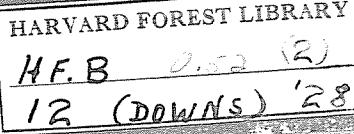


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HARVARD FOREST

BULLETIN No. 12

RICHARD T. FISHER, *Director*

THE WOOD-USING INDUSTRIES OF MASSACHUSETTS

1926

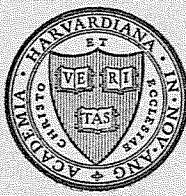
HARVARD FOREST

BY

J. B. DOWNS

WITH FIELD ASSISTANCE BY

C. B. GUTCHESS



HARVARD FOREST, PETERSHAM, MASS.

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**THE WOOD-USING INDUSTRIES OF
MASSACHUSETTS**

INTRODUCTION

THIS survey and summary of lumber utilization in Massachusetts is intended to make possible a more practical understanding of the extent to which New England forestry, or production by local timber operators, can or may support some valuable industries. By disseminating more exact definitions of the material used by the several industries, and by the publication of a complete directory of users, it should also make possible a more efficient and profitable marketing of the lumber at present being produced. The information has been gathered, not by correspondence, but by personal visits to over 95 per cent of the concerns engaged in wood-working. The lumber used in the building trades and other construction — in other words, that which is handled by the retail lumber yards — has not been included. To do so would have involved a great deal of duplication impossible to estimate or avoid. Thus, the consumption represented by this report is that only of the actual users of lumber in manufacturing.

The total annual consumption of the wood-working industries, approximately 450,000,000 feet, is probably less than half the total lumber used by all consumers in the state. The number of retail concerns, together with the average sales of representative dealers, indicates an annual purchase of about 750,000,000 feet over and above what is actually used by wood-working industries. It appears, therefore, that the total amount annually used in the state for all purposes is not far from one and one-quarter billion board feet.

It is frequently asserted in the propaganda of conservation that Massachusetts, with so many thousand acres of waste land, should produce much, if not all, of the lumber which is now imported. It is also commonly said that the consumer

is now paying from \$10 to \$15 freight on the lumber which the West and South are selling in New England and which in very recent years has largely replaced the native stock. Both statements need modification. In the first place, a very large percentage of the present uses of wood in Massachusetts cannot be met by native-grown stock, either now or hereafter. In general this means the high quality, large dimension material which now comes from Southern and Pacific Coast timber, and the specialty woods like mahogany, and high-grade hardwoods. As regards the freight item, it is true that much imported lumber has to pay the freights mentioned; but much of this cost comes out, not of the buyer, but of the Southern and Western producers, who have reduced prices in order to meet the cost of production of such native or Eastern lumber as can still compete in grade with the imported article.

On the basis of present consumption, about 300,000,000 feet comes from New England sources. Not all the species included in this total will flourish in Massachusetts. If sufficient available lands were properly developed and kept stocked with suitable forest types, the state might maintain a production of two thirds of its present consumption of New England lumber, say, approximately 200,000,000 feet. This could happen, however, only in case the quality of the timber produced were equal to that of the same species produced in other adjacent regions, such as New York or northern New England.

It is clearly indicated by the present survey that inferior quality is restricting the use of native lumber more than any other one factor. The inferiority is in part inherent in the standing timber itself, which in general is small and knotty, both as compared with the timber in the West and South and as compared with the earlier stands which were cut in New England. Even so, however, the native timber would have a wider market and would command a much better price if it were manufactured and distributed according to

better standards. It is a general complaint among almost all users of New England lumber, particularly those who require medium to better grades, that the native material is inaccurately sawed, poorly seasoned, and graded with little uniformity of knowledge of existing grading rules. It is true that these difficulties are hard to cure, considering the limitations of the portable mills which do the sawing, and the comparatively small amounts of timber available for any one operation.

In the long run, if timber production in the state is to have any sound economic basis, a reasonable standard of quality, both in the timber itself and in the method of manufacture and sale, is indispensable. This applies not merely to the marketing of existing timber, but still more to that which may be produced by the forestry of the future. The principal requisites are, first, the development of sufficiently large units of forest land to support one or more local wood-working industries, or a more permanent type of sawmill and finishing plant; and second, the handling of the forest so that something better than low-grade lumber may be produced.

R. T. FISHER.

SUMMARIES OF UTILIZATION BY INDUSTRIES

EXPLANATION OF ABBREVIATIONS

Hardwood Grades: **FAS**, firsts and seconds; **SEL-IC**, Selects and No. 1 Common; **2 COM**, No. 2 Common; **3 COM**, No. 3 Common.

Softwood Grades: **U.SEL.**, Upper Select; **LSEL.**, Lower Select; **U.COM.**, Upper Common; **L.COM.**, Lower Common.

Sawing: **R.E.**, round edge; **S.E.**, square edge.

Finishing: **RGH.**, rough; **SUR.**, surfaced.

Drying: **A.D.**, air dried; **K.D.**, kiln dried.

Separation of softwood into select and common grades has been made according to the basic grade classification for yard lumber recommended by the U. S. Department of Agriculture in Department Circular 296, dated October, 1923. The further division into upper and lower classes, however, has been made by the author, and the terms are defined as follows:

"Upper Select" includes lumber suitable for natural finishes: Government Grade A, lumber practically free from defects, and Grade B, lumber with a few small defects or blemishes. "Lower Select" includes lumber suitable for paint finishes: Government Grade C, lumber with a limited number of small defects or blemishes that can be covered with paint, and Grade D, lumber with any number of defects or blemishes which do not detract from a finish appearance, especially when painted. "Upper Common" includes lumber suitable for use without waste: Government No. 1 Common, sound and tight-knotted stock. Size of defects and blemishes limited. May be considered water-tight. Also No. 2 Common, lumber with large and coarse defects. May be considered grain-tight. "Lower Common" includes all inferior lumber, Government Nos. 3, 4, and 5, but it must hold together under ordinary handling.

Shop lumber has been classified in the same way for the sake of uniformity. In the few industries where it is used, it is so designated in the text.

BOXES AND SHOOKS

THIS survey shows that the consumption in 1926 of boxes and shooks was 191,451 thousand board feet of lumber, or above 40 per cent of the lumber consumed in the wood-using industries of Massachusetts. Of this nearly 98 per cent comes from New England. Native pine, leading with 83 per cent, together with hemlock, spruce, and chestnut, make up the principal species. Canada supplies limited amounts of eastern white pine and spruce.

This industry includes shooks and nailed-up boxes of plain (square end), lock-corner, wire-bound and veneer construction, display cases, radio cabinets and hardwood battery boxes. The consumption of lumber for crating has been classified under a separate head.

Ninety-four per cent of this lumber is log-run, round-edge. Many operators own their own mills and cut the wood lot themselves; others contract this work. Some mill men separate out the better grades of pine, either round-edge, or square-edge, and sell it for sash, doors and blinds, or for other uses that require higher quality. Ignorance of mill operators or inducements of slightly higher prices from box manufacturers lead to cutting nearly all the pine on the lot into box lumber. This allows the mill man to increase the quality of the pine for boxes, and enables him to sell it in all one form. Higher prices could be obtained, however, if more care were taken in the manufacture and grading of better-than-box pine.

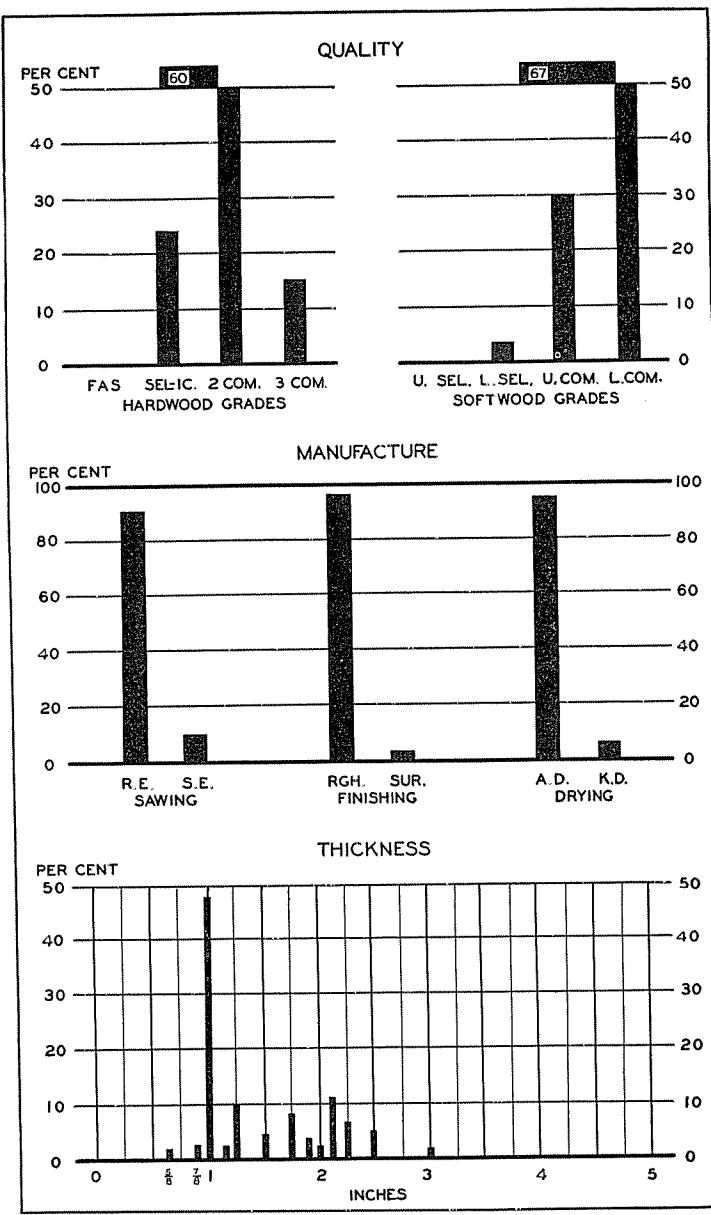
The industry is controlled mostly by large operators. Approximately thirty of the smaller box shops in the country districts were found to have recently gone out of business. Advertising, up-to-date sales methods, and scientific study of the needs of companies using wooden containers are partly responsible for this change. The heavy wooden box, largely used for railroad shipping, has been replaced to a considerable extent by the fiber and veneer box, used for local shipments by motor trucks.

However, there are many small operators in the state making boxes to supply a local demand, e.g., shipments of fruit, tobacco, etc. These mills operate, in some cases, only a few months during the year, but are responsible for a large yearly consumption of native pine.

The following figures are taken from a study of the box business in New England conducted by the Harvard Forest for the New England Council.

CONSUMPTION OF NEW ENGLAND STATES FOR 1922 AND 1925

State	1922		1925	
	Total Volume Thousand Board Feet	Per cent	Total Volume Thousand Board Feet	Per cent
Massachusetts.....	201,267	46.8	192,300	44.4
New Hampshire.....	110,610	25.7	122,013	28.2
Maine.....	85,504	19.9	83,579	19.3
Vermont.....	18,560	4.3	19,808	4.6
Rhode Island.....	8,131	1.9	8,755	2.1
Connecticut.....	5,925	1.4	6,221	1.4



BOXES AND SHOOKS
(Unit: THOUSAND BOARD FEET)

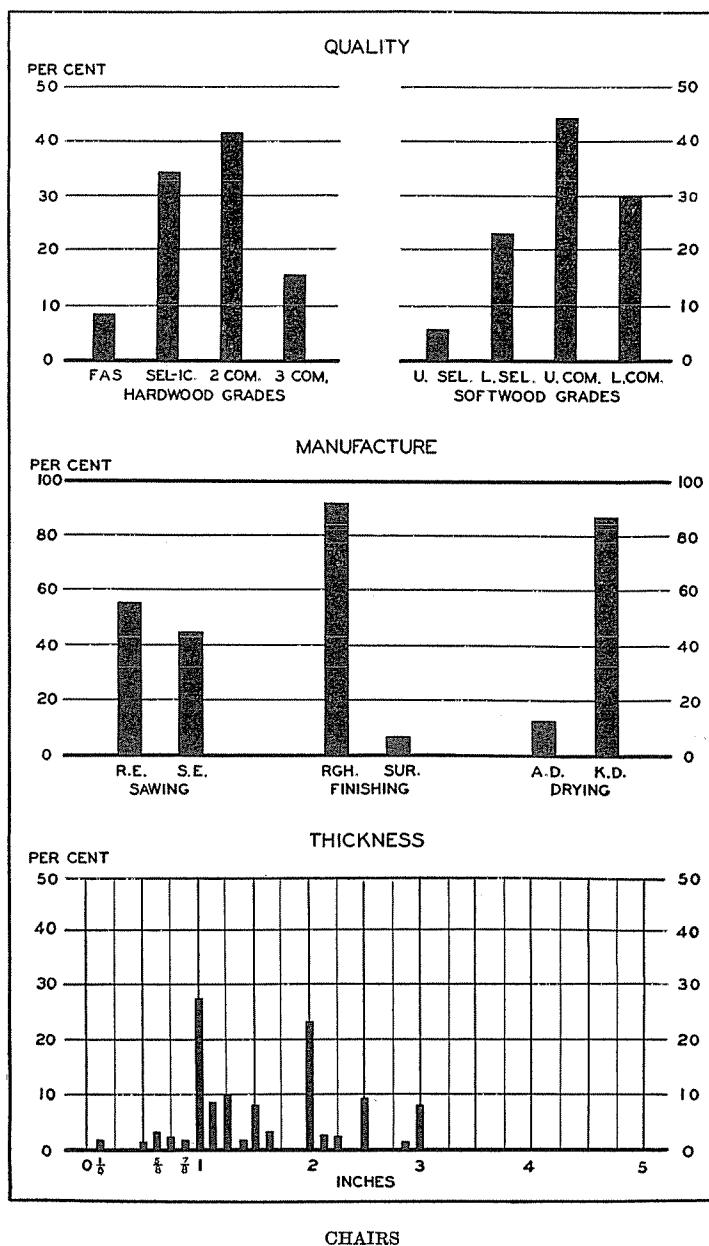
CHAIRS

IN this survey the chair business, more or less apart from furniture making in the state, has been classified as a separate industry. A distinct separation is impossible, due to the tendency of some operators to combine chair making with other furniture.

Native hardwoods predominate. Yellow birch, mixed oak, hard maple, beech, chestnut and white pine are the principal native woods used. New England furnishes 72 per cent of the entire consumption of the industry. Canada, supplying 11 per cent, produces large quantities of yellow birch, with some hard maple and beech. Red gum, spruce, hard maple, chestnut and basswood are the more common southern woods.

The wood most preferred, due to its grain, texture and workability, is yellow birch. The type of construction and style of chair changes. Thus in a year when a cheap chair is desired, a large quantity of one wood will be used. High quality clear stock is necessary when natural finish is desired, while low quality material with a high grade of enamel is used for cheaper construction.

Only 56 per cent of the lumber now used is local, log-run, round-edge. This percentage is being reduced due to increasing preference shown for small dimension or "squares," i.e., lumber cut to specifications at the mill. This eliminates waste at the factory, reduces freight and lowers labor and handling charges as compared with the cost of working up native, round-edge lumber.



CHAIRS

(Unit: THOUSAND BOARD FEET)

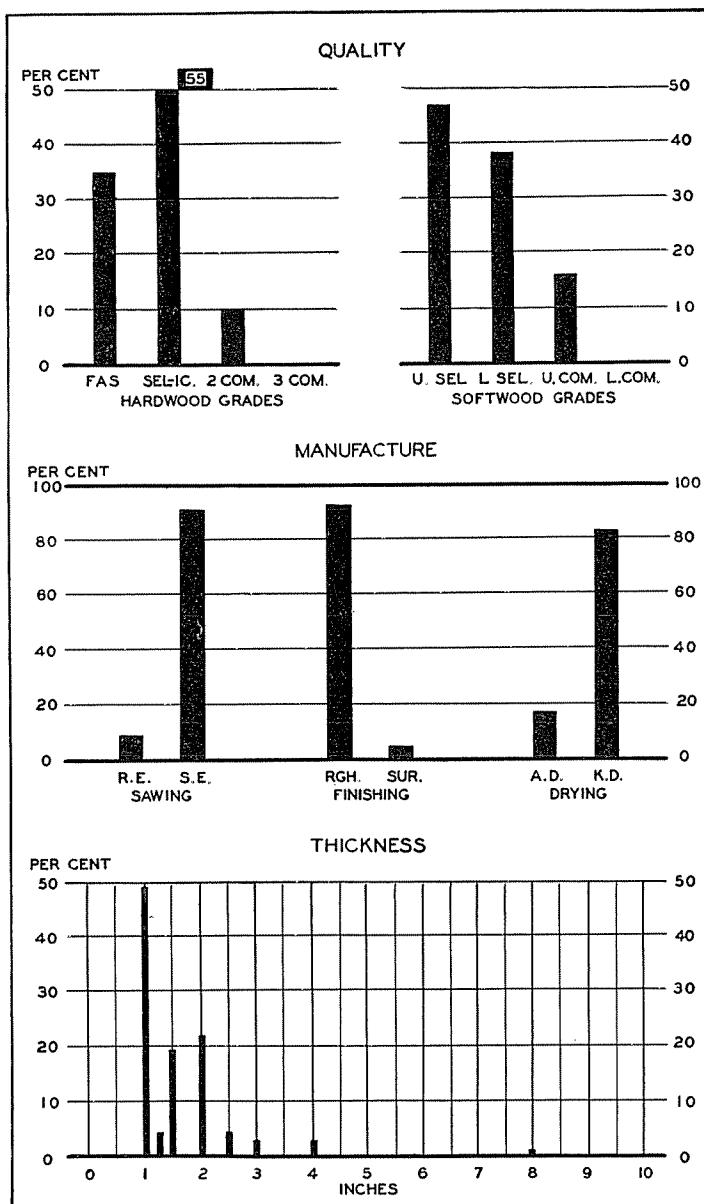
BUILDERS' FINISH AND STAIR WORK

SOUTHERN woods, chiefly North Carolina pine, mixed oak, red gum, and cypress make up 70 per cent of the 33,784 thousand board feet of lumber used in the industry. The West, supplying 12 per cent, furnishes western yellow pine, mixed oak, western white pine, Douglas fir, and California sugar pine. The use of native species is limited largely to eastern white pine, yellow birch, hard maple, spruce and basswood.

Well-equipped mills located in the cities consume the large amount of material produced outside the state. Smaller operators, found in the country districts, use native stock when they can get it properly manufactured for their needs. However, the use of outside woods has increased immensely in the last few years. The wholesalers and large retailers are able to furnish this type of manufacturer with mixed shipments of stock suitable for his business. Many of these smaller operators are taking advantage of this prompt service of any kind, grade or size of lumber offered by the large merchants. Trucks are used for transportation when the mill is within easy reach of the city and carload shipments are relied upon for greater distances.

Eight-five per cent of the softwoods used are of selected grades, while 90 per cent of the hardwoods used are No. 1 common and better. Only 10 per cent of native, round-edge stock is used. The smaller operator buys kiln-dried, or well air-dried lumber. Many large operators complain of too rapid drying of southern stock, and they prefer to buy air-dried or partially kiln-dried stock and complete the drying in their own kilns.

