

(No Model.)

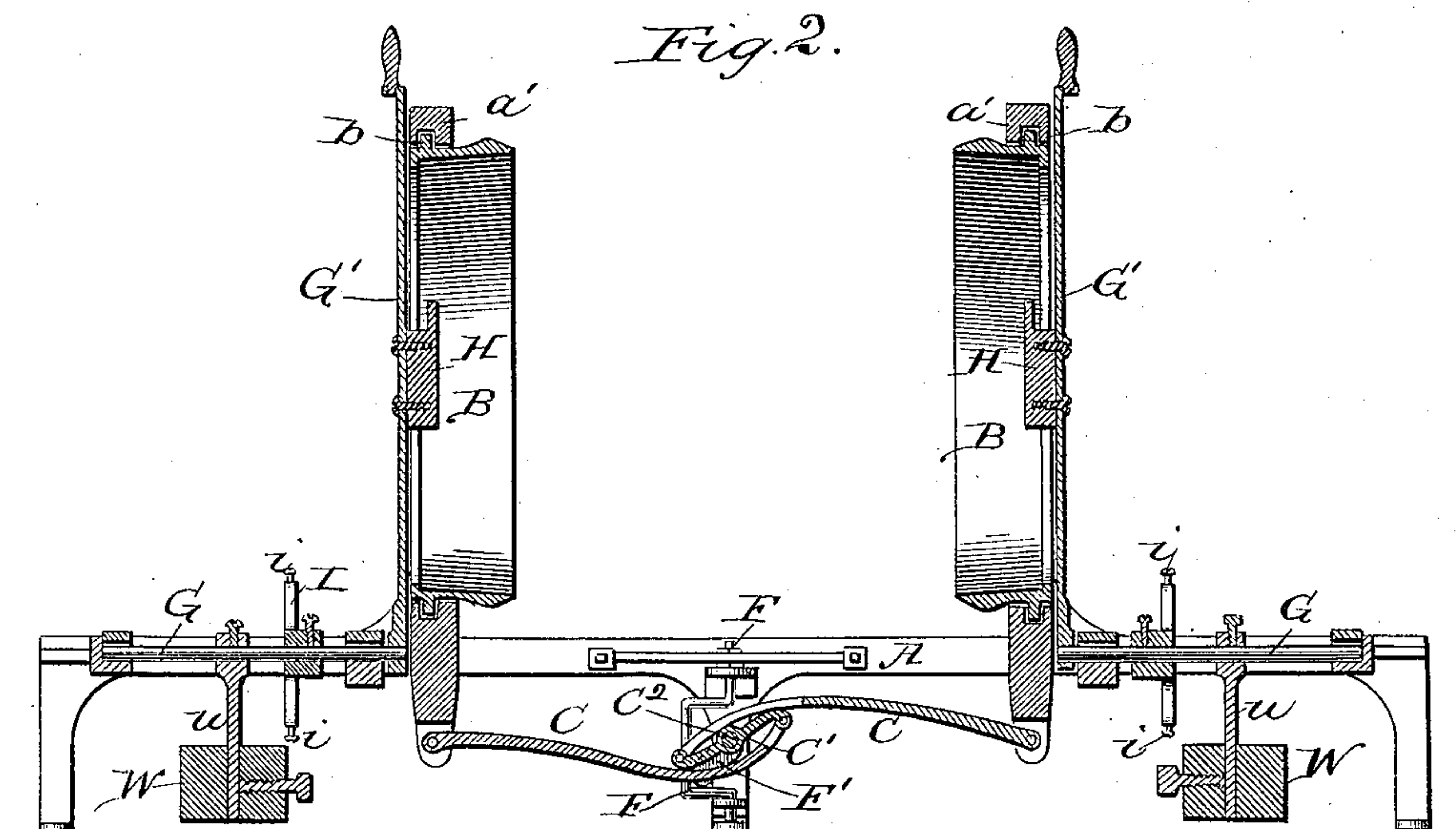
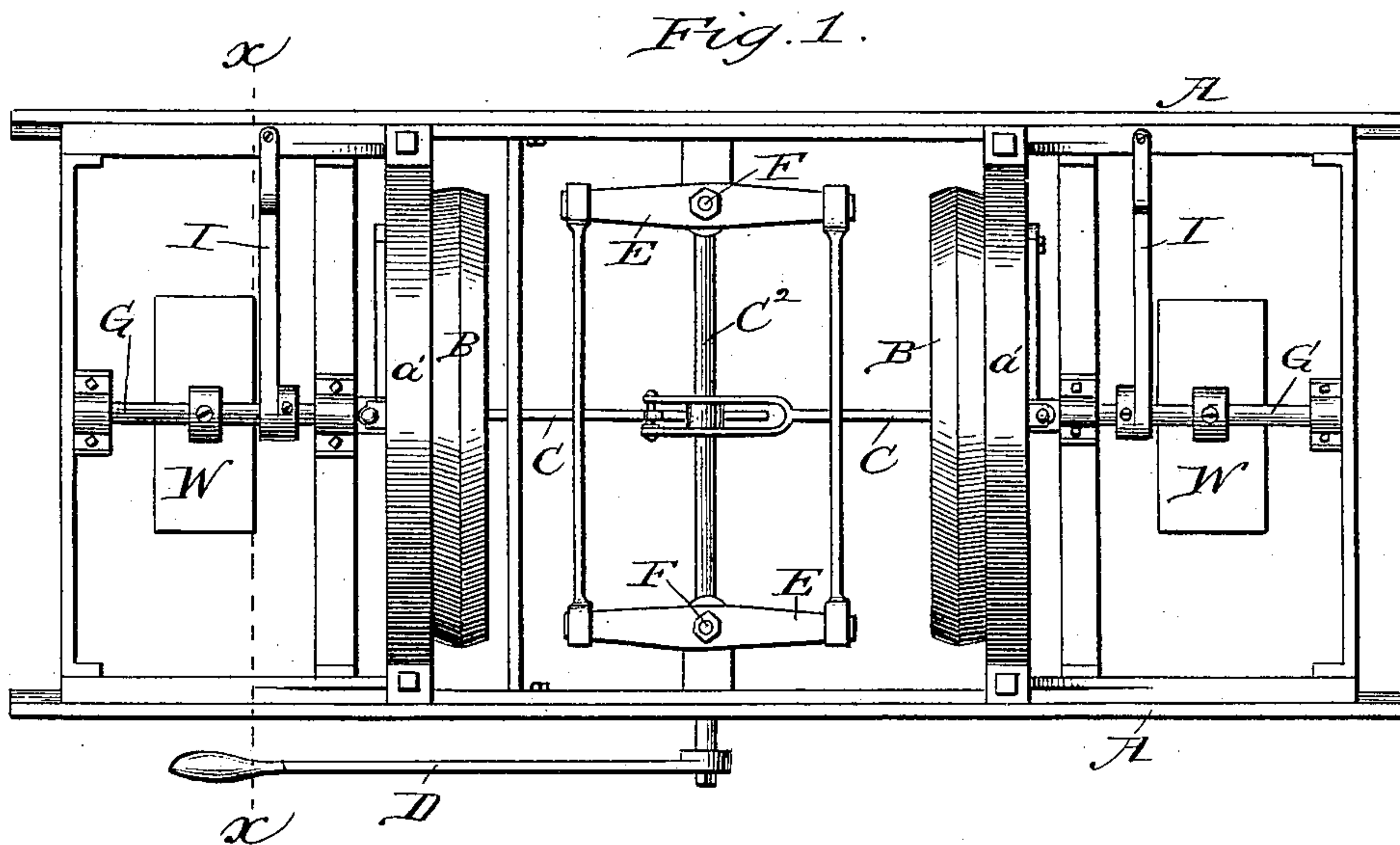
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G. J. MILLER.

