J. A. SEAMAN.

CROZING AND HOWELING MACHINE.

No. 189,878. Patented April 24, 1877.

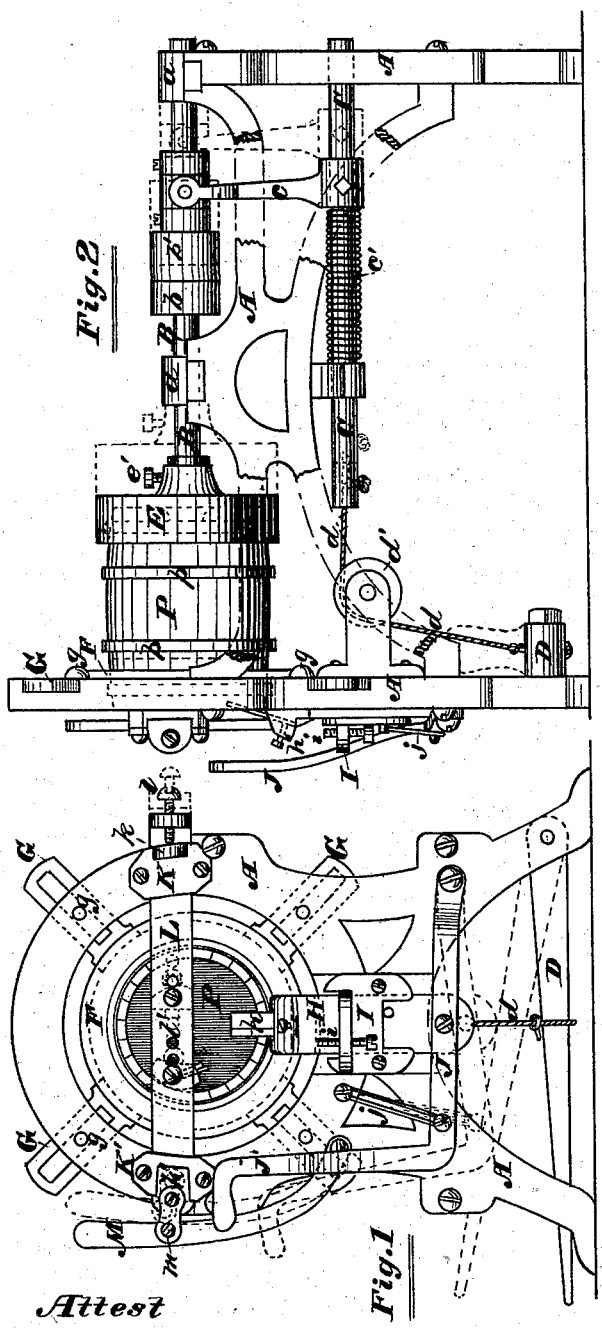

Fig. 1

Fig. 2

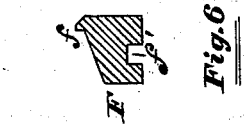

Fig. 6

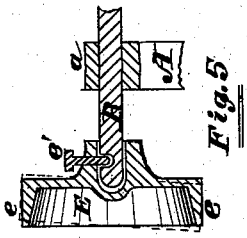

Fig. 5

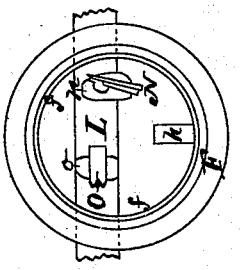

Fig. 4

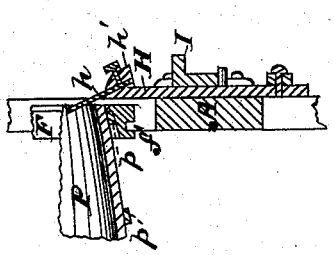

Fig. 3

Attest

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UNITED STATES PATENT OFFICE.

JOHN A. SEAMAN, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN CROZING AND HOWELING MACHINES.

Specification forming part of Letters Patent No. **189,878**, dated April 24, 1877; application filed December 9, 1876.

To all whom it may concern:

Be it known that I, JOHN A. SEAMAN, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Machines for Working Off Kegs and Barrels, which is fully described in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents an end elevation of the machine; Fig. 2, a side elevation of the same; Fig. 3, a detail vertical section, showing the trimming-knife and a portion of the barrel and holding-ring; Fig. 4, an end view of the holding-ring and slide, carrying the crozing and howeling tools, looking from the rear of the ring; Fig. 5, a sectional view of the shaft and clamp for holding the rear end of the barrel or keg; and Fig. 6 a cross-section of the front ring, which receives the forward end of the barrel.

