(No Model.)

E. M. JEWETT.

STAVE BENDING MACHINE.

No. 327,173. Patented Sept. 29, 1885.

Fig. 1.

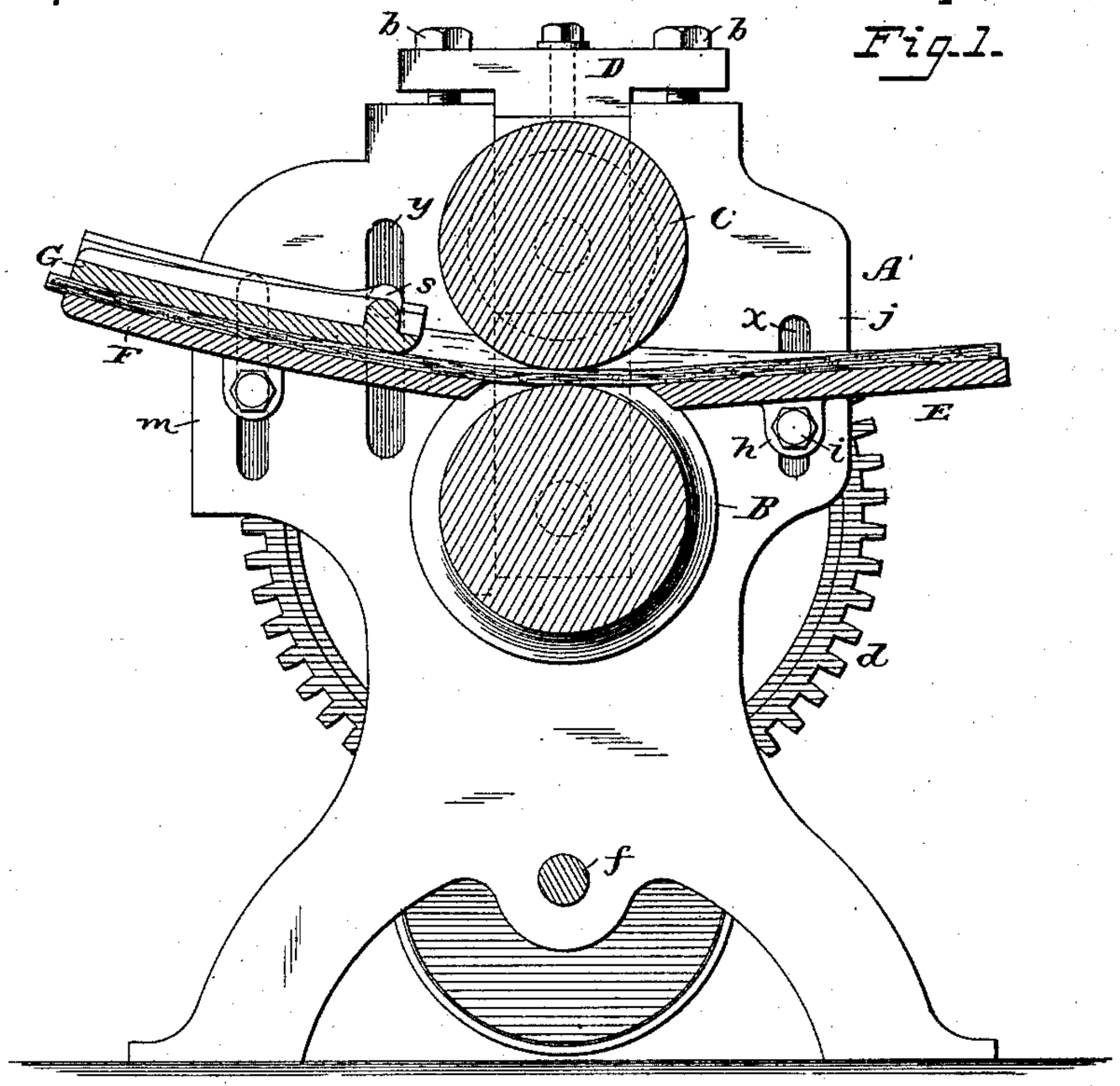


Fig. 3.

