93
26	Butchers' blocks .....	2,050	*....	35.73
	Totals .....	110,051,323	100.00	\$37.08

\* Less than 1-100 of one per cent.

To maintain uniformity in the reports, the same classification is here followed that has been used in preparing similar reports for other states. Connecticut is surpassed by many states in the amount of wood used for manufacturing purposes, but only six of the twenty states already studied exceed Connecticut in the number of industries and the diversity of manufactured wood products.

Whenever more than three manufacturers in the State specialize in the making of a certain commodity, or closely related commodities, their specialty is classed as an industry. For instance, the

## IN CONNECTICUT—BY INDUSTRIES.

Total cost f. o. b. factory	Grown in Connecticut			Grown out of Connecticut		
	Quantity Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Quantity Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory
\$515,431.70	5,330,865	\$19.14	\$102,033.57	19,080,225	\$21.67—	\$413,398.13
859,107.00	1,050,500	24.49	25,725.50	21,960,500	37.95—	833,381.50
741,641.07	852,000	29.38	25,032.00	16,447,570	43.57—	716,609.07
580,284.15	331,000	21.05	6,968.00	11,480,927	49.94—	573,316.15
289,962.27	1,789,670	32.76+	58,636.27	5,294,684	43.69—	231,326.00
167,309.80	724,500	19.18—	13,895.00	4,037,090	38.00	153,414.80
213,224.32	2,186,095	30.71—	67,129.15	2,205,915	66.23—	146,095.17
116,065.60	2,339,900	20.70—	48,426.70	1,144,420	59.10+	67,638.00
149,982.75	348,450	20.71—	7,214.95	1,842,081	77.50+	142,767.80
42,889.70	632,000	18.16+	11,534.00	1,111,800	28.20	31,355.70
65,177.00	434,000	19.98	8,672.00	1,252,000	45.13+	56,505.00
58,287.50	327,000	34.82—	11,385.00	1,295,500	36.20+	46,902.50
50,463.56	140,500	20.54+	2,886.50	895,745	53.11+	47,577.06
28,298.50	450,500	26.62	11,540.00	572,950	29.25	16,758.50
28,680.00	213,000	20.23+	4,310.00	580,000	42.02	24,370.00
16,220.00	666,000	18.16	12,095.00	75,000	55.00	4,125.00
40,496.00	.....	.....	.....	603,431	67.11	40,496.00
22,135.07	69,975	26.90	1,882.30	484,776	41.78—	20,252.77
33,711.61	117,227	22.57—	2,645.68	395,678	78.71+	31,065.93
27,364.95	134,700	18.27—	2,460.70	354,538	70.24+	24,904.25
11,962.34	5,800	35.00	203.00	284,136	41.39—	11,759.34
12,767.00	.....	.....	.....	209,500	60.94	12,767.00
6,117.75	2,500	28.00	70.00	152,325	39.70	6,047.75
2,502.00	110,000	22.50	2,475.00	300	90.00	27.00
810.00	18,500	23.78+	440.00	10,500	35.24—	370.00
73.25	2,050	35.73	73.25	.....	.....	.....
\$4,080,964.89	18,279,732	\$23.40	\$427,733.57	91,771,591	\$39.81—	\$3,653,231.32

TABLE XV. BOXES AND CRATES.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
White pine .....	16,940,925	\$21.70	\$367,617.83	4,104,000	\$19.58+	\$80,376.44	12,836,925	\$22.38—	\$287,241.39
Spruce .....	2,179,524	20.24—	44,109.57	.....	.....	.....	2,179,524	20.24—	44,109.57
Cotton gum .....	1,295,676	17.04—	22,072.17	.....	.....	.....	1,295,676	17.04—	22,072.17
Water or black gum...	1,250,000	17.00	21,250.00	.....	.....	.....	1,250,000	17.00	21,250.00
Loblolly pine .....	800,000	21.86—	17,485.00	.....	.....	.....	800,000	21.86—	17,485.00
Hemlock .....	513,000	13.93+	7,148.00	363,000	14.04+	5,098.00	150,000	13.67—	2,050.00
Yellow poplar (white- wood) .....	396,365	23.94+	9,490.63	300,365	23.11+	9,022.63	6,000	78.00	468.00
Basswood .....	268,000	31.79+	8,520.00	3,000	15.00	45.00	265,000	31.98+	8,475.00
Pitch pine .....	245,000	17.27—	4,230.00	245,000	17.27—	4,230.00	.....	.....	.....
Chestnut .....	142,500	14.82—	2,111.50	132,500	14.43—	1,911.50	10,000	20.00	200.00
White (soft) elm .....	106,000	43.35—	4,595.00	6,000	15.83+	95.00	100,000	45.00	4,500.00
Cottonwood .....	65,000	15.00	975.00	.....	.....	.....	65,000	15.00	975.00
Rock (cork) elm .....	50,000	45.00	2,250.00	.....	.....	.....	50,000	45.00	2,250.00
Ash .....	33,000	27.58—	910.00	25,000	14.00	350.00	8,000	70.00	560.00
Hard maple .....	30,000	34.50	1,035.00	.....	.....	.....	30,000	34.50	1,035.00
Hickory .....	25,000	14.00	350.00	25,000	14.00	350.00	.....	.....	.....
Red oak .....	24,000	16.67—	400.00	24,000	16.67—	400.00	.....	.....	.....
Cypress .....	19,100	20.00	382.00	.....	.....	.....	19,100	20.00	382.00
Longleaf pine .....	15,000	23.00	345.00	.....	.....	.....	15,000	23.00	345.00
Soft maple .....	10,000	11.00	110.00	10,000	11.00	110.00	.....	.....	.....
Sycamore .....	3,000	15.00	45.00	3,000	15.00	45.00	.....	.....	.....
Totals .....	24,411,090	\$21.11+	\$515,431.70	5,330,865	\$19.14	\$102,033.57	19,080,225	\$21.67—	\$413,398.13

cigar box manufacturers make one kind of container, the trunk manufacturers another, and the casket manufacturers, in their outer cases or rough boxes, still another. Instead of listing these several products as "Boxes," they are classified under the separate titles. The same rule accounts for noting the manufacture of chairs as distinct from furniture making, but in several cases the classifications run so closely together that a distinction is difficult to make. Because of this fact, an arbitrary division of the data is sometimes unavoidable. These cases will be pointed out later on under the discussion of the individual industry tables. In many cases, the information given by a single manufacturer relates to the making of products listed under several different industries. This explains the frequent appearance in the directory of this report of the names of the same manufacturer under more than one industry heading. Several small industries, in which no more than two establishments reported, are grouped together under the caption "Miscellaneous."

Over \$4,000,000 a year is paid by the Connecticut wood users for their raw material. Less than 15 per cent. of this is paid for home-grown woods. This leaves more than \$3,500,000 as the sum which Connecticut thus pays out each year to other states. In not a few instances, this purchase money is expended for material which might be produced in the State.

## BOXES.

In Connecticut more lumber is used for boxes and crates than for any other class of wood products, but the cost of the box material, over \$500,000, was considerably less than the cost of lumber reported by industries using smaller quantities. The musical instrument makers, for instance, paid \$65,000 more, and used less than one-half of the quantity, while the sash and door factories used nearly 6,000,000 feet less but paid \$200,000 more. Much of the material used for boxes is of the cheaper grades, as shown by the fact that the average price, \$21.11 per thousand feet, is lower than that for raw material reported by any of the other twenty-five classes of manufacturers.

The statistics in Table XV include the material used not only by box factories but also by box-making departments of other manufacturing industries, which produce packages and crates to

TABLE XVI. PLANING-MILL PRODUCTS.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Loblolly pine .....	4,279,000	\$ 25.48+	\$109,040.00	.....	.....	.....	4,279,000	\$ 25.48	\$109,040.00
Cypress .....	3,658,700	40.97+	149,914.50	.....	.....	.....	3,658,700	40.97+	149,914.50
Shortleaf pine .....	3,497,800	23.11+	80,838.50	.....	.....	.....	3,497,800	23.11+	80,838.50
White pine .....	2,613,000	39.13-	102,245.25	659,500	\$25.01	\$16,544.00	1,953,500	43.80	85,701.25
Spruce .....	2,238,500	24.54	59,425.00	.....	.....	.....	2,238,500	24.54	59,425.00
Yellow poplar (white- wood) .....	1,404,500	57.45+	81,267.50	2,000	25.00	50.00	1,402,500	57.91	81,217.50
Longleaf pine .....	984,500	28.08-	27,642.50	.....	.....	.....	984,500	28.08-	27,642.50
Chestnut .....	839,500	46.48-	39,017.00	250,000	24.29-	6,071.50	589,500	55.89-	32,945.50
White oak .....	824,000	73.60+	60,650.00	32,000	32.50	1,040.00	792,000	75.27-	59,610.00
Red oak .....	818,500	58.61	47,972.75	38,000	20.00	760.00	780,500	60.49	47,212.75
Ash .....	660,000	58.08-	38,332.00	.....	.....	.....	660,000	58.08-	38,332.00
Hard maple .....	223,000	40.54	9,040.50	4,000	30.00	120.00	219,000	40.73+	8,920.50
Red gum .....	210,500	45.21+	9,517.50	.....	.....	.....	210,500	45.21+	9,517.50
Sweet birch .....	171,000	52.74+	9,019.00	.....	.....	.....	171,000	52.74+	9,019.00
Sugar pine .....	127,000	47.91	6,085.00	.....	.....	.....	127,000	47.91	6,085.00
Cherry .....	100,000	97.50	9,750.00	.....	.....	.....	100,000	97.50	9,750.00
Douglas fir .....	100,000	45.00	4,500.00	.....	.....	.....	100,000	45.00	4,500.00
Western red cedar .....	90,000	45.00	4,050.00	.....	.....	.....	90,000	45.00	4,050.00
Tupelo .....	47,500	34.11-	1,620.00	.....	.....	.....	47,500	34.11-	1,620.00
Mahogany .....	42,000	166.67-	7,000.00	.....	.....	.....	42,000	166.67-	7,000.00
Hemlock .....	40,000	16.00	640.00	40,000	16.00	640.00	.....	.....	.....
Pitch pine .....	25,000	20.00	500.00	25,000	20.00	500.00	.....	.....	.....
Northern white cedar .....	10,000	30.00	300.00	.....	.....	.....	10,000	30.00	300.00
Black walnut .....	5,000	120.00	600.00	.....	.....	.....	5,000	120.00	600.00
Beech .....	2,000	70.00	140.00	.....	.....	.....	2,000	70.00	140.00
Totals .....	23,011,000	\$37.33	\$859,107.00	1,050,500	\$24.49	\$25,725.50	21,960,500	\$37.95-	\$833,381.50

meet their own requirements only. In the directory appended to this report, box factories are designated by an asterisk (\*). There is a class of box makers who purchase their material in the form of shooks or knocked-down boxes; these are manufacturers only in that they assemble or nail the parts together. This class of box makers was not asked to make a report, since information concerning the material used by them will be secured from the shook makers and appear in the report of the particular State in which their several factories are in operation.

Twenty-one different woods are used in Connecticut for boxes and crates, and the entire supply of only five was reported as home-grown, while nine kinds came entirely from other states. White pine, which is one of the three principal box woods in the country, made up nearly 70 per cent. of the total quantity used in Connecticut. It is used not only for common nailed boxes, shooks, and crates, but also for lock-cornered and dove-tailed boxes.

The quantity of cotton gum or tupelo consumed was probably greater than that shown in the table, as cotton gum, like water gum, is often called black gum and, in a few cases, it was difficult to determine from the manufacturers' report which of the two species was used. That these two woods should have been used in greater amounts than was loblolly pine is somewhat surprising, since they grow in the same region with loblolly, mostly in Virginia and North Carolina. In these states the quantity of loblolly used for boxes exceeds many fold the quantity of tupelo and black gum used. In Connecticut the largest demand for native pitch pine is from the box makers who use it for rough crating and cheap boxes. The amount of chestnut lumber used for this purpose is surprisingly low, since this tree is more abundant in Connecticut than any other and, next to soft maple, which is used only in small amounts, it is the cheapest wood purchased. Of the twenty-one states in which similar studies have been made, Connecticut alone reports the use of hickory by box factories.

#### PLANING-MILL PRODUCTS.

It is difficult to distinguish definitely between an industry making ordinary planing-mill products and one making sash,

TABLE XVII. SASH, DOORS, BLINDS, AND GENERAL MILLWORK.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
White pine .....	5,670,135	\$ 37.49	\$212,582.26	324,500	\$31.92+	\$10,359.00	5,345,635	\$ 37.83-	\$202,223.26
Cypress .....	2,749,250	40.32	110,864.24	.....	.....	.....	2,749,250	40.32	110,864.24
Loblolly pine .....	1,485,310	31.64+	47,000.30	.....	.....	.....	1,485,310	31.64+	47,000.30
Spruce .....	1,104,700	24.47	27,032.30	.....	.....	.....	1,104,700	24.47	27,032.30
White oak .....	932,700	72.47	67,593.00	34,500	28.65	988.50	898,200	74.15+	66,604.50
Sugar pine .....	921,370	55.64	51,287.35	.....	.....	.....	921,370	55.64	51,287.35
Chestnut .....	683,480	37.61-	25,704.15	445,250	27.57	12,275.25	238,230	56.37-	13,428.90
Ash .....	590,965	58.09-	34,313.27	.....	.....	.....	590,965	58.09-	34,313.27
Yellow poplar (white- wood) .....	590,690	60.35	35,684.15	.....	.....	.....	590,690	60.35	35,684.15
Western yellow pine ..	400,000	45.00	18,000.00	.....	.....	.....	400,000	45.00	18,000.00
Red oak .....	384,485	54.83	21,081.24	43,500	29.82-	1,297.00	340,985	58.02	19,784.24
Douglas fir .....	325,680	46.96+	15,294.90	.....	.....	.....	325,680	46.96+	15,294.90
Longleaf pine .....	262,400	32.99-	8,655.80	.....	.....	.....	262,400	32.99-	8,655.80
Red gum .....	231,505	50.40+	11,668.23	.....	.....	.....	231,505	50.40+	11,668.23
Sweet birch .....	173,130	65.46	11,332.78	.....	.....	.....	173,130	65.46	11,332.78
Hard maple .....	131,550	47.00	6,183.00	3,250	23.77-	77.25	128,300	47.59-	6,105.75
Shortleaf pine .....	125,000	29.20	3,650.00	.....	.....	.....	125,000	29.20	3,650.00
Idaho white pine .....	123,000	46.83	5,760.00	.....	.....	.....	123,000	46.83	5,760.00
Yellow birch .....	81,200	44.92	3,647.40	.....	.....	.....	81,200	44.92	3,647.40
Mahogany .....	72,020	165.96-	11,952.20	.....	.....	.....	72,020	165.96-	11,952.20
Cotton gum (tupelo) ..	50,800	35.06	1,781.00	.....	.....	.....	50,800	35.06	1,781.00
Basswood .....	44,000	50.98-	2,243.00	.....	.....	.....	44,000	50.98-	2,243.00
Paper birch .....	36,000	20.14	725.00	.....	.....	.....	36,000	20.14	725.00
Redwood .....	26,500	32.83	870.00	.....	.....	.....	26,500	32.83	870.00
Sitka spruce .....	25,000	47.00	1,175.00	.....	.....	.....	25,000	47.00	1,175.00
White (soft) elm .....	18,700	43.61-	815.50	.....	.....	.....	18,700	43.61-	815.50
Western red cedar .....	16,500	32.12-	530.00	.....	.....	.....	16,500	32.12-	530.00
Black walnut .....	14,500	105.82	1,535.00	.....	.....	.....	14,500	105.82	1,535.00
Cherry .....	13,000	112.31	1,460.00	.....	.....	.....	13,000	112.31	1,460.00
Hickory .....	13,000	76.54-	995.00	1,000	35.00	35.00	12,000	80.00	960.00
Butternut .....	3,000	75.00	225.00	.....	.....	.....	3,000	75.00	225.00
Totals .....	17,209,570	\$42.87	\$741,641.07	852,000	\$29.38	\$25,032.00	16,447,570	\$43.57-	\$716,609.07



doors, blinds, or doing a general millwork business. The former industry includes those products which can be manufactured for general use, such as flooring, siding, ceiling, partitions, and stock moulding, while under the latter industry are listed commodities made for a particular purpose, usually according to a design or drawing. This separation may seem unnecessary in Connecticut where the products of both industries are manufactured by the same class of establishments, but to make this report comparable with those from other states, a uniform method of classification is followed. In many states planing mills are operated in connection with sawmills, and where this is the case, the planing mills make products quite distinct from those of the sash and general millwork factories.

Large quantities of the planing-mill products used in Connecticut are brought into the State already manufactured, but information relating to this class of material was not asked for and is not included in the statistics of Table XVI.

Loblolly pine leads all other woods in the quantity used. Its cheapness, ease of working, and attractive figure account for its popularity with this class of manufacturers. Shortleaf often grows in the same region with loblolly and the two woods are so similar in quality and appearance that they are sold together as North Carolina pine, or sometimes as Virginia pine. Loblolly makes up more than 75 per cent. of the mixture.

Over 95 per cent. of the wood shown in the table grew outside of Connecticut, while only two kinds were reported as grown entirely at home. These two were hemlock and pitch pine. The amount of waste at planing mills is very large, and in Connecticut few manufacturers report any use of this waste other than for fuel, except that shavings and sawdust occasionally serve for bedding and for ice packing.