The complaints about native species are narrow widths, short lengths, and practically no uniform accepted grading compared to that stock manufactured outside of New England.



BUILDERS' FINISH, STAIR WORK

BUILDERS' FINISH AND STAIR WORK
(UNIT: THOUSAND BOARD FEET)

Species	Thickness in inches	REGIONAL SOURCE						Total amount	Per cent
		New England	Canada	New York and Penn.	Western	Lake States	Southern		
N. C. pine	1-3	..	..	..	..	..	..	18,029	53.4
Cal. white pine }	1-3	..	..	..	3,084	..	..	3,084	9.1
W. yellow pine }	..	..	..	..	..	..	..	2,620	7.7
Pondosa pine . . . . .	..	2,620	..	..	145	..	..	1,857	5.5
E. white pine	1-4	..	..	..	..	..	..	1,844	5.5
Mixed oak	1-2	..	..	..	..	..	..	1,515	4.5
Red gum	1-1½	..	..	..	..	..	..	1,305	3.9
Yellow birch	1-2	550	890	75	..	..	..	1,283	3.8
Mahogany . . . . .	..	..	..	..	..	..	..	662	2.0
Whitetwood	1-8	40	..	..	..	30	1,213	..	..
Cypress	1-4	..	..	..	..	..	662	..	..
W. white pine	1-3	..	..	..	..	318	..	..	..
Idaho white pine }	1-4	..	..	..	..	315	..	..	..
Douglas fir	1-4	..	..	..	42	..	..	..	..
Hard maple	1-2	191	..	..	..	..	..	..	..
Spruce	1-2	65	150	..	..	..	..	..	..
White ash	1-3	..	..	..	..	81	..	..	..
Cal. sugar pine	1-3	..	..	..	..	153	..	..	..
Basswood	1-2	75	..	..	..	..	..	..	..
Black walnut	1-3	..	..	..	..	..	..	..	..
Redwood	1-4	..	..	..	..	16	..	..	..
Chestnut	1-2	2	..	..	..	..	3	..	..
Totals . . . . .	..	3,543	1,040	117	4,112	30	23,637	1,305	33,784
Per cent . . . . .	..	10.5	3.0	.3	12.2	.1	70.0	3.9	100.0

CRATING

THE crating referred to is limited very largely to that consumed in the wood-using industries as distinguished from others, such as metal-using, etc., where wood is used for crating, mill repair, and other purposes. The consumption of 20,494 thousand board feet of lumber amounts to about 25 per cent of the total used in the state.

Spruce makes up 52 per cent of the lumber used. Of this Canada supplies 42 per cent. This is due largely to the efforts of Canadian operators to meet local competition. They study individual requirements of an industry and offer carload shipments in smaller sizes cut and bundled to specifications. Large crates must be manufactured from rough lumber.

Western white pine and North Carolina pine are very satisfactory for this purpose, but their use is limited by prohibitive freight rates. Approximately equal amounts of this are bought from local yards and as fillers for carload shipments of better grades of lumber.

CRATING¹
(UNIT: THOUSAND BOARD FEET)

Species	Thickness in inches	REGIONAL SOURCE					Total amount	Per cent	
		New England	Canada	New York and Penn.	Western	Lake States	Southern	Mexico Mise.	
Spruce.....	5-2	1,450	8,604	..	600	..	..	..	10,654
E. white pine.....	3-2	5,861	..	..	..	..	..	..	5,861
N. C. pine.....	3-2	..	..	..	..	..	..	..	1,292
W. white pine }.....	7-2	..	..	..	..	..	..	..	6.3
Idaho white pine }.....	1-2	..	..	..	..	..	..	..	..
Hemlock.....	1-2	565	..	..	1,055	..	..	..	1,055
Douglas fir.....	1-1½	..	..	..	..	..	..	..	..
White ash.....	2	230	..	..	420	..	..	..	565
Mixed oak.....	1½-2	150	..	..	..	..	..	..	420
Basswood.....	2½	100	..	..	..	..	..	..	230
Hard maple.....	2-3	92	..	..	..	..	..	..	1.1
Chestnut.....	1-2	75	..	..	..	..	..	..	.7
Totals.....	..	8,523	8,604	..	2,075	..	1,292	..	20,494
Per cent.....	..	41.6	42.0	..	10.1	..	6.3	..	100.0

¹ It is estimated that the total consumption for crating in the above table is approximately 25 per cent of the total amount used in the state.

WAGON AND AUTOMOBILE BODIES

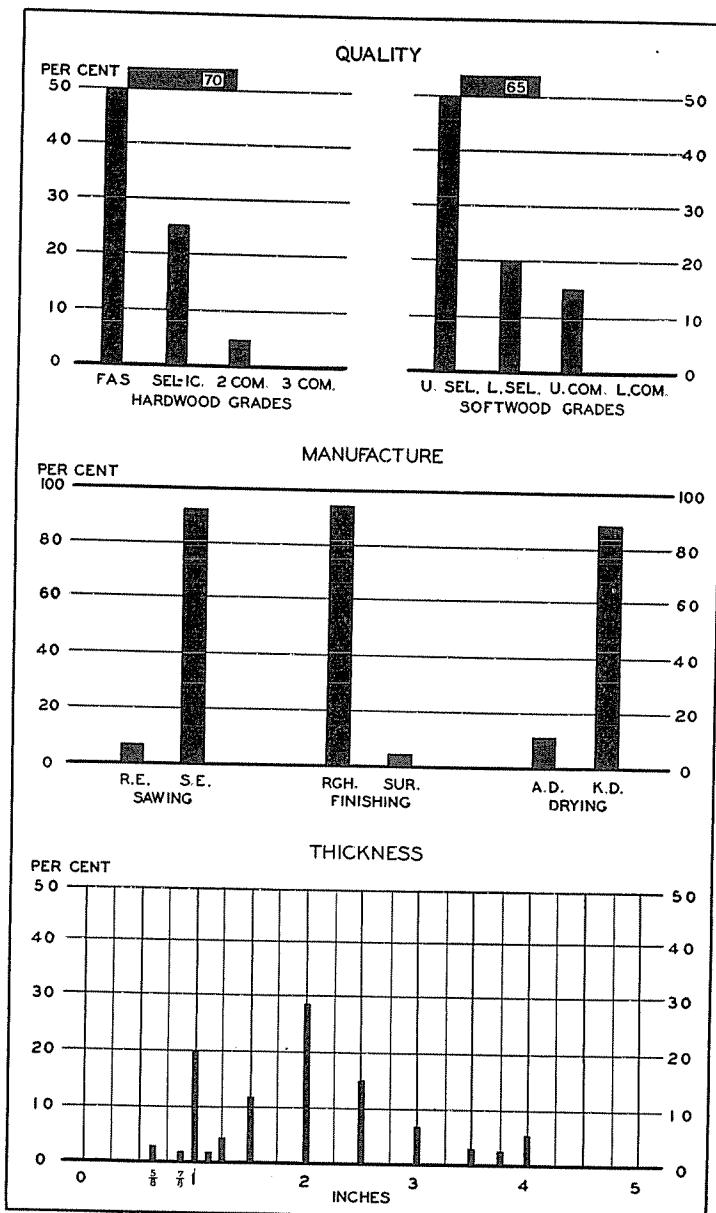
THE figures on consumption of wood for horse vehicles and automobile bodies in the Forest Service report for 1910 amount to 5 million feet, while this survey shows an increase to 18½ million.

At the present time the consumption of wood for wagon building and repairing is negligible compared with that used for automobile bodies. Repair work with a small amount of new construction characterizes the wagon business. Truck cabs and bodies make up 10 per cent of the volume used in the industry. This does not include the large amount of stock manufactured elsewhere but assembled in Massachusetts. The amount of wood per body varies from only a few feet in some cases to as high as 350 feet. A growing tendency of some body manufacturers is to use the all-steel body; but with the higher priced passenger body construction, a certain amount of wood will always be used.

White ash supplies above 60 per cent of the entire consumption. White-wood and mixed oak are used in relatively equal proportions, while yellow birch and hard maple follow very slightly smaller percentages. The great source of supply of ash is from the South. However, some native and western stock is used. Whitewood, the second in importance, comes entirely from the South. One-third of the mixed oak is native and the balance from the South. Large amounts of yellow birch from Canada are used; while New England, New York and Pennsylvania are depended upon for smaller amounts.

The complaints about native stock for body construction are invariably with its manufacture and poor drying. It is noticeable that only 3 per cent of the stock is round-edge. This amount is used by the smaller operators doing only repair work and buying from local yards to meet their requirements. Hardwoods used for body manufacture must have at least 40 per cent FAS with a large amount of the remaining proportion common and selects. In softwoods 60 per cent of the upper selects is required. The demands for kiln-dried lumber have increased in recent years, and at the present time only that stock cut by the small portable mill operator stays on sticks to dry in the yard. The larger amount of this is round-edge with the remaining portion lower quality square edge.

Large companies control the construction of bodies in this state. Their purchases are almost without exception in carload lots. The smaller manufacturer doing repair work uses native material.



WAGON AND AUTOMOBILE BODIES
(UNIT: THOUSAND BOARD FEET)

Species	Thickness in inches	REGIONAL SOURCE						Total amount	Per cent
		New England	Canada	New York and Penn.	Western	Lake States	Southern		
White ash.....	1-4	594	..	..	500	..	10,500	11,594	62.5
Whitewood.....	5-1 $\frac{1}{2}$	543	..	..	..	..	..	2,214	11.9
Mixed oak.....	1-4	405	525	275	..	..	1,513	2,056	11.1
Yellow birch.....	1-4	369	500	275	..	..	..	..	6.5
Hard maple.....	1-3 $\frac{3}{4}$	..	..	..	..	..	..	1,144	6.2
N. C. pine.....	1-1 $\frac{1}{4}$	..	..	..	..	..	..	..	.7
Hickory.....	1 $\frac{1}{8}$ -2 $\frac{1}{2}$	..	..	..	..	..	..	..	.4
Basswood.....	1-3	28	..	..	..	..	..	..	.3
E. white pine.....	7-2	26	..	..	..	..	..	..	.2
.....	1-3	..	..	..	..	..	..	..	.1
Spruce.....	1-2	..	..	..	..	15	..	..	.1
Redwood.....	..	..	..	..	..	..	..	..	.1
Totals.....	..	1,965	1,025	550	515	..	14,482	18,537	..
Per cent.....	..	10.6	5.5	3.0	2.8	..	78.1	..	100.0

BASKETS, COOPERAGE, AND TANKS

BASKETS, making up 3 per cent, include fruit packages, hampers, bushel baskets, etc. Cooperage (tight and slack), including barrels, tubs, pails, ice-cream freezers, buckets, and other wooden containers, accounts for 95 per cent of the consumption of the industry. Tanks and vats make up the remaining 2 per cent.

Native log-run, round-edge white ash, mixed oak and basswood are used for baskets. Tanks are preferably made from the better grades of square-edge cypress, Douglas fir, and North Carolina pine. White pine logs are preferred for cooperage. The length of the internode determines the possible length of the clear stave, and hence the value of the log. New England hitherto has supplied all the logs for this purpose, but Douglas fir sawed to dimension is being bought in increasing quantities for the larger staves. Slack cooperage is chiefly made from native chestnut, beech, mixed oak, and hard maple.

BASKETS, COOPERAAGE, AND TANKS
(UNIT: THOUSAND BOARD FEET)

Species	Thickness in inches	REGIONAL SOURCE					Total amount	Per cent
		New England	Canada	New York and Penn.	Western	Lake States	Southern	
E. white pine.....	logs, 1½-3	11,121	..	..	1,790	..	..	11,121
Douglas fir.....	3	1,023	..	..	..	..	1,790	10.5
Yellow birch.....	½-3	781	..	..	..	..	..	..
Mixed oak.....	1-2	756	..	..	..	..	781	4.6
Hard maple.....	½-3	470	..	..	..	..	736	4.5
Chestnut.....	½-2	322	..	..	..	..	470	2.8
Beech.....	½-2	200	..	..	..	..	322	1.9
White ash.....	½-2	..	..	..	..	..	200	1.2
Cypress.....	1-6	100	..	..	..	..	120	.7
Hemlock.....	1-2	..	..	..	..	..	100	.6
N. C. pine.....	1-5	..	..	..	..	..	90	.5
Whitewood.....	1-2	88	50	..	..	..	..	..
Spruce.....	1-4	40	..	..	..	..	88	.5
Basswood.....	2	30	..	..	..	..	55	.3
White birch.....	½-¾	..	..	..	..	..	40	.2
Totals.....	..	14,936	50	..	1,790	..	210	..
Per cent.....	..	87.9	.3	..	10.6	..	1.2	100.0

CAR AND MACHINE CONSTRUCTION

THE consumption of lumber for car and machine construction amounts to 15,691 thousand board feet, of which one-eighth is native stock. This industry includes freight cars, factory and mill trucks, elevators, lunch cars, cutting boards, die blocks, and wood for miscellaneous machines.

Douglas fir accounts for 62 per cent of the lumber consumed. The principal other species are mixed oak, southern hard pine (large dimension and structural timbers), hard maple, yellow birch, North Carolina pine (finish and small dimension), and beech. The use of native oak is limited on account of its narrow widths and short lengths, while Douglas fir is used chiefly for freight car and trolley car construction. Local yards supply lumber for lunch cars, elevators, etc. Manufacturers making freight cars, trolley cars and mill trucks buy by the carload.

CAR AND MACHINE CONSTRUCTION
(UNIT: THOUSAND BOARD FEET)

Species	Thickness in inches	REGIONAL SOURCE					Total amount	Per cent
		New England	Canada	New York and Penn.	Western	Lake States		
Douglas fir	1-4	1,218	..	..	..	..	..	61.8
Mixed oak	1-4	..	..	..	..	..	2,152	13.7
So. hard pine	1-10	..	..	..	..	..	1,059	6.8
Hard maple	1 $\frac{1}{4}$ -2	242	75	150	230	..	697	4.4
Yellow birch	1-3	165	..	75	..	..	365	2.3
N. C. pine ²	1-1 $\frac{1}{4}$	..	..	..	..	..	352	2.2
Spruce	1-2	26	268	..	30	..	..	..
Beech	1-2	110	..	200	..	..	324	2.1
..	5 $\frac{1}{2}$ -4	..	..	..	..	..	310	2.0
Mahogany	4	..	..	..	..	..	170	1.1
White ash	5 $\frac{1}{2}$ -4	100	..	..	..	..	..	..
E. white pine	1-2	..	77	..	..	..	55	1.0
Basswood	5 $\frac{1}{2}$ -4	..	..	..	..	..	..	..
W. red cedar	1-2	..	..	..	..	..	145	.9
Cherry	1	..	..	..	..	..	..	..
Whitetewood	5 $\frac{1}{2}$ -3	..	..	..	..	..	122	.8
Chestnut	1-3 $\frac{1}{2}$	..	..	..	..	..	50	.3
Totals . . . . .	..	1,938	343	475	10,010	68	2,687	170
Per cent . . . . .	..	12.4	2.2	3.0	63.8	.4	17.1	1.1
								100.0

¹ So. hard pine includes large dimension and structural timbers.

² N. C. pine includes finish and small dimension.

SPOOLS, BOBBINS, AND SHUTTLES

NEW ENGLAND furnishes 83 per cent of the 14,908 thousand board feet of lumber consumed, chiefly hard maple, white birch, beech, and yellow birch. For the most part the remaining portion, including persimmon, dogwood and some hard maple, is supplied from the South, although increasing amounts of yellow and white birch are brought in from Canada.

High quality, accurately sawn stock is required by this industry. Poor manufacture limits the use of native lumber. There are two steps in the manufacture of the finished product. The first operation comes at the portable mills, scattered in the country districts, cutting the rough bobbin plank (square or dimension). The second stage completes the turning of the bobbin, and is carried on in the highly equipped mills in the larger towns and cities. Highly developed machinery is used to work up the wood. This is due to the diversified specifications of the individual type of bobbin or shuttle. In many cases the wood is worked to .01 of an inch or closer.

SPOOLS, BOBBINS, AND SHUTTLES
(UNIT: THOUSAND BOARD FEET)

Species	Thickness in inches	REGIONAL SOURCE						Total amount	Per cent
		New England	Canada	New York and Penn.	Western	Lake States	Southern	Mexico Misc.	
Hard maple.....	1-4	5,700	120	15	..	..	204	..	5,919
White birch.....	1-4	2,850	..	..	..	..	..	..	2,970
Beech.....	1-4	2,708	788	..	..	..	..	..	2,708
Yellow birch.....	1-3	750	..	..	..	..	765	..	1,538
Dogwood.....	1 $\frac{1}{8}$ -2 $\frac{1}{2}$	..	..	..	..	..	..	..	765
Persimmon.....	1-1 $\frac{1}{2}$	..	..	..	..	..	522	..	522
Basswood.....	1-3	311	..	..	..	80	..	..	391
E. white pine.....	2	40	..	..	..	..	..	..	40
Whitetewood.....	1-2	..	..	..	..	..	35	..	35
White ash.....	2	..	..	..	..	..	..	..	..
Apple.....	1	5	..	..	..	..	..	..	..
Totals.....	..	12,364	908	30	..	80	1,526	..	14,908
Per cent.....	..	82.9	6.1	.2	..	.6	10.2	..	100.0

GENERAL MILLWORK

IN this survey general millwork does not include the consumption of the common type of planing mill in retail lumber yards. The 13,822 thousand board feet of lumber used in the industry represent the consumption of independent wood-working shops equipped with specialized machinery and catering to special types of manufacture.

Better grades of square edge lumber are required. The sizes and grades available permit only a limited use of native stock. Approximately equal amounts are used from the South and West. North Carolina pine, mixed oak, whitewood, basswood, cypress, chestnut, red gum and black walnut are the principal Southern woods. The West, with fewer species, furnishes western white pine, western yellow pine and Douglas fir. White birch, hard maple and eastern white pine are the chief species from New England.

GENERAL MILLWORK¹
 (UNIT: THOUSAND BOARD FEET)

Species	Thickness in inches	REGIONAL SOURCE						Total amount	Per cent
		New England	Canada	New York and Penn.	Western	Lake States	Southern		
N. C. pine	1-2	..	..	..	2,186	..	..	2,637	19.1
W. white pine	1-2	..	..	..	1,819	..	..	..	2,186
Idaho white pine . . . . .	..	..	..	..	..	..	..	..	15.8
Cal. white pine	1-1½	..	..	..	..	..	..	..	..
W. yellow pine . . . . .	..	..	..	..	..	..	..	..	..
Ponderosa pine . . . . .	..	..	..	..	..	..	..	..	..
White birch	5-4½	917	600	60	..	75	..	..	11.4
E. white pine	5-2	335	15	375	..	..	..	..	..
Douglas fir	1-3	..	..	..	605	..	..	..	..
Mixed oak	1-3½	111	..	..	53	..	..	..	..
Hard maple	5-2½	508	..	65	8	..	..	..	..
Whitewood	5-2	40	..	..	..	..	..	..	..
Yellow birch	1-4	150	255	85	..	..	..	..	..
Spruce	3-4	..	450	..	..	..	..	..	..
Basswood	1-2	120	..	..	..	..	..	..	..
Cypress	1-2	..	..	..	..	..	..	..	..
Chestnut	1	122	..	..	..	..	..	..	..
Red gum	1-1½	..	..	..	..	..	..	..	..
White ash	1-3½	141	..	..	..	..	..	..	..
Mahogany	1-3	..	..	..	..	..	..	..	..
Hemlock	1-3	..	..	..	..	..	..	..	..
Black walnut	1-2	..	..	..	..	..	..	..	..
Totals . . . . .	..	2,424	1,320	675	4,721	75	4,489	118	13,822
Per cents . . . . .	..	17.5	9.5	4.9	34.2	.5	32.5	.9	..
									100.0

¹ General Millwork includes chiefly consumption of small planing mills and wood working shops. Separate industries have been made for Builders' Finish and Stair Work; Sash, Doors and Blinds; and Fixtures, Refrigerators and Cabinets.

