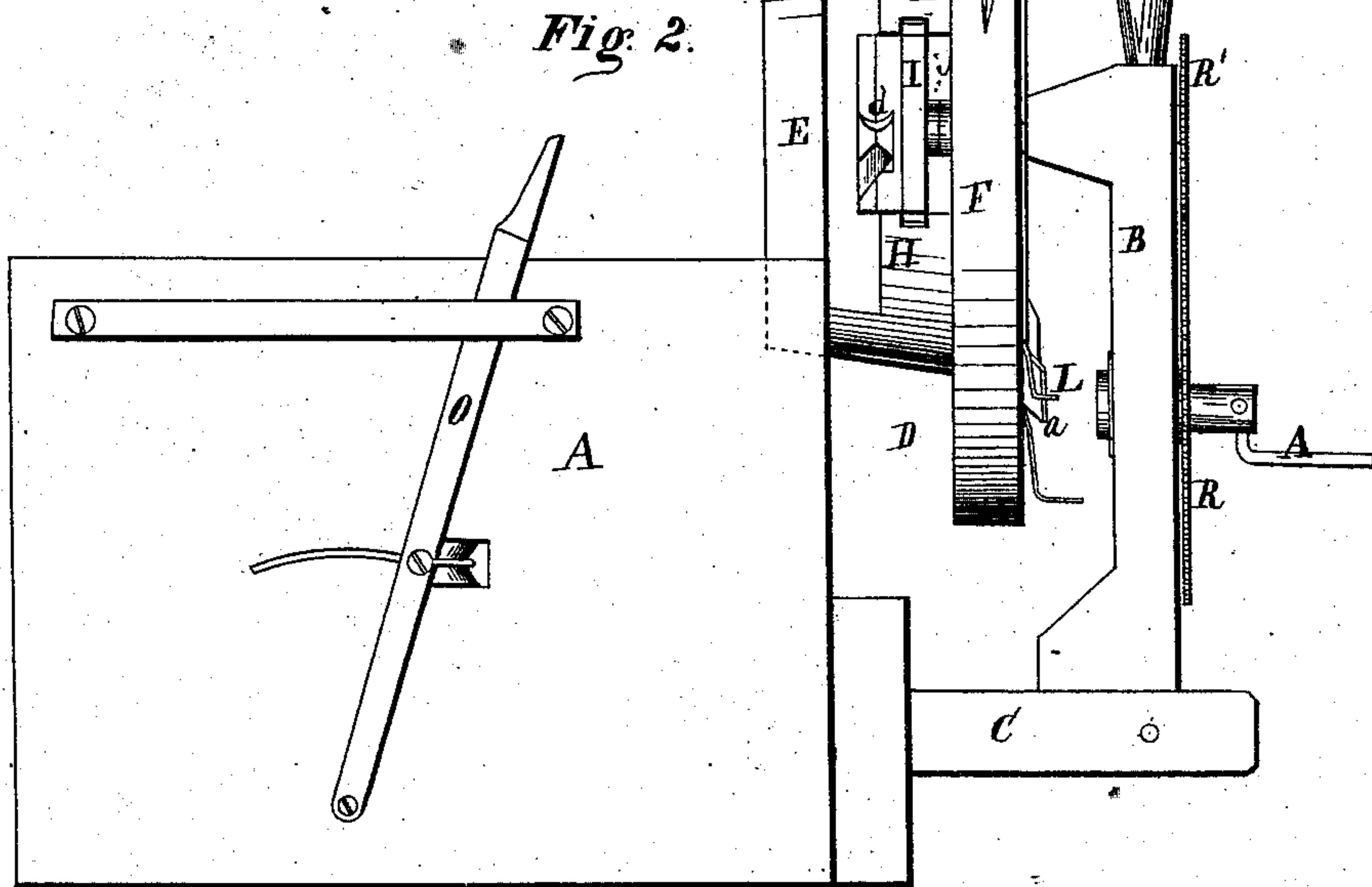