### SASH, DOORS, BLINDS AND GENERAL MILLWORK.

Table XVII lists thirty-one kinds of wood that are used not only for sash, doors, and blinds, but for mouldings, casings, stair and porch work, screens, consoles, mantels, and other commodities for house building. These products are made up to fit a particular design and thus differ from the material listed in Table XVI as planing-mill products, which are made for general

TABLE XVIII. MUSICAL INSTRUMENTS.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Chestnut .....	3,559,000	\$ 21.58+	\$76,815.50	215,000	\$21.02+	\$4,520.00	3,344,000	\$ 21.62	\$72,295.50
Yellow poplar (white- wood) .....	2,113,500	46.72	98,746.50	35,000	18.00	630.00	2,078,500	47.21	98,116.50
Basswood .....	1,500,000	48.35+	72,530.00	.....	.....	.....	1,500,000	48.35+	72,530.00
Hard maple .....	1,190,500	42.15+	50,184.50	8,000	18.00	144.00	1,182,500	42.32	50,040.50
Sugar pine .....	675,000	85.23	57,530.00	.....	.....	.....	675,000	85.23	57,530.00
Rock (cork) elm .....	638,000	41.18-	26,270.00	.....	.....	.....	638,000	41.18-	26,270.00
Yellow birch .....	400,000	42.00	16,800.00	.....	.....	.....	400,000	42.00	16,800.00
White oak .....	362,900	109.05-	39,573.50	.....	.....	.....	362,900	109.05-	39,573.50
White pine .....	349,900	59.89	20,955.65	.....	.....	.....	349,900	59.89	20,955.65
Mahogany .....	269,500	243.60	65,649.50	.....	.....	.....	269,500	243.60	65,649.50
Sweet birch .....	219,000	39.69	8,692.00	.....	.....	.....	219,000	39.69	8,692.00
Longleaf pine .....	90,000	38.00	3,420.00	.....	.....	.....	90,000	38.00	3,420.00
Cherry .....	89,000	38.65+	7,890.00	30,000	30.00	900.00	59,000	118.47	6,990.00
Boxwood .....	69,228	53.45	3,700.00	.....	.....	.....	69,228	53.45	3,700.00
Black walnut .....	57,250	198.37	11,356.75	.....	.....	.....	57,250	198.37	11,356.75
Spruce .....	55,000	48.98	2,693.75	.....	.....	.....	55,000	48.98	2,693.75
Ebony .....	41,041	266.25	10,927.00	.....	.....	.....	41,041	266.25	10,927.00
Red gum .....	35,000	45.00	1,575.00	.....	.....	.....	35,000	45.00	1,575.00
Butternut .....	35,000	18.00	630.00	35,000	18.00	630.00	.....	.....	.....
Cypress .....	25,000	60.00	1,500.00	.....	.....	.....	25,000	60.00	1,500.00
Red oak .....	24,000	97.04	2,329.00	.....	.....	.....	24,000	97.04	2,329.00
Paper birch .....	8,000	18.00	144.00	8,000	18.00	144.00	.....	.....	.....
Ash .....	6,000	54.00	324.00	.....	.....	.....	6,000	54.00	324.00
Circassian walnut .....	100	450.00	45.00	.....	.....	.....	100	450.00	45.00
Rosewood .....	8	312.50	2.50	.....	.....	.....	8	312.50	2.50
Totals .....	11,811,927	\$49.13-	\$580,284.15	331,000	\$21.05	\$6,968.00	11,480,927	\$49.94-	\$573,316.15

use. More than 30 per cent. of the wood used is white pine, which has a greater number of uses in this industry than any other wood reported. Formerly white pine from New England and the Lake States was the only wood used for making sash, doors and blinds in Connecticut, but in later years the growing scarcity of the upper grades of this wood has resulted in the substitution of sugar pine, Idaho white pine, and Western yellow pine, woods which are similar in appearance and quality to white pine, and are often sold as Western white pine. The large quantity of these Western woods used in Connecticut is due to the fact that only upper grades can be shipped so far, and these sell at lower prices than similar grades of Eastern white pine.

Cypress is the second wood of importance in this industry, most of it coming from the Carolinas and Florida. It goes into doors, stair work and interior finish, and is used more than any other wood for outside casing, cornice and porch work. Douglas fir from the Pacific Coast competes with cypress, more particularly for exterior work. The price of the Western wood is only \$6.34 more than the average cost of cypress. Loblolly pine and a small amount of shortleaf pine, which are sold together as North Carolina and longleaf pine, have a substantial place in this industry. These three woods are the important members of the yellow pine family, and their annual consumption aggregates over a million and three-quarter feet in the sash and door industry.

Among the hardwoods used chiefly for interior finish, the oaks are the most important, white oak greatly exceeding red oak in quantity. The ornamental figure and cheapness of chestnut make it the most popular for this use next to oak. The other woods listed in the table are used only in small amounts. Their number is due to the fact that different woods are selected to suit the designs and color schemes of the particular jobs in which they are to be used.

### MUSICAL INSTRUMENTS.

Table XVIII shows the material used in making pianos, and cabinet and church organs, the large part going into the former product. Thirteen manufacturers supplied the information listed. Some piano makers specialize in building cases, while others

TABLE XIX. SHIPS AND BOATS.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Longleaf pine .....	3,949,995	\$ 33.33	\$151,393.07	.....	.....	.....	3,949,995	\$ 33.33	\$151,393.07
Oak (white) .....	1,296,625	40.39	52,370.31	1,169,525	\$37.16+	\$43,464.56	127,100	70.07-	8,905.75
Chestnut .....	546,645	23.54-	12,866.71	546,645	23.54-	12,866.71	.....	.....	.....
Spruce .....	315,370	26.68	8,415.01	.....	.....	.....	315,320	26.68	8,415.01
Southern white cedar..	267,700	56.72+	15,185.00	.....	.....	.....	267,700	56.72+	15,185.00
Douglas fir .....	182,500	43.94	8,019.00	.....	.....	.....	182,500	43.94	8,019.00
White pine .....	111,935	70.54	7,895.58	.....	.....	.....	111,935	70.54	7,895.58
Hackmatack .....	88,225	73.53	6,487.41	.....	.....	.....	88,225	73.53	6,487.41
Cypress .....	76,905	59.82	4,600.83	.....	.....	.....	76,905	59.82	4,600.83
Mahogany .....	70,630	166.92	11,789.60	.....	.....	.....	70,630	166.92	11,789.60
Maple (hard) .....	63,000	31.43-	1,980.00	60,000	30.00	1,800.00	3,000	60.00	180.00
Loblolly pine .....	37,145	37.15	1,379.80	.....	.....	.....	37,145	37.15	1,379.80
Locust .....	31,500	100.00	3,150.00	.....	.....	.....	31,500	100.00	3,150.00
Yellow poplar (white- wood) .....	15,230	49.29	704.95	.....	.....	.....	15,230	49.29	704.95
Teak .....	8,000	287.50	2,300.00	.....	.....	.....	8,000	287.50	2,300.00
White ash .....	5,500	40.00	220.00	5,000	38.00	190.00	500	60.00	30.00
Rock (slippery) elm ...	3,500	54.29	190.00	3,500	54.29	190.00	.....	.....	.....
Hickory .....	3,500	25.00	87.50	3,500	25.00	87.50	.....	.....	.....
Lignum-vitæ .....	2,449	142.92	350.00	.....	.....	.....	2,449	142.92	350.00
Red cedar .....	2,000	65.00	130.00	.....	.....	.....	2,000	65.00	130.00
Applewood .....	1,500	25.00	37.50	1,500	25.00	37.50	.....	.....	.....
Black walnut .....	1,000	100.00	100.00	.....	.....	.....	1,000	100.00	100.00
Cherry .....	1,000	60.00	60.00	.....	.....	.....	1,000	60.00	60.00
Sycamore .....	1,000	60.00	60.00	.....	.....	.....	1,000	60.00	60.00
Redwood .....	500	80.00	40.00	.....	.....	.....	500	80.00	40.00
Sweet birch .....	500	50.00	25.00	.....	.....	.....	500	50.00	25.00
White mahogany .....	500	250.00	125.00	.....	.....	.....	500	250.00	125.00
Totals .....	7,084,354	\$40.93-	\$289,962.27	1,789,670	\$32.76+	\$58,636.27	5,294,684	\$43.69	\$231,326.00

make only the actions and keys. Another class, not included in this study, buy their cases of one manufacturer, their actions of another, their sounding boards of a third, and their hardware of the piano-hardware dealers, while their manufacturing operations consist merely in putting these parts together.

Chestnut, which is the favorite wood for veneer cores or backing, is the principal species reported in use by the Connecticut piano makers and organ builders. It goes almost entirely into cases, especially piano cases, and for this use, as in many other states in which studies similar to this have been made, it is the leading wood. Notwithstanding the fact that the chestnut tree is common throughout Connecticut, more than 90 per cent. of the three and a half million feet consumed by the musical instrument makers comes from the forests of other states. Other casewoods to be veneered or enameled are tulip poplar and white pine. The material used for the exterior work on cases is largely bought in the form of veneer. White oak, red oak, red gum, birch, mahogany, walnut, and sugar maple, are among the principal kinds reported. Sugar maple and elm enter largely into posts and backs of piano cases. White oak, red oak, cherry, mahogany and walnut are used for organ cases in addition to chestnut.

Action makers require yellow poplar, basswood, and sugar maple. Sugar pine from California is used considerably, and is the highest-priced action wood reported. Piano keys are also made from it as well as from sweet birch, ash, and cherry. Basswood is the favorite for organ keys, except for sharps or flats which—both for pianos and organs—are made of ebony. Spruce has no competitor for piano sounding boards, red spruce being preferred, though white spruce and, to a limited extent, Oregon Sitka spruce answer. Organ pipes are made from sugar pine and white pine, while for stop handles ebony is in greatest demand, though boxwood and rosewood are also used.

## SHIPS AND BOATS.

In quantity of wood used, boat builders stand fifth in the list of Connecticut industries. There are forty-one boat and ship builders in the State who make all kinds of boats, from a racing shell to a steamship. A large part of the material reported went

TABLE XX. CLOCKS.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b., factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Red oak .....	1,481,000	\$ 30.22	\$44,750.00	342,000	\$19.44	\$6,650.00	1,139,000	\$ 33.45	\$38,100.00
Basswood .....	1,400,000	32.64	45,700.00	62,500	18.00	1,125.00	1,337,500	33.34	44,575.00
Yellow poplar (white- wood) .....	1,050,000	35.32	37,082.50	.....	.....	.....	1,050,000	35.32	37,082.50
Chestnut .....	285,000	19.02	5,420.00	285,000	19.02	5,420.00	.....	.....	.....
White oak .....	262,300	47.35	12,420.00	30,000	20.00	600.00	232,300	50.88	11,820.00
Mahogany .....	104,000	146.83	15,270.00	.....	.....	.....	104,000	146.83	15,270.00
Soft maple .....	80,000	28.00	2,240.00	.....	.....	.....	80,000	28.00	2,240.00
Sweet birch .....	33,000	49.70	1,640.00	.....	.....	.....	33,000	49.70	1,640.00
Red gum .....	27,000	32.91	888.50	.....	.....	.....	27,000	32.91	888.50
White pine .....	20,000	37.50	750.00	5,000	20.00	100.00	15,000	43.33	650.00
Paper birch .....	10,000	30.00	200.00	.....	.....	.....	10,000	30.00	300.00
Black walnut .....	9,000	83.33	750.00	.....	.....	.....	9,000	83.33	750.00
Rosewood .....	290	340.69	98.80	.....	.....	.....	290	340.69	98.80
Totals .....	4,761,590	\$35.81+	\$167,309.80	724,500	\$19.18—	\$13,895.00	4,037,090	\$38.00	\$153,414.80

into barges and tow boats, extensively used for the coastwise freight business. Many high-grade launches, yachts, and large pleasure boats are made by the Connecticut boat builders. Wood is used chiefly for inside work and interior finish, since of late years steel construction has largely taken the place of wood.

Twenty-seven kinds of wood were reported by the Connecticut boat builders, aggregating more than seven million feet. (See Table XIX.) Yellow pine ranks first, and is used in building barges, scows, and tow boats, for the framework as well as for planking or siding. Oak stands next in amount and is put to a greater number of uses than any other wood reported for ship building. Inasmuch as the greater portion of this wood is reported as State-grown, it is safe to say that it is mostly black or yellow oak and red oak, since these are the more common species in Connecticut. The oak lumber shipped in from other states, and a small per cent. of the home-grown, is white oak, which is in large demand, especially by makers of pleasure craft, such as row boats, launches, and small sail boats. It goes into the framework of these, and for all classes of boats it is the principal wood for interior finish and cabinet work. Hackmatack appears in no other industry and is used with spruce for ship knees. Spruce also answers for bulkheads, spars, canopies, and hatches. Douglas fir, used mainly as large timbers for barges and scows, also contributes material for keelsons and sleepers.

Southern white cedar, brought from Virginia and North Carolina, is used for the siding of high-grade pleasure boats. It is interesting to note the use of applewood, exclusively Connecticut-grown, for knees in small boats. Besides oak, the principal finishing woods used for interior work are mahogany, ash, tulip poplar, black walnut, sycamore, redwood and sweet birch, in the order named.

### CLOCKS.

The clock manufacturing industry of Connecticut is probably larger than that of any other State. Wood is used only in the making of cases. Six of the sixteen clock factories of the State report its use for mantel and wall clocks, and a small per cent. for large hall or "grandfather" clocks. Red oak, basswood and tulip poplar are reported in the largest quantities, and these woods together constitute nearly 83 per cent. of the total

TABLE XXI. VEHICLES AND VEHICLE PARTS.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Hickory .....	1,172,365	\$ 41.85	\$49,062.85	783,650	\$33.20	\$26,017.75	388,715	\$ 59.29—	\$23,045.10
White ash .....	1,132,465	59.13+	66,967.71	293,350	32.04	9,397.50	839,115	68.61	57,570.21
White oak .....	633,400	32.44	20,548.15	566,900	31.61	17,918.15	66,500	39.55	2,630.00
Yellow poplar (white- wood) .....	575,275	61.70—	35,490.00	119,050	31.13	3,706.25	456,175	69.68	31,783.75
Rock elm .....	228,000	25.81	5,900.90	175,000	20.00	3,500.00	53,000	45.30	2,400.90
Red oak .....	199,500	30.21—	6,026.50	165,000	27.60	4,554.00	34,500	42.68	1,472.50
Loblolly pine .....	145,325	44.77	6,506.75	.....	.....	.....	145,325	44.77	6,506.75
Mahogany .....	97,000	160.18	15,537.50	.....	.....	.....	97,000	160.18	15,537.75
Hard maple .....	91,645	28.25	2,588.70	23,246	23.30	541.70	68,400	29.93—	2,047.50
White (soft) elm .....	28,000	33.57	940.00	23,000	25.65	590.00	15,000	70.00	350.00
Spruce .....	19,710	26.71	526.46	.....	.....	.....	19,710	26.71	526.46
Beech .....	15,000	23.00	345.00	7,500	23.00	172.50	7,500	23.00	172.50
Chestnut .....	12,800	25.00	320.00	12,800	25.00	320.00	.....	.....	.....
Paper birch .....	10,500	22.86—	240.00	5,000	23.00	115.00	5,500	22.73	125.00
Basswood .....	8,375	31.76+	266.00	6,200	28.87	179.00	2,175	40.00	87.00
White pine .....	8,300	31.51—	261.50	3,500	22.14	77.50	4,800	38.33+	184.00
Cypress .....	6,800	66.84	454.50	.....	.....	.....	6,800	66.84	454.50
Black walnut .....	3,500	171.43	600.00	.....	.....	.....	3,500	171.43	600.00
Circassian walnut .....	1,800	320.00	576.00	.....	.....	.....	1,800	320.00	576.00
Cherry .....	1,000	20.00	20.00	1,000	20.00	20.00	.....	.....	.....
Pitch pine .....	900	22.00	19.80	900	22.00	19.80	.....	.....	.....
Longleaf pine .....	400	65.00	26.00	.....	.....	.....	400	65.00	26.00
Totals .....	4,392,010	\$48.55—	\$213,224.32	2,186,095	\$30.71—	\$67,129.15	2,205,915	\$66.23—	\$146,095.17



shown in Table XX. Red oak is in largest demand for all grades of cases. It is used extensively in making wall clocks, and is finished by staining in the natural color of the wood or in the darker mission shades. Basswood and yellow poplar, used for hidden work and the backs of cases, are also the favorites for enamel cases. The art of enameling wood has made such rapid progress of late years that the imitations are difficult to distinguish from marble, foreign woods, or other materials which they are made to resemble. Chestnut goes largely into backing for veneered cases. Considerable mahogany is imported, much of it in the form of veneer which is used with sweet birch, red gum, black walnut, and rosewood for exterior finish. Red gum is growing in popularity with the clock makers. It is found beautifully mottled, with figure and color like those of Circassian walnut. When finished naturally it closely resembles that wood.

#### VEHICLES AND VEHICLE PARTS.

Table XXI includes conveyances of all grades and kinds, from the finest of automobile limousines and carriages like landaus and broughams, to common dump carts, together with sleighs, cutters, and bob sleds. A small per cent. of the wood used goes into hand-made vehicles, which are reported by wheelwrights in small towns and at cross roads, who, in addition to their chief business of repairing, also build a few wagons for local trade. Most of the information about vehicle material, however, was received from large vehicle and automobile factories, and by those specializing in the manufacture of vehicle supplies, such as poles, shafts, spokes and rims, wheels, and manufactured gear parts.

