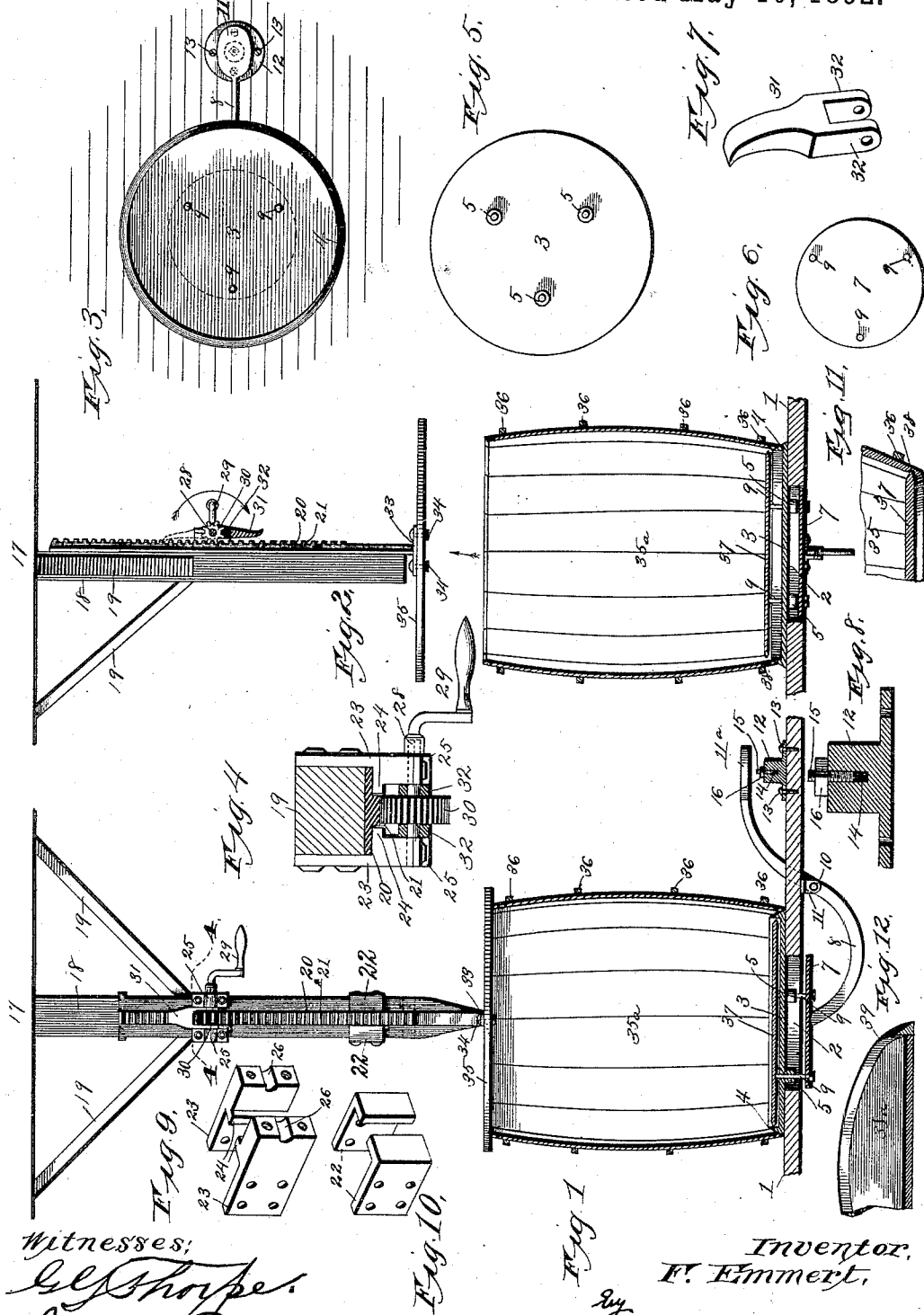


F. EMMERT.
BARREL HEADING MACHINE.

No. 474,596.

Patented May 10, 1892.



Witnesses;

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UNITED STATES PATENT OFFICE.

FREDERICK EMMERT, OF KANSAS CITY, KANSAS.

BARREL-HEADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 474,596, dated May 10, 1892.

Application filed June 1, 1891. Serial No. 394,735. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK EMMERT, of Kansas City, Wyandotte county, Kansas, have invented certain new and useful Improvements in Barrel-Heading Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to machines for inserting the heads into barrels, casks, and similar receptacles; and its object is to produce a simple, strong, durable, and inexpensive barrel-heading machine, which shall operate with the utmost directness and rapidity, and by means of which the heads shall be accurately inserted into the chine of the staves.

