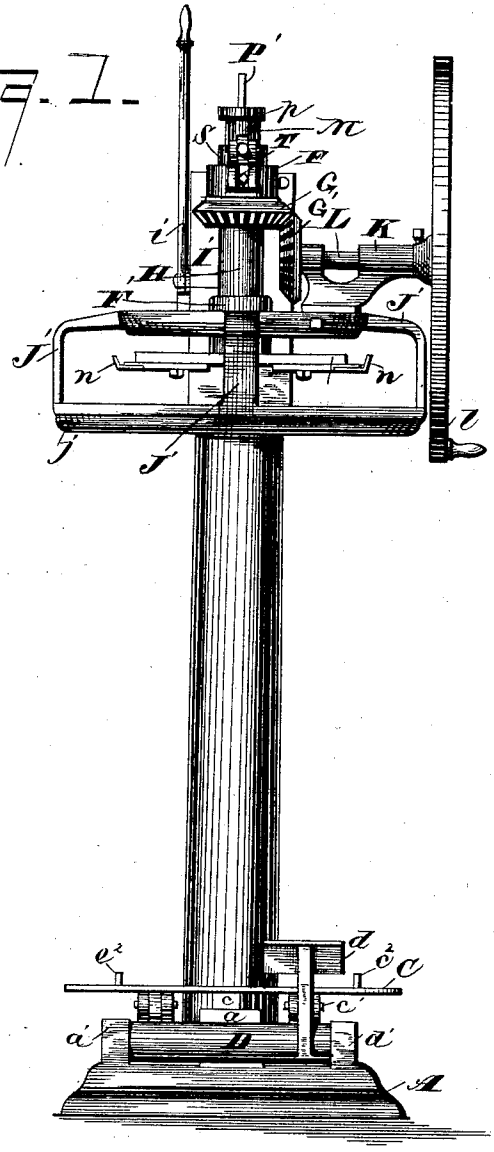
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G. A. FREIDEL & J. D. CLOUGH.

BARREL MAKING MACHINE.

No. 314,926. Patented Mar. 31, 1885.

Fig. 1.



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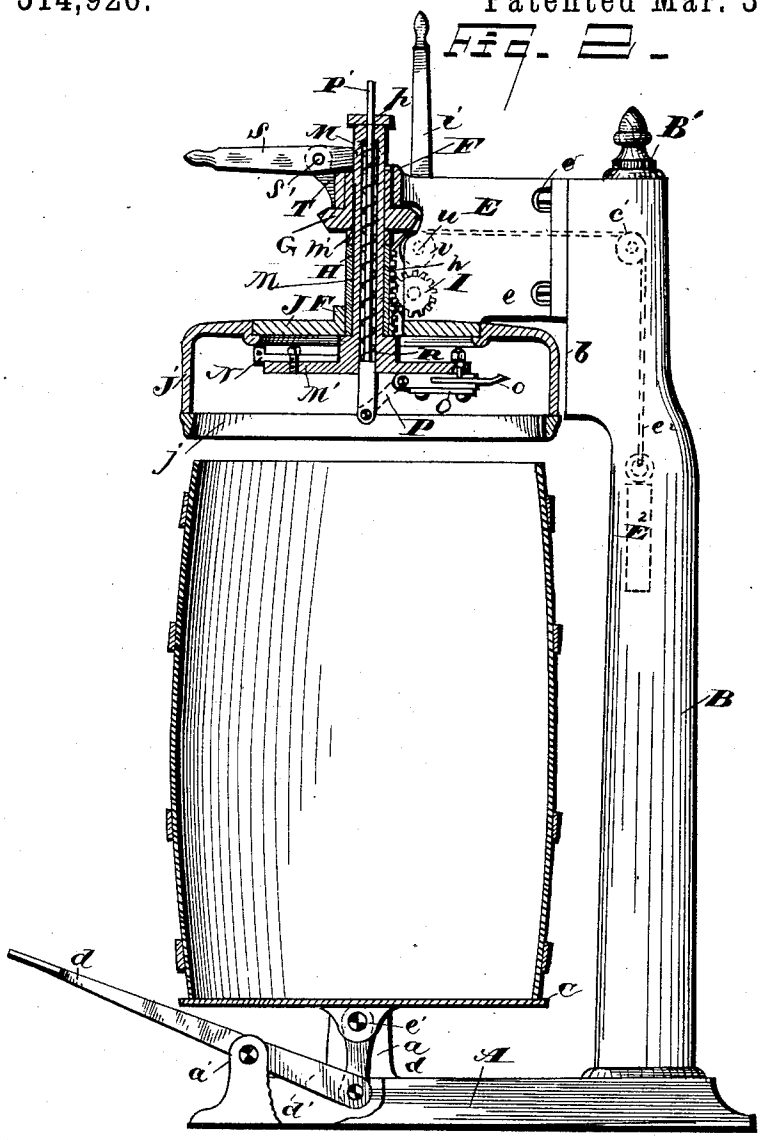
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FIG. 2.