Every effort was made to avoid listing the same material twice. Makers who purchased ready-made parts only to assemble them into a new unit and put on the finishing touches were not asked for information, while vehicle builders buying some of their material already manufactured were asked to report only concerning those parts which they actually cut from the rough lumber. There are twenty-two kinds of lumber reported; almost half of which is State-grown. In quantity consumed, hickory and ash are the principal woods and constitute about 50 per cent. of the total material used.

It is somewhat surprising that so large a part of the hickory used is home-grown, but this is accounted for by the fact that native hickory is well adapted to the needs of concerns making vehicle supplies, who form an important part of this industry. The material brought from the South and other states comes into Connecticut in the form of billets to be shaped into the finished products by manufacturers who only make parts like the parts of the running gear, and sell them to other factories which assemble and finish the vehicle. For gear stock, hickory is the principal wood used.

The manufacture of automobile bodies is conspicuous among the wood-using industries of Connecticut and, in this line, this State is ahead of the other twenty states in which like reports have been made. The manufacture of automobile bodies demands ash in greater quantities than any other kind of wood. Ash being strong and light is the favorite for body frames. In no other State does it occupy as prominent a position among the vehicle materials. The Connecticut manufacturers of horse vehicles use it for spring bars, poles, and shafts, and for gear parts of light vehicles. Yellow poplar is the other important body wood and meets an exacting demand for panel work. Because it is fine grained, soft and easily worked, and has a special capacity for holding paint, it is the favorite wood with builders of automobile, carriage, and buggy bodies. Its high price now prevents its use as formerly for wagon beds. In Connecticut, loblolly pine, spruce, and basswood have largely taken its place. Cypress, used only in small amounts, is growing in favor as a panel wood for fine vehicle bodies.

The white oak reported comes principally from without the State but the red oak largely from within. The yellow oak is entirely home-grown. The last named species as it grows in Connecticut is of an excellent quality and is popular as a vehicle wood. Being cheaper it is substituted even for uses which in many states are supplied by white oak alone, as for instance, in making gear parts for wagons, drays and heavy vehicles.

The elms are the hub woods, both the rock and the white elm being equally suitable. The elms are the easiest to bend and for that reason are used for the bent parts of vehicle and cutter bodies. Ash and yellow poplar also serve for this class of products. Sugar maple, red oak, longleaf pine, beech and

chestnut go into the bottoms of wagon bodies; the flooring of passenger vehicles is principally of red oak. The large quantity of mahogany shown in the table goes principally into automobile and limousine bodies, window frames of limousines, door parts of the tonneau, wind shields, steering wheels, magneto boxes, etc. Black and Circassian walnut also answer the same purposes.

### HANDLES.

A great variety of handles is made in Connecticut, which accounts for the many kinds of wood shown in the table of this industry. Twenty-two species are reported. (See Table XXII.) No other State shows as many handle woods used. Hickory heads the list. Inasmuch as this wood meets an exacting demand for long tool handles like those for picks, sledge-hammers, mauls, etc., it would be natural to assume that their manufacture was the most important part of the handle-making industry of Connecticut, but the largest per cent. of the hickory reported goes into handles of small tools, like files, chisels, hatchets, nail hammers, etc. For this purpose it is best of all woods. Other species are used for small handles in which the shock-resisting quality is not so important a requisite, such as those of awls, gimlets, augurs, braces, screw-drivers, and drawknives. Sugar maple, white oak, white and paper birch, mahogany and rosewood were the principal woods serving this latter purpose.

For garden-tool handles, ash is generally used, but in Connecticut, sugar maple, sweet birch and beech are substituted and consumed in greater quantities. These woods are also most in demand for brush handles.

The manufacture of knife and fork handles takes a prominent part in this industry in Connecticut. Many woods supply the material; some of them are foreign, and purchased at high prices. Of these cocobola, a Central American wood, is the favorite. It is dense, hard, ornamental, and susceptible of a high finish. Boxwood, mahogany, rosewood, and ebony are the other imported woods, and flowering dogwood stained to imitate ebony or cherry, butternut, yellow birch, sugar maple, and beech are the principal domestic woods used.

The only softwood or conifer reported for handles is white pine. It serves with the softer hardwoods, like basswood, tulip

TABLE XXII. HANDLES.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Hickory .....	987,400	\$ 23.00	\$22,709.00	719,400	\$22.59	\$16,250.00	268,000	\$ 25.03+	\$ 6,459.00
Hard maple .....	536,600	22.40	12,020.20	431,100	19.29-	8,314.20	105,500	35.13-	3,706.00
Beech .....	395,000	21.07-	8,321.50	300,000	16.18+	4,855.00	95,000	36.49-	3,466.50
Yellow birch .....	284,500	20.31-	5,778.00	194,000	20.14+	3,908.00	90,500	20.66	1,870.00
Gray birch .....	260,000	17.52	4,555.00	260,000	17.52	4,555.00	.....	.....	.....
Cocobola .....	208,560	167.07	34,844.00	.....	.....	.....	208,560	167.07	34,844.00
Paper birch .....	109,500	19.91-	2,180.00	.....	.....	.....	109,500	19.91-	2,180.00
Cherry .....	120,000	20.17-	2,420.00	70,000	20.29	1,420.00	50,000	20.00	1,000.00
Dogwood .....	100,000	24.00	2,400.00	100,000	24.00	2,400.00	.....	.....	.....
White ash .....	93,900	30.40+	2,854.90	64,500	26.90-	1,730.50	29,400	38.23+	1,124.40
Basswood .....	76,800	41.43	3,181.80	6,800	17.91	121.80	70,000	43.71	3,060.00
Soft maple .....	39,500	19.01+	751.00	29,000	18.45-	535.00	10,500	20.57+	216.00
Yellow poplar (white- wood) .....	38,600	22.96-	886.20	18,600	21.83-	406.20	20,000	24.00	480.00
Boxwood .....	37,383	54.89	2,052.00	.....	.....	.....	37,383	54.89	2,052.00
Rosewood .....	14,441	285.30	4,120.00	.....	.....	.....	14,441	285.30	4,120.00
Chestnut .....	10,000	18.00	180.00	10,000	18.00	180.00	.....	.....	.....
Mahogany .....	9,000	180.00	1,620.00	.....	.....	.....	9,000	180.00	1,620.00
Rock elm .....	6,000	20.00	120.00	3,000	15.00	45.00	3,000	25.00	75.00
White pine .....	5,500	17.45+	96.00	5,500	17.45+	96.00	.....	.....	.....
Butternut .....	2,000	25.00	50.00	2,000	25.00	50.00	.....	.....	.....
Ebony .....	1,636	232.27	380.00	.....	.....	.....	1,636	232.27	380.00
Applewood .....	1,000	30.00	30.00	1,000	30.00	30.00	.....	.....	.....
Totals .....	3,484,320	\$33.31	\$116,065.60	2,339,900	\$20.70-	\$48,426.70	1,144,420	\$59.10+	\$67,638.90

poplar or whitewood, for handles of soldering irons, carving and engraving tools, files, etc. Chestnut is used for casket handles, which are generally cloth-covered. Applewood, in limited quantities, with sugar maple, meets the demand for draw-knife handles.

### CARPENTERS' TOOLS.

Table XXIII shows the use of sixteen woods and more than two million feet in the manufacture of carpenters' tools. The material listed under the handle industry goes largely into carpenters' tools, but exclusively for handles, or for tools which are part wood and part metal. The products listed in the present class include carpenters' tools made entirely of wood, such as rules, planes, levels, mallets, mitre boxes, braces, clamps, plumbers' rules, gauges, etc. The entire supply of five of the woods reported is home-grown, but their combined quantity amounts to less than one-sixth of the total. Boxwood, which comes principally from Turkey and other Mediterranean countries, meets the largest part of the demand. In only one other industry table for Connecticut does a foreign wood lead in point of quantity. Its most important use is for rules, but it also contributes material for planes and gauges. It is hard, strong, and not liable to warp when seasoned. This makes it the chief rule wood, while its exceptional quality of wearing smooth—the same property that puts beech and sugar maple to this use—makes it specially valuable for planes and gauges.

Cherry and mahogany are the only woods used for plumbs and levels. Beech is chiefly used for mitre boxes, plane stocks, and hand screws. Chestnut, basswood, and black walnut are the principal tool chest materials. Hickory and lignum-vitæ are the mallet woods, and ash alone serves for clamps. The tool makers use a larger quantity of rosewood than any other class of manufacturers. Nearly a quarter of a million feet is demanded each year and the average price is higher than that of any other wood shown in Table XXIII.

### WOODENWARE AND NOVELTIES.

The manufacture of articles commonly known as woodenware and of articles known as novelties are so closely related that it

TABLE XXIII. CARPENTERS' TOOLS.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Boxwood .....	526,548	\$ 48.00	\$25,275.60	.....	.....	.....	526,548	\$ 48.00	\$25,275.60
Cherry .....	375,000	57.50	21,562.50	31,250	\$25.00	\$ 781.25	343,750	60.45+	20,781.25
Beech .....	243,200	50.67+	12,324.00	30,200	16.69	504.00	213,000	55.49	11,820.00
Rosewood .....	219,353	221.30	48,542.50	.....	.....	.....	219,353	221.30	48,542.50
Hard maple .....	190,000	25.92+	4,925.00	2,500	20.00	50.00	187,500	26.00	4,875.00
Chestnut .....	161,000	18.07+	2,910.00	161,000	18.07+	2,910.00	.....	.....	.....
Basswood .....	137,600	41.61+	5,726.11	5,000	18.00	90.00	132,600	42.50+	5,636.11
Hickory .....	105,500	24.93-	2,630.00	105,500	24.93-	2,630.00	.....	.....	.....
Black walnut .....	65,600	63.61-	4,166.00	.....	.....	.....	65,600	63.61-	4,166.00
Cocobola .....	64,800	207.56	13,450.00	.....	.....	.....	64,800	207.56	13,450.00
Lignum-vitæ .....	36,236	87.62	3,175.00	.....	.....	.....	36,236	87.62	3,175.00
Mahogany .....	27,694	114.51+	3,171.34	.....	.....	.....	27,694	114.51+	3,171.34
Yellow poplar (white- wood) .....	25,000	75.00	1,875.00	.....	.....	.....	25,000	75.00	1,875.00
Red oak .....	8,500	18.20	154.70	8,000	18.20	154.70	.....	.....	.....
Ash .....	3,500	20.00	70.00	3,500	20.00	70.00	.....	.....	.....
Applewood .....	1,000	25.00	25.00	1,000	25.00	25.00	.....	.....	.....
Totals .....	2,190,531	\$68.47-	\$149,982.75	348,450	\$20.71-	\$7,214.95	1,842,081	\$77.50+	\$142,767.80

TABLE XXIV. WOODENWARE AND NOVELTIES.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Paper birch .....	504,500	\$ 22.04+	\$11,338.50	.....	.....	.....	504,500	\$ 22.47+	\$11,338.50
White pine .....	400,000	24.40	9,700.00	210,000	\$22.05-	\$4,630.00	190,000	27.00	5,130.00
Hard maple .....	235,000	25.07+	5,892.00	120,500	14.45+	1,741.50	114,500	36.25-	4,150.50
Spruce .....	170,300	30.43-	5,182.20	.....	.....	.....	170,300	30.43-	5,182.20
Chestnut .....	135,000	13.56-	1,830.00	135,000	13.56-	1,830.00	.....	.....	.....
White oak .....	92,200	21.82+	2,012.00	57,000	19.82+	1,130.00	35,200	25.06-	882.00
Gray birch .....	49,500	17.65	873.50	49,500	17.65	873.50	.....	.....	.....
Yellow poplar (white- wood) .....	29,600	32.74-	969.00	21,000	20.00	420.00	8,600	63.84	549.00
Cherry .....	20,000	20.00	400.00	20,000	20.00	400.00	.....	.....	.....
Beech .....	16,000	18.00	288.00	8,000	18.00	144.00	8,000	18.00	144.00
Rock (cork) elm .....	15,000	25.00	375.00	.....	.....	.....	15,000	25.00	375.00
Mahogany .....	11,000	158.18	1,740.00	.....	.....	.....	11,000	158.18	1,740.00
Basswood .....	9,000	20.00	180.00	9,000	20.00	180.00	.....	.....	.....
Soft maple .....	5,500	22.00	121.00	.....	.....	.....	5,500	22.00	121.00
Douglas fir .....	5,000	70.00	350.00	.....	.....	.....	5,000	70.00	350.00
Ash .....	4,000	35.00	140.00	.....	.....	.....	4,000	35.00	140.00
Yellow birch .....	3,600	65.00	234.00	.....	.....	.....	3,600	65.00	234.00
Black walnut .....	3,100	89.84-	278.50	2,000	70.00	140.00	1,100	125.91	138.50
Aspen .....	3,000	15.00	45.00	3,000	15.00	45.00	.....	.....	.....
Locust .....	500	12.00	6.00	.....	.....	.....	500	12.00	6.00
Totals .....	1,746,800	\$24.55+	\$42,889.70	635,000	\$18.16+	\$11,534.00	1,111,800	\$28.20	\$31,355.70

is difficult to separate them. Therefore the two classes are grouped as one in Table XXIV. Generally woodenware refers to housekeeping accessories, like pails, buckets, dishes, bowls, trays, platters, and boards, step-ladders, flour sieves, etc. Connecticut manufacturers make but few of these. The principal one, according to the quantity of wood used, is step-ladders. Spruce being light and strong meets the entire demand. The other products reported are flour sieves and cutting boards. The sieves are made of soft elm, because it bends easily and retains a cylindrical shape. Cutting boards are commonly made of sugar maple.

The manufacture of novelties is the more important part of this industry. Vial and pill boxes are made from whitewood or yellow poplar, and basswood. Chestnut, maple, and birch serve for the plugs used by paper mills in the ends of rolls of paper. White pine and basswood furnish material for cloth boards; while beech birch and maple are used for rug and druggist poles. An interesting line of manufacture belonging to this industry is the making of collar buttons for laundries. They are used but once then thrown away, hence are made in enormous numbers.

The operation of making these is similar to that for making collets, or small wooden rings used as collars around the flanges of hose and stocking supporters, and both are usually made in the same factory, white birch being reported as the principal wood used. It is probable, however, that only a small portion of it is the true white birch. Door knobs and door stops are turned from a variety of woods, principally oak, sugar maple, cherry and mahogany.

#### MISCELLANEOUS.

Materials used in the manufacture of a large number of commodities, which can not be listed in any of the foregoing industries, have been classed together in the miscellaneous table which follows (Table XXV). Had there been more than two concerns making any one of these products, separate figures relating to it would have been given. For plumber's woodwork, white oak is in largest demand; the casket makers use chestnut, yellow poplar, and red cedar for their cloth-covered products, mahogany and red oak for their caskets finished in the natural wood, and white pine for their outer cases, or rough boxes. The manufacturers



TABLE XXV. MISCELLANEOUS.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Chestnut .....	440,000	\$ 22.68+	\$ 9,980.00	100,000	\$19.00	\$1,900.00	340,000	\$ 23.76+	\$ 8,080.00
White oak .....	290,000	64.83-	18,800.00	.....	.....	.....	290,000	64.83-	18,800.00
White ash .....	206,000	20.02+	4,125.00	206,000	20.02+	4,125.00	.....	.....	.....
Yellow poplar (white- wood) .....	205,000	38.20	7,830.00	25,000	20.00	500.00	180,000	40.72+	7,330.00
Red oak .....	189,500	47.82+	9,062.50	19,500	25.00	487.50	170,000	50.44	8,575.00
White pine .....	144,000	26.53-	3,820.00	.....	.....	.....	144,000	26.53-	3,820.00
Hard maple .....	54,000	36.11+	1,950.00	29,000	19.83	575.00	25,000	55.00	1,375.00
Red gum .....	40,000	34.00	1,360.00	.....	.....	.....	40,000	34.00	1,360.00
Mahogany .....	32,000	118.75	3,800.00	.....	.....	.....	32,000	118.75	3,800.00
Black walnut .....	30,000	110.00	3,300.00	.....	.....	.....	30,000	110.00	3,300.00
Yellow birch .....	28,500	19.72-	562.00	28,500	19.72-	562.00	.....	.....	.....
Soft maple .....	10,000	19.00	190.00	10,000	19.00	190.00	.....	.....	.....
Beech .....	7,500	20.00	150.00	7,500	20.00	150.00	.....	.....	.....
Basswood .....	3,000	20.00	60.00	3,000	20.00	60.00	.....	.....	.....
White (soft) elm .....	3,000	20.00	60.00	3,000	20.00	60.00	.....	.....	.....
Hickory .....	2,500	25.00	62.50	2,500	25.00	62.50	.....	.....	.....
Red cedar .....	1,000	65.00	65.00	.....	.....	.....	1,000	65.00	65.00
Rattan .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals .....	1,686,000	\$38.66-	\$65,177.00	434,000	\$19.98	\$8,672.00	1,252,000	\$45.13+	\$56,505.00

of sewing-machine tables and cabinets use a variety of woods, but principally red and white oak. A large part is quarter-sawed and, with mahogany, walnut, red gum and maple, serves chiefly for exterior work. A portion of these expensive woods is purchased in the form of veneer and made up usually with chestnut as a base. Yellow poplar from the Southern states is used for interior work like drawer sides and bottoms, and other compartments of sewing-machine cabinets.

Rattan is imported from China by the wickerware manufacturers and made into reeds, principally for baskets. Yellow poplar and basswood are the supplies for trunk and sample-case material. For barrel bungs, yellow poplar furnishes the entire supply, while the birches and maples are used in making faucets. Toy manufacturers use four kinds of wood—white pine, aspen, basswood and birch. Ash alone furnishes the material for tackle blocks, and, judging from the low average price reported, much of it must be brown or black ash. For making coal screens, oak, beech, and maple comprise the largest part of the supply, while the makers of ox yokes demand white oak, elm, hickory and maple in almost equal amounts.

