

MACHINE FOR DRESSING RIVED STAVES.

Extensive as has been the application of the revolving planer invented by Woodworth, it would seem, judging from the number of important new machines in which it has been introduced within the last few weeks, to be in the very infancy of its career.

We meet with it in molding machines, in box-making machines, in dovetailing machines; indeed, in almost all machinery for cutting wood, and we never take up a new invention in this department without expecting to find this ever-present device.

In the machine which we here illustrate revolving cutters are used for dressing staves, and its peculiarity consists in its dressing staves without cutting the wood across the grain, that is, in leaving the staves winding as they were rived from the bolt. This apparently impossible feat is accomplished by holding the stave between two rollers, one of which is straight and the other convex, and by permitting the frame which supports the cutters to have a rocking motion, by which the cutters adapt themselves to the twist of the stave.

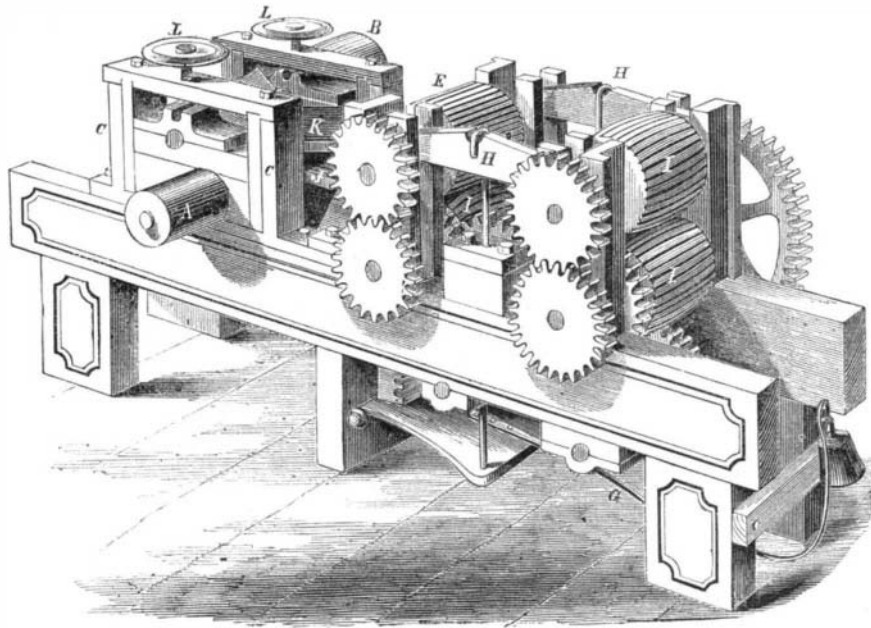
A series of revolving convex cutters, to dress the inner or concave side of the stave, are secured to the axle of the pulley, A, while a series of concave cutters for the outer side are fastened to the axle of the pulley, B. Either of the frame which supports these cutters may rise between the stationary standards, C C, thus permitting a rocking motion endwise of the cutters. The upper feed roll, E, is cylindrical, while the lower one, F, is made larger in the middle, or with a convex surface, this arrangement allowing a stave which is thicker on one edge than the other to pass between the rollers, to be pressed with its upper side flat against the straight roller, and to have its lower side pressed in the middle only by the convex roller below. The journals of the upper roller have a vertical motion and are held down by the weighted lever, G, acting through the rods, H H. Two supplementary rollers, I I, also aid in guiding the staves to the cutters. As the stave leaves the rollers, E and F, it passes over a stationary bed-plate, J, of a convexity corresponding to that of the lower roller, by which it is guided forward to the cutters. A flat plate, K, is fastened to the cutter frame so that it may partake of its rocking motion, and near each edge of this plate, and fastened to it, is a spring pressing down against the stave. By this arrangement it will be seen that the cutters are held in a position parallel to the upper side of the stave and must conform to its windings in its passage through the machine, thus dressing it to an even thickness without cutting the wood across the grain. The thickness of the stave is adjusted by raising or lowering the journals of the upper cutter by means of the screws, L L,

This machine makes handsome work, as we have seen, and the inventors state that it will dress 4,000 to 5,000 staves per day.

The patent for this invention was issued Jan. 10, 1860, and persons desiring further information in rela-

and direct agencies, and a machine is produced which is compact and not complicated, and which turns out a large amount of very perfect work.

The principal peculiarities of the machine are clearly shown in Fig. 2, which is a longitudinal section. The stave, A, to be jointed is placed upon the iron belt or endless chain, C, and fed forward between the rapidly revolving cutters, B B. The position of the stave upon the chain is determined by the stud, e, and as the chain is moved by cog wheels which gear into it, its position in relation to the cutters is adjusted. The vertical frames, D D, in which the cutters are secured, have an oscillating motion on the fulcras, f f; by which the cutters are first carried further apart and then brought nearer together as the stave passes through, thus making the stave wider in the middle than at either end. This oscillating motion is produced by means of the two cams, g g, which revolve with the shaft, h, and are connected with the frames, D D, by means of the bent rods, i i. It will be seen that the extent of this oscillation, and consequently the degree of taper in the stave, may be varied by carrying the cams, g g, with the rods, i i, along the shaft, h, which has a groove along it, into which a projection from the bore of the



HOLMES' MACHINE FOR DRESSING RIVED STAVES.

tion to it will please address the inventors, E. & B. Holmes, at Buffalo, N. Y.

