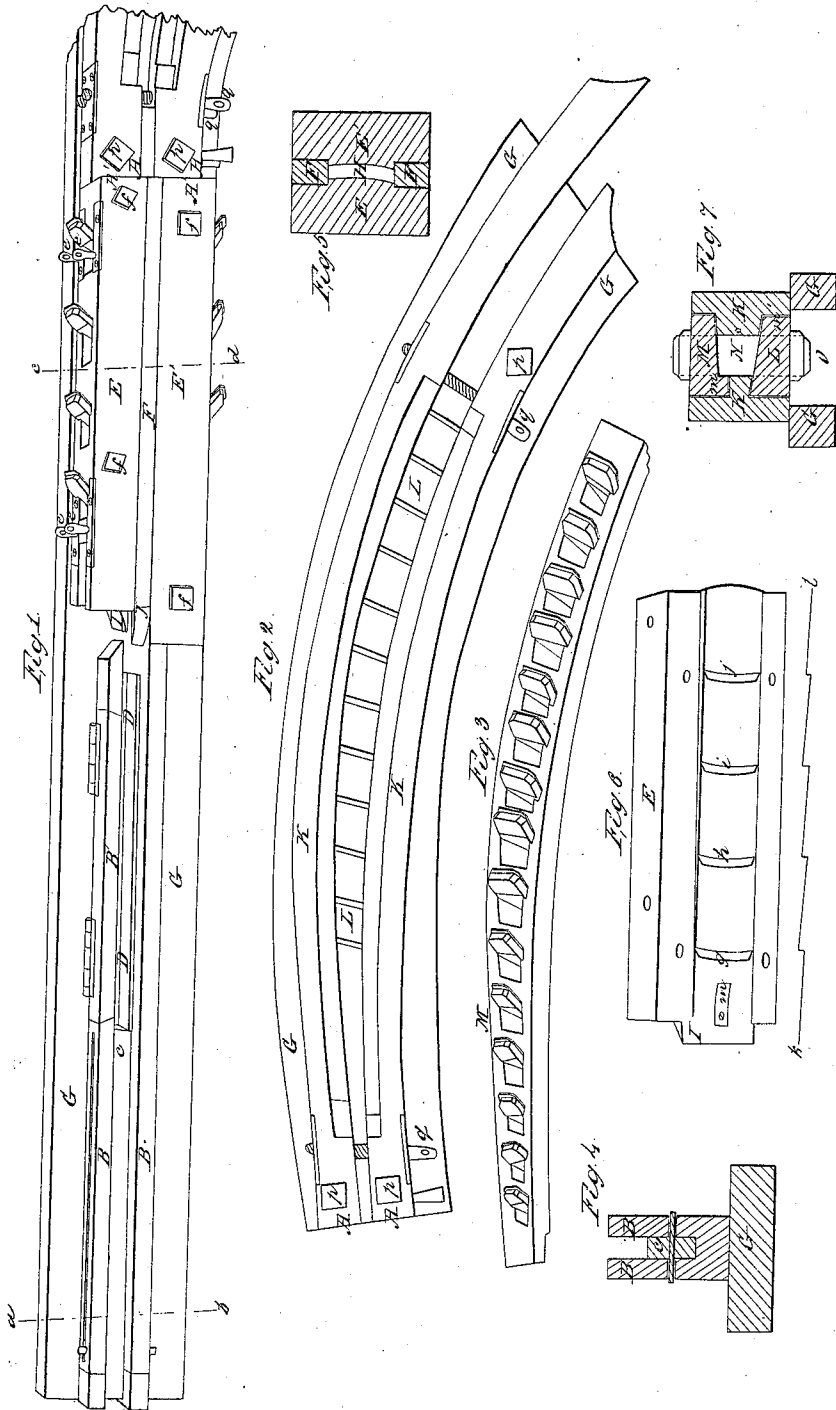


H. LAW,
Dressing Staves.

N^o 1687.

Patented July 15, 1840.



UNITED STATES PATENT OFFICE.

H. LAW, OF WILMINGTON, NORTH CAROLINA.

MACHINE FOR DRESSING AND JOINTING STAVES.

Specification of Letters Patent No. 1,687, dated July 15, 1840.

To all whom it may concern:

Be it known that I, H. LAW, of Wilmington, in the county of New Hanover and State of North Carolina, have invented a new and useful Machine for Dressing Staves for Barrels and other Vessels of Coopers' Ware, Using Therefor Rived Timber, Slabs from Sawmills, and other Stuff of Similar Character, by means of which machine the stuff, after being cut to the proper length, is dressed on both sides and jointed on its edges at one operation; and I do hereby declare that the following is a full and exact description thereof.

In the accompanying drawing, Figures 1, and 2, represent the machine in perspective, and are to be considered as united together at A, A', so as to constitute but one figure; Fig. 3, is a portion of Fig. 2, removed for the purpose of showing the parts more clearly. Fig. 4 is a vertical section through Fig. 1, in the line *a, b*.

B, B, are two cheeks, forming the side pieces of a groove, or channel, within which the lengths of stuff to be dressed, are to be dropped, or fed, and within which also they are to be forced forward against the cutting parts of the machine; the forcing forward being effected by means of a follower C, C, made to traverse back and forth within the groove, by steam, water, or other power, the traversing motion being produced by a crank, or other ordinary device for giving such reciprocating motion. The pieces to be dressed are to be fed into the channel at the part D, D. These pieces may be dropped into said channel singly, or they may be placed upon each other either edgewise, or flatwise, according to the position in which the machine is placed. When they are to be placed edgewise upon each other, the cheeks B, B, must be widened out at the part D, D, so as to form a kind of narrow hopper; and in this case the lower piece will be propelled by the follower, and another will fall down on its withdrawal. If fed in flatwise, the part of the cheek marked B', which is represented as hinged, may be removed, and a trough, or hopper, be, in like manner placed above it.