# MACHINE FOR GROZING AND HOWELING BARRELS.

No. 326,234.

Patented Sept. 15, 1885.



Witnesses.  
W. Rositer  
Jno. H. Whipple

Inventor:  
George J Miller  
By Merriam & Whipple  
Attys.

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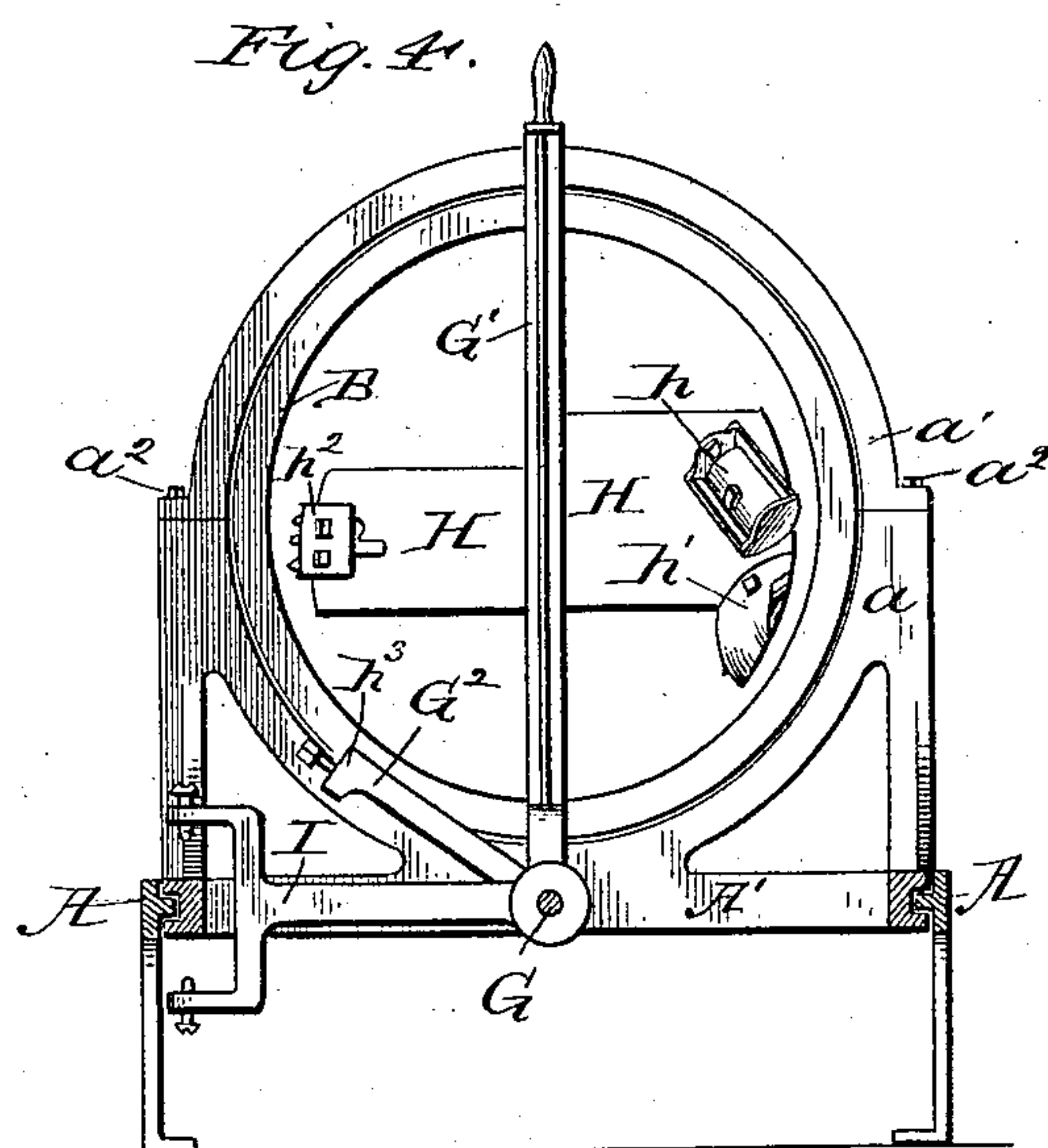
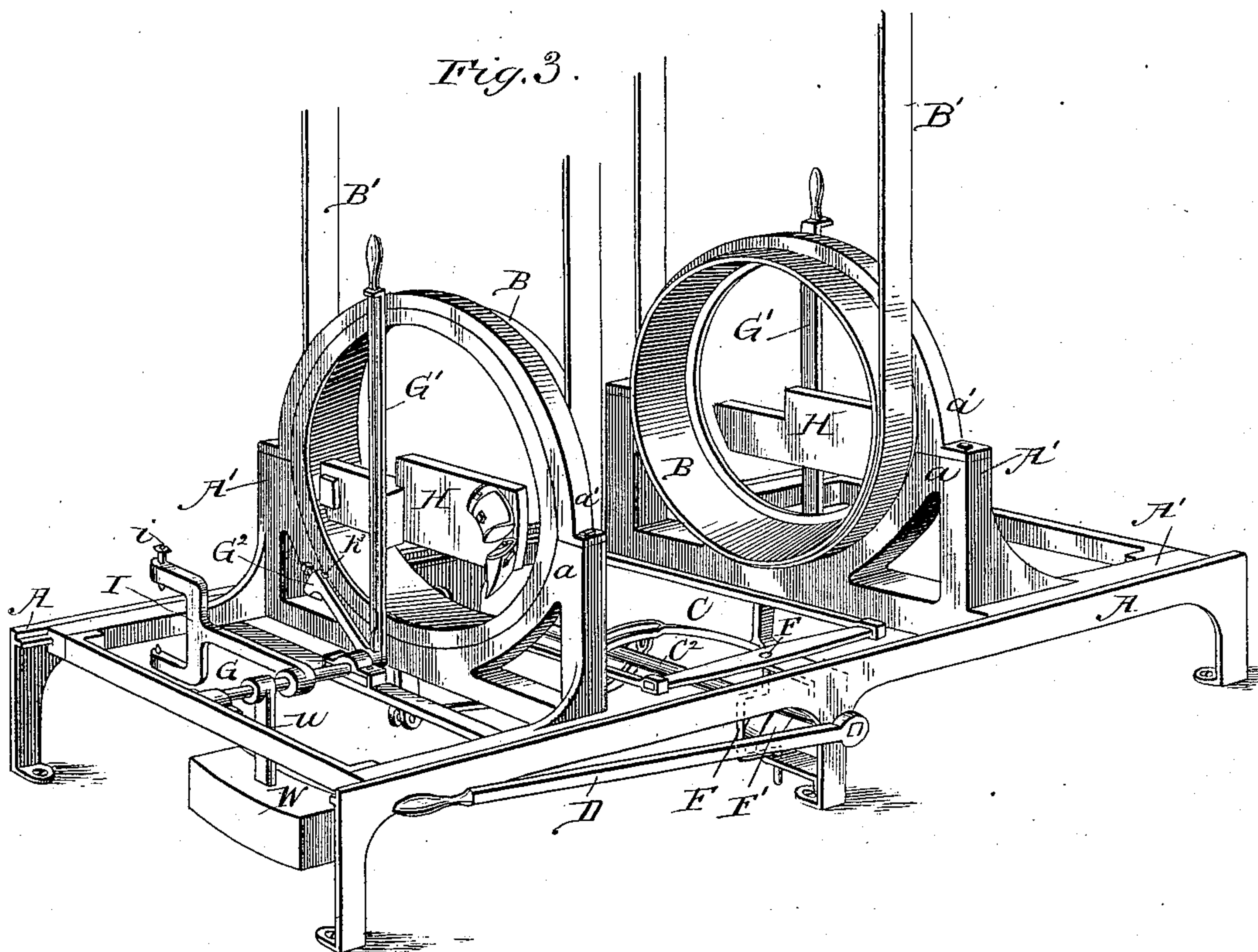
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# UNITED STATES PATENT OFFICE.