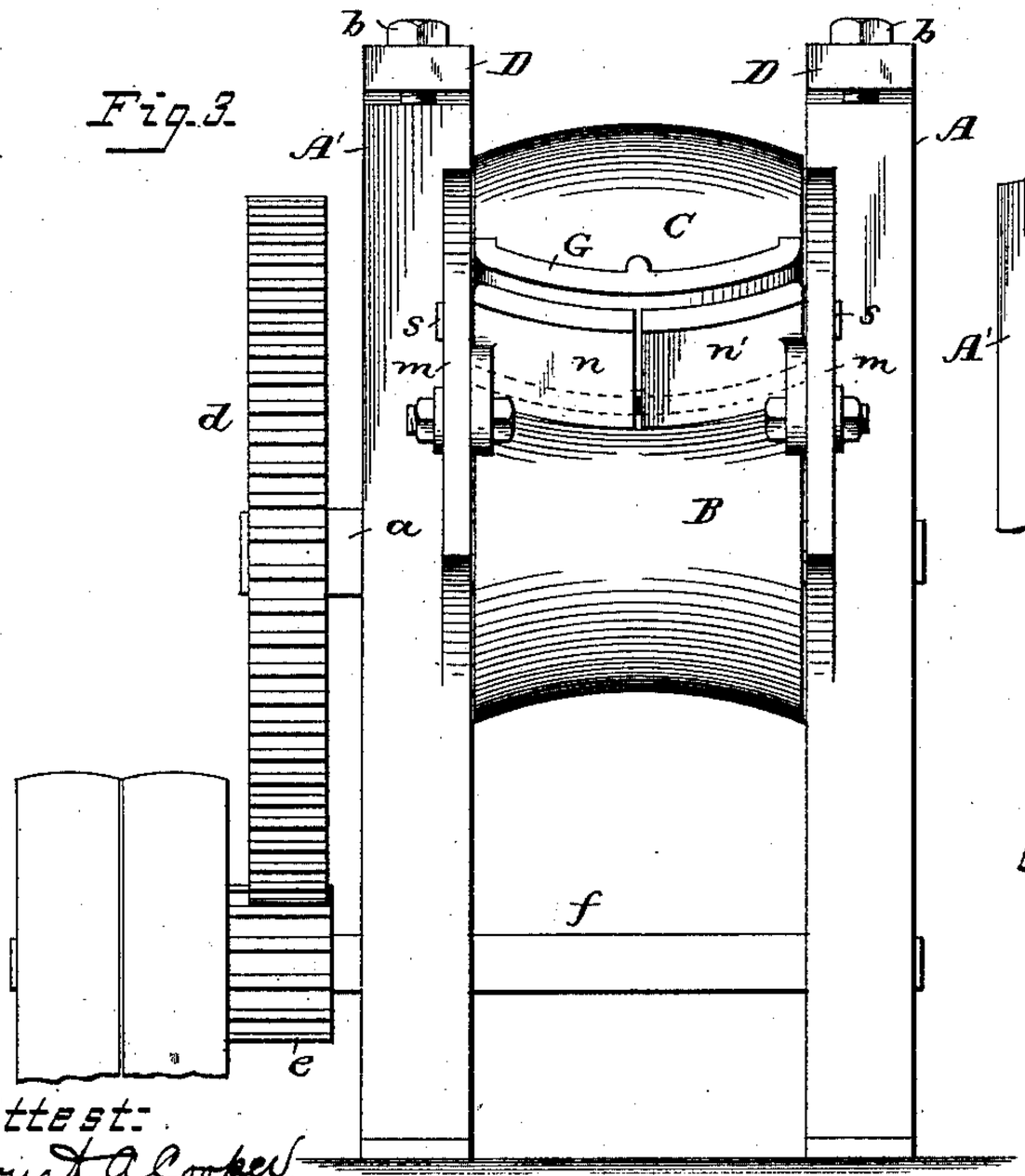


Fig. 2.

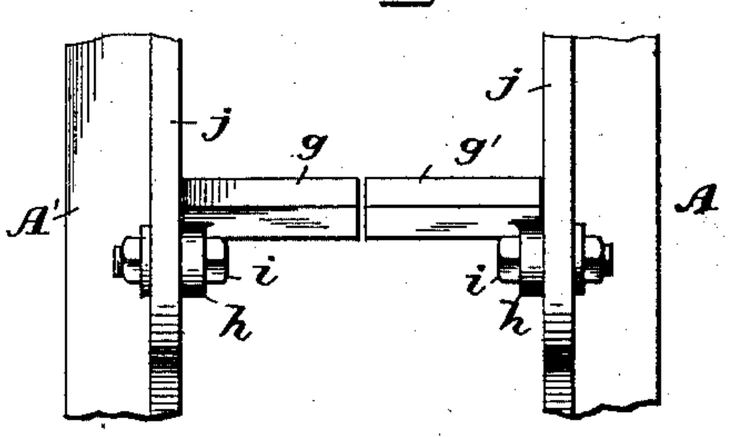
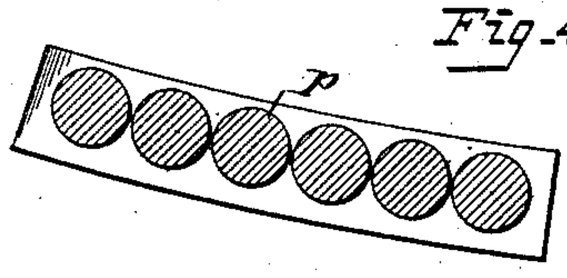


Fig. 4.



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UNITED STATES PATENT OFFICE.

EDWARD M. JEWETT, OF BUFFALO, NEW YORK, ASSIGNOR TO EDWARD W. JEWETT, OF SAME PLACE.

STAVE-BENDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 327,173, dated September 29, 1885.

Application filed July 15, 1885. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. JEWETT, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Stave-Machines, of which the following is a specification.

My invention relates to stave-machines; and it consists in a construction, substantially as herein set forth, whereby the staves may be condensed, solidified, and planished, and curved transversely to correspond to the curve of the barrel, and curved longitudinally to correspond with the bilge of the barrel, at one operation.