E, E', are two plane stocks, each having a series of irons, which irons may be affixed in place in the ordinary mode of wedging, or by means of screws, or otherwise. The stock E, has the irons rounding, to dress the inside of the stave hollow, and in this I have

four irons; a good and sufficient number, they being so set as to act in succession upon the stuff. The stock E', has but three irons, which are hollowed on their cutting edges, so as to form the outside of the stave. The number of irons may, of course, be varied, but I have in practice found that above stated to answer well.

Fig. 5, is a cross section of the plane stocks, in the line *c, d*. The pieces F, F, are strips which serve to keep the plane stocks at the proper distance apart, and to determine the width of the staves; these strips may be changed, and the distance varied, by means of the set screws *e, e, e*, and the screws *f, f*, by which the plane stocks are bolted down to the bed G, G, of the machine. The curved part is in like manner confined and adjusted by means of the screws *p, p*, and *q, q*.

As the rived stuff, or slabs, will frequently be too thick, or too wide, to enter into the space H, between the faces of the two plane stocks, and the two strips F, F, I arm the end of the plane stock E, with a frow, or cutting edge, as seen at I, which is flush, on its inner side, with the face of the plane; this serves to cut off any superfluous stuff, and to reduce it in thickness to the required degree. To reduce the width of such pieces as may require it, I also place a cutting knife, or frow, on the fore end of the strip F, as shown at J, which frow is flush with the lower side of said strip.

Fig. 6, is a representation of the plane stock E, removed from its place; as in this stock the irons *g, h, i, j*, are to cut the stuff in succession, and are set out, or project forward in the order of the letters, and as it is necessary that they should be set rank, so as to cut to a considerable depth, the face of the rounding part of the plane is reduced from the back of each cutting edge, to the front of the cutting edge next behind it, for it is manifest, that the staves would otherwise become wedged, or jammed, in passing from one to the other; the back ends of the faces of the planes must necessarily be as much nearer to each other than the front ends as is equal to the whole thickness to be taken off from the stuff; what is said, therefore, of reducing the faces, will apply equally to the face of each plane; a longitudinal section through the middle of the face of each plane would consequently present a line resembling that marked *k, l*. I find

it useful to place a spring *m*, on the face of the plane *E*, to press against the staves as they enter between the faces of the planes.

By means of the apparatus herein described, the staves will be dressed on their two sides, to the desired curvature, and they are thus prepared for being jointed on their edges, which is so effected by the curved part of the machine, Figs. 2, and 3, as to diminish them in width from the middle toward each end in such degree as to give the proper bulge to the barrel when finished.

K, K, is a curved box into which the staves pass immediately after they leave the planes *E, E'*, and at the bottom and top of this box there is a series of jointing irons placed near to each other, by which the two edges of the staves are to be jointed. These irons being placed near to each other; it is not necessary in the operation of jointing, to reduce the faces of the stocks in which they are set, as is done with the dressing planes.

As the staves when they leave the dressing planes are straight, longitudinally, it is manifest that in passing along the curved box, their ends will be in contact with the concave side of the interior thereof, and their middles against, or approaching toward, its convex side, and that in consequence of this the ends will be jointed by those portions of the plane irons which are against the concave, and their middles by the portion toward the convex side, and so of the intermediate parts. The bottom of this box, with its series of plane irons, is seen at *L, L*; the upper plane stock, forming the top of this box is shown separately at *M, M*, Fig. 3. The faces of the plane stocks forming the bottom and top of this box are not parallel to each other, either longitudinally or transversely, being of necessity nearer to each at the delivery end of the jointed stave, than at the part where it enters. Transversely, the faces of these planes are much nearer to each other toward the concave than they are toward the convex side of the in-

terior of the box, this being necessary to the giving the requisite bulge, and the proper rake to the jointed edge.

Fig. 7, is a cross section of the curved box; *L*, being the lower, and *M*, the upper plane stock, and *N*, the space between them in the curved box; the dotted lines *m', m'*, represent the insertions of the plane irons; *n*, the concave, and *o*, the convex side of the box. The bed *G, G*, of the machine is cut away in the middle along the extent of the planes of the curved box, thus allowing the space *O*, for the escape of shavings, &c. The rake of the edges of the irons toward the outer end on the concave side of the curved box is made greater than that of the others, for the purpose of giving more bevel to the jointed edges toward the ends of the staves, in accordance with the lessened diameter of the barrel which they are to form.

Having thus, fully described the manner in which I construct my machine for the dressing and jointing of staves from rived timber, slabs, &c., and having also explained the operation thereof, what I claim as constituting my invention therein, and which I desire to secure by Letters Patent, is—

1. The manner of constructing and combining the part for dressing the faces of the staves, as set forth, with the curved box, constructed as set forth, and furnished with a series of jointing irons contained in stocks forming the upper and lower portions of said box; the faces of said plane stocks approaching each other on the concave side of the interior of said box, for the purpose, and operating substantially in the manner, herein set forth.

2. I also claim the said curved box, for jointing staves, in its individual capacity, the respective parts thereof being constructed, and connected, as herein described.

HERVEY LAW.

Witnesses:

WM. W. EALLS,
JOHN C. SAVAGE.