FURNITURE

THE consumption of 12,533 thousand board feet of lumber used in furniture does not include the large amount used for chairs. It includes tables, cribs, cradles, school and office equipment, and upholstered furniture.

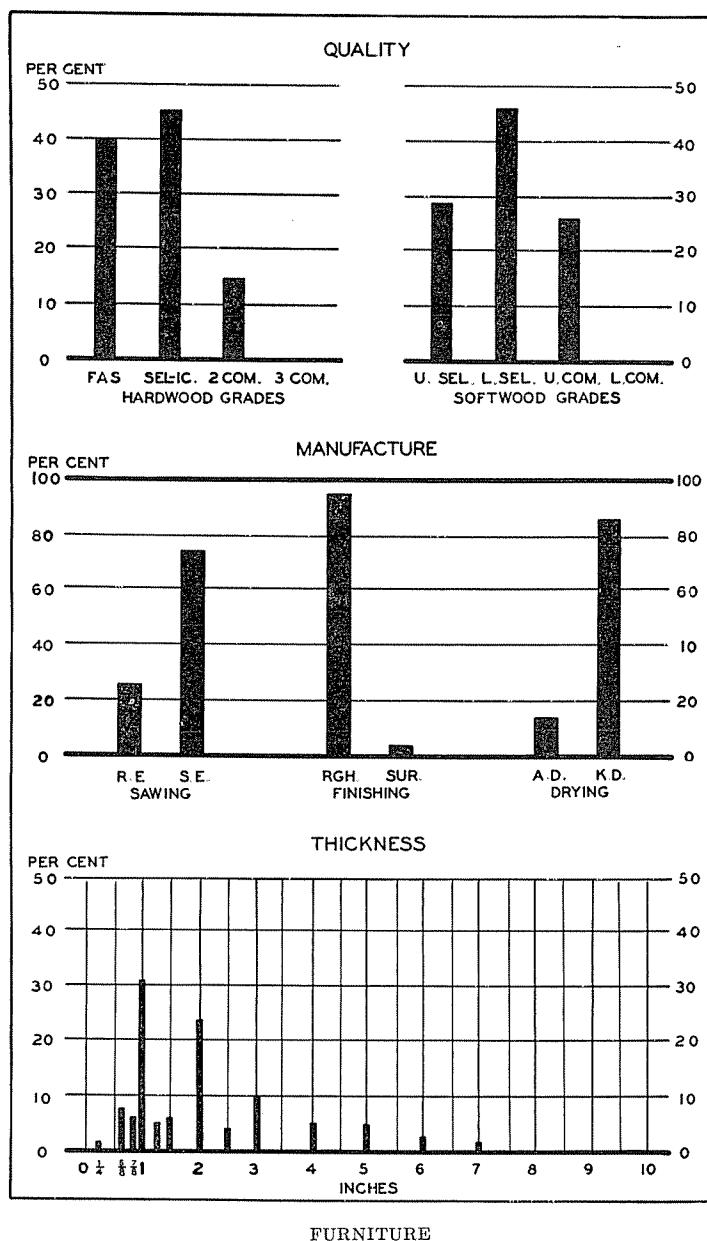
Thirty-five per cent of the lumber comes from the South. This is made up mostly of mixed oak, chestnut, basswood, black walnut, red gum, whitewood, and North Carolina pine. New England follows with 24 per cent, principally yellow birch, hard maple, eastern white pine, beech, chestnut, and mixed oak. Some yellow birch, hard maple, and beech are shipped in from Canada, New York, and Pennsylvania.

Round-edge, log-run lumber, once largely used, is now being replaced by the better grades of square-edge. In softwoods nearly three-fourths is a selected grade, with the balance in upper common. Hardwood grades are No. 1 common and better with a large amount of FAS.

The large manufacturers buy carload shipments of air-dried lumber and run it through their own kilns. Local yards supply lumber where the consumption is small as in frames for upholstered furniture, repairing, etc.

In the making of furniture the desired finish largely determines the grade of lumber necessary. For instance, for natural finish the best grade of lumber must be used, but for a stained finish the common and selected grades will do. Lower No. 1 common and upper No. 2 common will serve for an enamel finish, e.g., children's furniture, breakfast and tea room sets. This latter form of finishing is increasing and will undoubtedly lead to an increased use of low grade woods.

In some cases the quality of native beech is inferior, but all other native hardwoods are being used with good results. The only drawback is with their widths and lengths. The use of built-up stock, e.g., veneer of black walnut, mahogany, etc., with a core of chestnut, whitewood, gum and other adaptable woods is common in the manufacture of furniture.



FURNITURE (UNIT: THOUSAND BOARD FEET)

Species	Thickness in inches	REGIONAL SOURCE						Total amount	Per cent
		New England	Canada	New York and Penn.	Western	Lake States	Southern		
Yellow birch.....	1-3	1,228	815	833	..	..	4	2,880	23.0
Mahogany.....	1-4	155	360	..	75	..	..	2,372	18.9
Mixed oak.....	1-4	135	..	..	..	..	..	1,555	12.4
Chestnut.....	1-2	565	85	213	..	..	..	1,062	8.5
Hard maple.....	1-3	90	..	..	..	..	..	863	6.9
Basswood.....	1-2	..	..	..	..	..	..	..	..
Black walnut.....	1-6	..	..	..	125	..	..	635	5.1
Red gum.....	1-3	..	..	..	..	..	..	523	4.2
Beech.....	1-2	275	..	100	..	..	..	520	4.1
E. white pine.....	1-6	371	..	..	..	25	..	483	3.8
Whitewood.....	1-2	25	..	..	..	..	..	396	3.2
N. C. pine.....	1-4	..	..	..	..	..	..	335	2.7
N. W. white pine.....	1-4	..	..	..	..	..	..	260	2.1
White ash.....	1-3	16	..	..	..	..	..	221	1.8
Red birch.....	1-2 $\frac{1}{2}$	17	20	..	..	..	..	130	1.5
Spruce.....	1-3	50	..	..	..	..	..	30	.5
Magnolia.....	1	40	..	..	..	..	..	..	..
W. red cedar.....	2	..	..	..	..	..	..	..	..
English oak.....	5-2	..	..	..	..	..	..	30	.3
Cherry.....	8-2	..	..	..	..	..	..	30	.2
Totals.....	..	2,967	1,280	1,158	461	65	4,200	12,533	100.0
Per cent.....	..	23.7	10.2	9.2	3.7	.5	33.5	19.2	..

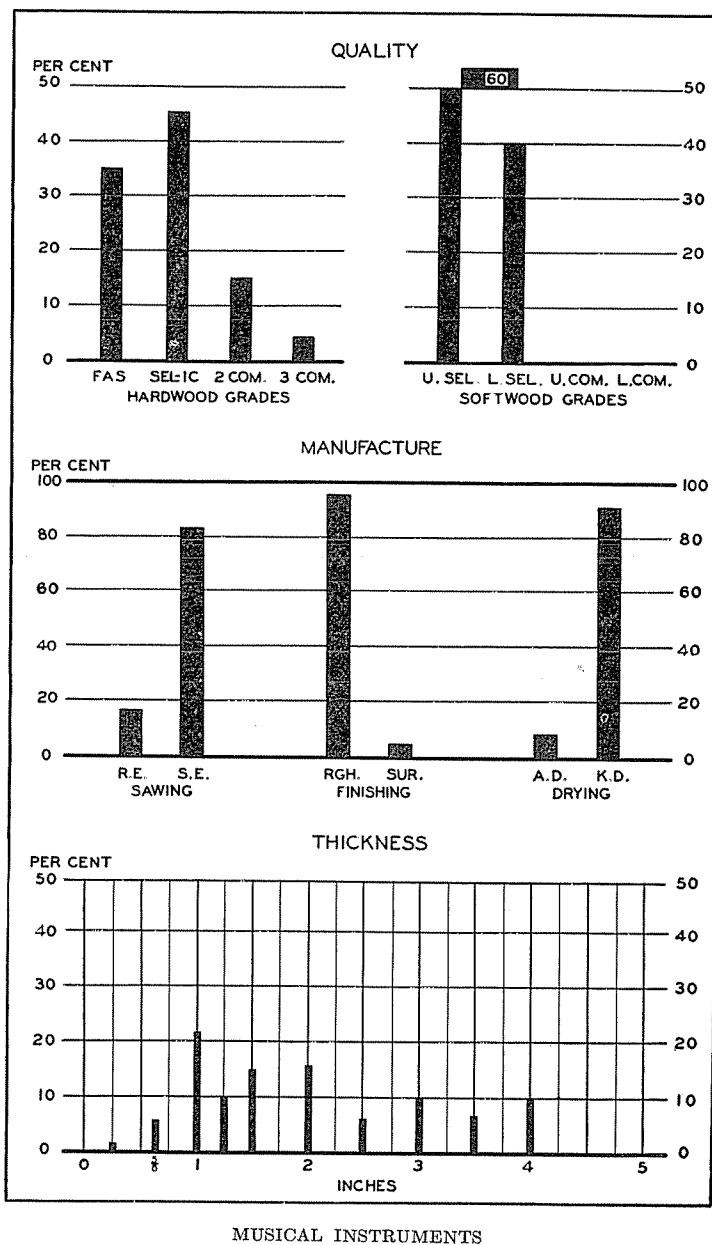
MUSICAL INSTRUMENTS

IN 1926 there was used in musical instruments slightly over 12 million board feet. This shows a decrease from 27½ million, as reported by the Forest Service in 1910.

Southern woods, mostly chestnut and whitewood, make up 38 per cent of the consumption. Native-grown stock, totaling 33 per cent, is composed of hard maple, spruce, and eastern white pine. Red birch and yellow birch from Canada, and to a larger degree spruce from the West, are coming into this state for piano construction, the relative proportion of which can be seen from the accompanying table and graphs.

Hard maple used in making pianos must be of high quality, having at least 60 per cent FAS with the balance No. 1 common and selects. Most manufacturers prefer straight-grained, white (sap) colored maple. In several cases the tendency is to quarter-saw the stock and leave bark on edge. Where basswood is used for key stock, it must be straight-grained white and preferably winter sawn. Round-edge, air-dried material finds demand in this industry, as the better grades of square-edge stock are used and a great deal of care is taken in the drying process.

The industry is composed mostly of large concerns, several of which make only cases. These companies sell direct to other manufacturers who complete the construction of the finished product.



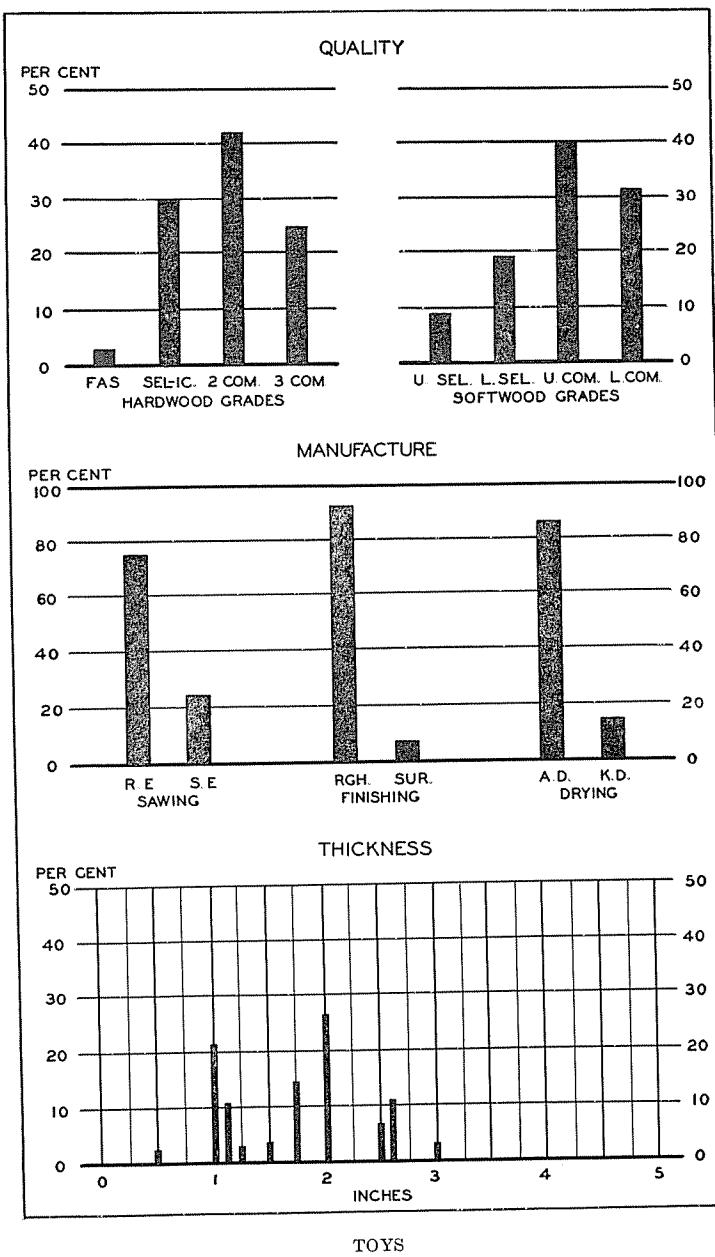
MUSICAL INSTRUMENTS (UNIT: THOUSAND BOARD FEET)

Species	Thickness in inches	REGIONAL SOURCE						Total amount	Per cent
		New England	Canada	New York and Penn.	Western	Lake States	Southern		
Chestnut.....	1-2	1,535	..	425	..	..	2,235	2,235	18.3
Hard maple.....	1-4	220	300	1,040	..	..	..	1,960	16.1
Brace.....	1-4	1,497	15	..	..	..	..	1,560	12.8
White pine.....	1-2½	..	..	..	..	..	..	1,542	12.7
White birch.....	5-4	..	..	..	..	..	..	1,140	9.3
Whitetopwood.....	8-2	..	..	..	..	..	..	883	7.3
Yellow birch.....	1-2	558	325	..	..	..	..	526	4.3
Cal. sugar pine.....	5-2	..	..	450	..	..	..	450	3.7
Red birch.....	1	..	..	..	..	..	..	409	3.4
Mahogany.....	5-2	..	..	..	..	..	..	300	2.5
White ash.....	1-2½	150	..	..	..	..	..	287	2.3
Basswood.....	1-2	28	..	..	..	..	..	282	2.3
Red gum.....	1-2	..	..	..	..	..	..	246	2.1
Mixed oak.....	5-2	..	..	..	..	..	..	200	1.6
Elm.....	1-4	..	..	..	..	..	..	85	.7
Black walnut.....	5-2	..	..	..	..	..	..	60	.5
Douglas fir.....	1-2	10	..	..	..	..	..	10	.1
Beech.....	1-2	3	..	..	..	..	..	3	..
Cherry.....	..	..	..	..	..	..	..	..	..
Totals.....	..	4,001	1,090	425	1,634	30	4,597	409	12,186
Per cent.....	..	32.8	9.0	3.5	13.4	.2	37.7	3.4	100.0

TOYS

Toys are largely made from native stock. The principal woods used are eastern white pine, western white pine, chestnut, white birch, spruce, hemlock, hard maple, beech, and mixed oak, with the exception of western white pine, all New England species. Whitewood, basswood, and North Carolina pine, used in smaller quantities, come from the South.

Due to the wide variation of thickness and length of individual pieces used for toys, close utilization is possible. As a result, lower quality, log-run, round-edge native stock can be used successfully. The western white pine can be purchased in any required form, i.e., rough lumber or dimension. This, of course, means an elimination of waste and a reduction of the necessary labor costs in working up local round-edge, log-run material. The price difference, as governed by the above mentioned considerations, is the foremost factor in determining which species is the most economical to buy.



TOYS
(UNIT: THOUSAND BOARD FEET)

Species	Thickness in inches	REGIONAL SOURCE					Total amount	Per cent	
		New England	Canada	New York and Penn.	Western	Lake States	Southern		
E. white pine	1-3	4,065	45	..	1,650	..	..	4,110	37.3
W. White pine }	1-3	..	..	..	..	..	..	1,650	15.2
Idaho white pine }	1-1 $\frac{1}{2}$	1,025	..	..	..	..	..	1,025	9.3
Chestnut	1-2 $\frac{1}{2}$	865	..	..	..	..	..	865	7.9
White birch	1-2	650	200	..	..	..	..	850	7.7
Spruce	1-2	650	..	..	..	..	..	650	5.9
Hemlock	1	530	..	..	..	..	..	530	4.8
Hard maple	1-1 $\frac{1}{2}$	345	..	25	..	..	..	370	3.4
Beech	1-1 $\frac{1}{2}$	325	..	..	..	..	..	325	3.0
Mixed oak	1	75	..	..	..	..	..	200	2.5
Whitewood	1-2	12	..	..	..	..	..	200	1.9
Basswood	3	..	..	..	..	..	..	45	.4
N. C. pine	1-2	..	..	..	..	..	..	25	.2
Red gum	1	..	..	..	..	..	..	20	.2
Mahogany	2-3	..	..	..	..	..	..	10	.1
Cedar	2	10	..	..	..	..	..	..	..
White ash . . . . .	..	..	..	..	..	..	..	..	..
Totals	8,552	245	25	1,650	..	..	490	20	10,892
Per cent	77.9	2.2	.2	15.0	..	4.5	.2	..	100.0

MISCELLANEOUS

PRODUCTS that could not be classified separately or with other industries are included under miscellaneous. They include baby carriages, carriage and automobile wheels, ladders, plumbers' woodwork, pool and billiard tables, portable saw mills, laundry appliances, trunks, patterns, picture frames and screens, and signs. A complete classification of the above miscellaneous articles is found in the directory.

