E. & B. Holmes,

Dressing Stares.

No. 31,459. Patented Feb. 19, 1861.

Fig. 1.

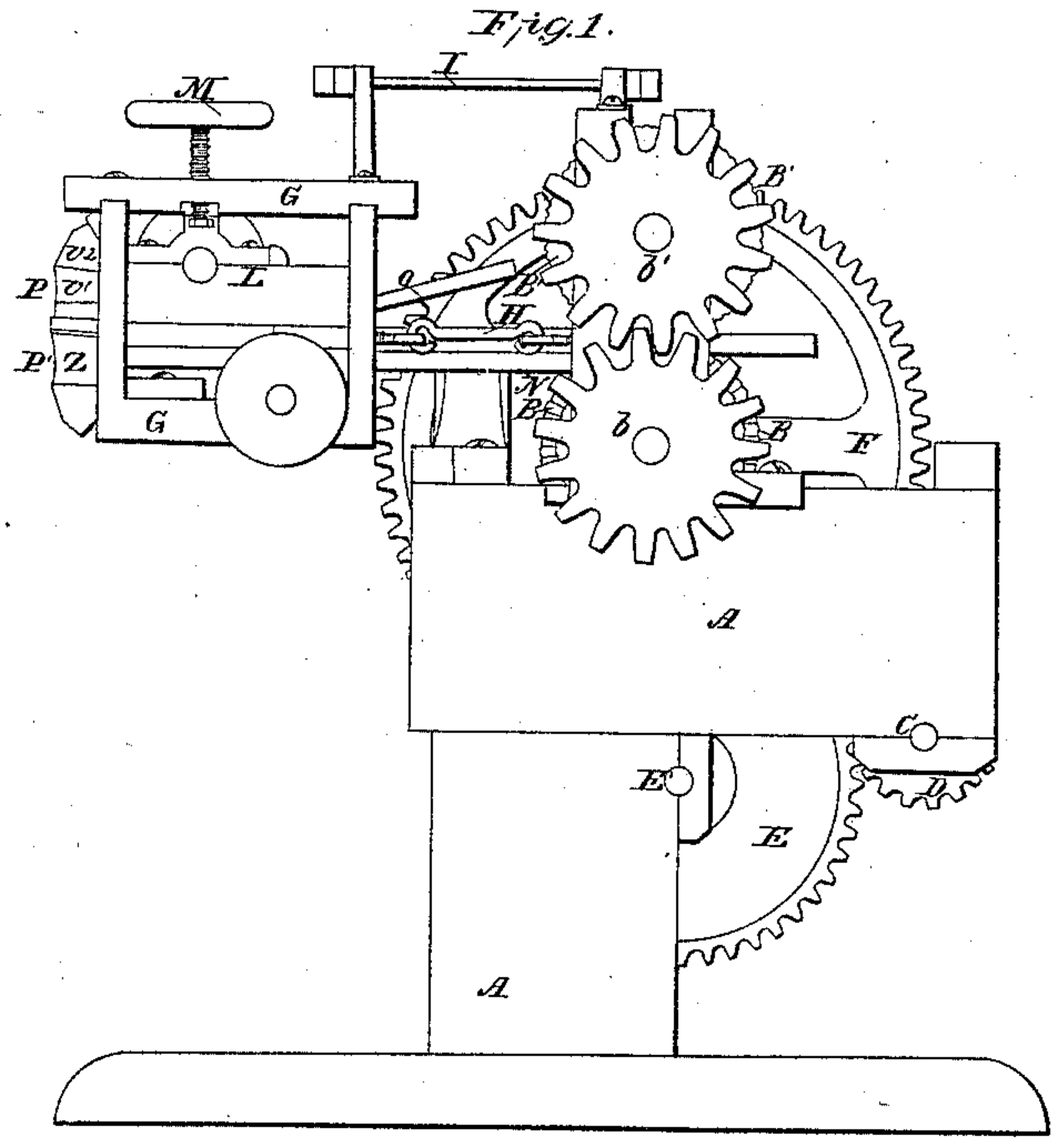


Fig. 3.