## CHAIRS.

Table XXVI gives statistics of lumber manufactured into chairs, piano stools, and benches. The chair industry is not important in Connecticut, since only a little more than a million and a half feet of lumber per annum is required for it. Contrary to expectation, only a small number of the chairs made in Connecticut are from turned stock, but are chiefly oak chairs of the mission design made from sawed or squared material. Folding chairs and camp stools, having canvas or other cloth seats, are turned-stock products for which sugar maple and yellow birch are used.

The piano stool manufacturers report the largest number of woods listed in this table. Yellow and sweet birch, sugar maple, soft maple, elm, and mahogany are the favorites. Birch, better than any other wood, can be stained to imitate mahogany and for that reason is used to meet the largest part of the demand. Soft maple and elm are excellent woods for holding glue and therefore generally used as veneer backing or cores for veneered stools of mahogany, cherry, and quartered oak.

TABLE XXVI. CHAIRS.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Yellow birch .....	500,000	\$ 30.10	\$15,050.00	50,000	\$18.00	\$900.00	450,000	\$ 31.44	\$14,150.00
Soft maple .....	400,000	33.00	13,200.00	.....	.....	.....	400,000	33.00	13,200.00
Hard maple .....	285,000	27.46—	7,825.00	35,000	23.57	825.00	250,000	28.00	7,000.00
White oak .....	242,000	39.92—	9,660.00	242,000	39.92—	9,660.00	.....	.....	.....
Red oak .....	143,000	55.38+	7,920.00	.....	.....	.....	143,000	55.38+	7,920.00
Cherry .....	25,000	120.00	3,000.00	.....	.....	.....	25,000	120.00	3,000.00
White (soft) elm .....	20,000	40.00	800.00	.....	.....	.....	20,000	40.00	800.00
Mahogany .....	7,500	111.00	832.50	.....	.....	.....	7,500	111.00	832.50
Totals .....	1,622,500	\$35.92+	\$58,287.50	327,000	\$34.82—	\$11,385.00	1,295,500	\$36.20+	\$46,902.50

TABLE XXVII. FIXTURES.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Chestnut .....	245,500	\$ 23.20+	\$ 5,696.50	135,500	\$20.50-	\$2,778.50	110,000	\$ 26.28-	\$ 2,918.00
White oak .....	234,200	73.80+	17,285.00	.....	.....	.....	234,200	73.80+	17,285.00
Yellow poplar (white- wood) .....	161,500	43.34-	7,001.00	1,500	30.00	45.00	160,000	43.48	6,956.00
Red oak .....	140,000	45.32	6,345.00	.....	.....	.....	140,000	45.32	6,345.00
Hard maple .....	60,500	45.00	2,722.50	.....	.....	.....	60,500	45.00	2,722.50
White pine .....	56,500	34.28+	1,937.00	.....	.....	.....	56,500	34.28+	1,937.00
Mahogany .....	28,800	133.94	3,857.50	.....	.....	.....	28,800	133.94	3,857.50
Loblolly pine .....	27,000	42.59+	1,150.00	.....	.....	.....	27,000	42.59+	1,150.00
Sweet birch .....	14,440	37.59-	542.76	.....	.....	.....	14,440	37.59-	542.76
Red gum .....	14,000	34.00	476.00	.....	.....	.....	14,000	34.00	476.00
Black walnut .....	10,000	110.00	1,100.00	.....	.....	.....	10,000	110.00	1,100.00
Redwood .....	10,000	80.00	800.00	.....	.....	.....	10,000	80.00	800.00
Western red cedar ....	10,000	70.00	700.00	.....	.....	.....	10,000	70.00	700.00
Spruce .....	10,000	26.50	265.00	.....	.....	.....	10,000	26.50	265.00
Basswood .....	7,305	39.88-	291.30	3,500	18.00	63.00	3,805	60.00	228.30
Cherry .....	6,500	45.23	294.00	.....	.....	.....	6,500	45.23	294.00
Totals .....	1,036,245	\$48.70	\$50,463.56	140,500	\$20.54+	\$2,886.50	895,745	\$53.11+	\$47,577.06

## FIXTURES.

Eleven firms in Connecticut report the manufacture of office, store, bank, and bar-room fixtures. A number specialize along these lines, but more report these products in conjunction with the manufacture of other commodities. The most important products of this industry are display show cases and racks, counters, wall cabinets and cases, shelving, buffets, bookcases, school furniture, railing bars, and filing cabinets. They are often difficult to separate from certain kinds of furniture, and many are closely related to the products for interior finish described under the industry of sash, doors, blinds, and general mill work, such as partitions, built-in buffets, sodawater fountains, cabinets, and wall cases. Manufacturers making several classes of such commodities seldom make any distinctions in their reports. This circumstance requires an arbitrary classification of the data.

Sixteen kinds of wood are used by the fixture manufacturers. (See Table XXVII.) Chestnut and basswood are the only ones grown in the State. For the exterior or exposed work the best grades of cabinetwood are desired. This is shown by the high average prices of the principal wood given in Table XXVII. They are white oak, red oak, tulip poplar, mahogany, black walnut, redwood, red gum, and cherry. For the hidden portions such as framing, lining, reinforcements, bases, veneer coring, drawer sides and bottoms, cheaper woods answer. Chestnut is the principal one, but white pine, spruce, and basswood are also used.

## SHUTTLES, SPOOLS, AND BOBBINS.

Eight woods are used in Connecticut for making shuttles, spools, bobbins, and affiliated products, and three of them, namely, hickory, white or gray birch, and persimmon constitute considerably more than four-fifths of the total quantity shown in Table XXVIII. Rated by the amount of wood consumed, picker sticks are the principal product made by this class of manufactures. These differ in shape and size according to the looms for which they are made. They taper toward one end and are about one and one-half inches wide, three-fourths of an inch thick, and from twenty-six to thirty-two inches in length. In the loom they are used as levers to impart motion to the shuttle.

TABLE XXVIII. SHUTTLES, SPOOLS, AND BOBBINS, INCLUDING PICKER STICKS.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Hickory .....	444,000	\$26.65—	\$11,832.50	356,500	\$25.86+	\$9,220.00	87,500	\$29.86—	\$2,612.50
Paper birch .....	310,250	31.70	9,835.00	.....	.....	.....	310,250	31.70	9,835.00
Persimmon .....	120,000	17.50	2,100.00	.....	.....	.....	120,000	17.50	2,100.00
White ash .....	82,000	25.12	2,060.00	82,000	25.12	2,060.00	.....	.....	.....
Hard maple .....	50,200	40.06	2,011.00	.....	.....	.....	50,200	40.06	2,011.00
Yellow poplar (white- wood) .....	8,000	20.00	160.00	8,000	20.00	160.00	.....	.....	.....
Beech .....	5,000	40.00	200.00	.....	.....	.....	5,000	40.00	200.00
White oak .....	4,000	25.00	100.00	4,000	25.00	100.00	.....	.....	.....
Totals .....	1,023,450	\$27.65	\$28,298.50	450,500	\$26.62	\$11,540.00	572,950	\$29.25	\$16,758.50

TABLE XXIX. MACHINERY AND APPARATUS—ELECTRICAL.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
White pine .....	200,000	\$ 25.00	\$ 5,000.00	.....	.....	.....	200,000	\$ 25.00	\$ 5,000.00
Spruce .....	200,000	25.00	5,000.00	.....	.....	.....	200,000	25.00	5,000.00
Mahogany .....	100,000	100.00	10,000.00	.....	.....	.....	100,000	100.00	10,000.00
Red oak .....	96,700	20.35	1,967.59	96,700	\$20.35	\$1,967.50	.....	.....	.....
Black walnut .....	60,000	65.00	3,900.00	.....	.....	.....	60,000	65.00	3,900.00
White oak .....	43,300	20.38	882.50	43,300	20.38	882.50	.....	.....	.....
Sweet birch .....	40,000	20.00	800.00	40,000	20.00	800.00	.....	.....	.....
Yellow birch .....	30,000	20.00	600.00	30,000	20.00	600.00	.....	.....	.....
Yellow poplar (white- wood) .....	10,000	22.00	220.00	.....	.....	.....	10,000	22.00	220.00
Cottonwood .....	7,500	25.00	187.50	.....	.....	.....	7,500	25.00	187.50
Chestnut .....	3,000	20.00	60.00	3,000	20.00	60.00	.....	.....	.....
Red gum .....	2,500	25.00	62.50	.....	.....	.....	2,500	25.00	62.50
Totals .....	793,000	\$36.17—	\$28,680.00	213,000	\$20.23+	\$4,310.00	580,000	\$42.02	\$24,370.00

ELECTRICAL MACHINERY.

Necessarily, a picker stick must be made from strong, tough, straight-grained wood. Hickory is used more than any other wood, but ash is used to a limited extent. Bobbins, spindles, and speeders are made from maple, birch, and beech, while persimmon alone contributes the shuttle material.

Two kinds of spools are made in Connecticut. The one-piece spool used for silk and cotton thread, and fine wire, is made of white birch. The spool used in connection with textile mill machinery is a three-piece product. The barrel is turned from birch, beech, or maple, and the disc-like heads are screwed and glued to the barrel. These spool heads are frequently made from a softer wood, like aspen, whitewood, and basswood, but birches and maples are heavier, more durable, and largely used.

### ELECTRICAL EQUIPMENT.

This includes electric wire and cable reels, wooden parts of switchboards, battery boxes and coil cases, telephone boxes, and other wooden parts of electrical apparatus. Mahogany is the only foreign wood reported, and, in quantity, exceeds all other species. It is the favorite material for switchboards and serves together with red oak, white oak, sweet and yellow birch, and red gum for telephone boxes. White pine and spruce, reported in equal quantities, exceed the amount of all other woods shown in Table XXIX. They are not used for the parts of electrical instruments but are made solely into reels of various sizes, around which cables and electric wire are wound.

### AGRICULTURAL IMPLEMENTS.

Most of the agricultural implements used in Connecticut are shipped into the State. Since tool handles, farm wagons, carts and sleds are listed under other industries, there remain only harrows, cultivators, plows, and hayrakes to be included in the statistics of Table XXX. White ash furnishes all the material for making wooden rakes, except for the teeth, which are made only of hickory. All other woods shown in the table went into harrows, yokes, and eveners, except a small quantity of oak and ash which was used for plow beams and handles.



TABLE XXX. AGRICULTURAL IMPLEMENTS.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Yellow birch .....	198,000	\$16.40+	\$3,248.00	198,000	\$16.40+	\$3,248.00	.....	.....	.....
Soft maple .....	163,000	16.10—	2,624.00	163,000	16.10—	2,624.00	.....	.....	.....
Red oak .....	93,000	19.32+	1,797.00	93,000	19.32+	1,797.00	.....	.....	.....
White ash .....	81,000	21.88—	1,772.00	81,000	21.88—	1,772.00	.....	.....	.....
Douglas fir .....	75,000	55.00	4,125.00	.....	.....	.....	75,000	\$55.00	\$4,125.00
Hickory .....	50,000	22.30	1,115.00	50,000	22.30	1,115.00	.....	.....	.....
White oak .....	35,000	19.57+	685.00	35,000	19.57+	685.00	.....	.....	.....
Chestnut .....	15,000	20.00	300.00	15,000	20.00	300.00	.....	.....	.....
White pine .....	15,000	18.00	270.00	15,000	18.00	270.00	.....	.....	.....
Rock (slippery) elm ..	10,000	18.00	180.00	10,000	18.00	180.00	.....	.....	.....
Hard maple .....	4,000	17.00	68.00	4,000	17.00	68.00	.....	.....	.....
Butternut (white walnut)	2,000	18.00	36.00	2,000	18.00	36.00	.....	.....	.....
Totals .....	741,000	\$21.89—	\$16,220.00	666,000	\$18.16	\$12,095.00	75,000	\$55.00	\$4,125.00

TABLE XXXI. FIREARMS.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Black walnut .....	389,700	\$ 78.14	\$30,451.00	.....	.....	.....	389,700	\$ 78.14	\$30,451.00
Red gum .....	210,000	44.50	9,345.00	.....	.....	.....	210,000	44.50	9,345.00
Circassian walnut .....	2,000	250.00	500.00	.....	.....	.....	2,000	250.00	500.00
Boxwood .....	1,731	115.54	200.00	.....	.....	.....	1,731	115.54	200.00
Totals .....	603,431	\$67.11	\$40,496.00	.....	.....	.....	603,431	\$67.11	\$40,496.00

TABLE XXXII. MACHINERY AND APPARATUS—NOT ELECTRICAL.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
White pine .....	111,280	\$33.04	\$3,676.80	.....	.....	.....	111,280	\$33.04	\$3,676.80
Basswood .....	84,518	50.56+	4,273.49	.....	.....	.....	84,518	50.56+	4,273.49
Loblolly pine .....	69,483	32.00	2,223.46	.....	.....	.....	69,483	32.00	2,223.46
Cypress .....	53,975	55.57-	2,988.50	.....	.....	.....	53,975	55.57-	2,988.50
Longleaf pine .....	51,156	35.11+	1,796.24	.....	.....	.....	51,156	35.11+	1,796.24
Chestnut .....	44,975	23.84+	1,072.30	44,975	\$23.84+	\$1,072.30	.....	.....	.....
Spruce .....	38,790	28.29+	1,097.49	.....	.....	.....	38,790	28.29+	1,097.49
Yellow poplar (white- wood) .....	30,776	64.05-	1,971.18	.....	.....	.....	30,776	64.05-	1,971.18
White oak .....	30,000	35.33+	1,060.00	25,000	32.40	810.00	5,000	50.00	250.00
Ash .....	20,868	48.00	1,001.66	.....	.....	.....	20,868	48.00	1,001.66
Hard maple .....	18,930	51.45	973.95	.....	.....	.....	18,930	51.45	973.95
Totals .....	554,751	\$39.90	\$22,135.07	69,975	\$26.90	\$1,882.30	484,776	\$41.78-	\$20,252.77

## FIREARMS.

The Connecticut manufacturers of firearms bring in from other states all the wood they use. (See Table XXXI.) This is not surprising, since of the four woods reported, black walnut alone is indigenous to Connecticut and, owing to its scarcity in the State, the price is high. Black walnut is preferred to any other wood for gun stocks because of its strength and ornamental color—qualities which have made it for many years a favorite wood with American manufacturers. In Europe, Circassian walnut is the leading gunstock wood, because it is tough and strong and its mottled figure makes a very attractive appearance. Owing to its high price not much of it is used in this country. The heartwood of red gum is several times as cheap and often resembles it so closely in figure and color that they cannot be distinguished. Red gum possesses all the essential qualities for gun stock material and, next to black walnut, is used in the largest quantity. Yellow birch also answers for gun stocks, and some Connecticut manufacturers are beginning to use it for the cheaper guns. English walnut was reported in too small a quantity to be listed in the table. It goes into pistol stocks. Boxwood, owing to its exceptional strength, is selected for gun rods.

## MACHINERY.

In Table XXXII following, are listed eleven kinds of lumber used in the wooden parts of machinery other than electrical. Parts of silk and textile machinery, cotton gins, papermill machinery, engine and other machine skids, machine tables, typewriter platen cores, and hat-making machines are the principal products into which the material enters. No foreign woods are used, but seven-eighths of the more than half a million feet purchased yearly for this industry are brought into Connecticut from other states.

## PATTERNS.

Patterns and flasks used by foundrymen, and hat blocks and flanges, are the products represented in the statistics in Table XXXIII. The principal pattern woods are pine and mahogany.

TABLE XXXIII. PATTERNS.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
White pine .....	333,375	\$ 66.48+	\$22,163.81	96,727	\$22.65—	\$2,190.68	236,648	\$ 84.40	\$19,973.13
Spruce .....	81,250	24.46	1,987.50	.....	.....	.....	81,250	24.46	1,987.50
Yellow poplar (white- wood) .....	44,380	91.76	4,072.30	.....	.....	.....	44,380	91.76	4,072.30
Mahogany .....	29,100	160.38—	4,667.00	.....	.....	.....	29,100	160.38—	4,667.00
Chestnut .....	20,000	22.00	440.00	20,000	22.00	440.00	.....	.....	.....
Idaho white pine .....	3,000	70.00	210.00	.....	.....	.....	3,000	70.00	210.00
Cherry .....	1,300	120.00	156.00	.....	.....	.....	1,300	120.00	156.00
Butternut .....	500	30.00	15.00	500	30.00	15.00	.....	.....	.....
Totals .....	512,905	\$65.73—	\$33,711.61	117,227	\$22.57—	\$2,645.68	395,678	\$78.71+	\$31,065.93

They are straight-grained and, when well seasoned, are less liable to warp and twist than any other wood. The quantity of white pine used in Connecticut exceeds the amount of mahogany used more than a hundredfold. In Connecticut there are a number of pattern makers who specialize in models, but most of the pattern wood is reported by foundrymen who run their own pattern department. Since a pattern must be designed in the exact shape and dimensions of the article to be molded from it, only the highest grades of material are used, as the prices in the table indicate; in this regard patterns differ from flasks, as these latter can be made from a variety of cheap woods. Flasks serve for frames holding the molding sand and the pattern employed in molding and casting. Two-part flasks are used when the molding is in two pieces, one fitting upon the other. The woods used are chestnut, white pine, and spruce. The average price of the flask woods is \$25.50 per thousand feet, as against \$87, about the average cost of the pattern material.