MISCELLANEOUS

(UNIT: THOUSAND BOARD FEET)

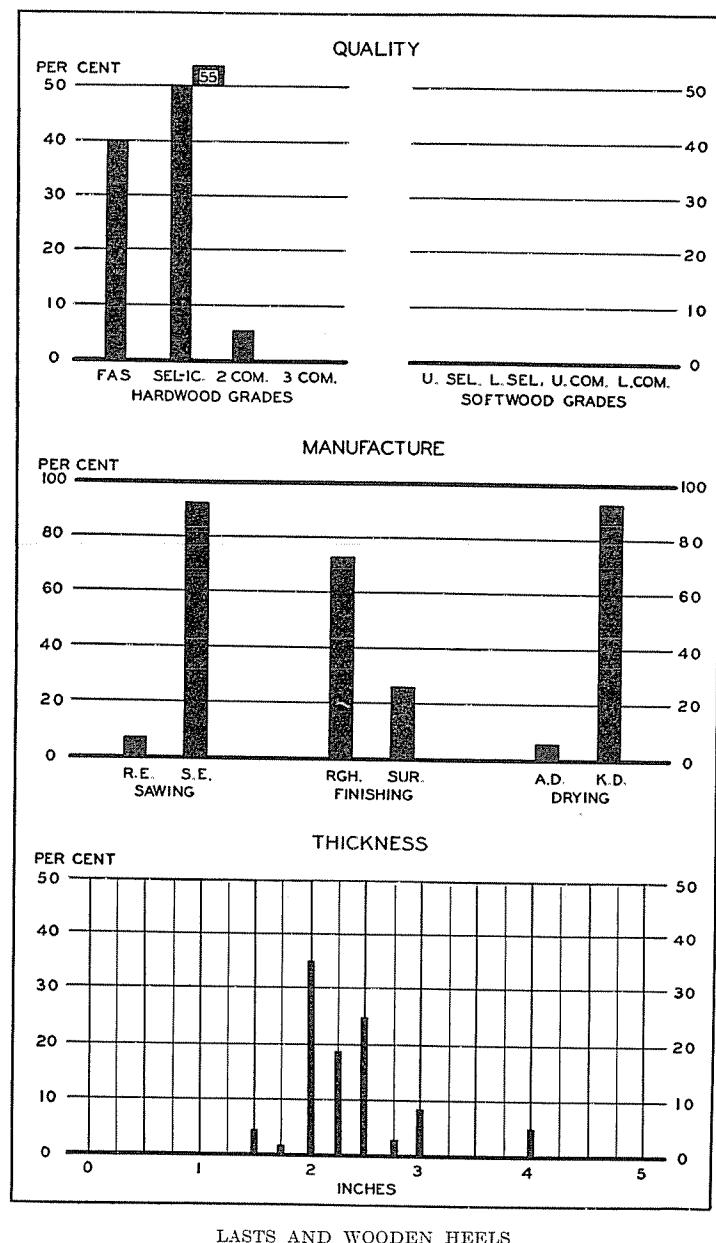
Species	Thickness in inches	Regional Source						Total amount	Per cent
		New England	Canada	New York and Penn.	Western	Lake States	Southern		
Spruce	1-2	860	250	75	105	500	..	1,715	20.6
	1-1½	1,060	25	56	20	10	..	1,205	14.5
	5/8-3	989	..	115	..	..	..	1,075	12.9
Basswood	2	799	..	15	..	59	..	914	11.0
Hard maple	1-2	..	..	..	..	..	..	655	7.9
Mixed oak	1-4	581	..	120	420	..	..	594	7.1
Beech	1-1½	474	..	..	..	..	..	420	5.1
Douglas fir	1-2	..	..	..	..	..	..	385	4.6
White birch	1½	385	..	..	..	..	..	251	3.0
Whitetewood	1-2½	251	..	..	..	..	..	237	2.9
White ash	2½-4	234	..	..	..	3	..	167	2.0
E. white pine	3/8-2	62	15	..	..	90	..	145	1.7
N. C. pine	1½-3	..	..	..	..	..	..	80	1.0
Hickory	1-2	35	..	..	..	..	..	102	1.2
Mahogany	1-2	..	..	..	..	..	..	102	1.2
W. white pine } (Idaho white pine)	3/8-4	..	..	..	..	86	..	..	..
Red birch	1-1½	..	75	..	..	..	..	86	1.0
Cypress	1-2	..	..	..	..	..	..	75	.9
Red gum	1-2	..	..	..	..	..	..	65	.8
Cedar	1	..	..	..	..	..	..	42	.5
Hemlock	1	20	..	..	..	..	..	20	.2
Chestnut	1-3	10	..	..	..	..	..	20	.2
Cherry	1	10	..	..	..	..	..	13	.2
Totals	..	5,715	365	381	626	210	907	122	1.5
Per cent	..	68.6	4.4	4.6	7.5	2.5	10.9	..	100.0

LASTS AND WOODEN HEELS

Lasts and wooden heels are made almost exclusively from hard maple. Yellow birch and beech have only a limited use. Their consumption accounts for less than one per cent of the 8,143 thousand board feet of lumber used. When the supply of suitable maple becomes scarce, the use of yellow birch and beech will increase. Yellow birch has been found to be superior to the beech. Of the lumber used, New York and Pennsylvania supply 45 per cent, New England 36 per cent, the Lake states 16 per cent and the balance comes from Canada.

The highest quality hard maple is desired. Forty per cent is FAS, 55 per cent being No. 1 common and selects, and the remaining 5 per cent is made up of No. 2 common. Rough lumber, once largely used, is now being replaced by S2S or S4S dimension, mostly the former. The larger operators buy well air-dried lumber and run it through their own kilns. The smaller manufacturer has limited storage space, no drying facilities, and uses diversified stock. As a result he buys from local yards.

Heel stock must be clear and dried as low as 5 per cent moisture content in some cases. Defects such as season checks, mineral streaks, and heart centers have to be closely culled out when grading lumber for this purpose. Season checks and mineral streaks open up when the lumber is run through the kilns. Mineral streaks dull the knives and make turning extremely difficult. Heart centers tend to break up and separate from the rest of the piece.



LASTS AND WOODEN HEELS
(UNIT: THOUSAND BOARD FEET)

Species	Thickness in inches	REGIONAL SOURCE					Total amount	Per cent
		New England	Canada	New York and Penn.	Western	Lake States		
Hard Maple.....	1 $\frac{1}{2}$ -4	2,888	262	3,596	..	1,337	..	8,083 99.3
Yellow birch.....	1 $\frac{3}{4}$ -2 $\frac{1}{2}$	..	..	35	..	..	..	.4
Beech.....	1 $\frac{3}{4}$ -2 $\frac{1}{2}$	..	..	25	..	..	..	.3
Totals.....	..	2,888	262	3,656	..	1,337	..	8,143 ..
Per cent.....	..	35.5	3.2	44.9	..	16.4	..	100.0 ..

BOATS

THE 7,186 thousand board feet consumed in this industry include lumber for new construction, repairing, tackle and pulley blocks, etc.

New England with its white pine, spruce, and mixed oak provides only 24 per cent of the lumber used. The South furnishes chiefly North Carolina pine, white ash, cedar, whitewood, and mixed oak. Mixed oak and Douglas fir come from the West and Middle West.

Better grades of rough, square-edge lumber or dimension are used. New construction is largely controlled by large companies who buy in carload shipments. Repairing and miscellaneous construction is done by small operators who buy from local yards. Many times in the latter case the material is partially manufactured.

BOATS (UNIT: THOUSAND BOARD FEET)

WOOD SPECIALTIES AND NOVELTIES

Wood specialties and novelties are made almost wholly from native species, as they possess the texture, grain, size and grade needed in the industry. A surprisingly small amount of wood will supply the needs of a wood-turning shop. The cost of labor in such a plant is many times that of the raw material. In no other industry, with the exception of toys, is such a complete utilization possible. This is due to the great variation in size of individual pieces taken alone or collectively (built-up stock) that go into the construction of the many forms of wooden specialties.

The products include dowels, banjo rims, candy sticks, clothespins, school specialties and other turned goods. Eastern white pine and white birch comprise 60 per cent of the lumber used. Beech, hard maple, yellow birch, chestnut, mixed oak, white ash, and red gum are being successfully utilized in smaller quantities.

Wood-turning shops are found scattered in sections of the state where there is still a sufficient supply of native timber. Portable mills, in many cases located near a small turning shop, produce all the lumber consumed.

WOOD SPECIALTIES AND NOVELTIES
(UNIT: THOUSAND BOARD FEET)

Species	Thickness in inches	REGIONAL SOURCE					Total amount	Per cent
		New England	Canada	New York and Penn.	Western	Lake States	Southern	
E. white pine.....	1-3	2,308	..	30	..	..	..	2,308
White birch.....	1 $\frac{5}{8}$ -2	1,880	..	..	..	..	..	33.7
Beech.....	1-2	501	..	75	..	..	..	27.9
Hard maple.....	1-1 $\frac{1}{4}$	402	..	..	..	..	..	7.3
Yellow birch.....	2 $\frac{1}{4}$ -3	233	155	..	..	..	..	477
Chestnut.....	1-3	370	..	..	..	..	..	388
Mixed oak.....	1-3	215	..	..	..	..	..	5.7
White ash.....	1-3 $\frac{1}{4}$	150	..	..	..	..	..	370
Red gum.....	1 $\frac{5}{8}$ -2 $\frac{1}{4}$	125	..	..	..	..	..	5.4
Basswood.....	1-2	..	..	..	..	..	..	215
N. C. pine.....	1	50	..	..	..	..	..	3.1
Hemlock.....	1	45	..	..	..	..	..	150
Cherry.....	1-2	5	..	..	..	..	..	2.2
Whitewood.....	2 $\frac{1}{2}$	40	..	..	..	..	..	.6
Spruce.....	1-1 $\frac{1}{2}$	..	..	..	..	..	..	.6
Cal. white pine }	..	..	..	..	..	..	..	.6
W. yellow pine }	..	..	..	..	..	..	..	.4
Ponderosa pine	..	..	..	..	..	..	..	.4
Totals.....	..	6,324	155	105	25	..	246	..
Per cent.....	..	92.2	2.3	1.5	.4	..	3.6	100.0

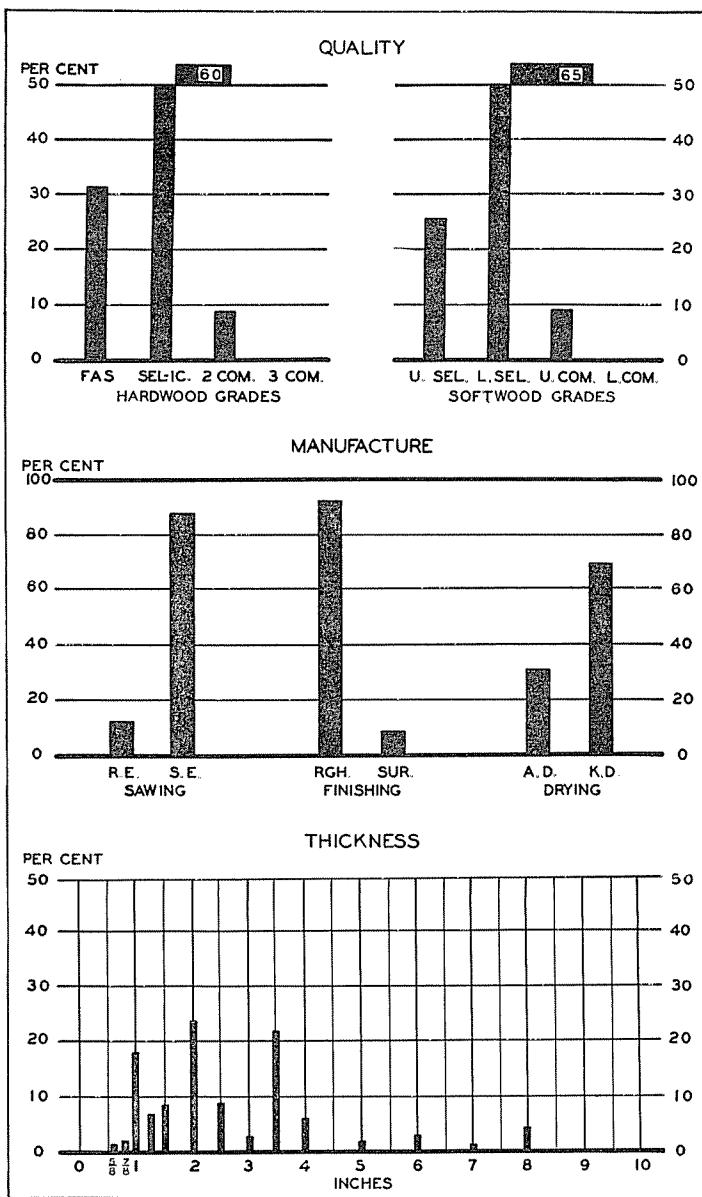
TEXTILE MACHINERY

Hard maple and white ash taken collectively make up more than 45 per cent of the entire consumption of the industry. Species having a more restricted use are eastern white pine, whitewood, yellow birch, spruce, beech, western yellow pine, chestnut and mixed oak.

New England furnishes 55 per cent of the lumber used. Approximately equal amounts come from New York and Pennsylvania, the South and the West. Canada and the Lake States supply 5 per cent.

Ninety-two per cent of the hardwood is No. 1 common and better with nearly a third FAS. In softwoods 91 per cent is of a selected grade and the balance of upper common. Log-run, round-edge lumber is now being replaced by high quality square edge and dimension.

Tough texture hard maple and white ash are preferred. Many buy air-dried stock that has been on sticks for at least one year. A smaller number of manufacturers buy partially air-dried lumber and run it through their own kilns.



TEXTILE MACHINERY

TEXTILE MACHINERY
(UNIT: THOUSAND BOARD FEET)

Species	Thickness in inches	Regional Source						Total amount	Per cent
		New England	Canada	New York and Penn.	Western	Lake States	Southern		
Hard maple	Logs, 1 $\frac{1}{4}$ -8	1,200	..	105	547	31	4	..	24.3
White ash	1-4	460	..	183	..	..	..	1,340	21.5
E. white pine	1-4	743	3	18	..	78	..	1,190	15.2
Whitetewood	5-7	..	..	..	..	..	..	842	..
Yellow birch	1-4	229	..	12	..	..	..	656	11.9
Spruce	1-7	..	..	150	..	..	..	394	7.1
Beech	1 $\frac{1}{2}$ -4	165	155	..	..	..	..	320	5.8
Cal. white pine {	1-4	72	..	150	..	..	3	..	4.1
W. yellow pine }	1-2 $\frac{1}{2}$	..	..	..	170	..	..	..	..
Pondosa pine	1	..	..	..	..	..	..	170	3.1
Chestnut	1-4	113	..	..	..	..	..	..	..
Mixed oak	1-4	70	..	..	..	..	..	113	2.0
Cherry	1-1 $\frac{1}{2}$	..	..	64	..	..	..	70	1.3
Magnolia	1	..	..	..	..	..	..	..	1.2
W. white pine }	1 $\frac{1}{4}$	..	..	..	45	..	..	46	.8
Idaho white pine }	1	20	..	..	..	..	..	..	..
Hemlock	1 $\frac{1}{4}$ -3	..	..	..	..	..	..	45	.8
Cypress	1-2	..	..	..	..	..	..	20	.4
Douglas fir	1	8	..	..	..	..	..	..	..
Apple . . . . .	..	..	..	..	..	..	..	..	..
Totals . . . . .	..	3,080	170	670	772	109	722	..	5,523
Per cent . . . . .	..	55.7	3.1	12.1	14.0	2.0	13.1	..	100.0

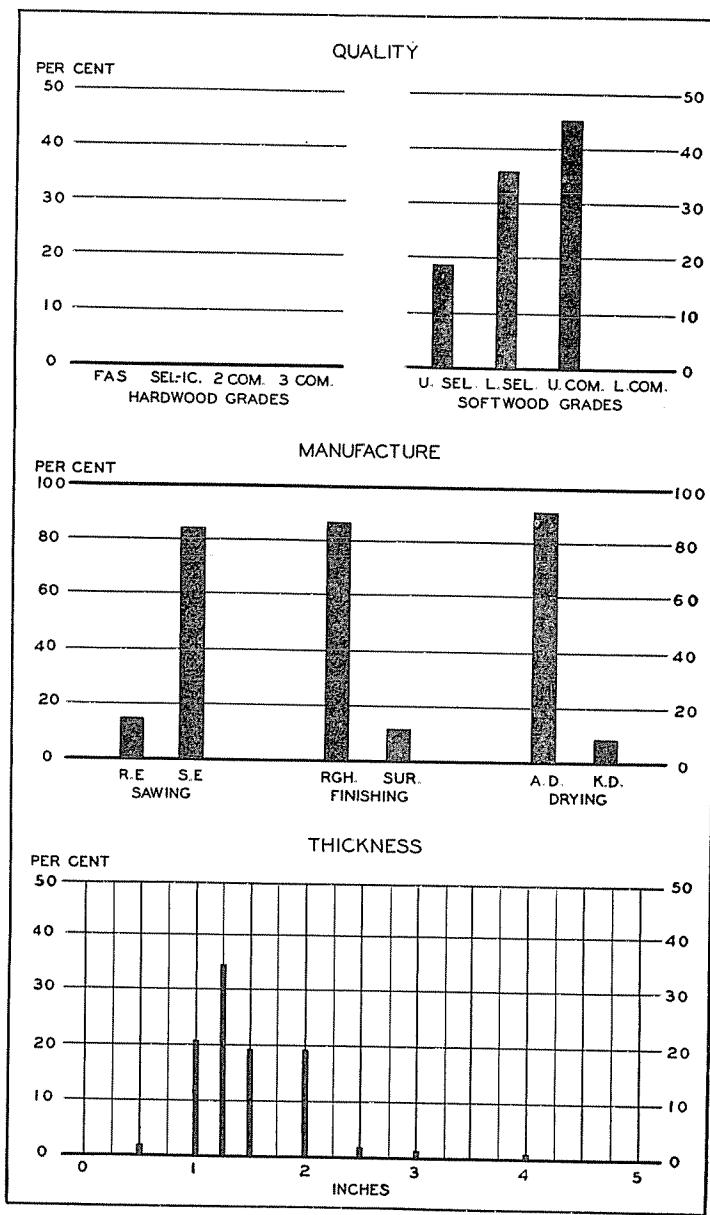
SASH, DOORS, AND BLINDS

THE 5,233 thousand board feet of lumber used for sash, doors, and blinds include only stock manufactured in this state. It does not include the large amount of stock manufactured elsewhere and merely assembled in Massachusetts.

Western yellow pine, furnishing 65 per cent, is the most important wood used. Species used to a lesser degree are eastern white pine, North Carolina pine and spruce. Grades of No. 2 barn and better of native pine are used. Western operators supply lumber in shop grades having a large per cent of clear cutting, and large quantities of small dimensions. This materially reduces waste and labor costs compared to that of working native pine.

Manufacturers prefer eastern white pine if they could get it in suitable sizes and grades. They find it works better and is more durable than the western pine. However, native operators cannot hope to furnish larger quantities of pine for this industry if they do not improve their present forms of manufacture and grading.

Cellar frames and frames for cheap construction allow a few tight knots. In some instances this is supplied from native pine; in others from the poorer shop grades of western pine.



SASH, DOORS, AND BLINDS

SASH, DOORS, AND BLINDS¹
(UNIT: THOUSAND BOARD FEET)

Species	Thickness in inches	REGIONAL SOURCES						Total amount	Per cent
		New England	Canada	New York and Penn.	Western	Lake Staates	Southern		
Cal. white pine W. yellow pine Pondosa pine	1-2½	..	..	3,410	..	..	..	3,410	65.2
E. white pine	1-2	860	..	..	..	..	..	860	16.4
W. white pine	1-2	..	..	540	..	..	..	540	10.3
N. C. pine	½-4	..	..	..	..	373	..	373	7.1
Spruce	1-1½	..	50	..	..	..	..	*50	1.0
Totals	..	860	50	..	3,950	..	373	..	5,233
Per cent	..	16.4	1.0	..	75.5	..	7.1	..	100.0

¹ Not including stock manufactured in other states and assembled in Massachusetts.

