(No Model.) 2 Sheets—Sheet 1.

J. H. SHULL.

MATCHED LUMBER.

No. 492,736. Patented Feb. 28, 1893.

FIG. II.

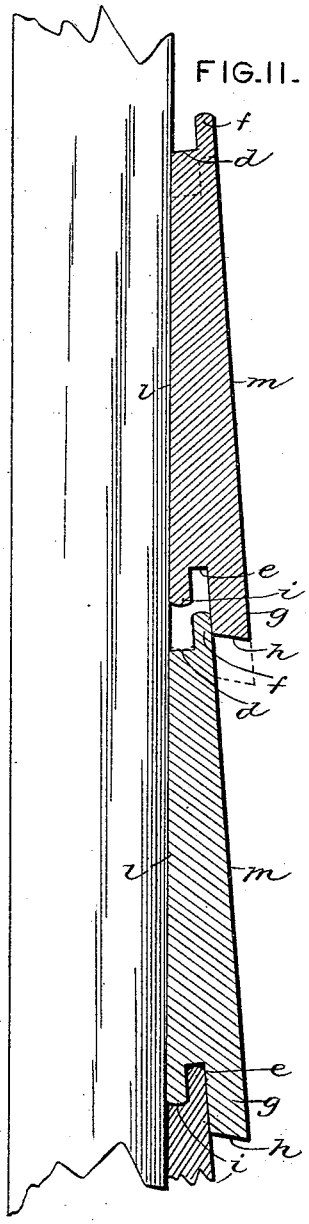

FIG. I.

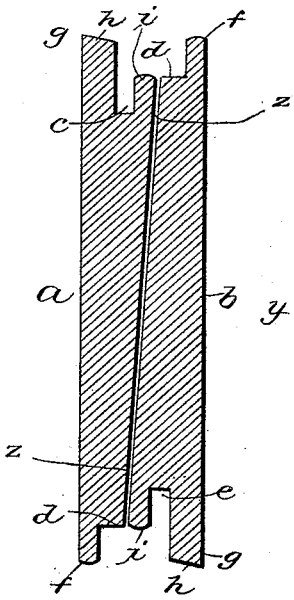

FIG. III.

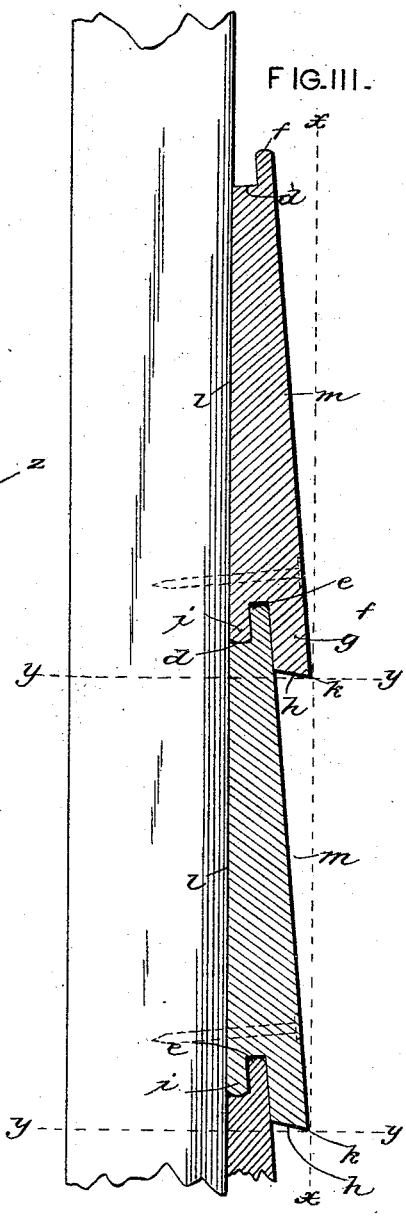

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FIG. IV.