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Fig. 3.

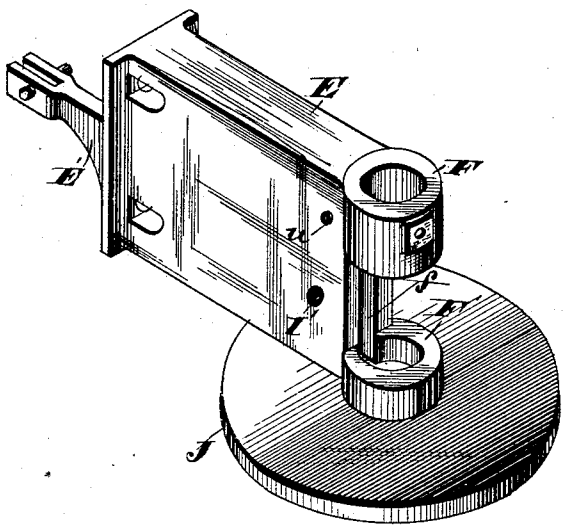


Fig. 4.

Fig. 6.

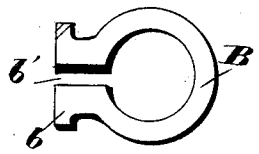
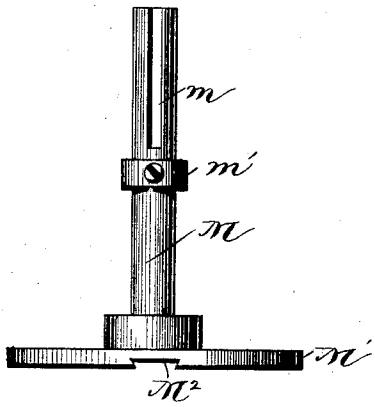
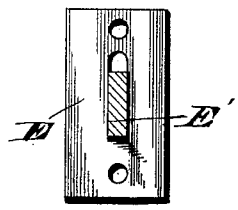


Fig. 5.





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UNITED STATES PATENT OFFICE.

GEORGE A. FREIDEL AND JAMES D. CLOUGH, OF CLEVELAND, OHIO.

BARREL-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 314,926, dated March 31, 1885.

Application filed January 13, 1885. (No model.)

To all whom it may concern:

Be it known that we, GEORGE A. FREIDEL and JAMES D. CLOUGH, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Barrel-Making Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

Our invention relates to improvements in barrel-making machinery, having for its object a table for supporting the barrels, and operated vertically by a treadle to elevate the barrels to engage the mechanism above, and a revolving head with cutters for leveling, chamfering, and crozing the upper end of the barrel, and suitable mechanism for operating the parts.

Our invention further consists in the details of construction hereinafter described.

In the accompanying drawings, Figure 1 is a front elevation of our improved machine. Fig. 2 is a side elevation, partly in section, with the table depressed and a barrel in position thereon. Fig. 3 is a view in perspective of the hollow head E and attachments. Fig. 4 is a plan view of the top of the post. Fig. 5 is a view in elevation of the rear end of the head E. Fig. 6 is a view in elevation of the hollow spindle M and the disk M′.