My invention relates to a machine for "working off" barrels and kegs—that is, for performing the work of trimming off evenly, and of chamfering the chime, howeling and crozing, so that the barrel is all ready to receive the heads and permanent hoops.

The invention consists in a sliding shaft, carrying a clamping-disk, in which one end of the barrel is placed, forced up to the front ring, and rotated; also, in attaching the clamping disk or plate to the sliding shaft by a loose joint, so that it will give or vibrate to accommodate the irregularities in the ends of the barrels; also, in constructing the front ring with a shoulder, against which the front truss-hoop on the end of the barrel rests, while the several cutting-tools are brought into operation; also, in mounting the trimming-cutter in a slide, which is moved up and down by a suitable lever; also, in mounting the howeling and crozing tools upon a single slide, moved back and forth by a lever, so that the tools are brought into operation successively; and, also, in various details of construction and combination of devices, as will be hereinafter fully set forth.

In the drawings, A represents a suitable frame, at one end of which is mounted a shaft, B. This shaft is fixed loosely in boxes *a*, so that it can slide back and forth therein. Just below the shaft B a sliding-bar C is mounted in the figure A, which is connected to the shaft B by means of an arm, *c*, attached to both the shafts B and the bar C in any suitable manner, so that it may be adjusted upon them. Between the lower end of the arm *c* and the inner bearing of the bar C a coiled spring, *c'*, is placed around the bar, which acts to push the bar, and with it the shaft, back toward the rear end of the machine.

A treadle, D, is connected by a cord, *d*, passing over a pulley, *d'*, to the forward end of the bar C, so that whenever desired the bar, and with it the shaft B, may be drawn forward; but whenever released the spring *c'* will force them back again.

On the shaft B are mounted a fixed driving-pulley, *b*, and a loose or idle pulley, *b'*, upon which the driving-belt is shifted alternately, as it is desired to rotate or stop the revolution of the shaft. A clamping-disk, E, is attached to the front end of the shaft B. This plate or disk is constructed with a flaring flange, *e*, and is mounted upon the end of the shaft, and secured by means of set-screw *e'*, the socket in the plate which receives the end of the shaft being a little larger than the shaft, so that the clamp will have a slight vibratory movement, as shown in dotted lines in Fig. 5 of the drawings. The clamping-disk E is made of such size as to receive and firmly hold the end of the keg or barrel which is to be operated upon, and must be changed for barrels of different sizes.

The front end of the frame A is constructed with a large circular opening, within which is mounted a ring, F. This ring is of considerable thickness, the opening being conical, and is provided at its extreme front edge with a flange or shoulder, *f*, the outer edge of which is beveled, as shown in Fig. 6 of the drawings. The ring is also provided with a groove, *f'*, upon its exterior surface, by means of which it is fixed and held in suitable position within the circular opening in the end of the main frame, slotted centering-plates G being fastened to the main frame by means of set-screws *g*, and fitted at their inner ends to enter the groove *f'* in the ring F, and form a bearing for the latter.

The ring F may thus be properly centered and held in the frame, but the centering-plates

should not be forced up so firmly as to prevent the revolution of the ring within them. The ring is made of such size that the end of the barrel will exactly fit into the opening within the flange *f*, and the end truss-hoop will fit the opening just back of said flange, against which it is forced and firmly held.

A slide, H, outside of the ring F, carries upon its upper end, a cutter, *h*, which is set at an angle, so as to incline inward, as shown in Fig. 3 of the drawings. This slide moves back and forth in a suitable guide, I, in which is fixed a set-screw, *i*, upon the end of which a shoulder, *h'*, at the upper end of the slide H, strikes, so as to limit the downward movement of the latter, which may be adjusted, as desired, by turning the screw *i*.

A suitable lever, J, is pivoted to the main frame A, and also joined to the slide H, so that by vibrating the lever the slide may be pulled down to bring the cutter *h* into working position. A suitable spring, *j*, connected with the main frame, and the lever J operates to throw up the latter, and with it the slide H whenever the lever is released.

In front of the ring F is also mounted in suitable guides K K', a sliding bar, L, the guides being attached to the front end of the main frame, so that the bar may be moved back and forth, just in front of the ring F. At one end of this bar is a set-screw, *l*, which strikes against a stop, K, on the guide K, thereby limiting the forward movement of the slide, which may be adjusted by turning the screw.