CASKETS¹
(UNIT: THOUSAND BOARD FEET)

Species	Thickness in inches	REGIONAL SOURCE						Total amount	Per cent
		New England	Canada	New York and Penn.	Western	Lake States	Southern		
Chestnut.....	1-1½	201	..	..	..	50	2,990	..	3,191
E. white pine.....	1-1½	435	..	..	..	..	479	..	485
Mixed oak.....	1	..	..	..	..	..	221	..	479
Cypress.....	1-2½	..	..	..	..	..	180	..	9.9
Magnolia.....	1	..	..	..	..	..	100	..	4.6
Whitewood.....	1½-1½	..	..	..	..	..	63	..	3.7
Mahogany.....	1-1½	..	..	..	..	..	..	..	2.1
Red gum.....	1	..	..	..	..	..	54	..	1.3
Redwood.....	1	..	..	..	..	..	40	..	1.1
Yellow birch.....	1-1½	..	..	..	..	..	25	..	.8
Totals.....	..	636	..	..	40	50	4,049	63	4,838
Per cent.....	..	13.2	..	..	.8	1.0	83.7	1.3	..
									100.0

¹ Not including outer cases.

FIXTURES, REFRIGERATORS, AND CABINETS

IN the manufacture of fixtures, refrigerators and cabinets, nearly half the total consumption of 3,818 thousand board feet comes from New England. Products, especially cabinets, are also made by small wood-working shops. Some of these shops, but not all of their output, are included under "General Millwork."

Fifty per cent of the total lumber used goes into the manufacture of store and office fixtures, post office furniture, display cases, etc. These products are made chiefly from mixed oak, yellow birch, whitewood and basswood. Refrigerators, using mostly spruce, eastern white pine, North Carolina pine, and Douglas fir, account for 30 per cent. Cabinets, constituting the remaining 20 per cent, consume chiefly mahogany, black walnut, white birch and Eastern white pine. Large quantities of mahogany and black walnut are used for radio cabinets. Common and better grades of square-edge lumber are required.

The supply of raw material for this industry, due to its specialized and varying requirements, is furnished from local yards. Most manufacturers have limited storage facilities and prefer to buy the kind, quantity and type of lumber as they need it.

FIXTURES, REFRIGERATORS, AND CABINETS
(UNIT: THOUSAND BOARD FEET)

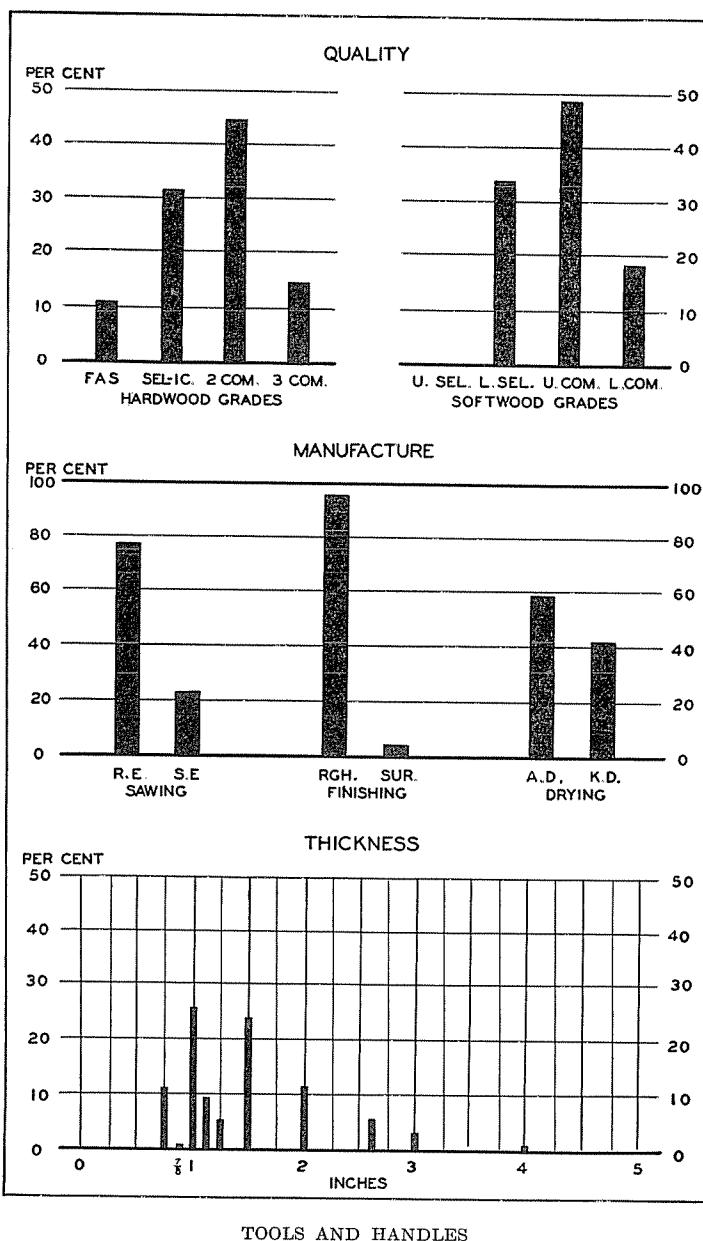
Species	Thickness in inches	REGIONAL SOURCE						Mexico Misc.	Total amount	Per cent
		New England	Canada	New York and Penn.	Western	Lake States	Southern			
E. white pine	1-4	1,166	"	"	"	25	"	"	1,194	31.2
Mixed oak	5-1	25	"	"	"	"	548	"	573	15.0
Yellow birch	1-2	110	70	249	"	"	"	"	429	11.2
White birch	1-3	312	"	"	"	"	"	"	312	8.2
Whitetewood	5-2	81	"	"	"	"	200	"	281	7.4
Mahogany	5-2	"	"	"	"	"	"	"	211	5.5
Basswood	1	60	"	"	"	"	"	"	151	3.9
Hard maple	1-2	32	10	165	"	"	"	"	147	3.9
N. C. pine	1-2	"	"	"	"	"	138	"	138	3.6
Spruce	1-2	30	60	"	40	"	"	"	130	3.4
Red gum	1-2 $\frac{1}{4}$	"	"	"	"	"	113	"	113	3.0
W. white pine }	1-2	"	"	"	48	"	"	"	48	1.2
Idaho white pine }	1-2	"	"	"	41	"	"	"	41	1.1
Douglas fir	1 $\frac{1}{8}$	"	"	"	"	"	"	"	19	.5
Black walnut	1-1 $\frac{3}{4}$	"	"	"	"	"	"	"	15	.4
Chestnut	1-2	"	"	10	"	"	"	"	10	.3
Beech	1 $\frac{1}{8}$	"	"	"	"	"	"	"	6	.1
White ash	5-1	"	"	"	"	"	3	"	3	.1
Cypress	1-2	"	"	"	"	"	"	"	"	"
Totals . . . . .	..	1,816	140	364	129	25	1,133	211	3,818	..
Per cent . . . . .	..	47.6	3.7	9.5	3.4	.6	29.7	5.5	..	100.0

TOOLS AND HANDLES

Such products as handles for saws, planes, hammers, screw drivers, rakes, shovels, clothes brushes, scrub brushes and other similar articles are included under this classification.

White birch, beech, and hard maple are the more common native woods used. California sugar pine from the West, black walnut from the South, and apple from New York and Pennsylvania are being used satisfactorily.

The manufacture of tools and handles requires a number of high and low priced woods with a variety of grade and size. New England supplies nearly 90 per cent of the entire amount of lumber used. The smaller operator successfully supplies the requirements for the cheaper handle, as he is able to work up the native round-edge, low-quality stock in a wide range of thickness and short, uneven lengths. Many of the larger manufacturers, making better handles, prefer to buy square-edge, graded stock.



TOOLS AND HANDLES
(UNIT: THOUSAND BOARD FEET)

Species	Thickness in inches	REGIONAL SOURCE						Total amount	Per cent
		New England	Canada	New York and Penn.	Western	Lake States	Southern	Mexico Misc.	
White birch.....	1-3	772	4	..	..	..	..	..	776
Beech.....	1-4	640	..	..	..	..	..	..	33.6
Hard maple.....	1-3	420	..	..	100	..	..	..	27.7
Cal. sugar pine.....	1-2	..	..	..	..	..	..	..	18.2
Basswood.....	1-3	66	..	..	..	..	..	..	4.3
Black walnut.....	1-2 $\frac{1}{2}$	..	..	..	..	..	..	..	3.1
White ash.....	1-3 $\frac{1}{2}$	70	..	..	..	..	..	..	3.1
Apple.....	1 $\frac{1}{8}$	..	..	60	..	..	..	..	2.6
Spruce.....	3-2 $\frac{1}{2}$	45	..	..	..	..	..	..	1.9
Hemlock.....	1-2	35	..	..	..	..	..	..	1.5
Whitewood.....	1-3	20	..	..	..	..	..	..	.8
Chestnut.....	2-4	2	..	..	..	..	..	..	.1
Totals.....	..	2,070	4	60	100	..	75	..	2,309
Per cent.....	..	89.7	.2	2.6	4.3	..	3.2	..	100.0

FIREARMS AND SPORTING GOODS

SPORTING goods, such as tennis rackets, baseball bats, oars, etc., made chiefly from ash, are supplied from New England. Black walnut used for gun stocks comes from the South. Yellow birch, replacing black walnut to a limited degree, is furnished partially from native stock, with the balance from the Lake states and Canada.

Great care is taken in the manufacture and drying of stock used for athletic goods. The selection of the right grain for a special purpose is very important. In several cases the lumber is left on sticks to air dry for about one year and later run through the kiln. Such precision in drying together with increased handling charges raises the price of the raw material.

**REARMS AND SPORTING GOODS
(UNIT: THOUSAND BOARD FEET)**

LUMBER CONSUMPTION ACCORDING TO SPECIES AND REGIONAL SOURCE
(Unit: THOUSAND BOARD FEET)

Species	Regional Sources					Mexico Misc.	Total Amount	Per cent
	New England	Canada	New York, and Penn.	Western	Lake States			
E. white pine	190,585	2,557	393	441	..	193,976	42.89	
Hard maple	20,186	1,347	5,716	238	208	29,088	6.43	
Spruce	12,352	11,800	..	1,815	1,393	27,496	6.08	
Yellow birch	15,726	7,415	3,014	..	20	26,472	5.85	
N. C. Pine ¹	..	..	..	..	160	1,509	..	
Hemlock	20,028	..	..	..	157	..	..
Mixed oak	9,270	360	105	50	..	24,753	24,753	5.47
White ash	2,882	..	228	1,618	..	..	20,078	4.44
Chestnut	7,128	..	..	1,128	40	7,715	19,068	4.22
Douglas fir	..	..	..	..	..	11,920	16,198	3.58
Beech	9,716	240	730	..	..	..	..	..
White birch	8,351	724	90	..	..	6,799	..	..
Cal. white pine	..	..	..	..	..	..	13,927	5.08
W. yellow pine	..	..	..	..	..	..	13,569	3.00
Ponderosa pine	..	..	..	..	..	..	10,797	2.39
Whitewood	750	..	..	..	..	..	9,165	2.03
Mahogany	..	..	..	..	..	..	..	..
Basswood	2,879	..	..	..	..	..	..	..
W. white pine	..	..	..	..	..	..	..	..
Idaho white pine	..	..	..	..	..	..	..	..
Red gum	..	..	..	..	..	..	4,730	1.05
Cypress	..	..	..	..	..	..	1,417	.31
So. hard pine ²	..	..	..	..	..	..	1,059	.23
Black walnut	20	..	..	..	..	..	..	..
					125	..	..	17

Teak.....	..	..	..	779	..	..	900	900	.20
Cal. sugar pine.....	..	..	..	..	..	..	..	779	.17
Dogwood.....	17	545	..	..	..	765	..	765	.17
Red birch.....	..	..	..	..	..	30	..	592	.13
Cherry.....	320	..	207	..	..	59	..	586	.13
Persimmon.....	..	..	..	10	27	522	..	522	.12
Cedar.....	..	..	..	..	..	20	500	500	.11
Apple.....	263	..	60	..	..	443	..	323	.07
Elm.....	18	..	85	..	..	200	..	303	.07
Magnolia.....	40	..	..	..	..	226	..	266	.06
Tupelo.....	5	..	..	..	..	240	..	245	.05
Hickory.....	35	..	..	..	..	150	..	185	.04
W. red cedar.....	..	..	..	..	..	..	..	90	.02
Redwood.....	..	..	..	..	..	..	..	71	.02
English oak.....	..	..	..	..	..	..	..	30	.02
Spanish cedar.....	..	..	..	..	..	..	..	12	.01
Butternut.....	..	..	..	..	..	..	..	9	.01
Sycamore.....	..	..	..	..	..	..	..	2	.01
Totals.....	300,571	24,988	10,684	34,560	2,211	72,901	6,359	452,274	100.00
Per cents.....	66.46	5.52	2.36	7.64	.49	16.12	1.41	..	..

¹ N. C. Pine includes finish and small dimension.² So. hard pine includes large dimension and structural timbers.

TOTAL LUMBER CONSUMPTION ACCORDING TO INDUSTRY¹

Industry	Total Volume (Thousand board feet)	Per cent
Boxes and Shooks	191,451	42.3
Chairs	37,671	8.3
Builders' Finish and Stair Work	33,784	7.5
Crating	20,494	4.5
Wagon and Automobile Bodies	18,537	4.1
Baskets, Cooperage, and Tanks	16,986	3.8
Car and Machine Construction	15,691	3.5
Spools, Bobbins, and Shuttles	14,908	3.3
General Millwork	13,822	3.1
Furniture	12,533	2.8
Musical Instruments	12,186	2.7
Toys	10,892	2.4
Miscellaneous	8,326	1.8
Lasts and Wooden Heels	8,143	1.8
Boats	7,186	1.6
Wood Specialties and Novelties	6,855	1.5
Textile Machinery	5,523	1.2
Sash, Doors, and Blinds	5,233	1.2
Caskets	4,838	1.1
Fixtures, Refrigerators, and Cabinets	3,818	.8
Tools and Handles	2,309	.5
Firearms and Sporting Goods	1,088	.2
Total	452,274	100.0

¹ Not including distribution by retail lumber dealers.

CLASSIFIED DIRECTORY OF CONSUMERS

(Retail dealers not included)

Industries are arranged in order of their importance (volume of consumption). Consumers are alphabetically arranged under industries. The addresses are those of the factories rather than of the main offices. The kinds of lumber following the consumer's name and address are arranged in order of importance.

Information was refused the interviewer in only a few cases. The absence of kinds of lumber after the name of the consumer is due chiefly to the failure of the interviewer to obtain the necessary information in a complete form.

LIST OF ABBREVIATIONS FOR KINDS OF LUMBER

Apl.....apple	N. C. pine...North Carolina pine
Bas.....basswood	Per.....persimmon
Be.....beech	R. bir.....red birch
B. wal.....black walnut	R. gum.... red gum
But.....butternut	Rwd.....redwood
Cal. s. pine..California sugar pine	So. h. pine...Southern hard pine
Ced.....cedar	Sp. ced.....Spanish cedar
Ches.....chestnut	Spr.....spruce
Chr.....cherry	Syc.....sycamore
Cyp.....cypress	Teak.....teak
Dgwd.....dogwood	Tup.....tupelo
D. fir.....Douglas fir	W. rd. ced...Western red cedar
E. w. pine...Eastern white pine	W. w. pine... { Western white pine Idaho white pine
Eg. oak.....English oak	W. y. pine... { Western yellow pine California white pine
Elm.....elm	pondosa pine
H. mpl.....hard maple	W. ash.....white ash
Hem.....hemlock	W. bir. ....white birch
Hic.....hickory	Whtwd.....whitewood
Mag.....magnolia	Y. bir.....yellow birch
Mah.....mahogany	
Mx. oak....mixed oak	

BOXES AND SHOOKS

ACUSHNET SAW MILLS Co., Acushnet. E. w. pine.
ALLEN, OTIS & SON Co., Lowell. E. w. pine, Hem., Spr.
ASSOCIATED GROWERS OF STERLING APPLES, Sterling. Ches., E. w. pine.
ATWOOD BROTHERS, INC., Whitman. E. w. pine.
ATWOOD & McMANUS BOX Co., Chelsea. E. w. pine., Spr.
ATWOOD, L. O., Middleboro. E. w. pine.
BAKER Box Co., Worcester. E. w. pine.
BEAMAN & MARVELL, Leverett. E. w. pine.

BILLINGS, CHAS. J., & SONS, Montague. E. w. pine.
 BOGERT & HOPPER, INC., Orange. E. w. pine, Spr., Bas.
 BONNEY, E. L., Box Co., Brockton. E. w. pine.
 BROOKS, A. L., Co., Lowell. Hem.
 CHAFFEE BROTHERS Co., Oxford. E. w. pine, Ches., Hem., Spr.
 CHAMPLIN & HOBBS Box Co., Medford. E. w. pine, Spr., Hem.
 CHENEY, FRANK P., Lowell. E. w. pine, Hem.
 CLEMENCE LUMBER Co., Southbridge. *See* General Millwork.
 COOK, O. S., & SONS Co., Fitchburg. Hem., Spr., E. w. pine.
 DAVIS & SARGENT LUMBER Co., Lowell. Hem., E. w. pine.
 DIBBLE, S. B., LUMBER Co., North Adams. W. w. pine, Y. bir., H. mpl.,
 Mx. oak.
 EDES MANUFACTURING Co., Plymouth. E. w. pine.
 FLANSBURG, W. C., Dalton. W. w. pine, E. w. pine.
 FLINT, BENJAMIN, East Mansfield. E. w. pine.
 FOSTER, JOHN Co., South Hanson. E. w. pine.
 GALE BROTHERS, Tully. E. w. pine, Hem., Whtwd.
 GENERAL BOX Co., Winchendon. E. w. pine, Whtwd., Be., Y. bir., Mah.
 GILCHRIST, J. L., Lunenberg. E. w. pine, Ches.
 GOODRIDGE Box Co., Westminster. E. w. pine, Spr.
 HARDY, WILLARD & SON, Georgetown.
 HAYES, C. H., CORP., Haverhill. E. w. pine, Hem., Spr.
 HOAGUE-SPRAGUE CORP., Lynn. E. w. pine.
 HOLYOKE Box & LUMBER Co., Holyoke. E. w. pine, Spr.
 HOPKINS, D. D., South Lee. E. w. pine, Mx. oak, Ches., Whtwd.
 IPSWICH MILL, INC., Ipswich. E. w. pine, Hem., Spr.
 IRVING Box Co., Salem. E. w. pine, Hem., Spr.
 ISLAND Box Co., Haverhill. E. w. pine.
 LANCASTER MILLS, CLINTON. E. w. pine, Ches.
 LAWRENCE LUMBER Co., Lawrence. E. w. pine.
 LYNDE, CLEVELAND, Bernardston. E. w. pine, Ches.
 MASSACHUSETTS Box Co., Lawrence. E. w. pine.
 MASSACHUSETTS Box Co., Brockton. E. w. pine.
 MEDWAY Box Co., Medway. E. w. pine.
 MERCHANTS Box & COOPERAGE Co., Gloucester. E. w. pine, Spr., Hem.
 NEW ENGLAND Box Co., Baldwinsville. E. w. pine.
 NEW ENGLAND Box Co., West Springfield. E. w. pine, Hem., Spr., Bas.,
 Mah., Ches.
 PAGE Box Co., Cambridgeport. E. w. pine, Mah.
 PECK Box Co., Westfield. E. w. pine, Hem.
 PHILLIPS, BATES & Co., West Hanover. E. w. pine.
 PROCTOR, WILLIAM P., Co., North Chelmsford. E. w. pine, Hem., Spr.,
 N. C. pine.
 PURRINGTON & GILCHRIST, Griswoldville. Hem., E. w. pine, Spr., Whtwd.,
 Ches.
 PUTNAM BROTHERS, Oxford. E. w. pine.
 ROGERS, JOHN, Raynham Center. E. w. pine.