Hat blocks and flanges closely resemble patterns, and therefore are included in this classification. The blocks are used in making crowns, while flanges are employed for shaping the rims. Yellow poplar is the favorite wood for making these commodities, and in Connecticut the manufacturers use no other kinds. It is purchased in only the highest grades, and great care is used in seasoning it. The average price paid per thousand was \$91.76, the highest cost reported for this wood by any industry.

### FURNITURE.

The furniture industry is not an important one in Connecticut. Only one manufacturer in the State makes tables and case goods, such as bookcases, buffets, dressers, and chiffoniers; another makes only couch frames; while the rest specialize in furniture parts. Lignum-vitæ, imported from Costa Rica, furnishes the entire supply of the caster material; judging from the quantity used, the Connecticut manufacturers evidently supply the needs of furniture makers in many other states. Couch frames are usually veneered and chestnut is the principal wood used for backing.

Red gum, plain and quartered oak, ash and sweet birch were the woods consumed for the exterior finish of case goods. For

TABLE XXXIV. FURNITURE.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Lignum-vitæ.....	218,663	\$ 92.04	\$20,125.00	.....	.....	.....	218,663	\$ 92.04	\$20,125.00
Red oak .....	80,000	23.69—	1,895.00	35,000	\$15.57+	\$545.00	45,000	30.00	1,350.00
Chestnut .....	78,000	22.27—	1,737.00	25,000	21.00	525.00	53,000	22.78+	1,212.00
Yellow poplar (white- wood) .....	43,000	22.00	946.00	38,000	18.84+	716.00	5,000	46.00	230.00
Paper birch .....	22,000	17.73—	390.00	22,000	17.73—	390.00	.....	.....	.....
White oak .....	11,250	74.56—	838.75	.....	.....	.....	11,250	74.56—	838.75
Beech .....	7,500	18.60	139.50	7,500	18.60	139.50	.....	.....	.....
Cypress .....	5,000	45.00	225.00	.....	.....	.....	5,000	45.00	225.00
Red gum .....	5,000	43.00	215.00	.....	.....	.....	5,000	43.00	215.00
Brown ash .....	5,000	53.00	265.00	.....	.....	.....	5,000	53.00	265.00
Sweet birch .....	3,000	52.00	156.00	.....	.....	.....	3,000	52.00	156.00
Cotton gum (tupelo) ..	2,500	32.00	80.00	.....	.....	.....	2,500	32.00	80.00
Hard maple .....	2,000	25.00	50.00	2,000	25.00	50.00	.....	.....	.....
Basswood .....	2,000	22.00	44.00	2,000	22.00	44.00	.....	.....	.....
Hickory .....	2,000	16.00	32.00	2,000	16.00	32.00	.....	.....	.....
White (soft) elm .....	1,200	16.00	19.20	1,200	16.00	19.20	.....	.....	.....
Mahogany .....	1,125	184.44+	207.50	.....	.....	.....	1,125	184.44+	207.50
Totals .....	489,238	\$35.93+	\$27,364.95	134,700	\$18.27—	\$2,460.70	354,538	\$70.24+	\$24,904.25

the interior work, yellow poplar, cotton gum, and cypress answered. Table XXXIV presents the available statistics.

### PRINTING MATERIALS.

Seven woods are used for making printing accessories in Connecticut, and the quantity and price of each are shown in Table XXXV. Base blocks for rubber-stamp pads constitute a very large per cent. of the total, and for these, low grades of yellow poplar and basswood provide the material. Cherry serves as backing for electrotypes, sweet birch for press tables, and the remainder for printing-press parts.

### CIGAR BOXES.

Though cigar boxes belong in the same general class with packing boxes, the former are made in separate factories and therefore the industry is distinguished in this report. Cigar-box manufacturers buy their wood by superficial measurement. To make the statistics of Table XXXVI comparable with the other tables of this report, cigar-box material has been reduced to board feet measure. This accounts for the high price shown in the table, because the cost increases as the thickness of the sheet of veneer decreases.

Owing to the high price of Spanish cedar, it is customary to make cigar boxes of a two-ply veneer of the cedar, glued on to a cheap domestic wood like elm, whitewood, tupelo or basswood. Red gum is shipped all the way from Missouri to Connecticut to be used in cigar boxes for holding the medium-priced goods, while for the best grades of cigars, Spanish cedar is used alone, usually of three-sixteenths thickness. Manufacturers in no other State already appearing in these studies of wood consumption report the use of elm for making cigar boxes. Connecticut manufacturers use it in larger quantities than any other kind of wood. It answers for cores or backing in two-ply work.

### TANKS.

The manufacture of tanks, vats, and silos in Connecticut calls for the use of only three woods. Cypress, which is the principal

TABLE XXXV. PRINTING MATERIALS.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Yellow poplar (white- wood) .....	140,000	\$21.00	\$2,940.00	.....	.....	.....	140,000	\$21.00	\$2,940.00
Cherry .....	45,000	81.78	3,680.00	.....	.....	.....	45,000	81.78	3,680.00
Hard maple .....	33,136	48.57—	1,609.34	.....	.....	.....	33,136	48.57—	1,609.34
Ash .....	31,000	61.32+	1,901.00	.....	.....	.....	31,000	61.32+	1,901.00
Sweet birch .....	20,000	58.20	1,164.00	.....	.....	.....	20,000	58.20	1,164.00
Basswood .....	15,000	31.00	465.00	.....	.....	.....	15,000	31.00	465.00
Chestnut .....	5,800	35.00	203.00	5,800	\$35.00	\$203.00	.....	.....	.....
Totals .....	289,936	\$41.26—	\$11,962.34	5,800	\$35.00	\$203.00	284,136	\$41.39—	\$11,759.34

TABLE XXXVI. CIGAR BOXES.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Rock (cork) elm .....	93,500	\$ 52.41—	\$4,900.00	.....	.....	.....	93,500	\$ 52.41—	\$4,900.00
Yellow poplar (white- wood) .....	33,000	46.85	1,546.00	.....	.....	.....	33,000	46.85	1,546.00
Spanish cedar .....	32,000	115.59	3,699.00	.....	.....	.....	32,000	115.59	3,699.00
Cotton gum .....	30,000	54.00	1,620.00	.....	.....	.....	30,000	54.00	1,620.00
Red gum .....	17,000	45.88	780.00	.....	.....	.....	17,000	45.88	780.00
Basswood .....	4,000	55.50	222.00	.....	.....	.....	4,000	55.50	222.00
Totals .....	209,500	\$60.94	\$12,767.00	.....	.....	.....	209,500	\$60.94	\$12,767.00



TABLE XXXVII. TANKS.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Cypress .....	141,825	\$38.62	\$5,477.75	.....	.....	.....	141,825	\$38.62	\$5,477.75
White pine .....	8,000	62.50	500.00	2,500	\$28.00	\$70.00	5,500	78.18	430.00
Longleaf pine .....	5,000	28.00	140.00	.....	.....	.....	5,000	28.00	140.00
Totals .....	154,825	\$39.51+	\$6,117.75	2,500	\$28.00	\$70.00	152,325	\$39.70	\$6,047.75

TABLE XXXVIII. SPORTING AND ATHLETIC GOODS.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
White oak .....	57,000	\$20.18	\$1,150.00	57,000	\$20.18	\$1,150.00	.....	.....	.....
White ash .....	40,000	25.00	1,000.00	40,000	25.00	1,000.00	.....	.....	.....
Hickory .....	13,000	25.00	325.00	13,000	25.00	325.00	.....	.....	.....
White pine .....	300	90.00	27.00	.....	.....	.....	300	\$90.00	\$27.00
Totals .....	110,300	\$22.68+	\$2,502.00	110,000	\$22.50	\$2,475.00	300	\$90.00	\$27.00

TANKS.

tank-wood in the country at large, contributes over 95 per cent. of the total shown in Table XXXVII. Most of it was shipped from Florida. Silo makers use cypress and longleaf pine, the latter wood coming from Georgia. The making of tank staves in this State is not a distinct industry. It is carried on as a side line by manufacturers listed in this report under other classes of industries.

### SPORTING GOODS.

Polo sticks, hockey sticks, and fishing floats are the only commodities made in Connecticut whose wood material can be listed under the head of sporting goods. (See Table XXXVIII.) White pine is used for floats, and white oak, ash and hickory for the other articles named. This material is all home-grown.

### LAUNDRY APPLIANCES.

The quantity of wood shown in Table XXXIX indicates that the making of laundry accessories is not an important industry in Connecticut. Only four woods are reported in Table XXXIX. Chestnut and spruce are used for making clothes reels, while rock oak and longleaf pine contribute the raw material for washing machines.

### BUTCHERS' BLOCKS.

Sugar maple is the only wood reported for butchers' blocks. (See Table XL.) The price paid indicates that the better grades are demanded. Sycamore is used more than any other wood for meat blocks in other states, but no Connecticut manufacturers report using sycamore for this purpose.

### WOODS CLASSIFIED BY INDUSTRIES.

The statistics shown in Table XLI afford a comprehensive review of the distribution of the kinds of woods used by the Connecticut manufacturers and the extent to which each of the twenty-six industries purchase them. For example, all but ten industries use hard maple, the chair manufacturers demanding the most—an amount equivalent to over 55 per cent. of the total—

TABLE XXXIX. LAUNDRY APPLIANCES.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Chestnut .....	17,500	\$22.29—	\$390.00	17,500	\$22.29—	\$390.00	.....	.....	.....
Spruce .....	10,000	35.00	350.00	.....	.....	.....	10,000	\$35.00	\$350.00
White oak .....	1,000	50.00	50.00	1,000	50.00	50.00	.....	.....	.....
Longleaf pine .....	500	40.00	20.00	.....	.....	.....	500	40.00	20.00
Totals .....	29,000	\$27.93	\$810.00	18,500	\$23.78+	\$440.00	10,500	\$35.24—	\$370.00

TABLE XL. BUTCHERS' BLOCKS.

KIND OF WOOD	Total quantity used annually			Grown in Connecticut			Grown out of Connecticut		
	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Total cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory	Feet b. m.	Average cost per 1000 ft. f. o. b. factory	Cost f. o. b. factory
Hard maple .....	2,050	\$35.73	\$73.25	2,050	\$35.73	\$73.25	.....	.....	.....
Totals .....	2,050	\$35.73	\$73.25	2,050	\$35.73	\$73.25	.....	.....	.....

while the box makers use the least, about 2 per cent. White pine, which leads all other kinds of wood in quantity, is apportioned among only thirteen industries. Tulip poplar has the widest demand of any of the species; nineteen of the twenty-six manufacturers report using it. White birch, dogwood, persimmon, Sitka spruce, and western pine are among the woods reported by only a single factory.

### SUMMARY OF AVERAGE PRICES.

Table XLII has been compiled to permit comparison of the average cost per thousand feet of the different kinds of wood used by the Connecticut manufacturers, as shown in the preceding industry tables. The form in which the raw material is delivered at the factory, whether in log, billet, bolt, veneer, or lumber; the thickness, dimension, grade; and the source, whether imported, domestic, etc., are but some of the causes of variation in the prices shown. Under no circumstances should the prices in Table XLII be confused with market prices.

TABLE XLI. PERCENTAGE OF THE DIFFERENT KINDS OF WOOD USED BY EACH INDUSTRY.

DOMESTIC WOODS	Total	Agricultural implements	Boxes and crates	Butchers' blocks	Chairs	Cigar boxes	Clocks	Firearms	Fixtures	Furniture	Handles	Laundry appliances	Machinery and apparatus, electrical	Machinery and apparatus, not electrical	Musical instruments	Patterns	Planing mill products	Printing materials	Professional and scientific instruments	Sash, doors, blinds and general millwork	Ships and boats	Shuttles, spools and bobbins	Spending and athletic goods	Tanks	Vehicles and vehicle parts	Woodenware and novelties	Miscellaneous	
Applewood	100	...	...	...	...	...	...	...	...	...	28.6	...	...	...	...	...	...	...	28.6	...	42.8	...	...	...	...	...	...	
Ash	100	2.7	1.1	...	...	...	...	...	0.2	3.1	...	...	...	0.7	0.2	...	22.0	1.0	...	19.7	...	2.8	1.4	...	37.8	0.1	6.9	
Aspen	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100.0	...	
Basswood	100	...	7.5	...	...	0.1	39.3	...	0.2	1.1	2.2	...	...	2.4	42.1	...	...	...	3.9	1.2	...	...	...	...	...	...	...	
Beech	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	35.2	...	...	...	...	...	...	...	...	
Birch, paper	100	...	...	...	...	...	1.0	...	...	2.2	10.85	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
sweet	100	...	...	...	...	...	4.9	...	2.1	4	...	...	5.9	...	32.5	...	25.4	3.0	...	3.5	...	30.7	...	...	...	...	...	
white	100	...	...	...	...	...	...	...	...	...	84.0	...	...	...	...	...	...	...	...	25.7	...	...	...	...	...	...	...	
yellow	100	13.0	...	...	32.8	...	...	...	...	...	18.6	...	2.0	...	26.2	...	...	...	...	...	...	...	...	...	...	16.0	...	
Butternut	100	4.7	...	...	...	...	...	...	...	...	4.7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Cedar, red	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
western red	100	...	...	...	...	...	...	...	8.6	...	...	...	...	...	...	...	...	...	...	...	66.7	...	...	...	...	...	33.3	
white	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	77.2	...	...	14.2	...	...	...	...	...	...	...	
Cherry	100	...	...	...	3.1	...	...	...	...	...	15.1	...	...	...	11.2	...	100.0	...	...	...	100.0	...	...	...	...	...	...	
Chestnut	100	2	2.0	...	...	...	3.9	...	3.4	1.1	1	2	...	...	6	49.1	3	11.6	...	47.1	1.6	...	...	...	...	...	...	
Cottonwood	100	...	89.7	...	...	...	...	...	...	...	...	...	10.3	...	8	...	...	...	2.2	9.4	7.6	...	...	...	...	...	...	
Cypress	100	...	3	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	2.1	...	...	...	...	
Dogwood	100	...	...	...	...	...	...	...	...	...	100.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Elm, rock	100	1.0	4.8	...	...	9.0	...	...	...	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
soft (white)	100	...	50.0	...	9.5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21.8	1.4	
Fir, Douglas	100	10.9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13.2	16.5	
Gum, black	100	...	100.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
red	100	...	...	...	...	2.1	3.4	26.5	1.8	6	...	...	3	...	4.4	...	26.6	...	...	29.2	...	...	...	...	...	...	...	5.1
Hackmatack	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100.0	...	...	...	...	...	...	...
Hemlock	100	...	92.8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hickory	100	1.8	9	...	...	...	...	...	...	...	35.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Locust	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3.7	5	...	15.7	5	...	...	41.6	...	...
Maple, hard	100	1	9	1	8.9	...	...	...	...	...	16.8	...	...	...	...	...	...	...	...	...	98.4	...	...	...	...	...	...	...
soft	100	23.0	1.4	...	56.5	...	11.3	...	1.9	1	5.6	...	...	...	...	...	...	...	5.9	4.1	2.0	1.6	...	...	...	2.8	7.3	
Oak, red	100	2.5	7	...	3.9	...	40.2	...	3.8	2.2	...	...	2.6	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...
white	100	6	...	...	4.4	...	4.8	...	4.3	2	2.7	...	...	...	...	...	...	...	...	10.4	...	...	...	...	...	...	...	...
Persimmon	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pine, loblolly	100	...	11.7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
longleaf	100	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
pitch	100	...	90.5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
shortleaf	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
sugar	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
western white Idaho	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
western yellow	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
white	100	1	62.8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100.0	...	...	...	...	...	...	...
Poplar, tulip or whitewood	100	...	5.7	...	...	5	15.2	...	2.3	6	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Redwood	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Spruce	100	...	33.9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sitka	100	...	...	...	...	...	...	...	...	...	...	...	3.1	6	9	1.3	34.9	...	...	...	...	...	...	...	...	...	...	...
Sycamore	100	...	75.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tupelo	100	...	90.8	...	...	2.1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Walnut, black	100	...	...	...	...	...	1.4	60.1	1.5	...	...	...	9.3	...	8.8	...	...	...	10.1	2.2	...	...	...	...	...	...	...	...
IMPORTED WOODS																												
Boxwood	100	...	...	...	...	...	...	...	...	...	5.9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cedar, Spanish	100	...	...	...	...	100.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cocobola	100	...	...	...	...	...	...	...	...	...	76.3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ebony	100	...	...	...	...	...	...	...	...	...	3.8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lignum-vitæ	100	...	...	...	...	...	...	...	...	85.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mahogany	100	...	...	...	8	...	11.5	...	3.2	1	1.0	...	11.1	...	29.9	3.2	4.7	...	...	...	...	...	...	...	...	...	...	...
white	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rosewood	100	...	...	...	...	...	...	...	...	...	6.2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Teak	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Walnut, Circassian	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Less than 1/4 of one per cent.