To the above purposes my invention consists in certain peculiar and novel features of construction and arrangement, as hereinafter described and claimed.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a view of my improved barrel-heading machine, partly in front elevation and partly in transverse vertical section, the rack-plate being in lowered position. Fig. 2 is a view of the machine, partly in side elevation and partly in transverse vertical section, the rack-plate being in raised position. Fig. 3 is a plan view of the base-plate and the operating-lever for the movable plate. Fig. 4 is a horizontal cross-section of the hanger and rack-bar and their operative connections on the line 4 4 of Fig. 1, the arms 32 of the detent-pawl 31 being also shown in horizontal section. Fig. 5 is an under side plan view of the base-plate. Fig. 6 is a plan view of the plate, which is carried by the operating foot-lever. Fig. 7 is a detached perspective view of the detent-pawl of the movable rack. Fig. 8 is a central transverse vertical section, on an enlarged scale, of the adjustable stop-standard. Fig. 9 comprises detached perspective views of the bearing and upper guide-plates for the pinion-shaft and rack-bar. Fig. 10 is a detached perspective view of the lower guides for the rack-bar. Fig. 11 is a detached view, in transverse vertical section, of a portion of one end of a barrel and a portion of its head, showing the relative position

of the head to the chine as the barrel is leaving the base-plate. Fig. 12 is a detached sectional perspective view of a modified arrangement of the head-lifting and stave-spreading devices.

In the said drawings, 1 designates a flooring or staging, which may be of any suitable or preferred form or type of construction, but which in any event occupies a horizontal position, and which is formed with an opening 2, preferably of circular marginal contour.

3 designates a plate, which is of circular marginal contour and which is fixed upon the floor or staging 1 above the opening 2 thereof. This plate 3 is formed or provided on its upper side with an upwardly-extending marginal flange 4 of circular form, and the outer side of which is inclined upwardly and inwardly toward the center of the plate 3, as shown. This base-plate is formed with three or more holes, which extend vertically through the plate, and said plate is formed on its underside with a corresponding number of hollow bosses 5, each of which registers with one of said openings in the plate.

7 designates a plate, which corresponds in marginal contour with the marginal contour of the opening 2, and which is supported upon the lower end of an operating foot-lever 8, to be presently fully described. This plate 7 is provided with three or more pins 9, which extend upward above the upper side of the plate and which extend vertically through and correspond in number with the number of the holes or openings in the base-plate 3, each of said pins extending upward through one of the hollow lugs or bosses 5, and also extending upward beyond the upper surface of the base-plate 3 when the plate 7 is moved into its uppermost position. The lever 8 is of approximately S form, and is pivoted at 10 to a bracket 11, which is secured beneath the flooring or staging 1 adjacent to the opening 2 thereof. One end of the lever 8 extends beneath and into contact with the underside of the plate 7, as shown, and the opposite end of the lever extends above the flooring or staging 1 and outward from the base-plate 3. The upper or outer end of the lever 8 is preferably flattened and expanded, as shown at 11^a, so as to form a convenient rest for the operator's foot. Upon the upper surface of the

flooring or staging, at a point immediately beneath the outer end of the lever 8, is secured a standard 12, the base of which is extended beyond the body portion of the standard to admit of the insertion of any desired number of retaining-screws 13 or equivalent devices for securing the standard in position. The body of this standard extends vertically upward from its base, and is formed with an internally-screw-threaded cavity 14, which opens at the upper end of the standard. Within this cavity or socket 14 is inserted a screw-rod 15, the upper end of which is provided with a jam-nut 16, which, by coming into contact with the upper end of the standard, retains the rod in any desired position of vertical adjustment. The purposes and operations of these parts will be presently fully explained.

17 designates a roof, ceiling, beam, or other equivalent structure, which is located above the flooring or staging 1, and from which depends vertically a hanger 18, the said hanger being braced laterally by three or any desired number of inclined braces 19, the upper ends of which are secured to the roof, ceiling, or beam, and the lower ends of which are secured to the sides of the hanger. Against the front side of this hanger 18 rests an elongated vertical rack-bar 20, preferably corresponding in width with the width of the hanger 18 and formed on its side with a vertical rack 21 of less width than the bar. This rack-bar is retained in position upon the hanger partially by two L-shaped guides 22, which are bolted or otherwise suitably secured to opposite sides of the hanger 18 near the lower end thereof, and the inwardly-extending end portions of which overlay the outer surface of the rack-bar at each side of the rack-teeth 21.