GEORGE J. MILLER, OF LAKE VIEW, ASSIGNOR TO DANIEL W. RYAN, OF CHICAGO, ILLINOIS.

## MACHINE FOR CROZING AND HOWELING BARRELS.

SPECIFICATION forming part of Letters Patent No. 326,234, dated September 15, 1885.

Application filed April 24, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE J. MILLER, of Lake View, Cook county, Illinois, have invented a new and useful Machine for Leveling, Howeling, and Crozing Barrels, of which the following is a specification.

The invention relates to that class of howeling and crozing machines in which the barrel is revolved and the tools for doing the working off are brought into contact with it while it is in motion.

The object of the invention is to simplify the component parts of the machine and better their arrangement and combination therein; and it consists in the combinations hereinafter described and claimed.

The accompanying drawings illustrate the invention.

Figure 1 is a plan view of the machine. Fig. 2 is a longitudinal vertical section. Fig. 3 is a perspective. Fig. 4 is a cross-vertical section on line *x x* of Fig. 1.

A is a low horizontal frame, made to be fastened to the floor by screws or bolts. Two supplemental frames, A', are supported on the horizontal frame and secured thereto by a tongue and groove, or otherwise, so as to slide back and forth thereon. The upright part of the supplemental frames is made in halves *a a'*, adapted to be secured together by screw-bolts, and together form a circular opening within which the barrel-holding ring B is secured by a tongue and groove, *b*, so as to turn freely, a broad flange on the ring projecting beyond the frame, so that a belt, B', may be trained upon it to operate the ring.

The supplemental frames are connected by curved links C C and a cam, C', fastened to a rock-shaft, C<sup>2</sup>, which is operated by a lever, D, so that by turning the lever in one direction the supplemental frames are drawn toward each other, and in the other are thrown apart. The curvature of the links, one being bowed up and the other down, is such with reference to the cam as to permit it to pass the center of motion when the lever is turned half around in the direction required to draw the supplemental frames together, so that they will then resist any outward strain without any provision for holding the lever down.

A barrel-support, E, is connected to the hori-

zontal frame, in the center between the supplemental frames, by means of vertically-sliding bars F, adapted to operate in connection with cams F', attached to the rock-shaft C<sup>2</sup>, so that when the lever is thrown in the direction required to move the supplemental frames apart the cams F' will strike the bars F and elevate the barrel-support, and when turned in the opposite direction will release them, and so lower the barrel-support.

The supplemental frames are each provided with a rock-shaft, G, to the inner end of which is secured an upright lever, G', provided with a plate, H, which supports the howeling-tool *h*, the chamfering-tool *h'*, and the crozing-tool *h''*, and the lower end of the lever has a branch, G<sup>2</sup>, which carries the leveling-knife *h'''*.

The movement of the lever G' is regulated by a bifurcated arm, I, fastened to the rock-shaft, one branch of which arm extends below and the other above the supplemental frame, and each has a set-screw, *i*, for the point of contact with the frame in the movement of the arm, which limits its movement up and down, and thus defines the movement of the rock-shaft and the lever G'. By setting the screws in or out the extent to which the lever may be reciprocated is decreased or increased as desired.

For the purpose of keeping the lever G' upright when released, or not in use, a weight, W, is suspended below the rock-shaft on a short arm, *u*, fastened rigidly to the shaft.

