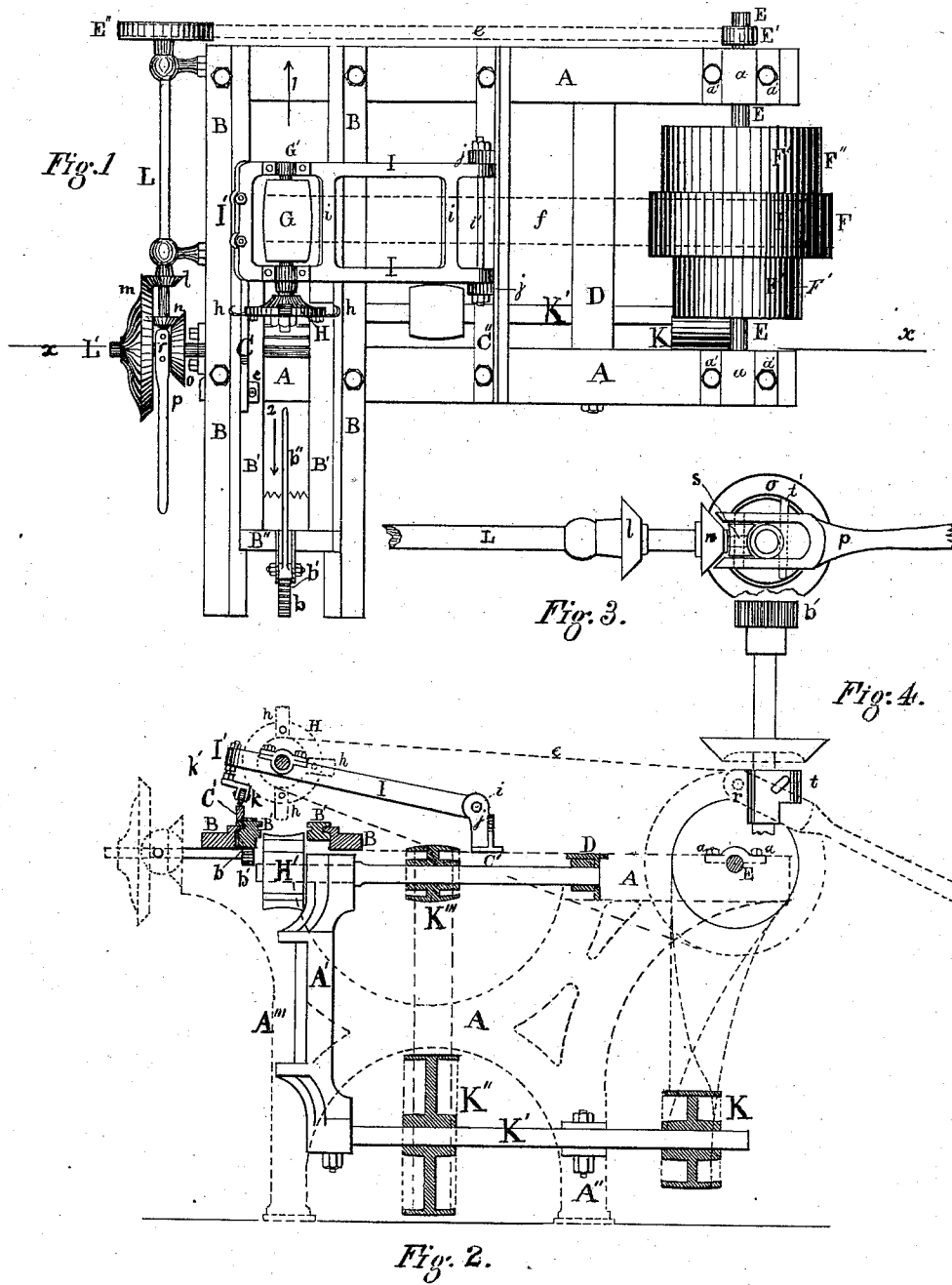


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IMPROVEMENT IN MACHINES FOR DRESSING STAVES.

Specification forming part of Letters Patent No. 163,336, dated May 18, 1875; application filed February 6, 1875.

To all whom it may concern:

Be it known that I, GEORGE A. SHIDELER, of Logansport, in the county of Cass and State of Indiana, have invented certain new and useful Improvements in Machines for Dressing Staves; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification:

Figure 1 is a plan view of the machine. Fig. 2 is a longitudinal vertical section on *xx*. Figs. 3 and 4 are details of the feed apparatus.

This invention relates to that class of stave-dressing machines wherein the blank is moved on a carriage between cutters, whereby the two sides are simultaneously dressed; and it consists first, in pivoting the frame of one of the cutter-heads so that a vertical movement is allowed to the cutters, whereby the staves may be dressed on the interior surface not only parallel to the outside, but by the use of a gage-bar the staves may be made thicker at each end than in the middle section, so as to provide for the depth of the croze. It also consists in the peculiar arrangement of the feed-gear of the carriage, so that the return motion of the carriage will be much quicker than the feed; and it finally consists in the whole arrangement of the several parts so that the machine will occupy as little space as possible and yet accomplish all that is requisite, all of which will be more fully hereinafter explained.