## APPENDIX.

### WOOD USES BY SPECIES.

#### DOMESTIC WOODS.

##### APPLEWOOD.

Gauges	Planes
Handles	Tool Handles
Knees (Small Boats)	

##### ASH.

Ammunition Boxes	Oyster Tongs
Auto Bodies	Piano Keys
Auto Body Frames	Picker Sticks
Auto Bows	Plow Beams
Auto Frames	Plow Pins
Automobile Pillars	Plow Rungs
Auto Running Boards	Polo Sticks
Battery Boxes	Press Platforms (Printing)
Bent Work (Carriages)	Printing Press Parts
Bent Work (Special)	Rakes
Bonnet Sills (Autos)	Reaches
Buggy Sills	Shafts
Cabinet Makers' Clamps	Sills (Vehicle) Bodies
Cabinet Work	Spring Bars
Cattle Stanchions	Stable Forks
Cotton Gins	Stair-work
Cushion Frames	Store Fixtures
Flails	Tackle Blocks
Gears (Vehicle)	Trucks
Handles	Truck Body Frames
Handles (Edge Tools)	Truck Bows
Handles (Engravers' Tools)	Wagon (Gear Parts)
Handles (File)	Wagon Bodies
Hockey Sticks	Wagon Jacks
Interior Finish	Wagon Parts
Ladder Rounds	Wagon Poles
Office Fixtures	Wagon Shafts

##### ASPEN.

Boxes	Crates
Cloth Shells (Cotton)	

## BASSWOOD.

Bent Vehicle Parts	Keys (Piano)
Boxes	Music Cabinets
Carriage Bodies (Panels)	Organ Frames
Chest Bottoms	Organ Keys
Cigar Boxes	Packing Boxes
Clock Cases	Piano Keys
Cotton Gins	Plumbs (Mechanic's)
Couch Frames	Rails (Piano)
Crates	Record Cabinets
Drawer Bottoms	Rubber Type Boxes
File Handles	Shelves (Desk)
Handles	Tool Boxes
Handles (Engravers' Tools)	Toys
Handles (File)	Trays (Enamelling)
Handles (Trowel)	Vial Boxes

## BEECH.

Brush Backs	Knife Handles
Brush Handles	Nitre Boxes
Coal Sieves	Novelty Turnings
Drawer Knobs	Planes
Handles (Hay Fork)	Rug Poles
Handles (Pitch Fork)	Rulers
Handles (Small)	Truck Platforms
Hand Screws	

## BIRCH (PAPER).

Auto Accessories	Knobs
Brush Backs	Lawn Mower Rolls
Brush Handles	Music Cabinets
Cabinet Backs	Paper Plugs
Cabinet Shelves	Piano Benches
Chair Frames (Rattan)	Piano Stools
File Handles	Rails (Piano)
Handles	Rug Poles
Handles (Edge Tools)	Tool Handles
Handles (Engravers' Tools)	Toys
Handles (File)	

## BIRCH (SWEET).

Action Parts (Organs)	Interior Finish
Backing Electrotypes	Office Fixtures
Cabinet Work	Piano Cases
Cases (Organ)	Piano Keys
Clock Cases (Cabinet)	Stair-work
Cutting Board Straps	Store Fixtures
Doors Board	Window Frames (Vehicle)



## BIRCH (WHITE OR GRAY).

Collets	Small Handles
Laundry Buttons	Spools (Silk)
Rolls (Braid)	

## BIRCH (YELLOW).

Action Parts (Organ)	Knobs
Agricultural Implements	Lawn Mower Rolls
Auto Accessories	Music Cabinets
Cabinet Work	Novelty Turnings
Chairs	Organ Rack Pins
Coal Sieves	Piano Benches
Doors	Piano Legs
Drawers	Piano Stools
Drawer Knobs	Press Table (Printing)
Faucets	Small Handles
Handles	Spools (Wire)
Harrow Parts	Tool Handles
House Trimmings	Truck Platforms
Interior Finish	Ventilators

## BUTTERNUT.

Agricultural Implements	Organ Pipe Feet
Cabinet Work	Organ Pipe Gates
Handles	Patterns

## CEDAR (NORTHERN WHITE).

Interior Finish

## CEDAR (RED).

Caskets

## CEDAR (SOUTHERN WHITE).

Launches (Siding)                      Planking (Boat)

## CEDAR (WESTERN RED).

Cabinet Work	Interior Finish
Doors	Screen Door Frames
Fixtures (Office)	

## CHERRY.

Backing Electrotypes	Mouldings
Base Knobs	Patterns
Cabinet Work	Piano Benches
Cases (Organ)	Piano Keys
Chisel Handles	Piano Parts
Handles	Plumbs
Handles (Chisel)	Rubber Stamp Moulding
House Trimmings	School Desks
Interior Finish	School Seats
Levels	Show Case Frames
Metronomes	Window Frames (Vehicle)

## CHESTNUT.

Agricultural Implements	Interior Frames
Boxes	Launches
Burial Cases	Linings (Auto)
Cabinet Work	Machine Tables
Cart Body Sides	Mouldings
Caskets	Organ Pipe Handles
Casket Handles	Panel Cores
Clock Cases	Paper Plugs
Clock Cases (Kitchen)	Piano Cases
Clock Cases (Office)	Piano Case (Cores)
Clothes Reels	Post Office Fixtures
Coal Barges	Printing Presses
Coffins	Settees
Coffin Boxes	Shelves
Coil Cases	Shelves (Desk)
Cotton Gins	Show Case Bases
Couch Frames	Show Case Shelving
Crates	Stair-work
Display Cabinets	Store Fixtures
Door Frames	Swings
Exterior Finish	Timber (Ship)
Foundry Flasks	Tool Chests
Frames (Barges)	Trimnings
Interior Finish	Window Frames

## COTTONWOOD.

Electric Fixture Blocks	Woven Wire Boxes
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## CYPRESS.

Bodies (Vehicle)	Mouldings
Cabinet Work	Organ Pipes
Casings	Panels (Organ)
Coal Barges	Rendering Cars
Cornice Work	Sash
Doors	Sink Boards
Door Frames	Stair-work
Exterior Finish	Steps
House Trimnings	Tanks
Interior Finish	Trimnings
Joiner-work (Ship)	Vats
Launches	Window Frames
Machinery Parts	

## DOGWOOD.

Knife Handles

## ELM, ROCK (CORK).

Bent Work	Hubs
Cigar Boxes	Ox Yokes
File Handles	Piano Cases
Frames (Vehicle)	Woven Wire Boxes

## ELM, ROCK (SLIPPERY).

Bent Work (Carriages)	Piano Backs
Harrow Parts	Sieve Rims
Hubs	Woven Wire Boxes
Ox Yokes	

## ELM, SOFT (WHITE).

Bent Work (Carriages)	Piano Benches
Frames (Vehicle)	Piano Stools
Handles	

## FIR, DOUGLAS.

Agricultural Implements	House Trimmings
Boat Bottoms	Interior Finish
Cabinet Work	Ladders (Fire Department)
Columns	Planking (Boat)
Decking (Boats)	Skiffs
Doors	Spars

## GUM, COTTON OR TUPELO.

Boxing	House Trimmings
Cabinet Work	Shipping Cases (Wire Bound)
Cigar Boxes	

## GUM, WATER OR BLACK.

Shipping Cases (Wire Bound)

## HACKMATACK.

Ship Knees

## HEMLOCK.

Box Shooks

## HICKORY.

Agricultural Implements	Hammer Handles
Axe Handles	Handles
Axle Beds	Hand Screws
Auto Parts	Hockey Sticks
Auto Top Bows	Mallets
Cabinet Work	Masons' Levels
Chisel Handles	Mast Hoops
Drop Hammer Pins	Novelty Turnings
Eveners	Ox Bows
Flails	Pick Handles
Gears (Vehicle)	Picker Sticks
Gouge Handles	Polo Sticks

Rakes	Trucks
Reaches	Truck Frames
Rims	Truck Poles
Sledge Handles	Yard Sticks
Spokes	Wagons
Spring Bars	Wagon Jacks
Stable Forks	Wagon Parts
Sweep Stakes	Whiffle Trees
Tool Handles	

## LOCUST.

Novelty Turnings	Tree Nails
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## MAPLE, SOFT.

Agricultural Implements	Knobs
Box Shooks	Lawn Mower Rolls
Clock Cases	Organ Fittings
Faucets	Organ Pipes
File Handles	Paper Plugs
Handles	Tool Handles
Handles (Edge Tools)	Piano Benches
Handles (Engravers' Tools)	Piano Stools
Harrow Parts	

## MAPLE, HARD.

Action Parts (Organ)	Folding Chairs
Agricultural Implements	Gear Logs
Automobile Frames	Handles
Automobile Panels	Handles (Edge Tools)
Bent Work (Carriages)	Handles (Engravers' Tools)
Brush Backs	Handles (File)
Brush Handles	Harrow Parts
Bridges (Piano)	Humidor Cabinets
Butchers' Blocks	Inside Finish (Vehicles)
Case Cores (Organ)	Interior Finish (Houses)
Cattle Stanchions	Knobs
Clock Cases	Letter Filing Cabinets
Coal Sieves	Machinery Parts
Cotton Gins	Mill Boards
Couch Frames	Motor Trucks
Cutter Sticks	Music Cabinets
Cutting Boards	Novelties (Small)
Drawers	Organ Rack Pins
Drawer Knobs	Organ Stock Rods
Draw Knife Handles	Ox Yokes
Electrical Appliances	Phonograph Cabinets
Faucets	Piano Action
Feed Boards (Printing Press)	Piano Benches
Flooring	Piano Cases

Piano Stools	Spools (Wire)
Pin Blocks (Piano)	Thread Cabinets
Printing Presses	Tool Handles
Rug Poles	Tumbling Barrels
Rulers	Tumbling Barrel Linings
School Desks	Truck Platforms
School Seats	Work Stands
Sewing Machine Cabinets	Woven Wire Boxes
Shelves	Wrest Plank (Piano)
Sled Shoes	Yard Sticks

## OAK, RED.

Agricultural Implements	Interior Finish
Auto Parts	Knobs
Cabinet Work	Letter Filing Cabinets
Carts	Novelty Turnings
Caskets	Phonograph Cabinets
Clock Cases	Piano Benches
Clock Cases (Kitchen)	Piano Stools
Clock Cases (Office)	Post Office Fixtures
Coal Barges	Rims
Coal Screens	Sewing Machine Cabinets
Couch Frames	Stair-work
Drawer Knobs	Store Fixtures
Electrical Appliances	Thread Cabinets
Electrical Equipment	Tool Chests
Electric Fixture Blocks	Trucks
Furniture Knobs	Truck Handles
Handles	Truck Platforms
Harrow Frames	Wagons
House Trimmings	Wagon Parts
Humidor Cabinets	Wagon Poles

## OAK, WHITE.

Agricultural Implements	Cases (Organ)
Auto Bodies	Cattle Stanchions
Axe Handles	Chairs
Axle Beds	Chimney Bracket Arms
Bath Room Fixtures	Clock Cases
Bent Steigh Stock	Coal Barges
Bent Work (Carriages)	Combings (Ship)
Bits (Ship)	Couch Frames
Body Sills (Vehicles)	Deadwood Stems
Cabinets	Decks (Boats)
Cabinet Work	Desk Tops
Cafe Fixtures	Display Cases
Carling (Boat)	Door Sills
Carts	Electrical Appliances

Electrical Equipment  
 Electric Fixture Blocks  
 Engine Beds (Boats)  
 Extension Ladder Bars  
 Felloes  
 Frames (Boats)  
 Frames (Wagon)  
 Furniture Knobs  
 Harrow Frames  
 Heavy Gears  
 Hockey Sticks  
 Humidor Cabinets  
 Interior Finish  
 Keels (Boats)  
 Ladder Rounds  
 Launches  
 Letter Filing Cabinets  
 Mast Hoops  
 Motor Trucks  
 Newspaper Files  
 Office Fixtures  
 Office Partitions  
 Ox Bows  
 Phonograph Cabinets  
 Piano Cases  
 Piano Stools  
 Picker Sticks  
 Pick Handles  
 Planking (Ship)  
 Plow Handles  
 Plow Rungs  
 Plow Pins  
 Plumbers' Wood-work

Polo Sticks  
 Porch Swing Slats  
 Post Office Fixtures  
 Postners (Ship)  
 Ribs (Boat)  
 Rims  
 Scraper Backs (Roads)  
 Scraper Handles (Roads)  
 Sewing Machine Cabinets  
 Sheer Strakes (Ship)  
 Show-case Frames  
 Sledge Handles  
 Special Furniture  
 Spokes  
 Stable Forks  
 Stairs  
 Stair-work  
 Store Fixtures  
 Swings  
 Tables  
 Thread Cabinets  
 Timbers (Ship)  
 Trucks  
 Truck Parts  
 Ventilators  
 Wagons  
 Wagon Bodies  
 Wagon Poles  
 Wagon Shafts  
 Wagon-work  
 Washboards (Ship)  
 Washing Machines  
 Whiffle Trees

## Shuttles

Auto Bodies  
 Auto Construction  
 Auto Running Boards  
 Bodies (Vehicle)  
 Bottom Boards (Auto)  
 Boxes  
 Cabinet Work  
 Coal Barges  
 Cotton Gins  
 Crates

## PERSIMMON.

## PINE, LOBLOLLY.

Crating  
 Display Arms  
 Doors  
 Dump Carts  
 House Trimmings  
 Interior Finish  
 Joiner-work  
 Mouldings  
 Panels (Carriage)  
 Piano Cases

Pulley Stiles	Trimmings
Sash	Wagon Bodies
Sheathing (Ship)	Wagon Floors
Stair-work	Window Jambs
Swell Boxes (Organ)	

## PINE, LONGLEAF.

Boat Planking	Interior Finish
Box Ends	Keelsons
Clamps (Boats)	Packing Cases
Coal Barges	Planking (Ship)
Cotton Gins	Silo Staves
Crates	Stringers (Boats)
Exterior Finish	Washing Machines
Framing (Boats)	

## PINE, PITCH.

Boxes	Dressed Boards
Box Shooks	Packing Cases

## PINE, SHORTLEAF.

Cabinet Work	Interior Finish
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## PINE, SUGAR.

Action Parts (Organs)	Keys (Piano)
Blinds	Organ Pipes
Doors	Sash
Interior Finish	

## PINE, WESTERN WHITE (IDAHO WHITE).

Cabinet Work	Patterns
Doors	Sash
House Trimmings	Shelves
Mouldings	Window Frames

## PINE, WESTERN YELLOW.

Doors	Sash
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## PINE, WHITE.

Action Parts (Organs)	Case Cores (Organs)
Agricultural Implements	Casket Handles
Balusters	Clock Backs
Blinds	Clothes Boards
Blocks (Piano)	Coal Barges
Box Shooks	Coffin Boxes
Burial Cases	Crates
Cabinet Work	Crayon Boxes
Cabins (Boat)	Decking (Boat)
Cable Reels	Exterior Finish

Fishing Floats	Piano Cases
Fixtures (Office)	Porch Columns
Foundry Flasks	Rails (Stairs)
Handles	Sash
Handles (Edge Tools)	Show-case Bases
Handles (Engravers' Tools)	Show-case Shelves
Handles (File)	Siding
Hat Cases	Silver Ware Blocks
Interior Finish	Silver Ware Boxes
Joiner-work	Small Boats
Machinery Parts	Sounding Board Ribs
Models	Stair-work
Mouldings	Store Fixtures
Outside Cornice	Tanks
Packing Boxes	Toys
Pallets	Window Frames
Pallet Racks	Wire Reels
Patterns	

## POPLAR, YELLOW (WHITWOOD).

Action Parts (Organ or Piano)	Enamel Work
Ammunition Boxes	File Handles
Auto Bodies	Filler Strips
Auto Body Panels	Folder Boards
Auto Frames	Handles
Automobile Panels	Handles (Edge Tools)
Baby Carriage Bodies	Handles (Engravers' Tools)
Bent Work (Carriages)	Handles (File)
Berths (Boat)	Hat Blocks
Bodies (Vehicle)	Hat Flanges
Bungs (Barrel)	House Trimmings
Cabinet Work	Humidor Cabinets
Caskets	Interior Finish
Cigar Boxes	Letter Filing Cabinets
Clock Cases	Machine Skids
Coal Barges	Masons' Levels
Coal Sieves	Motor Trucks
Cotton Gins	Novelty Turnings
Couch Frames	Office Fixtures
Counters	Organ Pipe Feet
Cutting Board Straps	Organ Pipe Handles
Crating	Panels
Crayon Box Cases	Panels (Carriages)
Doors	Phonograph Cabinets
Door Frames	Piano Cases
Electrical Appliances	Pillars (Auto)
Electric Fixture Blocks	Platten Cores (Typewriters)
Enamel Clock Cases	Post Office Fixtures



Rubber Stamp Pads	Trimmings
Sewing Machine Cabinets	Trucks
Shelves (Desks)	Turnings
Show-cases	Vial Boxes
Show-case Shelving	Wagons
Spools (Goldleaf)	Wagon Bodies
Stair-work	Wagon Seats
Store Fixtures	Wagon Work
Thread Cabinets	Window Frames
Toys	Wood Rolls (Paper Machinery)
Tray (Enamelling)	

## RED GUM.

Cabinet Work	Interior Finish
Cigar Boxes	Humidor Cabinets
Clock Cases	Letter Filing Cabinets
Electrical Appliances	Phonograph Cabinets
Electric Fixture Blocks	Piano Cases
Embossed Trimmings (Clocks)	Sewing Machine Cabinets
Gun Stocks	Stair-work
House Trimmings	Thread Cabinets

## REDWOOD.

Cabinet Work	Fixtures (Office)
Doors	

## SPRUCE

Blocking	Interior Finish
Boxes	Joiner-work (Ship)
Bulk Heads (Ship)	Ladders
Cable Reels	Lawn Settees
Canopy Tops (Boats)	Lawn Swings
Carpenters' Brackets	Pallet Racks
Carriages	Piano Cases
Chimney Brackets	Silver Ware Blocks
Clothes Reels	Silver Ware Boxes
Coal Barges	Sounding Boards
Crates	Spars
Door Frames	Stair-work
Extension Trestles	Step Ladders
Exterior Finish	Templets (Boats)
Flooring	Trimmings
Foundry Flasks	Window Frames
Hat Cases	Wire Reels
Hat Case Ends	Work Boxes
Hatches (Barges)	

## SPRUCE, SITKA.

Cabinet Work	Doors
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## SYCAMORE.