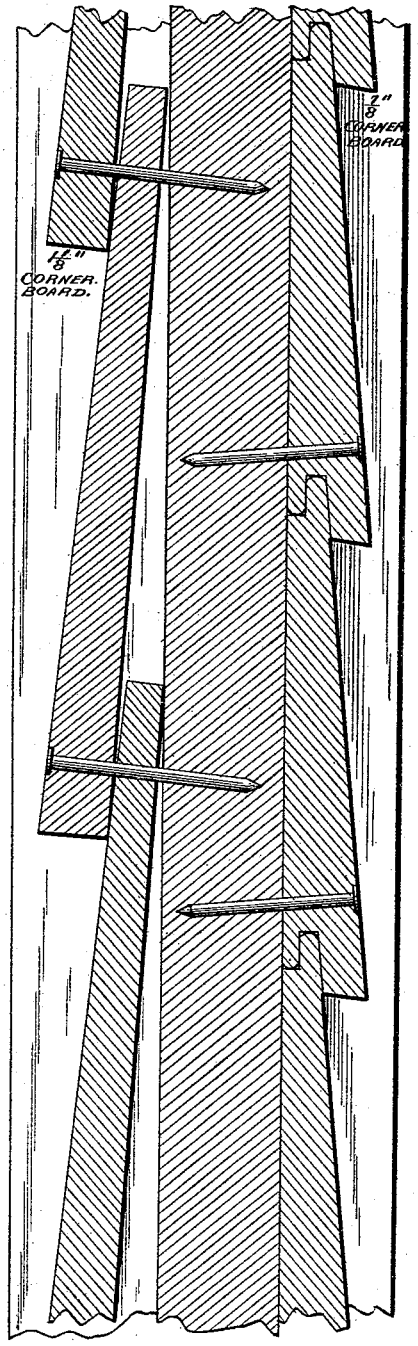
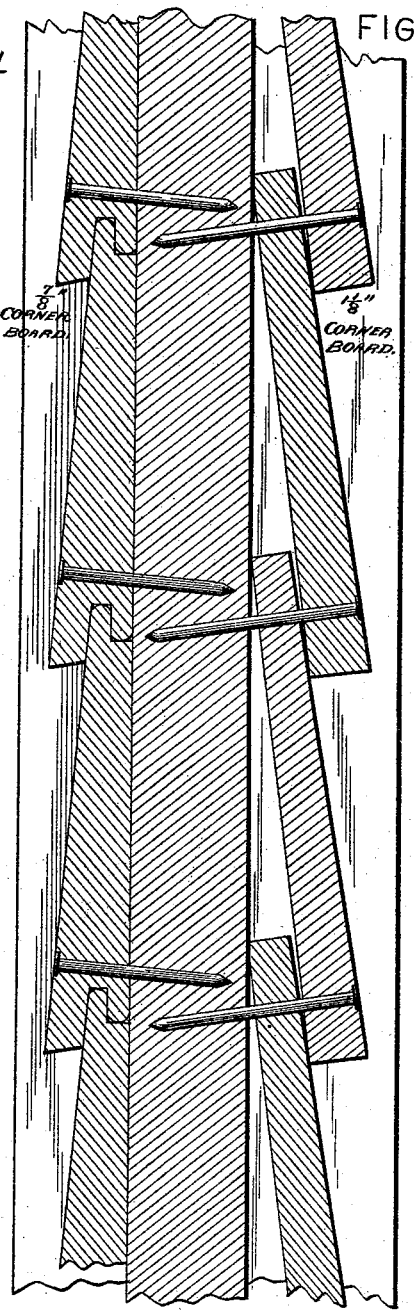


FIG. V.



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UNITED STATES PATENT OFFICE.

JOHN H. SHULL, OF FINDLAY, OHIO.

MATCHED LUMBER.

SPECIFICATION forming part of Letters Patent No. 492,736, dated February 28, 1893.