Upon the opposite sides of the hanger 18 and above the guides 22 are bolted or otherwise suitably secured two brackets 23, each of which is formed on its inner side with an inwardly-extending vertical rib or shoulder 24, which overlays the outer surface of the rack-bar 20 at each side of its rack-teeth 21, and thus assists in retaining the rack-bar in position. The outer ends of these brackets 23 are formed with aligned transverse half-bearings 26 to receive a crank-shaft 28, said shaft being retained in position by half-bearing cap-plates 25, bolted or otherwise suitably secured to the outer ends of the brackets. This shaft carries at one end a suitable crank-arm 29, and midway of the length of said shaft is mounted a gear-pinion 30, which turns with the shaft and which also meshes with the rack-teeth 21. This pinion is embraced by the bifurcations or arms 32 of a detent-pawl 31, which arms also loosely surround said shaft, the purpose and operation of said detent-pawl being hereinafter described. The lower end 33 of the rack-bar 20 is enlarged laterally, and to this end 33 is secured a plate 35, preferably of circular marginal contour, as shown, any desired number of bolts 34 or equivalent devices

serving as the means for connecting the plate to the end 33 of the rack-bar.

The operation of the above-described machine is as follows: Let 35^a represent the body portion of a barrel, cask, or similar receptacle, the staves of which said body portion is composed being properly leveled and surrounded by truss-hoops 36. At the commencement of the operation of the machine the inner or lower end of the lever 8 stands depressed and a barrel-head 37 is placed upon the upper surface of the base-plate 3. A barrel is now placed upon the base-plate with its lower end embracing the upper edge of the inclined flange 4 of said plate. The crank-handle 29 is now turned so as to lower the rack-bar 20 and bring its plate 35 into forcible contact with the upper end of the barrel. This forces the lower end of the barrel downward upon the inclined outer side of the flange 4, causing the lower ends of the staves to spring outwardly, the height of the flange being such that when the lower end of the barrel touches the upper surface of the base-plate the chine or groove 38, into which the edge of the barrel-head is to fit, is just above the upper edge of the flange 4. The operator's foot is now pressed upon the outer end of the lever 8, he still retaining the crank-handle 29 in his hand so as to prevent the crank-shaft 28 from turning, and the outer end of the lever 8 is depressed until it comes into contact with the upper end of the screw rod or stop 15. This downward movement of the outer end of the lever 8 produces a corresponding upward movement of its lower end, said lower end moving freely against the under side of the plate 7, thus raising said plate 7 and causing the pins 9 to move upward through the plate 3 (the bosses 5 serving as guides for the pins) and bringing said pins into contact with the barrel-head and lifting the same. The crank-handle is rotated so as to raise the rack-bar and its plate 35, after which the detent-pawl 31 is raised and its tip is engaged beneath one of the rack-teeth 21, so as to retain the plate 35 in raised position. The inward spring of the barrel-staves as soon as the plate 35 begins to rise will now (by acting on the inclined outer side of the flange 4) cause the barrel to rise automatically. The stop 15 is so adjusted that the barrel-head is raised just enough to cause the edge of the barrel-head to enter the chine 38 of the barrel at the instant that the lower ends of the staves are slipping upward off of the flange 4, and this movement is a very quick snapping one, so that the insertion is instantly accomplished. The barrel is now inverted and the above-described operations are carried out to insert the head into the opposite end of the barrel. If desired, the flange 4 may be made separate from the base-plate 3, as shown in Fig. 12, in which 38^a designates the base-plate and 39 a ring, which is separate from the base-plate and the outer side of which inclines upwardly and inwardly similarly to the outer side of the

flange 4, above described. In this instance the pins 9 would be dispensed with and the plate 7 would come directly into contact with the underside of the plate 38^a, raising it bodily and similarly raising a barrel-head resting on the plate 38^a within the ring 39. From this description it will be seen that I have produced a simple, durable, and inexpensive machine, which quickly and accurately inserts the heads into barrels, casks, and similar receptacles, and which is very easy to operate.

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

1. An improved barrel-heading machine comprising a base-plate provided on its upper surface with a circular upwardly-extending flange having an upwardly and inwardly inclined outer side and a number of holes extending vertically through the base-plate, a vertically-movable support for a barrel-head, provided with a number of upwardly-extending pins working through the openings in the base-plate, an **S**-shaped lever pivoted adjacent to the support and engaging at its lower end the under surface of said support and

also extending at its upper end above its pivotal support, and an adjustable standard located beneath the upper end of the lever and serving to limit the upward movement of the support, substantially as set forth.

2. An improved barrel-heading machine comprising a pendent hanger, a vertical rack-bar carried by said hanger and carrying at its lower end a platen to rest upon the upper end of the barrel, a crank-shaft carried by the hanger and having a gear-pinion meshing with the teeth of the rack and also a pawl loosely mounted upon the crank-shaft and arranged to engage the rack, a vertically-movable support for a barrel-head, an **S**-shaped lever pivoted adjacent to the support and engaging at its under end said support, and a vertically-adjustable stop engaging the outer part of the said lever, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK EMMERT.

Witnesses:

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G. Y. THORPE.