In the accompanying drawings, forming part of this specification, Figure 1 is a longitudinal section of a machine embodying my invention. Fig. 2 is an end view of one form of feeding-table. Fig. 3 is a rear end view of the machine, and Fig. 4 is a detail of a modification.

The frame of the machine is constructed in any suitable manner to support the working parts, preferable with side pieces, A A′, each recessed to receive the boxes in which turns a shaft, *a*, supporting a roller, B, having a concave face and also movable boxes receiving the journals of a roller, C, having a convex face, a follower, D, bearing upon the upper box and being held in position by bolts *b*, extending into the side frame.

If desired, springs may be interposed between the upper and lower boxes, which tend to lift the upper boxes, so that by turning the bolt *b* the upper roller may be adjusted to any required position in respect to the lower roller, and will be held therein without yielding to pressure tending to lift it from the lower roller.

The toothed wheel *d* on the end of the shaft *a* gears with a pinion, *e*, upon a driving-shaft, *f*, which is provided with the usual fast and loose pulleys.

At the front of the machine is an adjustable table, E, and at the rear is an adjustable shoe, F.

The table E may consist of a single piece or plate supported adjustably between the frames. I prefer, however, to make it of two sections, *g g′*, each having a perforated flange or ear, *h*, through which a bolt, *i*, is passed, the said bolt also extending through a slot, *x*, in a flange, *j*, projecting from the edge of the side frame, so that each section may be adjusted to any required height and angle in respect to the rolls, and may then be secured firmly in place by means of the bolt.

The shoe F is preferably made in two sections, *n n′*, each provided with an ear and bolted adjustably to a slotted flange, *m*, upon one of the side frames in the same manner as the section of the table; but the shoe-sections, instead of being flat like the table-sections, are each curved both longitudinally and transversely, the transverse curve corresponding to that of the faces of the rollers. The rollers B and C are adjusted to such a position apart that the staves in passing between them will be condensed, solidified, and planished, as set forth in the Letters Patent granted to J. J. Burke, June 21, 1881; but owing to the rounded form of the rollers the staves in addition will be curved transversely to correspond to the curve of the circumference of the barrel, and owing to the arrangement of the table and shoe and to the longitudinal curved form of the latter the stave will also be bent and receive a longitudinal curve or arch which will correspond to the bilge of the barrel. By this means a single passage of the stave between the rollers is caused to condense the stave, impart to it the desired transverse curve, and also the longitudinal curve, so that it leaves the machine in nearly a finished shape.

In order to aid in imparting the curved forms to the stave, I prefer to use in connection with the shoe a curved guard or cap, G, which is arranged above the shoe. As shown, the guard G is provided with trunnions *s*, extending into vertical grooves *y* in the side frames, so that the guard may rise as the stave passes over the shoe and then bear with its weight above the stave; but instead of this the guard may be secured in a fixed position, or it may be forced down toward the shoe or weighted to increase the pressure in any suitable manner.

It will be obvious that the rollers C B must be changed whenever it is desired to impart a different transverse curvature to the stave. It is not, however, necessary to change the rollers when the curve of the bilge is to be altered, as this may be varied by altering the adjustment of the shoe.

I do not limit myself to the precise construc-

tion of table, shoe, or guard shown, or to any special means of adjusting these parts, as it will be evident that the construction and securing and adjusting means may be changed without departing from the main features of my invention. For instance, the shoe, instead of consisting of a curved plate or plates, may consist of a series of rolls, *p*, Fig. 4, carried by an adjustable frame with their journals rotating therein, arranged in respect to the rolls C B in the same manner as the shoe made of plates above described. The guard G may also consist of a series of rollers carried by a frame.

The upper roller, instead of being held immovably in respect to the lower roller, may be weighted in any suitable or usual manner—for instance, by weighted levers bearing upon the boxes.

I claim—

1. The combination, in a stave-forming machine, of a pair of rolls, one concave and the other convex, a table at one side of the rolls, and a shoe at the opposite side, curved longitudinally and transversely upon its carrying and guiding face, and arranged to bend the staves upward as they pass from the rolls, substantially as set forth.

2. The combination, with the rolls of a stave-forming machine, one concave and the other convex, of an adjustable table at one side, and a shoe at the opposite side, consisting of two parts, each vertically adjustable, substantially as described.

3. The combination of the concave and convex rolls, a table at one side of the rolls, a curved shoe, and curved guard arranged above the shoe, substantially as set forth.

4. The combination of the concave and convex rolls, sectional feed-table, and shoe consisting of two sections curved longitudinally and transversely upon their carrying and guiding faces, substantially as described.

5. The combination of the side frames having slotted flanges, rolls carried by the frames, and table and shoe on opposite sides of the forming-rolls, each in two sections, each section being secured to one of the flanges by a bolt passing through the slot of the flange, substantially as described.

6. The combination of the concave and convex rolls and an adjustable shoe curved longitudinally and transversely upon its carrying and guiding face, substantially as described.

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Witnesses:
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