C. O. APPLEBY.

Machine for Setting Up Barrels.

No. 198,330. Patented Dec. 18, 1877.

Fig. 1.

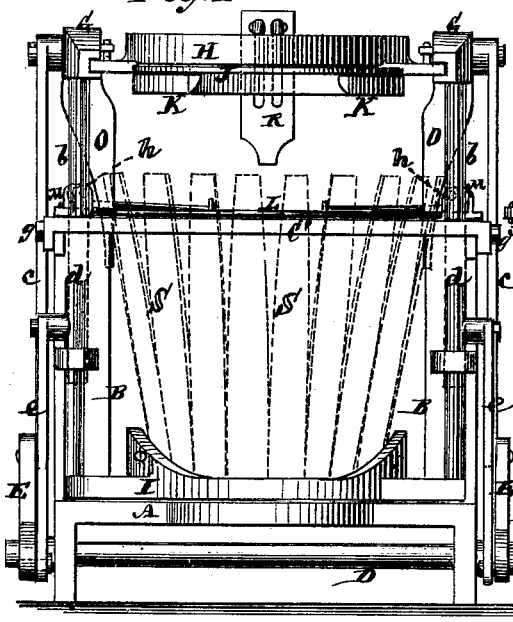


Fig. 3.

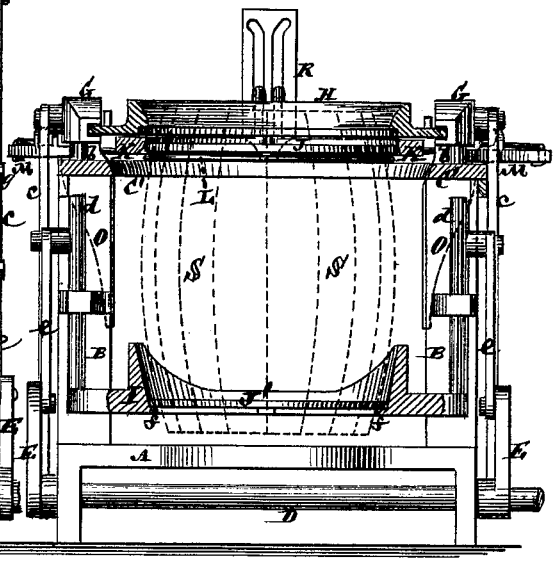


Fig. 2.

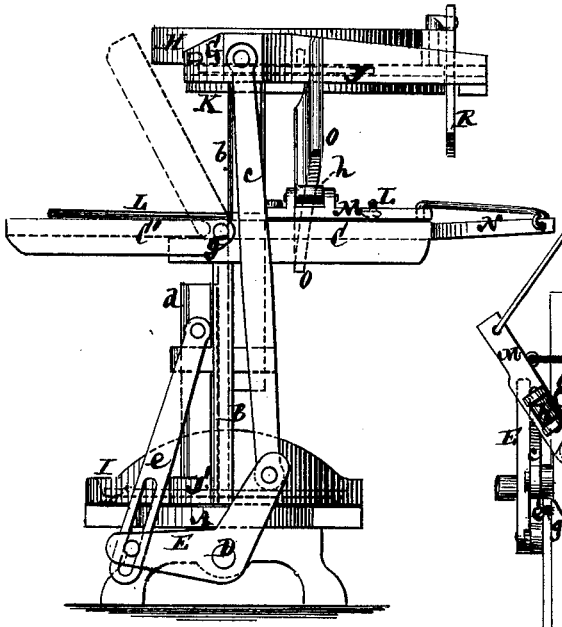
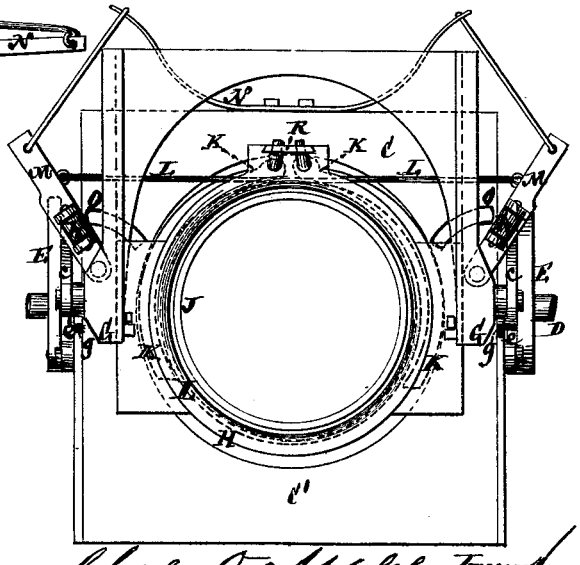