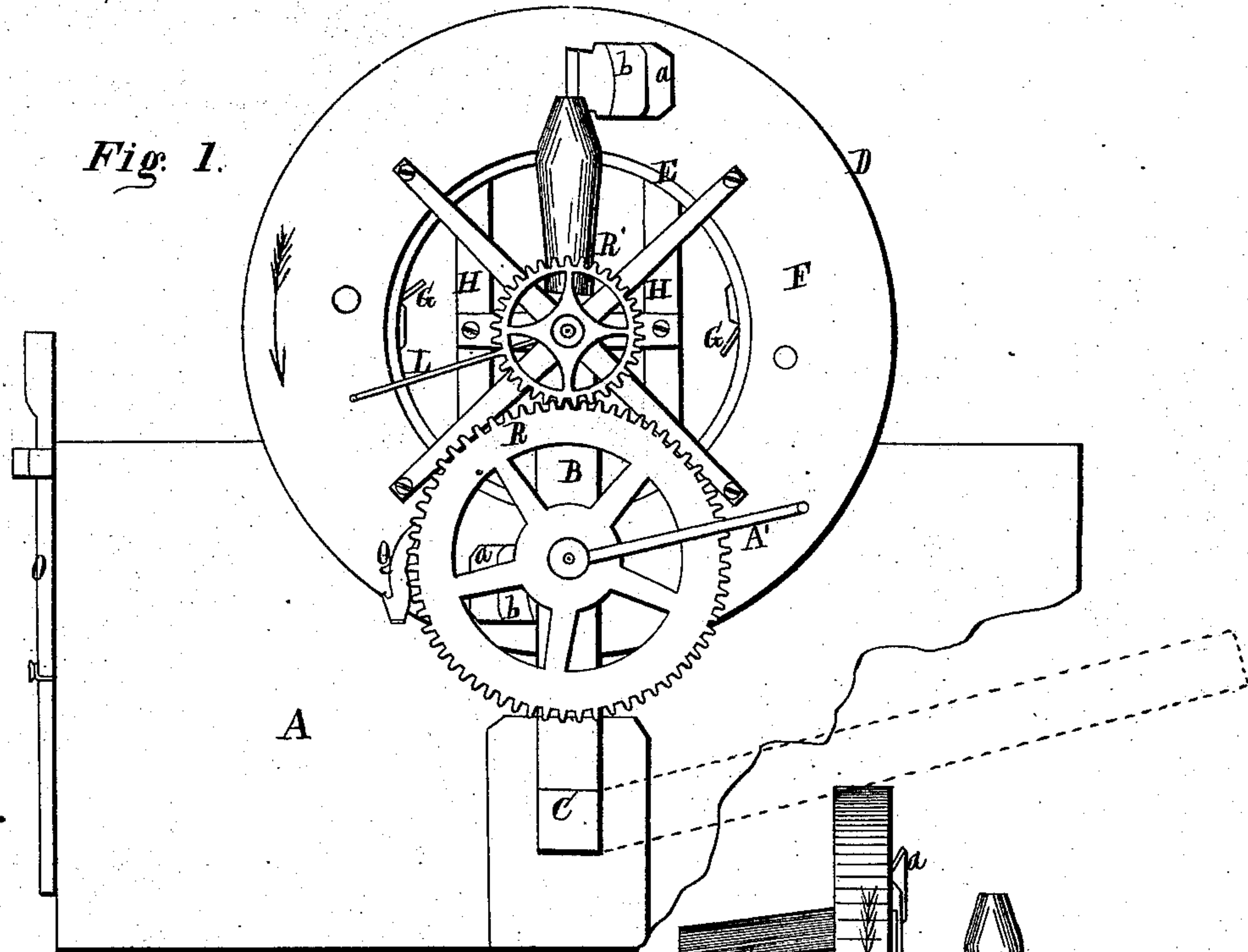