To the other end of the slide L is attached a lever, M, pivoted to the main frame, and connected to the slide by a link, *m*, so that the bar may be reciprocated in straight lines.

A recess, K, is cut in the guide K', which receives one end of the link *m*, and makes a stop for the latter, thereby limiting the backward movement of the slide.

A beveling tool, N, and a crozing-tool, O, are attached to the inside face of the slide L by means of suitable holders *n* and *o*, fastened to the slide L by screws passing through holes *l'* therein. The holders *n* and *o* project within the ring F, so that the tools may be held in proper position to howel and croze the chine of the barrel after it has been evenly trimmed by the cutter *h*.

Several holes *l'* are made in the bar, so that the tools may be adjusted to suit barrels of different sizes, and in such position that, when the slide is moved in one direction, the howelling-cutter will be brought into operation, and when moved in the other direction the crozing-tool will be brought into contact with the chine.

The ring F must be made of suitable size to fit the end of the barrel, as described, and must therefore be changed to suit barrels and kegs of different sizes.

The operation of my improved machine is as follows: The barrel P is set up in truss-hoops, *p*, in the usual manner, and a clamp, E, and ring F, of a size corresponding to the barrels to be worked off, are fitted to the machine. The shaft B and bar C are adjusted so that, when thrown back to their farthest limit by the spring *c'*, there will be just room for the barrel to pass between the clamp and the ring.

When in this position (shown in dotted lines in Fig. 6 of the drawings) the barrel P is passed in between the clamp and ring, and its rear end forced back within the flange of the clamp. The shaft B is then drawn forward by pressing down the foot-lever D, and the forward end of the barrel forced into the ring F, until the end truss-hoop *p* is pressed firmly against the shoulder *f* all around, as shown in Fig. 3 of the drawings.

If there are any irregularities in the ends of the chines, the clamp E will yield, as above described, sufficiently to make the end truss-hoop bear against the shoulder F around its entire circumference.

The driving-belt is shifted to the tight pulley on the shaft B, and thereby the clamp E is caused to revolve, the barrel being held so tightly between the clamp and ring that it is also caused to revolve with the clamp, carrying with it also, for the same reason, the ring F. The slide H is then drawn down by means of the lever J, thereby bringing the cutter *h* into operation, which, on account of its inward inclination, trims off the chine evenly, at the same time giving it a slight inward bevel, the extent of the cut of the trimmer being properly adjusted by means of the screw *i*. The trimmer is then released and the slide L is moved by the lever M in the proper direction to bring the howeling-tool N into operation upon the inside of the chine.

When this surface is properly smoothed, the bar is reciprocated in the opposite direction, and the crozing-tool O is brought into action to cut the usual croze in the chine. The proper adjustment of these tools and the bar L being effected, as described above, the machine is then stopped by shifting the belt to the idle pulley, the barrel is reversed, and the same operation is repeated upon the other end. It is then all ready to receive the heads and fixed hoops which complete it for use.

It is evident that the devices for reciprocating the shaft B may be changed, as well as the precise construction of some of the other devices herein described, without materially changing my invention.

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

1. The reciprocating drive-shaft B, having a clamping-plate, E, mounted on its forward end, substantially and for the purpose set forth.

2. The reciprocating shaft B, in combination with the slide C adjustably connected thereto, spring *c'*, and lever D, substantially as and for the purpose set forth.

3. The drive-shaft B in combination with

the clamping-plate E, mounted loosely on one end thereof, so as to have a vibratory or yielding movement thereon, substantially as and for the purpose set forth.

4. The holding-ring F, provided with an interior perpendicular flange or shoulder, *f*, against which the truss-hoop abuts when the barrel is put in the machine, substantially as and for the purpose set forth.

5. The ring F, having an interior flange or shoulder, *f*, in combination with the reciprocating shaft B, and yielding clamp E, mounted thereon substantially, as described.

6. The slide H, provided with the inclined cutter *h*, and hinged to the lever J, substantially as and for the purpose set forth.

7. The slide H having the inclined cutter *h* on its upper end, in combination with the adjustable stop *i*, lever J, and spring *j*, substantially as described.

8. The reciprocating bar L, provided with an adjustable stop, *e*, at one end, and a fixed stop at the other, in combination with the howeling and crozing tools N and O, mounted thereon, the holding-ring F, and lever M, substantially as described.

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Witnesses:
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L. M. HARRIS.