IMPROVED STAVE-JOINTER.

In shaping the edge of a barrel stave, several things are required; it must be wider in the middle than

cam fits. For the purpose of adjusting the distance of the cutters apart, a second joint is made in the frame, D, at g g, and the cutters are tipped towards each other or drawn apart by sliding the rods, k k, along the levers, l l. These rods, k k, are not connected with the shaft, h, as might be supposed from the diagram, but are suspended from parallel bars lying along the inner side of the frame, to which bars an equal motion is given by a pinion gearing into racks upon their edges. Upon the axle of this pinion is a crank or hand wheel, by turning which the bars are moved, and thus the distance apart of the cutters is instantly adjusted to staves of different widths. The position of the fulcras, j j, causes the cutters to be more inclined as they are drawn farther apart, and thus a correct level is given to the edges of all staves, while the more distant position of the fulcras, f f, about which the cutter frame oscillates to make each stave wider at the middle than at the ends, causes much less variation in the movement of the cutters, no more indeed, than is required to vary the bilge of each stave in the several portions of its length. It will be understood that the connection of the endless chain, C, with gears gives it that positive motion which enables the passage of the stave to be accurately adjusted to the oscillation of the cutters. The stops upon the hinged bar, m, are to hold the cams in place after they have been moved to cut a stave of any particular width.

When sawed staves are jointed, they may be also dressed on the outside at the same time by means of a revolving concave cutter which is removable from the machine when not required.

In making very stout casks, it is customary to make the staves thick at the ends to give strength to the chimes, and thinner in the middle in order that they may be bent by the cooper. The positive nature of the feed motions in this machine permits this cutting away of the middle of the stave to be done by a supplementary cutter, which is added for the purpose in finishing this class of staves.

Application for a patent for this novel, ingenious and exceedingly valuable invention has been made, and any further information in relation to it may be obtained by addressing the inventors, E. & B. Holmes, at Buffalo, N. Y.

Fig. 1

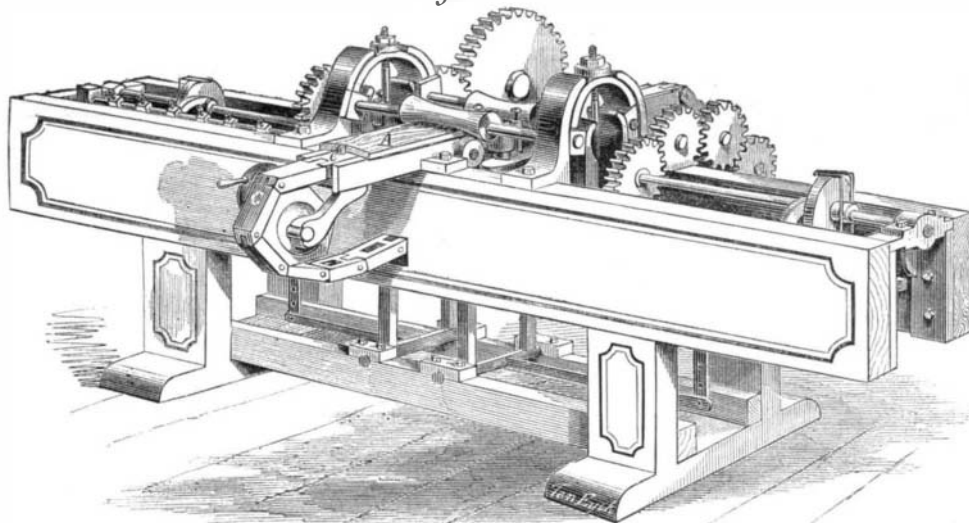
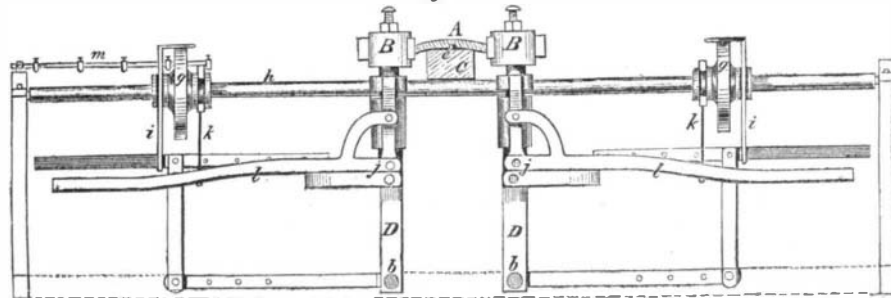


Fig. 2



HOLMES' IMPROVED STAVE-JOINTER

at the ends, and the edges must be fashioned in a peculiar curve to form the bilge of the barrel, this increase of width varying with the width of the staves. The edges, too, must not be at right angles with the sides of the staves, but must be beveled to a line with the radius of the circle which they surround, and this bevel must not only vary with different sized casks, but also with staves of different widths. In a machine for practical use all these changes must be properly related to each other, and must be readily adjustable. All these formidable tasks are here accomplished by the most simple