A represents the base of the machine, to which is attached the hollow post B. The base has an upwardly-projecting boss, *a*, and ears *a′*. The former has a vertical bore, and embraces the depending lug *c* of the table C, forming a guide for the table.

Pivoted to the ears *a′* is the roller D, with the treadle *d* extending forward, and the arms *d′* extending rearward. The latter are pivoted to the links d^2, that in turn are pivoted to the ears *c′*, depending from the table. The table has a series of holes, (not shown,) in which pins c^2 are placed for centering the barrel on the table. The upper end of the post is brought forward, and has a flat perpendicular face, *b*, with a vertical slot, *b′*, leading to the cavity in the post.

E is a hollow head with the rear end flat to fit against the corresponding face of the post, to which it is secured by bolts *e*, that extend through the slot *b′*, and the heads engage the walls of the post inside, and on either side of the slot *b′*. The walls of the head E are cut away around the nuts of the bolts, so that they are accessible. By loosening these bolts the head E may be adjusted vertically on the post according to the length of the barrel. An arm, E′, integral with the head E extends through the slot *b′*, and serves as a guide for the head. The end of this arm is forked and supports the grooved pulley *c′*, over which the cord e^2 passes to the counter-balance E^2. The forward part of the arm E′ above and below extends beyond the hollow part, and is bored vertically, forming boxes F and F′.

In the box F is journaled the hub of the beveled gear G, and in the box F′ slides the sleeve H. The sleeve has a rack, *h*, that slides in the notch *f*, and the teeth of the rack engage the pinion I, that is inside of the head E, and is mounted on a shaft, I′, that passes laterally through the head E, and is journaled therein, and has at the outer end attached the hand-lever *i*, by moving which the sleeve is moved vertically.

Integral with the under side of the head E is the disk J, to which is attached a frame, K, provided with suitable boxes, in which is journaled the shaft L, on which is mounted the gear G′, engaging the gear G, and on the outer end is mounted the balance and crank wheel *l*.

Through the hub of the gear G and through the sleeve H passes the hollow spindle M, that is integral at the lower end with the disk M′. The spindle is provided with a groove, *m*, and the gear G with an engaging spline, so that the spindle and groove revolve together and the former may slide vertically in the latter. The spindle is provided with a collar, *m′*, that with the hub of the disk M′ embraces the ends of the sleeve H, by means of which the spindle may turn freely in the sleeve, but must move endwise with the sleeve. It is evident, therefore, that by turning the crank *l* the spindle is revolved, and by moving the lever *i* the spindle may be raised or lowered.

To the disk M′ are attached the cutters N, for leveling the end of the barrel, and the cutters *n*, for beveling the chines. These knives are adjustable, and may be moved radially on the disk M′ and secured in the desired position, according to the size of the barrel.

In a dovetailed radial groove, M^2, on the under side of the disk M′ operates the sliding block O, to which is attached the knife *o* for cutting the crozing. To this block O is pivoted the link P, that in turn is pivoted to the rod P′, that passes up through the spindle M. A spiral spring, R, rests below on a shoulder on the rod P′ and above abuts against a shoulder on the spindle M, by means of which the tension of the spring holds the rod depressed, as shown in Fig. 2, and in this position the link P holds the block O toward the center of the disk M′.

Attached to the rod P′ is the collar *p*, that, when the rod P′ is depressed, rests on the upper end of the spindle M, that therefore limits the depression of the rod P′ and consequent movement of the block O. A lever, S, is fulcrumed at S′ to an arm, T, attached to the part F, and has a forked end that embraces the spindle M, and may engage the collar *p* when the outer end of the lever S is depressed.

To the plate J are attached the arms J′, that support the band *j*. This band is flaring inside, the larger opening presenting downward. When the barrel is raised by means of the treadle *d*, the upper end of the barrel passes up through this band, and the band fits onto the barrel and holds it firmly. Different-sized bands are attached to the machine, according to the size of the barrels, or bushings may be used to reduce the size of the larger band. A pin, *u*, passes laterally through the head E, and a grooved pulley, *v*, is journaled thereon, over which passes the cord that is attached to the sleeve H, by means of which the weight E^2 counterbalances the sleeve, hollow spindle, and vertically-moving attachments.