The operation of the machine is as follows: The operator, standing facing the machine on the side having the lever D, in the position shown in Fig. 3, turns the lever to the right-hand side. This throws the holding-rings B B apart sufficiently to admit a barrel to be rolled between the belt-flanges, and also elevates the barrel-support between them, so that it will support the barrel with its axis substantially in line with the axis of the holding-rings. The horizontal frame or bed being low down, the barrel may be readily turned over on to the support, without lifting, and placed with the ends coincident with the rings. When in this position, the lever D is turned over to the left. This brings the flanges of the rings over the ends of the barrel and causes



them to enter and be clamped in the rings. This movement of the lever also lowers the barrel-support, so that the barrel is now held by the rings and free to turn with them. The barrel projects through the rings at each end sufficient to extend across the path of the leveling-tool, so that all irregularity of the staves will be cut off even or level by said tool. The leveling and chamfering tools are so timed or arranged with reference to each other that the former, as lever G' is moved toward the operator, will be brought into contact with the outside of the stave before or nearly simultaneously with the contact of the latter on the inside, so that the surplus ends of the staves will be leveled or cut off from both sides instead of one, and thus all burring of the edge—such as usually results from cutting the stave off from one side or with one tool—is prevented and a smooth edge formed. The howeling-tool is also brought into operation by this movement of the lever G' in the direction indicated, and continues to operate until the lowermost branch of the bifurcated arm comes in contact with the frame of the machine. The leveling and howeling of the barrel will then be completed at one end and the lever is then moved in the opposite direction to bring the crozing-tool into action and cut the croze. The same operation is repeated at the other end, and the worked-off barrel is then taken out of the machine.

During the operation of working off the barrel is revolved rapidly by means of the belts B' B' on the ring-flanges, passing over operating-pulleys above, arranged in any of the ordinary ways to be stopped or set in motion by a friction-clutch operated by a lever suspended within reach of the operator.

The interior orifice of the holding-rings corresponds in size or diameter with the end of the barrel above the end truss-hoops, so that the truss-hoop will come against the side of the ring and prevent the barrel going through any farther, and the orifice through the belt-flange is made large enough to readily allow the truss-hoops to pass through to the ring.

For smaller barrels other sets of rings with correspondingly - smaller orifices are substituted for those used for the largest size. The machine is in this way adapted to about three or four sizes of barrels. For still smaller sizes or kegs a smaller-size machine is preferred.

What is claimed is—

1. In a howeling and crozing machine, a low

horizontal frame provided with a sliding frame at each end carrying the barrel-holding rings provided with belt-flanges and a vertically-movable barrel-support, said sliding frames and barrel-support being connected with cams on a rock-shaft arranged to operate the sliding frames and barrel-support simultaneously, substantially as specified.

2. In a howeling and crozing machine, two sliding frames for supporting the barrel-holding rings, arranged to slide toward and from each other, and a barrel-supporting frame arranged between the holding-rings and being movable vertically, in combination with a rock-shaft provided with a cam and links connecting with said sliding frames, and one or more cams, as F', connecting said rock-shaft with and thereby operating the barrel-supporting frame, all substantially as shown.

3. In a howeling and crozing machine, the howeling, chamfering, and crozing tools mounted on a plate, H, attached to an oscillating lever, G', and the leveling-knife  $h^3$  on an arm of said lever, said lever being supported in front of the barrel-holding ring, so as to bring and oscillate the plate transversely of the barrel and within its end when placed in the ring, and the leveling-knife just outside the barrel near the face of the ring, substantially as specified.

4. In a howeling and crozing machine, the howeling, chamfering, and crozing tools mounted on a plate, H, attached to a lever, G', and the leveling-knife  $h^3$  on an arm of said lever, said lever being supported in front of the barrel-holding ring on a rock-shaft, so as to bring and oscillate the plate transversely of the barrel and within its end when placed in the ring, and the leveling-knife just outside the barrel and near the face of the ring, said rock-shaft being provided with a bifurcated arm, I, and weight W, as and for the purpose specified.

5. In a howeling and crozing machine, the barrel-clamping frames connected to a rock-shaft, as C', by links C, hinged to the opposite end of an S-shaped cam on the rock-shaft, said links at the ends next to the cam being curved in opposite directions, so that the extreme ends or points of connection with the cam may be turned past the center of motion, as and for the purpose specified.

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Witnesses:

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