In the drawing, A represents the frame upon which all the working parts are supported, and may be of any desired form or construction, and separately constitutes no part of the invention, and is seen in dotted lines in Fig. 2. B B are two rails fastened transversely on top of frame A, at one end. B' B'' represent a carriage, which, having grooves in the outer frames, slides freely on the rails B B. The interior grooves of B' B' are for the dogging-knives, which are operated by a rack, *b*, under B' B', and pinion *b'*, on the end of a lever *b''*, as seen in Fig. 1 at B''. On this carriage B' B'' is placed a gage-bar, C, which,

vertically, has the contour of the stave to be dressed, and set even therewith longitudinally. This gage may be secured to the frame B' in any manner, and can be removed to have its place supplied by another of different gage when required. C' is a shaft journaled at one end in the standard A', which is secured to the thwart A'', and at the other end in the thwart D. Outside of standard A' a cutter-head is fastened on shaft C', the knives of which head are curved on the edges to suit the curve of the barrel. E is a shaft journaled transversely to the frame and on top of it, in journal-boxes *a a*, which are secured by bolts *a' a'*. On shaft E are cone-pulleys F, in the middle, and F' and F'', one on each side. A band passes from F to a pulley, G, on a cutter-shaft, G', which is journaled in a frame, I, which is pivoted upon a thwart, C''. On this shaft G' is a cutter-head, H, having curved knives *h* extending beyond the periphery, which cut the curve in the stave parallel to the exterior face worked by the cutter-head H' below. To the lower side of frame I, at the free end at I', is attached below a friction-roller, K, Fig. 2, which roller is made adjustable by double nuts K' K'', to regulate the depth of cut of the cutter-head H. This roller travels over the gage C as the carriage B' B'' travels under the cutter, thus raising or lowering the cutters according to the contour of the gage. From pulley F' extends a quarter-belt to a pulley, K, on a shaft, K', in the lower part of the frame, journaled to the standards A' and A''. On this shaft is also a pulley, K'', from which a belt connects with a pulley, K''', on shaft C', and which shaft has on it the cutter-head H', which will be driven from the main driving-shaft E, by these pulleys and bands. On the outer end of shaft E is a small pulley, E', from which a belt, *e*, extends to a pulley, E'', on the outer end of a small shaft, L, on which is a bevel friction-wheel, *l*, which operates upon a wheel, *m*, on the outer end of a shaft, L', on which is a pinion-wheel, *b'*, that meshes with a rack-bar, *b*, under the carriage B', so that as the shaft revolves to the left the carriage is moved in the direction of the arrow No. 1, to feed the blank stave under the cutter-heads. On shaft L is another bevel friction-wheel, *n*, which op-

erates upon a bevel friction-wheel, *o*, also on shaft *L'*, so that the shaft *L*, revolving in the same direction as before, the wheel *n* will operate on wheel *o*, and turn the shaft *L'* in the opposite direction and reverse the motion of the carriage in the direction of arrow No. 2; but as the proportion between the wheels *n* and *o* is different from that between wheels *l* and *m*, the former will be faster than the latter, and this to any degree which may be desired. The handle *p* is pivoted at *r* in loose piece *s*, which has a bearing in it longitudinally, for the end of shaft *L*, as seen at *s*, Fig. 3. On the shaft *L'* is an L-shaped piece, as seen in Fig. 4, at *t*, through which passes a pin, *t'*, as also through the handle *p*, which, being moved laterally in either direction, carries the wheels *m* or *o* into or out of gear with the bevel-wheels *l* or *n*, to feed the carriage or withdraw it.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the pivoted cutter-head frame *I*, having a guide friction-wheel

K, with the sliding carriage, having a gage-bar, *C'*, adjusted thereon, and the under cutter *H'*, substantially as and for the purpose described.

2. The feed-gear, consisting of the combination of the friction-wheels *m o*, upon the shaft *L'*, and the wheels *l n* upon the shaft *L*, with the adjusting-lever *p*, as and for the purpose specified.

3. The combination of the shaft *E*, and pulleys *F F' E'*, the shaft *K'* and pulleys *K K''*, shaft *C'* and pulley *K'''*, shaft *L* and pulley *E''*, shaft *G'* and pulley *G*, and their connecting-belts, with the cutter-heads *H* and *H'*, beveled friction-wheels *l m n o*, shaft-pin *b'* and rack *b*, and carriage *L'*, all substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

GEORGE A. SHIDELER.

Witnesses:

LEMON W. CROUCH,
JACOB W. FORD.