Boxes Finish (Boats)

## WALNUT, BLACK.

Cabinet Work	Novelties
Clock Cases	Phonograph Cabinets
Coil Cases	Piano Cases
Cylinder Heads	Piano Legs
Electrical Appliances	Pistol Stocks
Fore-end Blanks (Fire-arms)	Rifle Stocks
Gun Stocks	Sewing Machine Cabinets
Humidor Cabinets	Thread Cabinets
Knobs	Tool Boxes
Letter Filing Cabinets	Tool Chests
Newspaper Files	Window Frames (Auto)

## FOREIGN WOODS.

## BOXWOOD.

Fork Handles	Planes
Gauges	Rules
Gun Rods	Sharps (Piano)
Knife Handles	

## CEDAR, SPANISH.

Cigar Boxes

## COCOBOLA.

Bit Brace Heads	Handles
Carpenters' Tools	Knife Handles
Fork Handles	Tool Handles

## EBONY.

Fork Handles	Organ Stop Knobs
Keys (Organ)	Sharps (Piano)
Knife Handles	

## LIGNUM-VITÆ.

Bit Brace Handles	Mallets
Bit Brace Heads	Stern Bearings
Castor Rolls	

## MAHOGANY.

Auto Bodies	Clock Cases
Auto Dash Boards	Couch Frames
Auto Fixtures	Counter Tops
Auto Panels	Crating
Bank Fixtures	Desks
Bar Tops	Electrical Appliances
Cabinet Work	Electrical Equipment
Caskets	Furniture Knobs

Gauges  
 Gear Frames (Vehicle)  
 Handles  
 House Trimmings  
 Humidor Cabinets  
 Interior Finish  
 Joiner-work (Ship)  
 Knobs  
 Launches  
 Letter Filing Cabinets  
 Levels  
 Mantles  
 Models  
 Office Fixtures  
 Organ Cases  
 Panels  
 Patterns

Phonograph Cabinets  
 Piano Benches  
 Piano Cases  
 Piano Legs  
 Piano Stools  
 Planking (Ship)  
 Sewing Machine Cabinets  
 Show-case Frames  
 Special Furniture  
 Stair-work  
 Steering Wheels (Ship)  
 Store Fixtures  
 Table Tops  
 Thread Cabinets  
 Trimmings (Auto)  
 Window Frames (Auto)

## MAHOGANY, WHITE.

Fine Finish (Boats)

## ROSEWOOD.

Carpenters' Tools  
 Clock Cases  
 Gauges  
 Handles

Levels  
 Organ Stop Knobs  
 Planes  
 Tool Handles

## TEAK.

Rails (Boats)

## WALNUT, CIRCASSIAN.

Auto Dashes  
 Auto Frames

Piano Cases  
 Pistol Stocks

## DIRECTORY.

Below is a list of the wood-using manufacturers who supplied the data contained in this report. If there are any names missing from this Directory it is because they did not answer the request for information or else they are not in an industry converting lumber into products in final form. The addresses of those manufacturing several products classified under different industries will appear in the list under more than one industry.

### AGRICULTURAL IMPLEMENTS.

•The Torrey Brothers Company .....	Central Village
•W. S. Danielson .....	Danielson
•The Cutaway Harrow Company .....	Higganum
•The Rogers Rake Company .....	New Hartford
•J. B. Tatem & Son .....	Putnam
•W. & H. Bronson .....	Roxbury
•Charles Gilbert .....	Stepney Depot

### BOXES AND CRATES.

• A. H. Lavietes & Company .....	Andover
*W. H. Thompson .....	Ansonia
*H. W. Woodford .....	Avon
*H. C. Hoffman & Company .....	Bridgeport
• Locomobile Company of America .....	Bridgeport
• The Sewing Machine Cabinet Company .....	Bridgeport
• The Wheel & Wood Bending Company .....	Bridgeport
• The E. Ingraham Company .....	Bristol
• Horatio Kelsey .....	Clinton
• The Collins Company .....	Collinsville
• Isaac Armstrong & Company .....	Danbury
*The Clark Box Company .....	Danbury
*The Hine Box & Printing Company .....	Danbury
• Pratt, Read & Company .....	Deep River
*The East Hartford Lumber & Ladder Company .....	East Hartford
• George M. Weld .....	East River
• Ellington Basket Company .....	Ellington
• The Sessions Clock Company .....	Forestville
• The O. D. Case Company .....	Guilford
• Austin Organ Company .....	Hartford
• Colts Patent Fire-arms Manufacturing Company .....	Hartford

\* Make boxes or shooks for sale.

•The Columbia Motor Car Company .....	Hartford
•Crane & Johnson .....	Hartford
•The National Machine Company .....	Hartford
•The Pope Manufacturing Company .....	Hartford
•The Pope Manufacturing Company West Works .....	Hartford
•*J. W. Rockwell & Son .....	Hartford
•*Amos D. Bridge's Sons, Inc. ....	Hazardville
•**The Dodd Cooperage Company .....	Meriden
•Meriden Cutlery Company .....	Meriden
•*The Charles Parker Company .....	Meriden
•The Vocalion Organ Company .....	Meriden
•*J. Dudley .....	Mystic
•The American Hardware Corporation .....	New Britain
•The John Pinches Company .....	New Britain
•*D. C. Beardsley .....	New Haven
•J. F. Goodrich & Company .....	New Haven
•The Hemming Brothers Company .....	New Haven
•*The Hubbell & Merwin Company .....	New Haven
•Manning & Conger .....	New Haven
•The New Haven Clock Company .....	New Haven
•The New Haven Machinery Company .....	New Haven
•*New Haven Wire Bound Box Company .....	New Haven
•Samuel K. Page .....	New Haven
•Rattan Manufacturing Company .....	New Haven
•Sargent & Company .....	New Haven
•E. B. Sheldon Company .....	New Haven
•H. G. Shepard & Sons .....	New Haven
•Standard Wash Tray Company .....	New Haven
•The Wilbur Corporation .....	New Haven
•Winchester Repeating Arms Company .....	New Haven
•The Brown Cotton Gin Company .....	New London
•*W. L. Roe, Jr. ....	New London
•D. E. Whiton Company .....	New London
•The Chapin-Stephens Company .....	Pine Meadow
•*B. Tatem & Son .....	Putnam
•*F. W. Bradley .....	Rockville
•James Swan Company .....	Seymour
•The Huntington Piano Company .....	Shelton
•Whitcomb Metallic Bedstead Company, Pioneer Works .....	Shelton
•Whitlock Printing Press Company .....	Shelton
•Peck, Stow & Wilcox Company .....	Southington
•*Knapp Box Company .....	South Norwalk
•Sealshipt Oyster System .....	South Norwalk
•*The C. S. Trowbridge Company .....	South Norwalk
•Cheney Brothers .....	South Manchester
•The Smith & Winchester Manufacturing Company .....	South Windham

\* Make boxes or shooks for sale.

*Preble & Bumstead .....	Stafford Springs
*Seth Thomas Clock Company .....	Thomaston
*The Jennings & Griffen Manufacturing Company .....	Tracy P. O.
*Waterbury Clock Company .....	Waterbury
*C. B. Cottrell & Sons Company .....	Westerly
*Windham Handle Company .....	Willimantic
*The George P. Clark Company .....	Windsor Locks
*Wm. L. Gilbert Clock Company .....	Winsted
*The Tiffany & Pickett Company .....	Winsted
*Winsted Manufacturing Company .....	Winsted
*Still River Box Shop .....	Woodstock Valley

## BUTCHERS' BLOCKS.

*J. W. Curtiss .....	Ansonia
*W. S. Danielson .....	Danielson
*A. Bowe & Son .....	Meriden

## CHAIRS.

*The Charles Parker Company .....	Meriden
*The Vocalion Organ Company .....	Meriden
*Rattan Manufacturing Company .....	New Haven
*Metropolitan Chair Company .....	New Haven
*The B. J. Harrison Sons Company .....	Winsted
*The John W. Roe Estate .....	Winsted

## CIGAR BOXES.

*The Bronson & Robinson Company .....	Hartford
*Carl G. A. Gruettke .....	New Haven
*Chas. S. St. John .....	South Norwalk
*H. S. Cowles & Sons .....	Suffield

## CLOCKS.

*The E. Ingraham Company .....	Bristol
*The Sessions Clock Company .....	Forestville
*The New Haven Clock Company .....	New Haven
*Seth Thomas Clock Company .....	Thomaston
*Waterbury Clock Company .....	Waterbury
*Wm. L. Gilbert Clock Company .....	Winsted

## FIRE ARMS.

*Colts Patent Fire Arms Manufacturing Company .....	Hartford
*Meriden Fire Arms Company .....	Meriden
*Parker Brothers .....	Meriden
*Winchester Repeating Arms Company .....	New Haven
*The Marlin Firearms Company .....	New Haven
*Union Hardware Company .....	Torrington

\* Make boxes or shooks for sale.

## FIXTURES.

-Wm. Ellis .....	Bethel
U The Sewing Machine Cabinet Company .....	Bridgeport
-Hoffman Show Case Company .....	Bridgeport
-James H. S. Jones .....	Bridgeport
-Essex Wood Turning Company .....	Essex
U The O. D. Case Company .....	Guilford
-L. F. Dettenborn Wood Working Company .....	Hartford
• Robt. T. Alcorn .....	Hartford
S The American Hardware Corporation .....	New Britain
• Chas. E. Griffiths .....	New Haven
• A. E. Bradley Company .....	New Haven

## FURNITURE.

• Essex Wood Turning Company .....	Essex
-The Sperry & Amos Company .....	New Haven
• Eastern Lounge Company .....	New Milford
S U Union Hardware Company .....	Torrington
• Connecticut Screen & Cabinet Company .....	Yalesville

## HANDLES.

• E. W. Buell .....	Andover
• Frank L. Smith .....	Baltic R. F. D.
-W. H. Kelsey .....	Bristol
• A. A. Lowrey .....	Bristol
U Joseph Masack .....	Bristol
-Fayette Wightman .....	Bristol
S The Torrey Brothers Company .....	Central Village
• Horatio Kelsey .....	Clinton
• Wm. R. Hartigan .....	Collinsville
• H. G. Jones .....	Deep River
• The Rogers Brush Works .....	Deep River
• Biglow Brothers .....	Litchfield
B Meriden Cutlery Company .....	Meriden
• H. A. Smith .....	Milford
• Landers, Frary & Clark .....	New Britain
• Stanley Rule & Level Company .....	New Britain
D The Rogers Rake Company .....	New Hartford
S Sargent & Company .....	New Haven
• E. L. Walker .....	New Haven
• Seymour Smith & Son .....	Oakville
-Chas. I. Allen .....	Pequabuck
S The Chapin-Stephens Company .....	Pine Meadow
• Bates & Warfield .....	Plainville
B J. B. Tatem & Son .....	Putnam
S James Swan Company .....	Seymour

Peck, Stow & Wilcox Company	Southington
Windham Handle Company	South Windham
Union Hardware Company	Torrington
The Jennings & Griffen Manufacturing Company	Tracy P. O.
Eastern Wood Working Company	Wallingford
F. B. Smith & Sons	Warrenville
James H. Harry	West Cheshire
B. P. Mervin Wood Turning Works	Westport
J. M. Tatem Handle Company	Willimantic
The Winsted Edge Tool Works	Winsted
C. I. Yale Manufacturing Company	Yalesville

INSTRUMENTS, PROFESSIONAL AND SCIENTIFIC.

Prentice Manufacturing Company	Bridgeport
Stanley Rule & Level Company	New Britain
Sargent & Company	New Haven
The Wilbur Corporation	New Haven
D. E. Whiton Company	New London
The Chapin-Stephens Company	Pine Meadow
C. M. & E. B. Kent	Putnam
Peck, Stow & Wilcox Company	Southington
Union Hardware Company	Torrington
The Upson Nut Company	Unionville

LAUNDRY APPLIANCES.

The East Hartford Lumber & Ladder Company	East Hartford
Bishop Ladder Company	Hartford
Geo. C. Wilcox	Winsted

MACHINERY AND APPARATUS, ELECTRICAL.

The N. J. Patrick Corporation	Derby
Bates & Warfield	Plainville
Union Hardware Company	Torrington

MACHINERY AND APPARATUS, NOT ELECTRICAL.

The Ball & Socket Company	Cheshire
Turner Machine Company	Danbury
A. Gilbert & Sons	Derby
Brown Cotton Gin Company	New London
Cheney Brothers	South Manchester
The Smith & Winchester Manufacturing Company	South Windham

MISCELLANEOUS.

Olmstead-Thompson Manufacturing Company	Berlin
N. Buckingham & Company, Inc.	Bridgeport
The Sewing Machine Cabinet Company	Bridgeport
Clayton Cooperage Company	Canaan



• W. L. Sanford .....	Canaan
<b>D</b> The Torrey Brothers Company .....	Central Village
• Norman P. Little .....	East Hartford
• The Brewing Appliance Specialty Company .....	Hartford
• Hartford Burial Case Company .....	Hartford
• C. O. Jelliff & Company .....	New Canaan
<b>D</b> Sargent & Company .....	New Haven
<b>D</b> Chas. I. Allen .....	Pequabuck
• Geo. W. Smith & Son .....	South Canterbury
• The W. N. Craw Manufacturing Company .....	South Norwalk
<b>D</b> Chas. Gilbert .....	Stepney Depot
<b>D</b> Union Hardware Company .....	Torrington
• L. D. & E. E. Hoyt .....	Unionville
• B. P. Mervin Wood Turning Works .....	Westport

## MUSICAL INSTRUMENTS.

• Denison Bros. ....	Deep River
<b>D</b> Pratt, Read & Company .....	Deep River
• The Sterling Company .....	Derby
<b>D</b> Austin Organ Company .....	Hartford
• The Comstock Cheney Company .....	Ivoryton
• Mansfield Organ Pipe Works .....	Mansfield Depot
<b>D</b> The Chas. Parker Company .....	Meriden
<b>D</b> The Vocalion Organ Company .....	Meriden
• The Wilcox & White Company .....	Meriden
<b>J</b> H. Hall & Company .....	New Haven
• B. Shoninger Company .....	New Haven
• Imperial Manufacturing Company .....	Stamford
• Schleicher & Sons Piano Company .....	Stamford

## PATTERNS.

• Fred F. Beach .....	Bridgeport
• Bridgeport Pattern & Model Company .....	Bridgeport
• The Lake Torpedo Boat Company .....	Bridgeport
• O. S. Platt .....	Bridgeport
• Sessions Foundry Company .....	Bristol
<b>D</b> Turner Machine Company .....	Danbury
• C. F. Yochum .....	Danbury
• N. F. Ball .....	Groton
• E. J. Anderson .....	Hartford
• The J. C. Barrett Company, Inc. ....	Hartford
<b>D</b> The Columbia Motor Car Company .....	Hartford
<b>D</b> Crase & Johnson .....	Hartford
• The Hartford Pattern & Model Company .....	Hartford
• Topping Brothers .....	Hartford
<b>D</b> the Cutaway Harrow Company .....	Higganum
<b>D</b> the Hemming Brothers Company .....	New Haven

•	The McLagon Foundry Company	.....	New Haven
D	New Haven Machinery Company	.....	New Haven
D	Brown Cotton Gin Company	.....	New London
•	New London Marine Iron Works	.....	New London
•	The Thames Tow Boat Company	.....	New London
D	D. E. Whiton Company	.....	New London
•	The Baird Machine Company	.....	Oakville
•	C. H. Aisthrope	.....	South Norwalk
D	The Smith & Winchester Manufacturing Co.	.....	South Windham
•	Wm. B. Judd	.....	Waterbury
•	C. H. Manville	.....	Waterbury
•	C. B. Cottrell & Sons Company	.....	Westerly, R. I.
D	Geo. C. Wilcox	.....	Winsted

## PLANING MILL PRODUCTS.

D	H. W. Woodford	.....	Avon
•	A. W. Burritt Company	.....	Bridgeport
•	H. C. Hoffman & Company	.....	Bridgeport
•	W. S. Hurlburt Building Company	.....	Bridgeport
•	Frank E. Miller Lumber Company	.....	Bridgeport
•	W. A. Smith & Son	.....	Bridgeport
•	Rhoades & Stanton	.....	Canaan
•	W. S. Danielson	.....	Danielson
•	James A. Nichols	.....	Danielson
•	Thomas Forsyth	.....	Fairfield
•	The Maher Brothers Corporation	.....	Greenwich
D	The East Hartford Lumber & Ladder Co.	.....	East Hartford
•	W. H. Cairns Wood Working Company	.....	East Hartford
•	The Edwin Taylor Lumber Company	.....	Hartford
•	S. C. Lewis	.....	Meriden
•	The T. E. Main Company	.....	Moosup
•	The Naugatuck Lumber & Coal Company	.....	Naugatuck
•	H. C. Messenger	.....	New Hartford
•	The George Alling's Sons Company	.....	New Haven
•	David E. Clark	.....	New Haven
•	The M. J. Gibbud Company	.....	New Haven
D	The Hubbell & Merwin Company	.....	New Haven
D	The Sperry & Amos Company	.....	New Haven
•	Warren & Sperry Company	.....	New Haven
•	Denison & Brown	.....	New London
•	H. R. Douglas	.....	New London
D	New London Marine Iron Works	.....	New London
•	L. S. Raymond	.....	New London
•	H. B. Porter & Son Company	.....	Norwich
•	The Wheaton Building & Finish Company	.....	Putnam
•	H. W. Mather	.....	South Norwalk
•	St. John & Keyser	.....	South Norwalk