ROPER BOX & LUMBER Co., Princeton Depot. E. w. pine, Ches., Mx. oak,
 Y. bir., Hem., Spr., H. mpl., Be.
 SAWYER, C. J., HUDSON. E. w. pine.
 SMITH, CHAS. L., Westminster. E. w. pine, Hem., Mx. oak., Be.
 SPRAGUE, A. F., Dighton.
 SPRAGUE & REYNOLDS, Norton. E. w. pine.
 STANTON, H. E., Huntington. Hem., Ches.
 STEVENS, GEORGE A., LUMBER Co., Great Barrington. E. w. pine.
 STONE, R. B. & Co., Spencer. *See Builders' Finish and Stair Work.*
 SWIFT RIVER BOX Co., North Dana. E. w. pine, Hem.
 SYMONDS, O. P. & SONS, Reading. E. w. pine.
 WALKER, EUGENE G., Southbridge. E. w. pine, Hem., Whtwd.
 WALLIS, W. R., East Douglas. E. w. pine.
 WARE LUMBER Co., Ware. E. w. pine, Spr., Hem., N. C. pine, W. w. pine.
 WEBSTER BOX Co., West Hatfield. E. w. pine, Spr.
 WILLIAMS & BRIDGES Co., Worcester. E. w. pine.
 WILLIAMS & BRIDGES Co., Framingham. E. w. pine.
 WILLIAMS, EDWIN, Raynham Center. E. w. pine.

CHAIRS

ALLEN CHAIR Co., Concord Junction. Mx. oak, Ches.
 AMERICAN BASSINETT Co., Gardner.
 ATHOL TABLE MFG. Co., South Athol. E. w. pine, Bas., H. mpl., Whtwd.,
 Y. bir.
 BENT, S., & BROS., INC., Gardner. Ches., E. w. pine, H. mpl., Y. bir.,
 Be., Bas.
 BROWN CHAIR Co., Gardner. Ches., H. mpl., Be., Y. bir., Bas., E. w. pine,
 Whtwd.
 BUCK, E. R., CHAIR Co., Sterling. Y. bir., Ches., Mx. oak.
 BUCK, T., and E. R., West Sterling. Ches., E. w. pine, Mx. oak, Apl., Chr.
 COFFIN CHAIR Co., Gardner. R. gum, Y. bir., Spr.
 CONCORD COLONIAL FURNITURE Co., Ashland. Be., Y. bir., Mx. oak, Spr.
 COOK, C. A. Co., Cambridge. Mx. oak, Y. bir., Mah.
 CONANT BALL Co., Gardner. Y. bir., H. mpl., Mx. oak, Mah., Be., B. wal.
 CURTIS CHAIR Co., Ashburnham. Be., Tup.
 DERBY, P., & Co., INC., Gardner. W. bir., Mx. oak, Be., Y. bir., H. mpl.
 DICKERMAN, J. A., Co., Gardner. Y. bir., Bas., E. w. pine.
 DUNN, JOHN A., Co., Gardner. Y. bir., R. gum, Ches., Be., H. mpl., Spr.,
 W. y. pine.
 EASTERN CHAIR Co., South Gardner. Y. bir., H. mpl., Whtwd., Mx. oak,
 Be., Spr.
 GREENWOOD ASSOCIATES, Gardner. Y. bir., Be., H. mpl.
 HEYWOOD-WAKEFIELD Co., Erving. Ches., Be., Mx. oak, Y. bir., Elm,
 Bas.
 HEYWOOD-WAKEFIELD Co., Gardner. Mx. oak, Y. bir., Spr., H. mpl., Be.,
 Ches., Bas., R. gum, W. ash, Chr., Elm, Hic.

HEYWOOD-WAKEFIELD Co., Wakefield. Y. bir., H. impl., Be., W. ash, Spr.
 HOWE, SPAULDING, Co., Gardner. R. gum, Mx. oak.
 KELLY BROTHERS, Gardner.
 LIBERTY CRUTCH & NOVELTY Co., Ashburnham. W. bir., Be., Spr.
 LOMBARD, F. W., Co., South Ashburnham. Y. bir., Ches., Be., Mx. oak.
 MAHONEY, E. H., CHAIR Co., Gardner. H. mpl., Y. bir., Be.
 NICHOLS & STONE Co., Gardner. Y. bir., Be., H. mpl., Mx. oak, W. ash.
 PEELER, DURWARD A., Ashburnham. Be., H. mpl., Ches., Mx. oak, Tup.
 PIERCE, A. F., Littleville. Be., H. mpl., Y. bir., W. ash, Mx. oak.
 PIERCE, S. K., & SONS, Gardner. H. mpl., Mx. oak, R. gum, Y. bir., Be.
 PLANET MANUFACTURING Co., Westfield. *See Furniture.*
 REED & FIBRE CORP., Gardner. Spr.
 SMITH DAY & Co., Baldwinsville. R. gum, Y. bir., Mx. oak, B. wal.
 TEMPLE STUART Co., Baldwinsville. Ches., Y. bir., R. gum, H. mpl., Be.
 THOMPSON, E. L., CHAIR CORP., Baldwinsville. Mx. oak, H. mpl., Y. bir., Be.
 WAITE CHAIR Co., Baldwinsville. Be., Mx. oak, H. mpl., Y. bir.
 WHITE MANUFACTURING Co., South Ashburnham. Y. bir., Whtd.
 WHITNEY, ALFRED H., South Ashburnham. Y. bir., Mx. oak, Be., H. mpl.
 WHITNEY REED CORP., Leominster. E. w. pine, Mx. oak, Be., H. mpl.,
 W. bir, W. ash.
 WHITNEY, W. F., Co., South Ashburnham. Y. bir., H. mpl., Mx. oak,
 R. gum, Ches., Be., Chr.
 WINCHENDON CHAIR Co., Winchendon. Y. bir., W. bir., H. mpl., Be.
 WORRICK, F. C., Co., Tully. E. w. pine, H. mpl., Y. bir., Be., Ches.

BUILDERS' FINISH AND STAIR WORK

AHLSTRON & ENHOLM Co., Neponset. N. C. pine, R. gum, Mx. oak, E. w. pine.
 ALCBANY MILLING Co., Boston, N. C. pine, Mx. oak, Whtd., R. gum, Mah.
 ALEXANDER, E. H., Everett. N. C. pine, W. y. pine, Mx. oak, Whtd.,
 Cyp., Mah.
 ARMSTRON BUILDING FINISH Co., Chelsea. N. C. pine, Mx. oak, R. gum,
 Cyp., W. y. pine, Mah., Spr.
 BISHOP, J. W., Co., Worcester. W. w. pine, R. bir., Mx. oak, N. C. pine,
 Cyp., E. w. pine, Bas., Whtd.
 BOYER, J. A., Co., West Newton. N. C. pine, E. w. pine.
 BRETT-RAYNER Co., Boston. N. C. pine, R. gum, E. w. pine, Mx. oak,
 W. ash, Cal. s. pine, Mah., Whtd.
 BROOKS, WILLIAM T., Medford. N. C. pine, Mx. oak, R. gum.
 BURNHAM BROTHERS, Newton Center. N. C. pine, W. y. pine, Spr.,
 D. fir., R. gum, Whtd., E. w. pine, Mx. oak.
 CAMPBELLO WOODWORKING Co., Campbello. N. C. pine, Whtd., E. w.
 pine, Mx. oak, R. gum.
 CARDER WOODWORKING Co., Allston. N. C. pine, R. gum, Mx. oak,
 Cyp., E. w. pine, Y. bir., W. ash, W. y. pine, Mah., H. mpl., Ches.,
 Ced., Chr.

- CARLSON, EDWIN, Worcester. N. C. pine, E. w. pine, W. y. pine.
- CHAPMAN, HAZEN B., Boston. N. C. pine, Whtwd., Mx. oak, R. gum.
- CLIFTONDALE WOODWORKING Co., Saugus. N. C. pine, R. gum, E. w. pine,
Mx. oak, W. w. pine.
- CROWLEY, WILLIAM P., & SONS, Taunton. N. C. pine, Mx. oak, Whtwd.,
E. w. pine.
- DAY & Co., Boston. Mx. oak, N. C. pine, Whtwd., E. w. pine, Y. bir.,
Mah., B. wal., W. ash, W. y. pine, Cal. s. pine, H. mpl.
- DEXTER LUMBER Co., Fall River. N. C. pine, W. y. pine, Cyp., D. fir.
- EASTERN BUILDING FINISH Co., Roxbury. N. C. pine, W. y. pine, E. w.
pine, Mx. oak, R. gum, Y. bir., H. mpl., Mah.
- FEDERAL BUILDING FINISHING Co., East Boston. N. C. pine, W. w. pine,
E. w. pine.
- FINBERG, DANIEL & SON, Boston. N. C. pine, Mx. oak, R. gum.
- FULLER THURBER Co., Boston. Mah.
- GARNEAU, JOSEPH, Gardner.
- GRAHAM & CAMERON, East Boston. E. w. pine, N. C. pine, W. w. pine,
R. gum.
- GREENWOOD SHEPHERDSON Co., Beverly. E. w. pine, N. C. pine, Cyp.,
Mx. oak, R. gum, Whtwd., Y. bir.
- GRIFFITH KEIVER & Co., Allston. N. C. pine, Mx. oak, Whtwd., R. gum,
B. wal., W. y. pine, E. w. pine.
- HAMPDEN LUMBER Co., Springfield. *See* Sash, Doors, and Blinds.
- HATCH & BARNES Co., Worcester. N. C. pine, Y. bir., W. y. pine, Cyp.,
Mx. oak, Whtwd.
- HOLMES, CHAS. W., Lowell. N. C. pine, Whtwd., R. gum, Mx. oak, Y. bir.
- HOUSING COMPANY, Waverly. N. C. pine, Mx. oak, E. w. pine, Cyp.,
Whtwd., Y. bir.
- INTERIOR BUILDING FINISH Co., Chelsea. R. gum, Mx. oak, Whtwd.,
W. ash, N. C. pine, Cal. s. pine.
- LAJNG BROTHERS Co., Braintree. W. y. pine, R. gum, Mx. oak, Whtwd.,
E. w. pine, Mah., W. ash, Y. bir., H. mpl.; Veneer, D. fir.
- LEEMING, ALFRED H., Fall River. Spr., D. fir, E. w. pine, W. y. pine.
- LUCAS, M. FRANK, West Newton. N. C. pine, R. gum, Whtwd., Mah.,
E. w. pine, Mx. oak, Y. bir.
- MARSHALL, E. R., Chelmsford. N. C. pine, Whtwd., R. gum, E. w. pine.
- McDUFFEE, W. O., Co., Boston. N. C. pine, Mah., Mx. oak, R. gum,
W. ash, Chr., E. w. pine.
- MILES, WILLIAM C., Co., Medford. E. w. pine, R. gum, N. C. pine, W. w.
Whtwd., Mx. oak, Y. bir.
- NORFOLK WOODWORKING Co., Braintree. N. C. pine, R. gum, Mx. oak,
Y. bir.
- O'CONNELL & LEE MFG. Co., Somerville. N. C. pine, Cyp., W. y. pine,
Mx. oak, R. gum, Whtwd., B. wal., Mah., W. ash.
- OLESON, CARL J. & SONS, Lawrence. N. C. pine, E. w. pine, W. w. pine,
Mx. oak, Whtwd., Y. bir., H. mpl.
- PAIGE, D. F., Co., Boston. N. C. pine, R. gum, Whtwd., Mah., B. wal.

- PAUL, JOSEPH F., Co., Boston. Mx. oak, H. mpl., N. C. pine, Y. bir., R. gum, W. w. pine, Mah., Cyp., Whtwd., Rwd., W. ash.
- PITMAN & BROWN Co., Salem. N. C. pine, D. fir, W. y. pine, E. w. pine, R. gum, Whtwd., Mx. oak.
- PUTNAM, HENRY J., Webster. Cyp., N. C. pine, E. w. pine.
- REMBY, JOSHUA & Co., Everett. N. C. pine, R. gum, Mx. oak, Y. bir., Cyp., E. w. pine, Whtwd.
- ROSS, W. F., & Co., East Cambridge. *See Furniture.*
- SMITH, CHAS. E., Hyannis.
- SMITH, M. K. CORP., Worcester. N. C. pine, E. w. pine, W. y. pine, Cyp., Mx. oak, Y. bir.
- STONE, R. B., & Co., Spencer. E. w. pine, N. C. pine.
- STRANGMAN MFG. Co., Newtonville. N. C. pine, Y. bir., Cyp., Mx. oak, Whtwd., E. w. pine, Ches., H. mpl.
- SWEEZEEY, A. B., Malden.
- THORPE, THOMAS W., New Bedford. Bas., Cyp., N. C. pine, W. w. pine, Mx. oak, Rwd., Mah., Y. bir., H. mpl.
- VAIL BROS., & MANGER CORP., Arlington. N. C. pine, R. gum, Mx. oak, W. y. pine.
- WILLIAMS, A. G. & Co., Taunton. N. C. pine, Cyp., E. w. pine, Whtwd., Mx. oak, H. mpl.

CRATING

The following list of consumers of crating accounts for approximately 25% of the total amount used in the state. In this report the consumption of crating is limited very largely to that used in the wood-using industries, as distinguished from metal-using, etc., industries whose only consumption of wood is for crating, mill repair, etc.

- AMERICAN SAW & MFG. Co., Springfield. E. w. pine, Spr.
- BAUSCH MACHINE TOOL Co., Springfield. E. w. pine, Spr., Ced., Mah.
- BEMIS & CALL, Springfield. Hem., N. C. pine, R. gum.
- BLAIR MANUFACTURING Co., Brightwood. H. mpl., W. ash.
- BOSTON BURIAL CASE Co., West Somerville. *See Caskets.*
- CHAPMAN VALVE MFG. Co., Indian Orchard. Spr., N. C. pine, W. w. pine, Mah., Ches.
- CHENEY BIGELOW WIRE WORKS, Springfield. D. fir, Rwd., Spr., Ced.
- CHILDREN'S VEHICLE Co., East Templeton. *See Miscellaneous.*
- COFFIN CHAIR Co., Gardner. *See Chairs.*
- CONCORD COLONIAL FUURNITURE Co., Ashland. *See Chairs.*
- CORCORAN, P., & SONS, INC., South Boston. E. w. pine.
- DUNN, JOHN A., Co., Gardner. *See Chairs.*
- FIBERLOID COMPANY, Indian Orchard. Spr., W. w. pine.
- FIELD, CHAS. R., MFG. Co., Greenfield. *See Miscellaneous.*
- FISK RUBBER Co., Chicopee Falls. E. w. pine, W. ash, Hem., Mx. oak, Bas., H. mpl.
- FLORENCE CASKET Co., Florence. *See Caskets.*
- GILBERT & BARKER, West Springfield. Spr.
- GILMORE, K. M., & Co., Somerville. E. w. pine.
- HEYWOOD-WAKEFIELD Co., Gardner. *See Chairs.*

- HEYWOOD-WAKEFIELD Co., Wakefield. *See* Chairs.
- HOLYOKE CARD & PAPER Co., Brightwood. E. w. pine, Spr.
- INDIAN MOTOR CYCLE Co., Springfield. E. w. pine, Hem.
- IVER JOHNSON ARM & CYCLE WORKS, Fitchburg. *See* Firearms and Sporting Goods.
- LAMB KNITTING MACHINERY Co., Chicopee Falls. E. w. pine, Ches., Spr.
- LIBRARY BUREAU, Cambridge. Spr.
- MIDDLESEX CASKET Co., Webster. *See* Caskets.
- MOORE DROP FORGING Co., Brightwood. W. w. pine.
- NATIONAL CASKET Co., East Cambridge. *See* Caskets.
- NATIONAL EQUIPMENT Co., Springfield. *See* Miscellaneous.
- PACKAGE MACHINERY Co., Brightwood. Spr.
- POOLE PIANO COMPANY, Cambridge. E. w. pine, Spr.
- POTTER KNITTING Co., Springfield. E. w. pine, Hem.
- RAMSDELL, L. B., Co., Gardner. *See* Toys.
- SIEBERT, O. W., Co., Gardner. *See* Miscellaneous.
- SIMONDS SAW & STEEL Co., Fitchburg. *See* Tools and Handles.
- SMITH, H. B., Co., Westfield. Spr.
- SMITH & PARKER, INC., Foxboro. *See* Firearms and Sporting Goods.
- SMITH & WESSON, Springfield. *See* Firearms and Sporting Goods.
- STANLEY MOTOR CARRIAGE Co., Newton. Spr.
- UNITED MANUFACTURING Co., Brightwood. W. w. pine.
- WESCOTT, A. A., & SONS Co., Hopedale. E. w. pine.
- WHITNEY, F. A., CARRIAGE Co., Leominster. *See* Miscellaneous.

WAGON AND AUTOMOBILE BODIES

- BAIRD, WILLIAM F., Co., Winchester. Mx. oak.
- BIDDLE & SMART Co., Amesbury. W. ash, Whtwd., H. mpl., Y. bir..
Mx. oak.
- BLACKEY BROTHERS, Campbello. Mx. oak, Whtwd., W. ash, N. C. pine,
Spr.
- BOSTON BODY Co., Boston. Mx. oak, W. ash, Whtwd.
- BROWNELL & BURT, INC., Taunton. W. ash, H. mpl., Mx. oak, Y. bir.
- CLAYTON, M. J., Haverhill. W. ash.
- DUNN, M. J., & Co., Springfield. Mx. oak, N. C. pine, Whtwd.
- ESSEX TRUCK BODY CORP., Lynn. Mx. oak, W. ash, Whtwd.
- FARNHAM NELSON Co., Roslindale. W. ash.
- FLANAGAN, T. F., Sterling. Mx. oak, W. ash, E. w. pine.
- GILLETT, E. A., & SONS, Everett. Hic., Mx. oak, W. ash.
- GREEN BROTHERS & Co., Roxbury. Mx. oak, Whtwd., N. C. pine, W. ash.
- GROTHE, JOHN J., Co., Woburn. Mx. oak, W. ash, E. w. pine, Rwd.,
Veneer, Whtwd.
- HARRISON, ROBERT, Co., South Boston. Mx. oak, W. ash, Whtwd., Spr.,
H. mpl.
- HUME BODY CORP., Boston, W. ash, Whtwd.
- JUDKINS, J. B., Co., Merrimac. W. ash.