Fig. 4.



Witnesses

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IMPROVEMENT IN MACHINES FOR SETTING UP BARRELS.

Specification forming part of Letters Patent No. **198,330**, dated December 18, 1877; application filed October 31, 1877.

To all whom it may concern:

Be it known that I, CHARLES O. APPLEBY, of Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Machines for Setting Up Barrels, of which the following is a description, reference being had to the accompanying drawing, forming part of this specification.

The object of this invention is to produce an apparatus which shall operate automatically, or nearly so, to set up the staves of a barrel, and leave the latter in a condition ready for cutting the croze and chine, and for subsequently putting on the permanent hoops, thereby doing the work of setting up and applying the temporary hoops which hold the staves together much more expeditiously by machinery than has heretofore been done by hand.

The invention consists in an apparatus having its parts organized to act in a continuous manner, first upon a shirring band or rope to draw the staves together, and then upon devices for putting on the temporary hoops.

The invention also consists in various advantageous constructions and combinations of the particular devices which are used in setting up the barrel by said apparatus.

Figure 1 represents a front view of an apparatus for setting up barrels, constructed in accordance with my invention, and with the working parts in their starting or normal position. Fig. 2 is a side view of the same under like conditions or positions of the working parts. Fig. 3 represents a sectional elevation of said apparatus, with the working parts in their finishing position, and after the temporary hoops have been forced to their binding or holding positions on the staves; and Fig. 4 is a plan under a like position of the working parts.

A is the bed of the machine, on which are erected opposite side uprights B B, that serve to support a table, C C′. Beneath the bed A is a rock-shaft, D, which extends from side to side of the apparatus, and to which motion may be imparted by any suitable means. This rock-shaft has secured on its opposite ends levers or arms E E, from which motion is communicated on opposite sides of the axis of said shaft, first to an upper frame, G, which carries an upper temporary hoop-holder, H, and subsequently in a reverse direction to a lower temporary hoop-holder, I. The frame G, which carries the working head or upper temporary hoop-holder H, is guided in its up-and-down movement by side bars *b b*, which pass through guides in the portion C of the table and guides on the uprights B B. Side rods *c c* connect the levers or arms E E with the frame G, to impart to the latter its necessary up-and-down movement. The lower temporary hoop-holder I is similarly guided in its up-and-down movement by side bars *d d* passing through guides on the uprights B B, and receives its up-and-down movement by wrists or studs on the levers E E, working in slotted side rods *e e*.

J is the upper temporary hoop, which is arranged to rest on jaws K K in the upper hoop-holder H; and J′ is the lower temporary hoop, which rests upon supports *f* within the lower hoop-holder I. Said temporary hoop-holders H and I are of annular construction, corresponding to the rotundity of the barrel at or near its ends, and the table C C′ has a larger circular opening through it. The upper temporary hoop-holder H is fitted to slide backward and forward in the frame G, to facilitate the entry of the staves within or through the circular opening in the table C C′, the front portion C′ of which latter is hinged at *g* to the rear portion thereof, to provide for the removal of the barrel after it has been set up and bound by the temporary hoops.