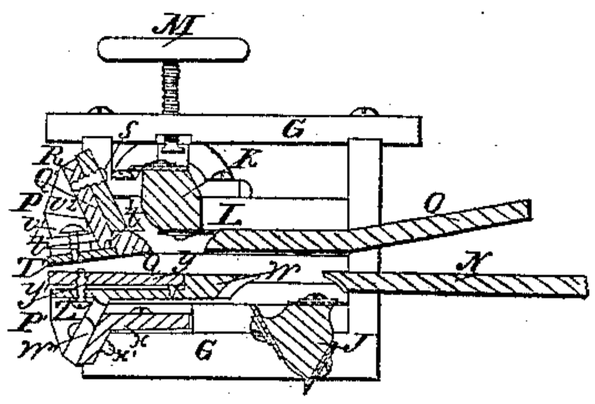
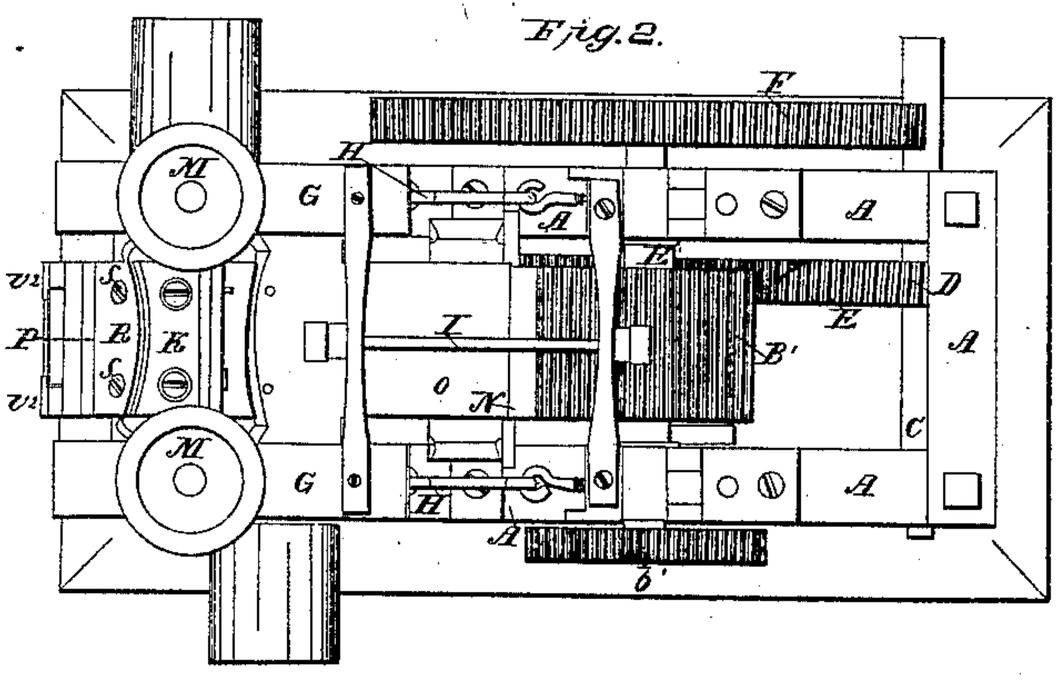


Fig. 2.



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UNITED STATES PATENT OFFICE.

EDWARD HOLMES AND B. HOLMES, OF BUFFALO, NEW YORK.

STAVE-MACHINE.

Specification of Letters Patent No. 31,459, dated February 19, 1861.

To all whom it may concern:

Be it known that we, EDWARD HOLMES and BRITAIN HOLMES, of the city of Buffalo, county of Erie, and State of New York, have invented certain new and useful Improvements in Stave-Dressing Machines; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and the letters of reference marked thereon, in which—

Figure I is a side elevation of our improvement. Fig. II is a plan of the same and Fig. III is a longitudinal section of the cutter frame and flexible mouth pieces.

The nature of our invention relates, first, to connecting the cutter frame to the stationary or gear frame of the machine by means of flexible or yielding connections so that the cutter frame may oscillate or move in any direction according to the peculiar requirements of each stave to be dressed; second, in the arrangement of yielding or flexible mouth pieces in a cutter frame which has a yielding or flexible connection to the gear or stationary frame so as to allow a crooked or winding stave to pass between them and at the same time steady and hold the stave so as to insure the proper action of the cutters thereon.

Letters of like name and kind refer to like parts in each of the figures.

A is the main frame which supports the feed rollers and gearing.

B is the lower feed roller having a convex corrugated surface.

B′ is the upper feed roller having a straight corrugated surface.

C is the driving shaft having a pinion (D) upon it.

E is a spur wheel upon the shaft (E′) and gears into the pinion (D.)

F is a spur wheel upon one end of the shaft of the lower feed roller (B) which gears with a pinion upon one end of the shaft (E′) thus giving motion to the lower feed roller which motion is communicated to the upper feed roller (B′) through the spur wheels (*b*, *b*′.)

For a more full description of this part of our machine we refer to our patent of January 10th, 1860.