KEEN, W. B., & SON, Malden. Mx. oak, W. ash, H. mpl.

KILEY, JAMES A., Somerville. W. ash, Mx. oak, Whtwd.

KILEY, P. J., Somerville. Mx. oak, Whtwd.

KRESS, O. F., & SON, Lawrence. Mx. oak, Whtwd., W. ash.

LACEY, W. F., & SONS, Medford. Mx. oak, N. C. pine, Whtwd.

LUXOR CAB MFG. Co., Framingham. W. ash, Y. bir.

LYNCH BROS. CARRIAGE CO., Chelsea. W. ash, Mx. oak, Whtwd.

MCNEAR, GEORGE W., BROOKLINE. W. ash, Whtwd., B. wal., Mah.

MERRIMAC BODY Co., Merrimac. W. ash.

MORSE BODY Co., West Watertown. Mx. oak, W. ash.

NEW ENGLAND TRUCK Co., Fitchburg. Mx. oak, W. ash.

NORTH READING WAGON Co., North Reading. Mx. oak, N. C. pine, Whtwd., W. ash.

O'BRIEN, T. R., Springfield. N. C. pine, Bas., Whtwd., Mx. oak, W. ash, Be., H. mpl., Y. bir.

O'CONNOR, JAMES, & SON, Somerville. W. ash, Mx. oak, Whtwd.

ORCUTT WAGON WORKS, Northampton. Mx. oak, W. ash, Whtwd.

PAIGE MOTOR BODIES, Fitchburg. Mx. oak, E. w. pine.

PLANTE, ALFRED, Fall River. Mx. oak, N. C. pine.

SCAMMELL & SONS, Quincy. Mx. oak, N. C. pine, Whtwd.

SMITH CARRIAGE Co., Springfield. Mx. oak, W. ash, Whtwd., N. C. pine.

SPRINGFIELD BODY CORP., West Springfield. W. w. pine, E. w. pine, W. ash.

STONE, W. P., Co., South Boston. Mx. oak, W. ash, Spr., Whtwd.

TEEL, E., & Co., Medford. Mx. oak, W. ash, H. mpl., E. w. pine, N. C. pine, Whtwd.

TURNER, J. E., North Reading. Mx. oak, W. ash, Whtwd., N. C. pine.

VAUGHN, JAMES A., Lynn. Mx. oak, Whtwd.

WACHUSSETT MOTORS, Fitchburg. Mx. oak, W. ash.

WALKER BODY Co., Amesbury. W. ash, Whtwd.

WELCH, DWYER & GRADY, Somerville. W. ash, Mx. oak, Whtwd.

WOBURN BODY Co., East Woburn. W. ash, Mx. oak.

BASKETS, COOPERAGE, AND TANKS

ALASKA FREEZER Co., Winchendon. Spr., Be.

BACHELDER, A., Co., Lowell. E. w. pine, D. fir, Mah.

BALLOU, M. E., ESTATE, Becket. W. ash, Mx. oak, Bas.

BOLDUC, JOSEPH, Colrain. W. bir., Spr., Whtwd., Be., H. mpl., Y. bir.

BROWN, W., & SON, Winchendon. E. w. pine.

BROWN PACKAGE Co., Winchendon. E. w. pine, D. fir.

DAMON & RICHARDSON, West Townsend. E. w. pine, Ches.

FESSENDEN COMPANIES, INC., Townsend. E. w. pine, D. fir, Y. bir., H. mpl., Mx. oak, Ches., Be.

HALL BROTHERS Co., West Acton. E. w. pine.

HERZIG, FRANK, Colrain. W. bir., Whtwd., E. w. pine, Bas., H. mpl., But., Ches.

LILLY, EARL W., Buckland. Hem., Whtwd.
 MURDOCK, E., Co., Winchendon. E. w. pine, Be., H. mpl., Y. bir.
 NEW ENGLAND TANK & TOWER Co., Everett. Cyp., N. C. pine, D. fir,
 Mx. oak.
 WILDER, ALBERT W., Ashby. Y. bir., H. mpl., Mx. oak.
 WILLIAMS MANUFACTURING Co., Northampton. Mx. oak, W. ash.

CAR AND MACHINE CONSTRUCTION

BAUSCH MACHINE TOOL Co., Springfield. *See* Crating.
 BAY STATE ELEVATOR Co., Springfield. H. mpl., E. w. pine, Spr.
 BIRCH BROTHERS, Somerville. Bas., H. mpl., Spr.
 BRADLEY OSGOOD CAR Co., Worcester. So. h. pine, Mah., Whtwd.,
 Y. bir., Be., W. ash.
 CHAPMAN VALVE MFG. Co., Indian Orchard. *See* Crating.
 FORSYTH, WILLIAM, & SONS Co., Lynn. H. mpl., E. w. pine.
 KEITH CAR & MFG. Co., Sagamore. D. fir, Mx. oak.
 NATIONAL SCALE CORP., Chicopee. Y. bir., Be., H. mpl., N. C. pine, Spr.
 LEWIS-SHEPHERD Co., Watertown. Be., H. mpl., Y. bir.
 PAYNE, F. S., Co., Cambridge. E. w. pine, N. C. pine, Spr.
 STORM DROP FORGING Co., East Springfield. H. mpl., Hem.
 TESSIER BROTHERS, Northampton. Mah., Mx. oak; Veneers: Whtwd.,
 Y. bir.
 THE WARREN COMPANY, Chicopee Falls. H. mpl., Y. bir., W. ash, Be.
 WASON MANUFACTURING Co., Brightwood. Mx. oak, N. C. pine, D. fir,
 Chr., W. rd. ced., Y. bir., Mah., Whtwd., Ches., W. ash.
 WORCESTER LUNCH CAR Co., Worcester. Mx. oak, N. C. pine, So. h. pine,
 E. w. pine.

SPOOLS, BOBBINS, AND SHUTTLES

BROWN, DAVID Co., Lawrence. Be., Y. bir., H. mpl., Per., Dgwd., Bas.
 COURTNEY, DANA S., Co., Chicopee. Y. bir., H. mpl., Be., Bas.
 DRAPER CORPORATION, Hopedale. *See* Textile Machinery.
 LITCHFIELD SHUTTLE Co., Southbridge. Per., Dgwd.
 LOWELL SHUTTLE Co., Lowell. H. mpl., Be., Y. bir., Dgwd., Per.
 NEW BEDFORD SHUTTLE Co., New Bedford. Dgwd., Per.
 PARKER, WALTER L., Co., Lowell. H. mpl., Be., Y. bir.
 PARKS, M. H. & Co., Winchendon. Y. bir., Bas., E. w. pine, Whtwd.
 PRATT, ROBERT G., Worcester. H. mpl., W. ash, Spr., Apl., Dgwd.
 U. S. BOBBIN & SHUTTLE Co., Lawrence. H. mpl., Y. bir., Dgwd., Be.,
 Per., W. bir., Bas.
 U. S. BOBBIN & SHUTTLE Co., Lowell. Y. bir., H. mpl., Bas., W. bir.

GENERAL MILLWORK

Separate industries have been made for Builders' Finish and Stair Work; Sash, Doors, and Blinds; and Fixtures, Refrigerators and Cabinets.

ALLEN Co., New Bedford. *See* Textile Machinery.

ATLANTIC SCREEN & WINDOW PRODUCTS Co., Roxbury. W. y. pine.

BAY STATE WOOD WORKING Co., Boston. Mx. oak, N. C. pine, Whwd., Y. bir., Mah.

BENT, W. E., INC., Springfield. D. fir, W. w. pine.

BOOTH & CHALMERS, Charlestown. Mah., Y. bir., H. mpl., R. gum, Mx. oak, Whwd.

BOSTON PARLOR FRAME Co., Boston. Y. bir., Ches.

CHAPMAN, HAZEN B., Boston. *See* Builders' Finish and Stair Work.

CHAPMAN, TYLER Co., Boston. B. wal., Ches., Mah., W. ash, Whwd., Mx. oak, Eg. oak.

CHASE, C. P., LUMBER Co., Springfield. N. C. pine, W. w. pine, Cyp., Mx. oak, Whwd.

CLEMENCE LUMBER Co., Southbridge. E. w. pine, H. mpl., Whwd., N. C. pine, W. w. pine, Ches., Cyp., Mx. oak.

DAVENPORT BROWN Co., Somerville. Whwd., R. gum., N. C. pine, E. w. pine, W. ash, Mx. oak, Y. bir., B. wal., H. mpl., Mah., Ches.

DAYS, WILLIAM J., & Co., South Boston. *See* Sash, Doors, and Blinds.

DILLON, PATRICK J., Pittsfield. N. C. pine, Mx. oak, Whwd.

ESTES, E. B., & SONS WOODWORKING Co., Hancock. W. bir., H. mpl., Whwd., E. w. pine.

FINBERG, DANIEL, & SON, Boston. *See* Builders' Finish and Stair Work.

FREEMAN, CHAS. A., MFG. Co., Weston. W. y. pine.

FULLER, W. A., & Son, Clinton. *See* Sash, Doors, and Blinds.

FULLER, W. A., LUMBER Co., Leominster. N. C. pine, E. w. pine, H. mpl., W. w. pine, Cyp., Mx. oak, Mah.

GRAVES & HEMMES, Great Barrington. *See* Fixtures, Refrigerators, and Cabinets.

HAVEN, GEORGE E., Co., FITCHBURG. E. w. pine, W. bir., W. ash, Ches., Mx. oak.

HOLDEN, H. E., Cushman. *See* Sash, Doors, and Blinds.

LAING BROTHERS Co., Braintree. *See* Builders' Finish and Stair Work.

LEEMING, ALFRED H., Fall River. *See* Builders' Finish and Stair Work.

MARCOULIER BROS., Westfield. E. w. pine, W. w. pine, N. C. pine.

MERRILL, P. W. Co., Revere. E. w. pine, Cal. s. pine.

MILLER BROTHERS, Northampton. Bas., Spr., Mx. oak, Y. bir., Ches.

MORRISON-SKINNER Co., Wakefield. W. y. pine, Cal. s. pine, W. w. pine, E. w. pine.

NIMS, B. D., Springfield. W. w. pine, N. C. pine, Spr.

PECKHAM, H. M., Athol. E. w. pine, N. C. pine, Whwd., R. gum, Mah.

PRATT, W. M., Charlemont. W. ash, Mx. oak, E. w. pine, Cyp.

PURITAN PARLOR FRAME Co., Charlestown. Y. bir., Ches., Mah.

SPRINGFIELD LUMBER Co., East Springfield. N. C. pine, Ches., Spr., W. w. pine.

STACY, LEON H., SHADE & SCREEN Co., Lynn. E. w. pine.
 SUPERIOR PARLOR FRAME Co., Charlestown. Y. bir., Ches.
 TAYLOR & MELLEN, Williamsburg. E. w. pine, N. C. pine, Mx. oak, Ches.
 WARD, Z. A., WOODWORKING Co., Pittsfield. N. C. pine, Mx. oak, Whtwd.,
 W. ash, B. wal., Ches., Mah.
 "WASHBURN," New Bedford. E. w. pine, Whtwd.
 WILLIAMS, A. G., & Co., Taunton. *See* Builders' Finish and Stair Work.
 YOUNG, E. C., Co., Randolph. D. fir, Spr., N. C. pine, W. w. pine, Hem.

FURNITURE

BACON, FRANCIS H., Co., Boston. Mah., Mx. oak, Ches., W. ash, H. mpl.,
 Whtwd., Y. bir.
 BECKWITH BROTHERS, Westfield. Bas., Whtwd., Mx. oak, Y. bir., Chr.,
 Ches., H. mpl.
 BOSTON WOOD PRODUCTS CORP., Chelsea. H. mpl.
 CHAIRTOWN MFG. Co., Gardner. Y. bir., bas., Whtwd.
 CHARAK FURNITURE Co., Boston. Mah., H. mpl., Ches., Y. bir.
 DODGE, C., FURNITURE Co., Manchester. Mah., Whtwd., W. ash,
 E. w. pine.
 DOTEN DUNTON DESK Co., Cambridge. Mah., Ches., Bas., B. wal.,
 Mx. oak, W. ash; Veneers: Mah., Y. bir., B. wal.
 ELY LUMBER Co., Holyoke.
 GARDNER UPHOLSTERED FURNITURE Co., South Gardner. Hem.
 GEM CRIB & CRADLE Co., Gardner. Be., Spr., Bas., Ced., Mag.
 GRANT, A. M., FURNITURE Co., Cambridge. Mah., Spr., Ches.
 HANDY CHAIR Co., Springfield. Y. bir., Mah., Hem.
 HARTSHORN, C. H., Gardner. Spr.
 IMPERIAL UPHOLSTERING Co., Lowell. Y. bir., R. gum, Mx. oak.
 IRVING & CASSON — A. H. DAVENPORT Co., East Cambridge. E. w. pine,
 Mx. oak, Mah., Ches., B. wal., Bas., Be., H. mpl., W. w. pine, W. ash,
 Eg. oak, R. gum, Syc., But., Teak, Spr.
 KAPLAN FURNITURE Co., Cambridge. Mah., Whtwd., Ches., Y. bir.,
 H. mpl.
 KENNEY BROS. & WOLKINS, Baldwinsville. Y. bir.
 MASSACHUSETTS PARLOR FRAME Co., East Cambridge. Y. bir., Ches.
 MAYFLOWER COLONIAL SHOPS, INC., Boston. Mah., H. mpl., Y. bir.,
 Ches., B. wal.; Veneer: Mah.
 MELLISH & BYFIELD MFG. Co., Charlestown. Y. bir., B. wal., Mah.,
 Mx. oak.
 MERRIAM HALL & Co., North Leominster. R. gum, Be., Y. bir.; Ply:
 B. wal., Mah., R. gum.
 MORSE, L., & SON Co., Athol. E. w. pine, Bas., Ches., Y. bir., Whtwd.,
 Be., H. mpl., Hem.
 NEW ENGLAND CABINET MAKING Co., Cambridge. Mah., Y. bir., R.
 gum, H. mpl.
 NEW ENGLAND CABINET MAKING Co., Somerville. Mx. oak, Be., Y. bir.,
 H. mpl., Mah.

NUTTING, WALLACE, Framingham. H. mpl., Mx. oak.
 O'HEARN MFG. Co., Gardner.
 ORPIN DESK Co., Charlestown. Mx. oak, Mah., Be., Y. bir., H. mpl.
 PAINE FURNITURE Co., Boston. Whtwd., R. bir., W. ash, Ches., Mah.,
 B. wal.
 PLANET MANUFACTURING Co., Westfield. Be., Y. bir., H. mpl., E. w. pine.
 POLLAK BROS. FURNITURE Co., Boston. Mah.
 PRATT, AMASA, Co., Lowell.
 ROSS, WILLIAM F., & Co., East Cambridge. Mx. oak, Spr., Whtwd., Mah.,
 B. wal., Y. bir., Chr.
 SHAW FURNITURE Co., East Cambridge. B. wal., Y. bir., Mah., R. gum,
 W. ash; Veneers: Mah., B. wal., Mx. oak, Y. bir.
 THOMAS & Co., Worcester. Mx. oak, Whtwd., E. w. pine, N. C. pine,
 Y. bir., B. wal., R. gum, W. ash, Cyp., Mah.
 UNION PARLOR FURNITURE Co., Boston. Y. bir.
 UNITED PARLOR FURNITURE Co., Chelsea. Y. bir.

MUSICAL INSTRUMENTS

FRAZEE ORGAN Co., Everett. W. y. pine, Whtwd., R. gum, B. wal., Mah.,
 Mx. oak.
 HALLETT & DAVIS PIANO Co., Neponset. Ches., Spr., E. w. pine, H. mpl.,
 Y. bir., Whtwd.
 HAMMOND REED Co., Worcester. Bas., E. w. pine, Spr.
 HOOK & HASTINGS Co., Kendall Green. Cal. s. pine, D. fir, Mx. oak,
 Y. bir., Chr.
 IVERS & POND PIANO Co., Cambridgeport. Ches., Spr., H. mpl., E. w.
 pine, Mah., Whtwd., B. wal.
 JEWETT PIANO Co., Leominster. Whtwd., Spr., H. mpl., Y. bir., Ches.,
 E. w. pine.
 MASON & HAMLIN Co., Boston. W. ash, H. mpl., Spr., E. w. pine, Whtwd.
 MERRIAM A., Co., South Acton. Y. bir.
 RICHARDSON PIANO CASE Co., Leominster. E. w. pine, Ches., Whtwd.,
 H. mpl., Y. bir., R. gum, Spr., B. wal., Mah., Mx. oak.
 SCHWAMB, THEO., Co., Arlington. Ches., E. w. pine, Whtwd., Mah.,
 H. mpl., Spr., Y. bir.
 SIMPLEX PLAYER ACTION Co., Worcester. R. bir., Whtwd., H. mpl.
 SKINNER ORGAN Co., Dorchester. Cal. s. pine, Spr., Whtwd., H. mpl.,
 Mx. oak, B. wal., Mah.
 SKINNER ORGAN Co., Westfield. Cal. s. pine, Spr., Mah., Whtwd., Mx.
 oak, Bas., H. mpl., Be.
 STANDARD ACTION Co., Cambridge. H. mpl., B. wal., Spr., Bas.
 VOSE & SONS PIANO Co., Watertown. H. mpl., B. wal., Ches., Elm, Mah.,
 R. bir., R. gum, Spr., Whtwd.
 WEBER PIANO Co., Worcester. Ches., H. mpl., Mah., Mx. oak, Spr.,
 Y. bir., Elm, Whtwd.
 WELLINGTON PIANO CASE Co., Leominster. Ches., E. w. pine, Whtwd.,
 R. gum, Mah.

TOYS

BARTLETT, W. W., Leominster. Ches., E. w. pine.
 CASS, N. D., Co., ATHOL. E. w. pine, Ches., Y. bir., W. bir., H. mpl.,
 Hem., Be., Whtwd., Mx. oak, W. ash.
 CONVERSE, MORTON E., & SON, Winchendon. E. w. pine, Spr., W. w. pine,
 Ches., Be., Whtwd.
 LOOMIS BROTHERS, Attleboro. E. w. pine, N. C. pine, W. bir., Mah., Ced.,
 H. mpl., W. ash.
 MCKINNON, D. A., Co., Manchester. E. w. pine, Bas.
 MASON & PARKER MFG. Co., Winchendon. W. w. pine, E. w. pine,
 Hem., Spr., H. mpl., Be., W. bir.
 MILBRO MFG. Co., Chelsea. W. bir.
 NOBLE & COOLEY, Granville. *See* Wood Specialties and Novelties.
 RAMSDELL, L. B., Co., Gardner. E. w. pine, H. mpl., Bas., Whtwd., Be.,
 W. bir., Spr.
 TED TOY LERS INC., New Bedford. W. bir., Be., H. mpl., Bas.
 WOOD NOVELTY Co., Leominster. Ches., Mx. oak, E. w. pine, Spr.,
 W. bir., Bas., R. gum.