Application filed May 23, 1892. Serial No. 434,050. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. SHULL, a citizen of the United States, residing at Findlay, in the county of Hancock and State of Ohio, have invented certain new and useful Improvements in Matched Lumber, of which the following is a specification.

My invention relates especially to tongued and grooved half inch lumber specially adapted for covering the outside walls of frame buildings, porch ceilings and ceilings of stores and business rooms. The construction is such that shrinking subsequent to the putting on is not perceptible nor productive of any injurious effect. The inner surface rests solid on the wall, preventing the lumber under all circumstances from warping or capping and the tongue and groove prevents any lipping or parting of the lap-joint.

My invention relates to the construction of such lumber and it will be readily understood upon reference to the accompanying drawings in which:—

Figure I represents a cross-sectional view of two pieces of lumber as the material comes from the machine which makes it. Fig. II represents the manner of applying the material to the walls, in forming the covering for outside walls. Fig. III is a similar view representing two of the boards in place. Figs. IV and V are vertical sectional views illustrating comparatively the economy and effects of different sizes of my improved lumber, over the old form of lap siding.

a, *b*, represent two pieces of lumber in the relative position which they occupy as they emerge from the machine which makes them and as will be seen, these two pieces, are formed of a single piece of inch lumber. The stock being introduced into the machine is planed on both faces, and molded and then sawed into the parts *a*, *b*, by a saw or saws which make the saw space *z*. The stock, therefore, emerges from the machine shaped on each edge so as to form a step *d*, a deep groove *e*, a slightly rounded tongue *f* and the lap *g* having an inclined edge *h*. These parts are formed on both edges of the stock as it passes through the machine, corresponding parts, however, on the respective sides being diagonally opposite each other as shown. The saws sever the parts *a* and *b* in the plane inclined to the outer faces of the stock which are likewise the outer faces of the finished material, and this plane which passes through the center, is such that portions are taken off from the steps *d* in order to leave flanges *i* which constitute the inner walls of the grooves, *e*. The flanges *i* as will be seen, do not extend nearly so far as the laps *g*, for the reason to be hereinafter explained, though the tongues *f* and laps *g* preferably do extend to the edges of the stock. The edges of the tongues *f* are preferably rounded in order that they may more readily enter the grooves *e* as will be understood on reference to Figs. II and III. The flanges *i* likewise are rounded slightly as this assists said flanges in passing the tongues *f* when the parts are forced together.

The lumber being formed as explained, it is obvious that the two parts *a* and *b* are similar in every respect. In putting them into use, they are applied similarly to ordinary weather-boarding by beginning at the bottom and building up.

The laps *g* have two very important functions in use, which are illustrated respectively by Figs. II and III. In applying a board in which the flange *i* and lap *g* are made coextensive as is customary in all matched lumber heretofore made, much difficulty is experienced in causing the tongue *f* to enter the groove *e*. In my improved form of lumber, the lap *g* is made so much longer than the flange *i* that the board being applied may be placed over and will readily rest upon the next lower board with which the joint is to be made. The upper board is then pushed in and driven down, the lap *g* serving continually to bring the groove *e* to the proper point above the tongue *f*. I have found in practice that this results in great convenience and economy of time in applying lumber of this character on walls and especially crooked ceilings. When once forced down the flange *i* engages behind the tongue *f* in such a manner as to hold the siding in and prevent lipping up. The material being thus held together against lateral displacement a single row only of nails in each piece is required. The value of such a siding will readily be appreciated upon reference to Fig. III. The advantage over a common lap-joint is quite obvious, first,