G is the oscillating cutter frame in which is arranged the cutters for dressing both sides of the stave at the same time, and the yielding mouth pieces which allow a crooked or winding stave to pass between them and at the same time steady the stave so as to insure the proper action of the cutters thereon. This frame is connected to the main frame (A) by the links (H) at the sides and spring rod I at the top. This manner of connecting the cutter frame to the main frame gives the cutter frame and cutters freedom to oscillate and move laterally and vertically according to the requirements of the stave being dressed.

J (Fig. III) is the lower cutter head the knives of which have convex cutting edges.

K is the upper cutter head placed over and slightly in advance of the lower one the cutting edges of its knives being concave. It has journal bearings in the adjustable journal boxes L which are raised or lowered by means of the hand screws (M) according to thickness of the stave to be dressed.

N is a bed plate supported upon the main frame. It has a convex corrugated surface and supports the stave while it is passing from the feed rollers to the cutters.

O is a guide plate secured to the journal boxes L of the upper cutter head so that it will always retain the same relative position thereto. Its front end is bent upward so that the stave as it is fed in will be sure to pass in under it.

P and P′ are combined yielding and stationary mouth pieces between which the stave passes as it leaves the cutters. The stationary part (Q) of the upper mouth piece is a short continuation of the guide plate (O) the cutter head working between it and the guide plate. Its surface however instead of being flat like that of the guide plate is concave; corresponding to the concavity of the knives of the upper cutter head and to the convexity of the stave when dressed. The stationary part Q has an upward oblique projection (Q′) by which it is connected to the cross bar (R) (said cross bar being connected at its ends to the movable journal boxes (L) of the upper cutter head) by means of the bolts or screws (S) the holes in the cross bar through which they pass being elongated to allow of the proper adjustment of the mouth piece.

T is the yielding part of the mouth piece being a continuation of the stationary part Q and having the same degree of concavity. It is connected to the stationary part by the bolt (*t*) passing through it and the lug V projecting from the stationary part Q. This

bolt (t) in connection with the pin (t') holds the yielding part T in place and guides it in its yielding movement. The rubber springs V′ placed between the plate (T) and the lugs V^2 projecting from the oblique part (Q′) press it downward continually but still allow it to yield. The lower mouth piece is similar to the upper one. It has a short stationary continuation (W) of the bed plate N with a similar convex surface and a downward oblique projection W′ by which it is connected to the cross bar X by means of the bolts x' the holes through the oblique part W′ being elongated to allow of the proper adjustment. It has a yielding plate (Y) rubber springs (Z) connecting bolt Y′ all constructed and operating as in the upper mouth piece the yielding plate (Y) having a convex surface corresponding to the convexity of the lower cutters.

The operation of our machine may be described as follows: Suppose a crooked and winding stave thicker at one edge than the other to be passed into the feed rollers. The convexity of the lower roller will allow the stave to pass through with its upper surface parallel with the straight surface of the upper feed roller. From the feed rollers the stave passes upon the bed plate (N) and under the guide plate (O) the underside of which is flat and consequently the twist or wind of the stave will cause the cutter frame to tilt until the cutter heads become parallel with the upper surface of the stave consequently the cutter heads will dress the staves parallel with the upper surface thereof no matter how winding or crooked the stave may be. As the stave leaves the cutters it passes between the mouth pieces which while the stationary parts Q and W thereof hold the stave steady for the cutters to act thereon and prevent the cutters from cutting in too deep and the yielding parts will accommodate themselves to the crooks and winds of the stave. It may be observed that were the whole length of the mouth pieces stationary it would be impossible to pass a crooked and winding stave through for it would choke and stop the machine and were the whole length of the mouthpieces made yielding they would not hold the stave sufficiently firm to secure the proper action of the cutters thereon but by combining short or narrow stationary parts with longer flexible parts both of these difficulties are obviated. The narrow stationary parts will hold the stave firmly for the action of the cutters and will fall into and follow all the crooks winds and hollows of the stave while the yielding parts will yield to all the inequalities and still hold the stave firmly especially when it is about to leave the cutters. The first stave fed into the machine will pass beyond the reach of the feed rollers before it is fully dressed but the second stave as it passes through the feed rollers will move it forward until it is fully dressed and so on successively as the staves are fed into the machine.

We claim—

1. Connecting the cutter frame (G) to the stationary or gear frame of the machine by means of flexible or yielding connections (H and I) so as to admit of the oscillation or movement of the cutter frame in any direction according to the peculiar requirements of each stave to be dressed substantially as set forth.

2. The arrangement of the flexible mouth pieces P and P′ in the cutter frame (G) substantially as described in combination with the flexible connection of said cutter frame to the stationary or gear frame of the said machine as set forth.

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Witnesses:
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