B′ is merely an ornamental cover on the post.

In operating the machine the barrel is placed upon the table and elevated to an engagement with the band *j*. The machine is set in motion by the crank-wheel *l*, and the hollow spindle and disk M′ are lowered by means of the lever *i* until the cutters N and *n* have leveled and chamfered the end of the barrel. In this depressed position of the spindle M the collar *p* is brought near to the forked end of the lever S, by depressing the outer end of which the cutter *o* is thrust outward and the crozing is cut. This knife *o* is set so that when the link P is horizontal the cutter is extended the proper distance for cutting the crozing, and of course this position of the link will be the limit of the outward thrust of this cutter. After the work is completed the lever S is raised, withdrawing the cutter *o*, the lever *i* is raised, lifting the cutter-head above the barrel, the barrel is lowered by means of the treadle, and removed to make place for another barrel.

The machine may be operated by one man, and will do the work quickly and well.

A belt may be applied to the pulley *l* in case other than hand power is to be used.

What we claim is—

1. In barrel-making machinery, the combination, with a supporting-base having an upwardly-projecting boss, *a*, with a vertical bore, and upwardly-projecting ears *a′*, of the table C, with the pendent pin or lug *c*, arranged to slide in the boss *a* and form a guide for the table, and a treadle fulcrumed to the ears *a′* and connected by links to pendent ears of the table on opposite sides of the guiding device, substantially as set forth.

2. In barrel-making machinery, the combination, with a barrel-support and a hollow column having the face *b*, of a head secured to said face and provided with bearings, a grooved pinion journaled in one of said bearings, a hollow spindle connected to said pinion so as to be rotated thereby, but free to move longitudinally independently of said pinion, and cutters connected to said spindle, substantially as set forth.

3. In barrel-making machinery, the combination, with a barrel-support, a standard, and the head E, provided with bearings or boxes at its outer end, of the grooved pinion provided with a hub resting in the upper bearing of the head, a hollow spindle having a spline fitting the groove in the hub of the pinion, and suitable cutters operated by said spindle, substantially as set forth.

4. In barrel-making machinery, the combination, with a barrel-support and a standard provided at its upper end with bearings or boxes F F′, of the pinion G, journaled in one of said boxes, the longitudinally-movable spindle M, passing through said pinion and rotated thereby, the sleeve H, embracing the spindle and secured therein against longitudinal movement independently of said spindle, and provided with a rack, a pinion engaging the rack, and cutters operated by said spindle, substantially as set forth.

5. In barrel-making machinery, the combination, with a barrel-support and a standard provided at its upper end with bearings F F′, of a rotary spindle journaled in said bearings, a sleeve embracing said spindle and provided with a rack, a pinion engaging the rack for moving the sleeve and spindle longitudinally, the spring-actuated rod P′, located within the hollow spindles, the link P, connected to one end of said rod, the sliding block connected to the link, the collar *p*, and the forked lever S, all of the above parts combined substantially as set forth.

6. In barrel-making machinery, the combination, with a barrel-support and a standard provided at its upper end with bearings and with the plate J, of the arms J′, secured to said plate, the band *j*, secured to the lower ends of the arms, and cutter supports or holders journaled in the bearings at the upper end of the standard, and secured to said holders, substantially as set forth.

7. In barrel-making machinery, the combination, with a barrel-support and standard, of the head E, having a rearwardly-projecting arm, a roller journaled on said arm, the pinion G, spindle M, cutters connected to and operated by said spindle, a sleeve embracing the spindle, and the cord and counterbalance-weight, all of the above parts operating substantially as set forth.

In testimony whereof we sign this specification, in the presence of two witnesses, this 29th day of December, 1884.

GEORGE A. FREIDEL.
JAMES D. CLOUGH.

Witnesses:
CHAS. H. DORER,
ALBERT E. LYNCH.