L is a shirring band or rope of wire, hide, or other suitable material or materials. This band or rope is arranged in a circular form on or over the table C C′, outside the opening through the latter, and has its ends crossed and connected with opposite side levers M M on the table. These levers are drawn toward each other by a spring, N, to open or expand the circular shirring-band; and wedges or inclined-plane attachments O, carried by the frame G, serve, as the latter is lowered, to act upon rollers *h h* on the levers M M, and, by forcing the latter apart, to close or tighten the shirring-band around the staves under operation within the apparatus.

In the operation of the apparatus the staves S S, after having been prepared in the ordinary or any suitable manner, are set up within

the lower hoop J′, and within the opening in the table C C′, as represented in Fig. 1, while the upper temporary hoop-holder H is raised and slid back in the frame G, as shown in Fig. 2, to facilitate the placing of the staves within the apparatus, the lower temporary hoop-holder I then being in its lowermost position. Motion having been communicated to the rock-shaft D to lower the frame G, the first operation is to contract the shirring band or rope L by the action of the inclined-plane attachments O on the levers M M. This causes the shirring-band to be drawn around the staves, and to draw the upper part of them together. The upper temporary hoop-holder H is then slid forward in the frame G to bring the upper hoop J into concentric relation with the circle of staves beneath it. Motion of the rock-shaft D being continued to further depress the frame G, a slotted slide, R, on the back of the holder H strikes the portion C of the table and opens the jaws K K, which liberates the upper temporary hoop J and deposits it over or around the upper ends of the staves, as represented in Fig. 3; and while this latter action of depositing the upper hoop takes place the fur, ther contraction of the shirring-band is arrested by straight upper portions of the inclined attachments O then coming in contact with the rollers *h*. Simultaneously with this placing of the upper temporary hoop around the staves held together by the shirring-band, the lower temporary hoop-holder I is raised to adjust the lower temporary hoop J′ around the lower ends of the staves. The rock-shaft D is then reversed to lower the hoop-holder I and raise the hoop-holder H to their normal positions, leaving the temporary hoops J J′ on the barrel-body, and liberating or expanding the shirring-band L. After the barrel has been thus set up and bound by the temporary hoops J J′ the front hinged portion C′ of the table is swung up, as shown by dotted lines in Fig. 2, and the barrel or barrel-body taken out of the apparatus. The hinging of the front portion C′ of the table C C′ obviates the necessity of lifting the barrel over the table, and of raising the upper temporary hoop-holder H higher than is necessary to free the upper part of the barrel when removing the latter from the apparatus.

The barrel or barrel-body, as taken from the apparatus, is left in a condition ready for cutting the croze and chine, after which the permanent hoops are put on and the temporary hoops removed, certain of said permanent hoops, however, being put on before removing the temporary hoops.

I claim—

1. The combination, in an apparatus or machine for setting up barrels, of upper and lower temporary hoop-holders, arranged to move one toward the other when putting said hoops on the staves, an intermediate table for the lateral support of the upper portions of the staves, and a shirring band or rope for drawing the staves together to receive the temporary hoops over them, substantially as specified.

2. The rising and falling upper temporary hoop-holder, provided with jaws for successively holding and releasing the hoop, in combination with a slotted slide attached to said holder, for controlling the jaws and operating, during the descent of the holder, to open the jaws, essentially as described.

3. The combination, with the rising and falling frame G, of the upper temporary hoop-holder H, constructed to admit of being slid backward and forward within said frame, substantially as specified.

4. The combination, with the shirring rope or band, of levers, to which said band is attached at its opposite ends, a rising and falling frame, carrying the upper temporary hoop-holder, and inclined-plane attachments, carried by said frame and operating said levers, whereby the shirring rope or band is automatically contracted or closed on and around the staves, essentially as described.

5. The table C C′, constructed with a circular opening through it, and having a forward hinged or rising and falling section, in combination with upper and lower temporary hoop-holders, substantially as and for the purpose or purposes herein set forth.

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