because the entire inner face *l* of each piece has a firm bearing against the studding or sheathing, preventing warping and cupping and second, because the tongue-and-groove-joint, *e*, *f*, is necessarily tighter than an ordinary lap-joint. My present invention, however, has an advantage in addition to the advantage of convenience in applying as described with reference to Fig. II. This results from the extra length of the lap *g* and also from the form of its lower edge *h*. The additional length of the lap *g* makes a tighter joint and one better adapted to exclude air and moisture by reason of the increased bearing surface between the two boards at the joint. The formation of the lower edge *h* which has been heretofore referred to as inclined is on such an angle that when the material is put into use, said edge *h* inclines upwardly from the horizontal line toward the inside and the angle thus formed with the outer face *m* of the material is sharp enough to cause the water to drop at a point *k* which I call the dripping edge. It will therefore be observed that the water cannot run in to the joint, by reason of its affinity for the wood but must drop on the surface of the next board below. The relative inclinations of the edge *h* will be appreciated by reference to the dotted lines *x*, *x* and *y*, *y* in Fig. III. By making the inner wall of groove so much shorter than the outer wall it always fills the space between the tongue and sheathing although the stock may be too narrow to secure a full tongue or outer wall of groove, and the inner wall of the groove and shoulder at tongue always come together and preserve the alignment and the full height on the wall, regardless of the width or regularity of the tongue and whether or not the outer lap fills the gage. It is found in application that this is very important and makes it possible to always reach the same height when the siding is applied to the walls. In all other forms of matched lumber where the tongue and inner walls of grooves do not fill their corresponding spaces, the courses run behind. Furthermore, it is found that the outer lap, in projecting down past the shoulder, over the tongue the outer side of which is tapering, wedges, and when the siding is drawn down to the wall by the nail, the lower edge of the outer lap binds firmly on the surface of the board below, and at the same time forces the upper end of the tongue against the inner wall of the groove, thus securing a combined wedged tongue-and-groove ship lap joint, impervious to wind and moisture.

Matched lumber constructed in accordance with my present invention is produced as cheap as the common one-half inch clapboards of lap siding. By the use of narrow boards the material from which this stock is made is more readily secured and narrow strips containing the very best of lumber is specially adapted for this class of matched lumber, which could not be used to advantage in the ordinary lap siding. There is also a saving of from ten to fifteen per cent. in the lap, over ordinary siding which is demonstrated by Figs. IV and V. When applied there are no crevices between the inner sides of the boards and wall as in the ordinary siding, as shown by Figs. IV and V. But one edge of the board is fastened in nailing which allows of shrinkage without splitting the boards. There being no spacing or lining this form of covering is speedily and accurately placed on the walls, always securing a perfectly straight line, and reaching the same height at all points on the wall. The inner surface lying plumb against the wall, all joints are cut in an ordinary iron miter box, dispensing with the tedious task of setting nails on which to rest the board while the length is being taken by the assistance of the siding hook now in use. By cutting perfectly square, two joints are made at one cutting of the board. In applying this covering only seven-eighths inch lumber is required for corner boards, sill boards, frieze boards and all outside casings and belt courses as shown in Figs. IV and V.

Having thus described my invention, what I claim is—

1. The method of constructing matched lumber of a single piece of material which consists in shaping the edges of the stock to form co-extensive projections *f* and *g*, the steps *d* and the grooves *e* and then severing the stock in a plane inclined to the faces of the stock so as to remove portions of the steps *d* at each edge and to form thereof flanges *i* constituting the inner walls of the grooves *e*, substantially as herein shown and described.

2. The herein described method of constructing matched lumber of a single piece of stock which consists in molding the edges to form on each, the tongue *f*, the lap *g*, the step *d*, and the groove *e*, and then severing said stock at *z* in a plane inclined to the faces of the stock so as to remove portions of the steps *d* and form the flanges *i* in the same pieces with the laps *g*, but of shorter length than said laps, substantially as and for the purpose specified.

3. The herein described matched lumber formed with a tongue *f* on one edge and on the other edge the groove *e*, whose inner wall is formed by the flange *i* and whose outer wall is formed by the lap *g* of greater length than the flange *i* and having the edge *h* at an acute angle to the outer face of said lap and forming therewith the dripping edge *k*, substantially as explained.

JOHN H. SHULL.

Witnesses:
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OCTAVIUS KNIGHT.