MISCELLANEOUS

BABY CARRIAGES

CARTER & CAMPBELL, Winchendon. H. mpl., W. ash, Y. bir.
 CHILDREN'S VEHICLE Co., East Templeton. Spr., Be., Y. bir., Bas.
 FIELD, CHARLES R., MFG. Co., Greenfield. Y. bir., H. mpl., W. ash, Bas.,
 Hem., Whtwd.
 SIEBERT, O. W., Co., Gardner. Spr.
 WHITNEY, F. A., CARRIAGE Co., Leominster. Spr., Bas., H. mpl., W. bir.,
 Mx. oak, Whtwd.

CARRIAGE AND AUTOMOBILE WHEELS

ARCHIBALD WHEEL Co., Lawrence. Hic., Mx. oak.
 EAMES, A. M., & Co., Framingham. Mx. oak, Hic.
 HARRIS, CHARLES E., Easthampton. Mx. oak, Hic.

LADDERS

MAXIM MOTOR Co., Middleboro. D. fir, Hic., Mx. oak.
 MOULTON, W. H. C., Co., Somerville. Spr., D. fir, Bas., W. ash.
 YOUNG BROTHERS Co., Worcester. Spr., D. fir, Mx. oak.
 YOUNG, S. O., Co., Springfield. D. fir, Spr., Mx. oak.

MISCELLANEOUS

B R E MFG. Co., Hyde Park (Plumbers' Woodwork). Y. bir., Mx. oak,
 W. bir.
 CAME, J. E., Co., Boston (Pool and Billiard Tables). Ches., Mx. oak,
 N. C. pine, W. ash, Whtwd.

- CHASE TURBINE Co., Orange (Saw Mills). N. C. pine, Hem.
 MURDOCK, E., Co., Winchendon (Laundry Appliances). *See* Baskets,
 Cooperage and Tanks.
 KILLAM, MYRON E., Lynn. (Cutting Boards and Blocks). H. mpl., Bas.
 NEW ENGLAND TRUNK Co., Everett (Trunks). W. w. pine.
 PATTEN BROTHERS, Fall River. (Laundry Machinery). Cyp., N. C. pine,
 Mx. oak, W. ash, Bas., Y. bir., H. mpl.
 SCHEIBE, RALPH R., Somerville. (Mahogany Trays) Mah.; Veneers:
 Mah., Y. bir.

PATTERNS

- BERKSHIRE PATTERN Co., Pittsfield. W. w. pine, Mx. oak, Whtwd., Mah.
 BEMIS, A. L., Worcester. W. w. pine, E. w. pine, H. mpl., Whtwd.,
 Mx. oak.
 COLUMBIA PATTERN & MODEL Co., Springfield. Mah., E. w. pine, H. mpl.
 DIXON, F. W., Cambridge. E. w. pine, Mah.
 HASTINGS & SCHOEN, Springfield. E. w. pine, Mah.
 MARSHALL, C. C., Springfield. E. w. pine, Bas., H. mpl., Whtwd., W. ash,
 Mx. oak, Hic., Y. bir.
 NATIONAL EQUIPMENT Co., Springfield. Spr., N. C. pine, Mx. oak,
 H. mpl., Hic., W. ash, Chr., Ches., Y. bir., E. w. pine, D. fir, Bas.,
 Cyp., Mah.
 SPRINGFIELD PATTERN WORKS, Springfield. E. w. pine, Mah., Sp. ced.

PICTURE FRAMES & SCREENS

- AMERICAN METAL WEATHER STRIP Co., Springfield. E. w. pine.
 FOSTER BROTHERS Co., Arlington. Spr., Bas.
 HATFIELD, JAMES H., Canton. Whtwd., W. w. pine.
 SCHWAMB, CLINTON W., & Co., Arlington Heights. Bas., R. bir., R. gum,
 Mx. oak, Mah., B. wal.
 TABER PRANG ART Co., Springfield. E. w. pine, Mx. oak, W. ash, Bas.,
 R. gum.

SIGNS

- GRIFFIN COMPANY, Springfield. N. C. pine, Y. bir., E. w. pine.
 BURGER, CHARLES E., Springfield. E. w. pine, Bas., Y. bir., Mah.,
 Whtwd.
 CUSACK, THOMAS, Co., Springfield. Spr., E. w. pine.

LASTS AND WOODEN HEELS

- AUBURN LAST Co., Framingham. H. mpl.
 BAILLY BROS. WOOD HEEL Co., Haverhill. H. mpl.
 BELCHER, GEORGE E., Stoughton. H. mpl.
 BEVERLY LAST Co., Beverly. H. mpl.
 BOSTON WOOD HEEL Co., Lynn. H. mpl.
 BRAY, W. S., & SON, Haverhill. H. mpl.
 BRODY WOOD HEEL Co., Lynn. H. mpl.

COX, GEORGE P., LAST Co., Malden. H. mpl.
 EXCEL SHOE FORM Co., Lynn. H. mpl.
 FOX, CHAS. K., Wood HEEL Co., Haverhill. H. mpl.
 FRAMINGHAM LAST Co., Framingham. H. mpl.
 GARDNER, T. W., Co., Lynn. H. mpl.
 LITTLE, A. E., Co., Lynn. H. mpl.
 LYNN LAST Co., Lynn. H. mpl.
 MARLBORO LAST Co., Marlboro. H. mpl.
 McNICHOL & TAYLOR, INC., Lynn. H. mpl.
 MARTIN, O. A., Wood HEEL Co., Haverhill. H. mpl., Y. Bir, Be.
 MEARS, FRED W., Haverhill. H. mpl.
 MILLER WOOD HEEL Co., Amesbury. H. mpl.
 NEW ENGLAND WOOD HEEL Co., Haverhill. H. mpl.
 SANDERS, CLYDE R., Haverhill. H. mpl.
 STUART, F. W., & Co., Beverly. H. mpl.
 TISDELL, CHAS. H., & Co., Lynn. H. mpl.
 UNITED WOOD HEEL Co., Haverhill. H. mpl.
 WASON HEEL Co., Haverhill. H. mpl.

BOATS

ATLANTIC WORKS, East Boston. Mx. oak, N. C. pine, R. gum, Mah.
 BAKER YACHT BASIN, INC., Quincy. Mah., W. w. pine, Cal. s. pine,
 Mx. oak.
 BETHLEHEM SHIP BUILDING CORP., Fore River. Spr., N. C. pine, W. ash,
 E. w. pine, Whtwd., Mah., Mx. oak.
 BOSTON & LOCKPORT BLOCK Co., East Boston. Y. bir.
 BRITT BROTHERS, Lynn. E. w. pine, Mx. oak.
 CAPE COD SHIP BUILDING CORP., East Wareham. Mx. oak, E. w. pine,
 Ced.
 FRAZIER, J. H., Marblehead. Ced., Mx. oak, E. w. pine, Mah., N. C. pine.
 GRAVES, JAMES E., Marblehead. Ced., Mx. oak, Mah., E. w. pine,
 N. C. pine.
 HAND, WILLIAM H., JR., Fair Haven. E. w. pine, Mx. oak, Cyp., N. C.
 pine, Whtwd.
 JAMES, JOHN F., & SON, Essex. Mx. oak, Whtwd., N. C. pine, E. w. pine,
 D. fir, Cyp., Syc., R. gum, Mah., Teak.
 LAWLEY, GEORGE, & SON, CORP., Neponset. Mx. oak, E. w. pine, Mah.,
 Whtwd., W. rd. ced., But., W. ash.
 MARBLEHEAD YACHT YARDS, INC., Marblehead. Mx. oak, E. w. pine,
 Mah.
 PIGEON HOLLOW SPAR Co., East Boston. D. fir, Spr., N. C. pine, Mx. oak,
 Ced., Mah., W. ash.
 STORY, ARTHUR D., Essex. Mx. oak, N. C. pine, E. w. pine, D. fir, Cyp.,
 Mah.
 TOPPAN BOAT & ENGINE Co., Medford. E. w. pine, Ced., Mx. oak.
 TRUE, A. R., Amesbury. E. w. pine, Mx. oak.
 WADDELL, DAVID M., Rockport. Mx. oak, E. w. pine, Mah.

WOOD SPECIALTIES AND NOVELTIES

- ANGEL NOVELTY Co., Fitchburg. E. w. pine, N. C. pine, R. gum,
Cal. s. pine, Mx. oak.
- BALL, C. A., East Windsor. Be., H. mpl., W. bir., Spr.
- BECKWITH BROTHERS, Westfield. *See Furniture.*
- CUSHING, S. G., & SON Co., Fitchburg. W. bir.
- FRARY MFG. Co., Charlemont. W. bir., Be., W. ash, H. mpl., Hic.
- FULLER, J. J., Co., Westfield. W. bir., Whtwd., Bas., Be., H. mpl., Y. bir.,
Chr.
- LAMBERT & LATIMER, Leominster. Ches., E. w. pine, W. bir.
- LEOMINSTER NOVELTY Co., Leominster. Whtwd., Ches., W. bir., Y. bir.,
N. C. pine, Mah.
- LOUD, F. A., Westhampton. E. w. pine, Ches., W. bir., Whtwd.
- LYMAN, C. E., Becket. H. mpl., W. bir.
- MILTON & BRADLEY, Springfield. Y. bir., Bas., W. bir., E. w. pine,
Whtwd., Chr., H. mpl.
- NATIONAL FIREWORKS MFG. Co., West Hanover. E. w. pine, H. mpl.,
Mx. oak.
- NOBLE & COOLEY, Granville. Ches., R. gum, Be., Hem., Mx. oak.
- ROBERTS, E. H., Orange. W. bir., H. mpl., Be., Y. bir.
- SHAW, F. A., Leominster. N. C. pine, E. w. pine, Ches., Bas., H. mpl.,
W. bir.
- STANTON MFG. Co., West Chesterfield. Be., H. mpl.
- STANTON, E. P., Huntington. Be., Mx. oak, W. ash, H. mpl., Ches.,
E. w. pine, W. bir.
- STARKEY, C. D., Orange. W. bir.
- STEVENS, A., SONS, Worthington. Be., H. mpl., W. bir.

TEXTILE MACHINERY

- ALLEN COMPANY, New Bedford. Be., E. w. pine, H. mpl.
- ANDREWS, ROBERT, Chicopee. E. w. pine.
- CROMPTON & KNOWLES LOOM WORKS, Worcester. W. ash, Spr., H. mpl.
E. w. pine, Y. bir., Apl.
- CURTIS & MARBLE MACHINERY Co., Worcester. Spr., E. w. pine, Whtwd.,
N. C. pine, H. mpl., Be., Y. bir.
- DAVIS & FURBER MACHINE Co., North Andover Center. Spr., E. w. pine,
Mag., Whtwd., Y. bir., Be., D. fir.
- DRAPER CORPORATION, Hopedale. Be., Y. bir., H. mpl., Spr., W. ash.
- GESSNER, DAVID, Co., Worcester. Spr., Y. bir., Whtwd., Be., E. w. pine.
- LUDLOW MFG. Co., Ludlow. H. mpl., Whtwd., E. w. pine, N. C. pine.
- SACO LOWELL SHOPS, Newton Upper Falls. Spr., E. w. pine, N. C. pine,
Whtwd.
- STAFFORD Co., THE, Readville. H. mpl., W. ash.
- TEXTILE ROLL & MACHINERY Co., Orange. H. mpl., Hem., Mx. oak,
E. w. pine, Cyp.

WHITIN MACHINE WORKS, Whitinsville. Whtwd., W. y. pine, Chr.,
W. w. pine, H. mpl., E. w. pine, Mag., W. ash, Y. bir.
WORCESTER LOOM WORKS, Worcester. Spr.

SASH, DOORS, AND BLINDS

Not including concerns dealing in stock manufactured in other states and assembled in Massachusetts.

CROWLEY, WILLIAM P., & SONS, Taunton. *See* Builders' Finish and Stair Work.

DAYS, WILLIAM J. & Co., South Boston, W. y. pine, E. w. pine.

DEXTER LUMBER Co., Fall River. *See* Builders' Finish and Stair Work.

FULLER, W. A., & SON, Clinton. N. C. pine, E. w. pine, W. w. pine, Cyp.,
Mx. oak, Mah., R. gum, R. bir., H. mpl.

GREEN & WOOD, New Bedford. W. w. pine.

GREENWOOD-SHEPERDSON Co., Beverly. *See* Builders' Finish and Stair Work.

HAMPDEN LUMBER Co., Springfield. W. y. pine, Spr.; Veneer: W. ash.

HOLDEN, H. E., Cushman. E. w. pine, W. y. pine, Mx. oak.

MCMANUS, HARRY, Boston. W. y. pine.

NEWTON, F. C., Boston. W. y. pine.

PRATT & FOREST Co., Lowell. W. w. pine, E. w. pine.

PROSSER, WILLIAM, & SON, Fall River. W. y. pine.

RAYMOND, A. J., Athol. W. y. pine, E. w. pine, N. C. pine.

RICH, T. E. Co., Barre Plains. W. y. pine.

TYLER, ARTHUR F., Co., Athol. W. y. pine, E. w. pine.

CASKETS

BOSTON BURIAL CASE Co., West Somerville. Ches., E. w. pine, Cyp.,
Rwd., Mx. oak, Mah.

FLORENCE CASKET Co., Florence. E. w. pine, Ches., Cyp., Mx. oak, Mah.

MIDDLESEX CASKET Co., Webster. Ches., Mx. oak, Cal. s. pine, F. w.
pine, Mah., Y. bir.

NATIONAL CASKET Co., East Cambridge. E. w. pine, Ches., Mx. oak,
Mag., Whtwd., Cyp.

SESSIONS, F. E., Co., Worcester.

FIXTURES, REFRIGERATORS, AND CABINETS

AMERICAN SODA FOUNTAIN Co., Boston. W. w. pine, Spr., Y. bir., R. gum,
Whtwd., H. mpl., Mah., W. ash.

ANDERSON, GUSTAF, & Co., Lynn. E. w. pine, Mah.

ATHERTON, F. A., Co., Worcester. Spr., E. w. pine, Mx. oak, N. C. pine,
D. fir.

BAKER, W. D., MFG. Co., South Ashburnham. H. mpl., Y. bir., Mah.

BANGS FIXTURE Co., Reading. Whtwd., Mah., Y. bir., B. wal., E. w.
pine, Mx. oak.

BOSTON SHOW CASE Co., Roxbury. Whtwd., Mah., R. gum, Y. bir., Mx. oak.

BOURN-HADLEY Co., Templeton. Mx. oak, Y. bir., W. bir., H. mpl., Be.

CARTER, GEORGE H., Co., Boston. N. C. pine, Whtwd., Mx. oak, R. gum.

CONANT BROTHERS Co., Somerville. Bas., R. gum, Y. bir.

DOANE & WILLIAMS Co., Holyoke. Bas., Mx. oak, E. w. pine, Y. bir., N. C. pine, Mah., R. gum, B. wal.

EDDY, D., & SONS Co., Dorchester. E. w. pine.

FOSBERG, E., & Co., Worcester. Y. bir., N. C. pine, Mah., Mx. oak.

GOODMAN, R. E., Co., Lynn. E. w. pine, Mah.

GOODWIN, C. L., Co., Worcester. N. C. pine, E. w. pine, Y. bir., R. gum.

GRAVES & HEMMES, Great Barrington. W. w. pine, E. w. pine, Cyp., N. C. pine, Bas.

LORING MFG. Co., Worcester. W. bir., H. mpl., Mx. oak, Whtwd., Mah., N. C. pine.

LUCAS, M. FRANK., West Newton. *See* Builders' Finish and Stair Work.

MARTIN BROTHERS, Holyoke. E. w. pine, N. C. pine, Mx. oak, Whtwd.

MCLEAN, ISAAC, SONS Co., South Boston. Y. bir., Whtwd., Mah., E. w. pine, Ches.

MORRIS, A. B., Charlestown. Whtwd., R. gum.

O'CONNELL & LEE MFG. Co., Somerville. *See* Builders' Finish and Stair Work.

OLESON, CARL J., & SONS, Lawrence. *See* Builders' Finish and Stair Work.

PLOURDE, P. P., Somerville. Mx. oak, Spr., H. mpl., Y. bir.

POMEROY BROTHERS, Northampton. E. w. pine, Mx. oak, Be., H. mpl., Y. bir.

PYNN & CAMERON, Somerville. Y. bir., Mah., R. gum.

STANDARD ELECTRIC TIME Co., Springfield. Mx. oak, E. w. pine, W. rd. ced.

STROMBERG REFRIGERATOR Co., Somerville. D. fir, Mx. oak, Spr., W. w. pine, W. ash, N. C. pine, H. mpl.

WHITMAN, E. R., Co., Charlestown. D. fir, Mx. oak, N. C. pine, Spr.

WHITMAN, M. M., Worcester. Spr., N. C. pine.

TOOLS AND HANDLES

AKERLEY MFG. Co., Reading. Bas.

AMERICAN BRUSH Co., Springfield. Whtwd.

BAXTER, HARRY, North Heath. Be., H. mpl., W. bir., Hem., Spr.

DUFRESNE, M., Ashfield. Be., H. mpl., W. bir.

HARMON, HARRY E., Ashfield. Be., H. mpl., W. bir.

HEALEY, S. A., & SONS, West Chesterfield. H. mpl., Be., W. bir.

HITCHCOCK, LEROY, North Heath. Be., W. ash., H. mpl., Spr., Hem., W. bir.

JORDAN, SAMUEL E., BRUSH Co., Malden. W. bir.

MAYHEW LUMBER Co., Ashfield. Be., W. bir., Y. bir.

PROPHYLACTIC BRUSH Co., Florence. W. bir., B. wal., N. C. pine,
W. w. pine.

RUGG MANUFACTURING Co., Greenfield. Cal. s. pine, Bas., Be., H. mpl.,
W. ash, W. bir., Ches.

SIMONDS SAW & STEEL Co., Fitchburg. Be., W. w. pine, Apl., W. y. pine,
Spr.

STEVENS MANUFACTURING Co., Cummington. Be., W. bir., Whtwd.,
H. mpl.

FIREARMS AND SPORTING GOODS

HARRINGTON & RICHARDSON, Worcester. B. wal., Y. bir., E. w. pine.

IVER JOHNSON ARM AND CYCLE WORKS, Fitchburg. Spr., E. w. pine,
B. wal., Y. bir.

MAGNAN, N. J., CORP., North Attleboro. W. ash, B. wal., Sp. ced., Bas.
PIERCE, A. F., Littleville. *See* Chairs.

SMITH & PARKER, INC., Foxboro. Spr., E. w. pine, H. mpl., W. ash.,
W. rd. ced., Mah., Mx. oak, Ced.

SMITH & WESSON, Springfield. E. w. pine, B. wal.

SPAULDING, A. G., & BRO., Chicopee. W. ash, Elm, Bas., H. mpl., Ches.,
Spr., Y. bir., Mx. oak, Hic.

STEVENS ARMS Co., Chicopee Falls. Y. bir., B. wal., Chr.