• A. Waldron .....	South Norwalk
• The St. John Wood Working Company .....	Stamford
• The Hotchkiss Brothers Company .....	Torrington
• The Torrington Lumber Company .....	Torrington
• Loucks & Clarke .....	Wallingford
• The C. F. Woodruff Company .....	Wallingford
• J. E. Smith & Company, Inc. ....	Waterbury
• The Tracy Brothers Company .....	Waterbury
• Geo. A. Upham .....	Waterbury
• H. S. Case .....	Weatogue
• The H. H. Richards Lumber Company .....	West Haven
• The Isaac Sherman Company .....	Westerly, R. I.
• R. G. Barlow & Son .....	Westford
• Hillhouse & Taylor .....	Willimantic

## PRINTING MATERIALS.

• B. P. Webler .....	Bristol
• W. T. Barnum & Company .....	New Haven
• C. S. Butler & Son .....	New Haven
• E. B. Sheldon Company .....	New Haven
• The Brown Cotton Gin Company .....	New London
• Whitlock Printing Press Company .....	Shelton
• C. B. Cottrell & Sons Company .....	Westerly

## SASH, DOORS AND BLINDS AND GENERAL MILLWORK.

• W. H. Thompson .....	Ansonia
• A. W. Burrett Company .....	Bridgeport
• H. C. Hoffman & Company .....	Bridgeport
• Frank E. Miller Lumber Company .....	Bridgeport
• W. R. Muirhead Lumber Company .....	Bridgeport
• W. A. Smith & Company .....	Bridgeport
• Johnson Lindell & Company .....	Canaan
• Elmer H. Barnum .....	Danbury
• Foster Brothers .....	Danbury
• W. S. Danielson .....	Danielson
• James A. Nichols .....	Danielson
• The H. Sands Selleck Company .....	Darien
• F. A. Bradley .....	Derby
• Wm. Cooper .....	Derby
• The N. J. Patrick Corporation .....	Derby
• W. H. Cairns Wood Working Company .....	East Hartford
• J. P. Crosby .....	Greenwich
• The Maher Brothers Corporation .....	Greenwich
• The Andrews and Peck Company .....	Hartford
• W. E. Caulkins & Son .....	Hartford
• C. H. Dresser & Son, Inc. ....	Hartford
• Hartford Builders' Finish Company .....	Hartford

•The Hartford Sash & Door Company .....	Hartford
•McIntyre & Ahern .....	Hartford
✓ J. W. Murray .....	Hartford
•Wm. Olds & Company .....	Hartford
•James Struthers .....	Hartford
✓ The Edwin Taylor Lumber Company .....	Hartford
✓ Amos D. Bridge's Sons, Inc. ....	Hazardville
•Chapman & Tripp .....	Jewett City
•Geo. J. Switzer .....	Litchfield
•The Morehouse Brothers Company .....	Meriden
•The Gustav Lowenthal Company .....	Middletown
✓ Naugatuck Lumber & Coal Company .....	Naugatuck
•Carlson & Torell .....	New Britain
•H. E. Dimock .....	New Britain
✓ The John Pinches Company .....	New Britain
✓ The Geo. Alling's Sons Company .....	New Haven
•David E. Clark .....	New Haven
•M. Etzel & Son .....	New Haven
•Gerrish & Hume .....	New Haven
✓ The M. J. Gibbud Company .....	New Haven
•Lewis Hawthorne Company .....	New Haven
✓ The Hubbell & Merwin Company .....	New Haven
•G. E. Johnstone & Company .....	New Haven
•Morgan & Humiston Company .....	New Haven
✓ Norton Brothers .....	New Haven
•Lewis Rempfer .....	New Haven
✓ Sargent & Company .....	New Haven
✓ The Sperry & Amos Company .....	New Haven
✓ Warner & Sperry Company .....	New Haven
✓ The Wilbur Corporation .....	New Haven
✓ Denison & Brown .....	New London
✓ H. R. Douglas .....	New London
•Henry O. Hawthorne .....	New London
✓ W. L. Roe, Jr. ....	New London
•A. R. Malkin & Company .....	Norwalk
✓ The H. B. Porter & Son Company .....	Norwich
✓ C. M. & E. B. Kent .....	Putnam
✓ The Wheaton Building & Finish Company .....	Putnam
•Gem Ventilator Company .....	Saybrook
✓ Cheney Brothers .....	South Manchester
•Colonial Column Manufacturing Company .....	South Norwalk
•The Hatch & Bailey Company .....	South Norwalk
✓ H. W. Mather .....	South Norwalk
✓ St. John & Keyser .....	South Norwalk
✓ A. Waldron .....	South Norwalk
✓ The St. John Wood Working Company .....	Stamford
•Walter Bates & Sons .....	Thompson

The Hotchkiss Brothers Company	Torrington
The Torrington Lumber Company	Torrington
R. F. Jones	Unionville
The Parsons Lumber & Hardware Company	Unionville
The G. F. Wooding Company	Wallingford
W. W. Wilson	Washington Depot
Brass City Lumber Company	Waterbury
Thomas Heaton	Waterbury
Wm. B. Judd	Waterbury
J. E. Smith & Company, Inc.	Waterbury
The Tracy Brothers Company	Waterbury
Geo. A. Upham	Waterbury
The Watertown Lumber Company	Watertown
The Isaac Sherman Company	Westerly, R. I.
The H. H. Richards Lumber Company	West Haven
Thomas Quinlan	Westport
Hillhouse & Taylor	Willimantic
Latham & Crane	Willimantic
Connecticut Screen & Cabinet Company	Yalesville

## SHIPS AND BOATS.

Claus A. Johnson	Branford
The Lake Torpedo Boat Company	Bridgeport
Geo. Saunders	Chester
C. E. Stevens	Clinton
R. Stoughton	Clinton
Palmer Brothers	Cos Cob
Comstock & Mack	Essex
Harrison & Halliday	Essex
Aaron T. Perkins	Essex
The Gildersleeve Ship Building Co.	Gildersleeve
Greenwich Yacht Yard	Greenwich
Chas. Butson	Groton
C. F. Ferguson	Groton
L. P. Anderson	Guilford
W. P. Fowler	Guilford
Reuben E. Hall	Guilford
Ralph B. Hall	Guilford
The Hartford & New York Transportation Co.	Hartford
H. T. Adams	New Haven
E. E. Crampton	New Haven
John E. Mar & Son	New Haven
Antonio Palo	New Haven
S. W. Pring	New Haven
Edw. M. Sears	New Haven
Louis Anderson	New London
The T. A. Scott Company	New London

<i>D</i>	The Thames Tow Boat Company .....	New London
	- Jerry Davis .....	Noank
	- The Robert Palmer & Son S. B. & M. Ry. Co. ....	Noank
	- Freeman Rogers .....	Noank
	- C. L. Barker .....	Norwalk
	- Marine Ry. & Boat Building Company .....	Portland
<i>D</i>	Geo. W. Smith & Son .....	South Canterbury
	- Oscar Anderson .....	South Norwalk
	- Banks & Company .....	South Norwalk
	- Leslie Gamble .....	South Norwalk
	- The Marine Railways & Con. Company .....	Stamford
	- Geo. Scrobogna .....	Stamford
	- The Stamford Motor Company .....	Stamford
	- W. E. Bedell .....	Stratford
	- The West Mystic Boat Company .....	West Mystic

## SPOOLS AND BOBBINS.

<i>F</i>	Frank L. Smith .....	Baltic, R. F. D.
<i>P</i>	The Torrey Brothers Company .....	Central Village
<i>A</i>	A. Gilbert & Sons .....	Derby
	- G. W. Winslow .....	East Killingly
	- J. M. Keith & Company .....	Eastford
	- The Allen Spool & Printing Company .....	Mystic
	- Webster D. Whedon .....	Madison
<i>E</i>	E. L. Walker .....	New Haven
<i>B</i>	B. B. Tatem & Son .....	Putnam
<i>G</i>	Geo. W. Smith & Son .....	South Canterbury
	- W. H. Armstrong .....	Coventry
<i>C</i>	Cheney Brothers .....	South Manchester
<i>W</i>	Windham Handle Company .....	South Windham
<i>W</i>	Walter Bates & Sons .....	Thompson
<i>J</i>	J. M. Tatem Handle Company .....	Willimantic

## SPORTING GOODS.

<i>A</i>	A. Gilbert & Sons .....	Derby
<i>T</i>	The Torrey Brothers Company .....	Central Village
<i>H</i>	H. G. Shepard & Sons .....	New Haven
<i>G</i>	Geo. W. Smith & Son .....	South Canterbury

## TANKS.

	H. C. Hoffman .....	Bridgeport
<i>E</i>	Elmer H. Barnum .....	Danbury
<i>W</i>	W. S. Danielson .....	Danielson
<i>G</i>	The Geo. Alling's Sons Company .....	New Haven
<i>H</i>	H. G. Shepard & Sons .....	New Haven
<i>T</i>	The T. A. Scott Company .....	New London

W. M. & E. B. Kent .....	Putnam
The Smith & Winchester Manufacturing Co. ....	South Windham
Geo. C. Wilcox .....	Winsted

## VEHICLE AND VEHICLE PARTS.

- J. G. Curtiss .....	Ansonia
J. W. Curtiss .....	Ansonia
James McKinnon .....	Ansonia
Dennis Mahoney .....	Ansonia
W. H. Thompson .....	Ansonia
Frank L. Smith .....	Baltic, R. F. D.
The Flynn & Doyle Company .....	Bantam
Tudor Whiton .....	Bloomfield
Thos. M. Bray .....	Branford
H. W. Hubbard .....	Branford
J. S. Moore .....	Branford
R. Nillson .....	Branford
Belamore Armoured Car and Equipment Co. ....	Bridgeport
The Blue Ribbon Auto & Carriage Co. ....	Bridgeport
The Eddy-Sherwood Carriage & Motor Co. ....	Bridgeport
Gates Wagon Company .....	Bridgeport
The C. W. Hall Carriage Company .....	Bridgeport
Locomobile Company of America .....	Bridgeport
Metropolitan Auto & Carriage Company .....	Bridgeport
Peck & Lines .....	Bridgeport
The Wheel & Wood Bending Company .....	Bridgeport
H. M. Brockaway .....	Centerbrook
The Torrey Brothers Company .....	Central Village
C. H. Kelsey .....	Clinton
E. J. Clinton & Son .....	Clintonville
W. S. Danielson .....	Danielson
Frank M. Howard .....	Deep River
J. J. Booth .....	Derby
P. J. Donovan .....	Derby
G. W. Winslow .....	East Killingly
Wm. Potter .....	Essex
Harris Hymon .....	Groton
The Maher Brothers Corporation .....	Greenwich
The Archibald-Guilford Wheel Company .....	Guilford
P. P. Ives .....	Guilford
F. E. Banning .....	Hadlyme
The Columbia Motor Car Company .....	Hartford
The Hartford Model & Pattern Company .....	Hartford
B. L. McGurk .....	Hartford
Mansuy & Smith .....	Hartford
W. Murray .....	Hartford
The Pope Manufacturing Company .....	Hartford

• The Pope Manufacturing Company, West Works .....	Hartford
• The James Pullar Company .....	Hartford
• W. H. Fowler .....	Hockanum
• F. A. Chapman .....	Ivoryton
• Chapman & Tripp .....	Jewett City
• M. Abraham .....	Meriden
• John Bostelman .....	Meriden
• A. Bowe & Son .....	Meriden
• Chalker & Fenn .....	Meriden
• Otto G. Ost .....	Meriden
• J. B. Evans .....	Middletown
• W. S. Reynolds .....	Middletown
• H. A. Smith .....	Milford
• James Murphy .....	Naugatuck
• Barney Van Ness .....	Naugatuck
• Benoit Brothers .....	New Britain
• New Britain Carriage Company .....	New Britain
• The M. Armstrong Company .....	New Haven
• D. W. Baldwin & Company .....	New Haven
• Dann Brothers .....	New Haven
• A. T. Demarest & Company .....	New Haven
• Joseph Gardner .....	New Haven
• W. J. Gates .....	New Haven
• J. F. Goodrich & Company .....	New Haven
• Charles M. Hamm .....	New Haven
• The Holcomb Company .....	New Haven
• Henry Hooker & Company .....	New Haven
• Frederick Howshield .....	New Haven
• Chas. A. Kandetski .....	New Haven
• James Murphy .....	New Haven
• New Haven Auto Top Company .....	New Haven
• New Haven Carriage Company .....	New Haven
• Samuel K. Page .....	New Haven
• Rattan Manufacturing Company .....	New Haven
• H. G. Shepard & Sons .....	New Haven
• Rafter Wagon Works .....	New Haven
• W. Robertson .....	New Haven
• West Rock Wagon Works .....	New Haven
• G. A. Tenbroeck .....	New Haven
• Geo. H. Barber .....	New London
• A. B. Collins .....	New London
• J. B. Getchell .....	New London
• D. E. & J. F. Moran .....	New London
• Elliott Wagon Corporation .....	North Grosvenor Dale
• C. L. Barker .....	Norwalk
• S. T. Ruby .....	Norwalk



• The L. L. Chapman Company .....	Norwich
• Geo. W. Harris .....	Norwich
• M. B. Ring .....	Norwich
• Scott & Clark Corporation .....	Norwich
• J. A. Walz .....	Norwich
• A. R. Keables .....	Norwichtown
• E. E. Gay .....	Norwichtown
• I. M. Shapiro .....	Oakville
• The Wheaton Building & Finish Company .....	Putnam
• Geo. B. Milne .....	Rockville
• Fred H. Scharp .....	Rockville
• Raymond Brothers .....	Rowayton
• W. H. Armstrong .....	South Coventry
• H. W. Mather .....	South Norwalk
• A. Waldron .....	South Norwalk
• Ira B. Bliss .....	Stamford
• C. L. Smalley .....	Stepney
• M. G. Dibble .....	Suffield
• H. C. Holdredge .....	Suffield
• J. H. Baeder .....	Torrington
• C. C. Haight .....	Torrington
• L. D. & E. D. Hoyt .....	Unionville
• L. B. Scranton .....	Wallingford
• H. Oddy & Son .....	Wallingford
• Ekman Brothers .....	Washington Depot
• R. N. Blakeslee .....	Waterbury
• W. M. Doyle .....	Waterbury
• Geo. H. Goodwin .....	Waterbury
• A. J. Kenneally .....	Waterbury
• Peter Laroque .....	Waterbury
• O'Neil & Fox .....	Waterbury
• O'Neil & Warner .....	Waterbury
• Geo. Panneton .....	Waterbury
• M. Rosen .....	Waterbury
• W. B. Whitney .....	Waterbury
• A. A. Devylder .....	West Cheshire
• James H. Harry .....	West Cheshire
• C. H. Holdredge .....	Westerly, R. I.
• Stillman Carriage Company .....	Westerly, R. I.
• A. R. Burnham .....	Willimantic
• Galipeau & Ducharme .....	Willimantic
• J. Alexander .....	Winchester Center
• John Darcey & Son .....	Winchester Center
• The Geo. P. Clark Company .....	Windsor Locks
• Howard L. Hitchcock .....	Woodbury
• L. L. Ives .....	Yalesville

## WOODENWARE AND NOVELTIES.

D. W. Buell	Andover
Connecticut Screen & Cabinet Company	Yalesville
Elmwood Button Company	Bridgeport
D Fayette Wightman	Bristol
D W. S. Danielson	Danielson
D A. Gilbert & Son	Derby
D The East Hartford Lumber and Ladder Co.	East Hartford
D E. J. Anderson	Hartford
D Bishop Ladder Company	Hartford
D Crase & Johnson	Hartford
D Amos S. Bridge's Sons, Inc.	Hazardville
D C. O. Jelliff & Company	New Canaan
D A. W. Flint & Company	New Haven
D Sargent & Company	New Haven
D The Baird Machine Company	Oakville
D Chas. I. Allen	Pequabuck
D Peck, Stow & Wilcox Company	Southington
D Windham Handle Company	South Windham
D Preble & Bumstead	Stafford Springs
D Union Hardware Company	Torrington
D B. P. Merwin Wood Turning Works	Westport

## THE 1910 LUMBER CUT OF CONNECTICUT.

The statistics and discussions in the foregoing report are based on a study of the woods consumed in 1911 by the Connecticut factories. This report, it will be recalled, does not include the cut of rough lumber but only that part of it which becomes the raw material of the factories converting it into various commodities. For the convenience of the reader who may desire to make a comparison of the kinds and amounts of lumber produced by the Connecticut sawmills, with the quantity consumed by the factories, an exact copy of part of the Bureau of Census Bulletin giving the 1910 lumber cut for Connecticut is presented in the following table:

KIND OF WOOD	FEET B. M.	KIND OF WOOD	FEET B. M.
Chestnut	58,810,000	Elm	215,000
Oak	25,686,000	Tupelo	112,000
White Pine	23,021,000	Walnut	91,000
Hemlock	5,376,000	Cedar	48,000
Hickory	3,483,000	Sycamore	5,000
Maple	2,780,000	Spruce	4,000
Ash	1,893,000	Tamarack	3,000
Birch	1,750,000	Balsam	2,000
Pitch Pine	1,527,000	All others	69,000
Basswood	739,000		
Beech	581,000	Total cut	126,463,000
Cottonwood	268,000		