**S. S. STEEL & S. MUNSON.**  
**Machine for Crozing Barrels.**

No. 160,966.

Patented March 16, 1875.



*Witnesses.*

*A. T. Cornell.*  
*J. T. Hunt.*

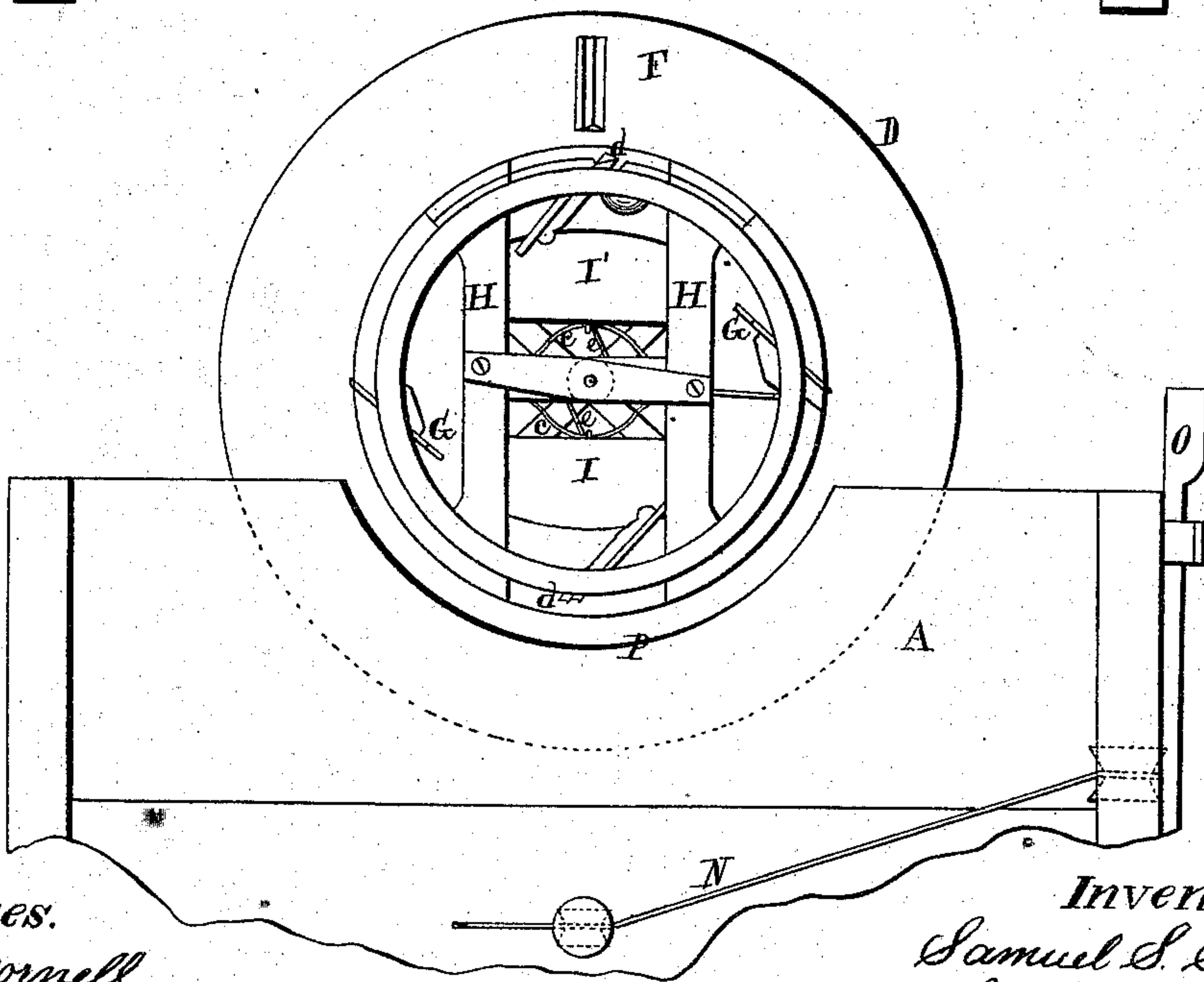
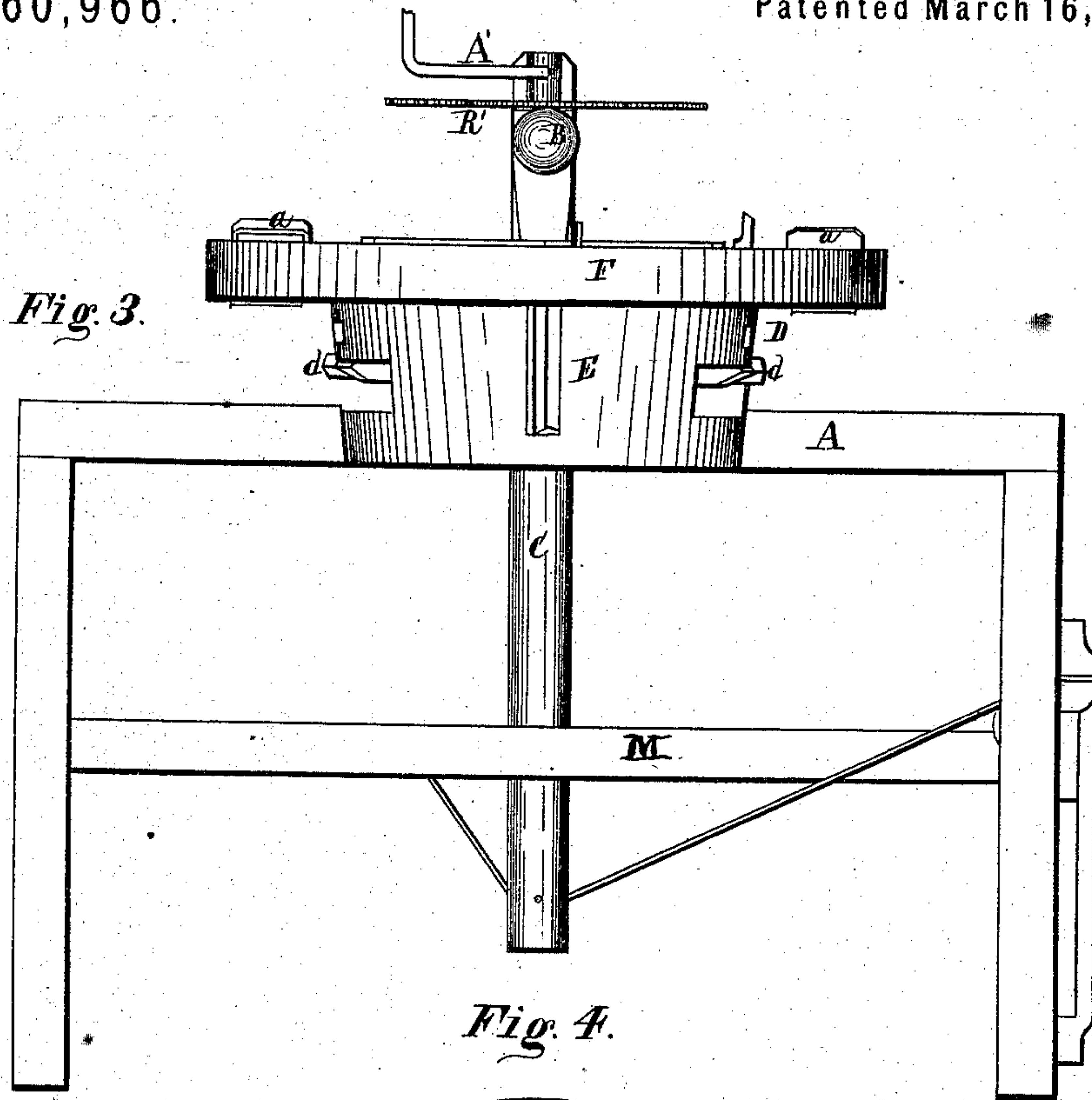
*Inventors.*

*Samuel S. Steel*  
*Shubal Munson.*  
*Per. Burridge & Co.*

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# UNITED STATES PATENT OFFICE

SAMUEL S. STEEL AND SHUBAL MUNSON, OF MARTIN, OHIO.

## IMPROVEMENT IN MACHINES FOR CROZING BARRELS.

Specification forming part of Letters Patent No. **160,966**, dated March 16, 1875; application filed October 3, 1874.

*To all whom it may concern:*

Be it known that we, SAMUEL S. STEEL and SHUBAL MUNSON, of Martin, in the county of Ottawa and State of Ohio, have invented a certain new and Improved Machine for Crozing Barrels, of which the following is a full, clear, and complete description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan view of the barrel-machine. Fig. 2 is an end view. Fig. 3 is a front view. Fig. 4 is a view of the under side.

Like letters of reference refer to like parts in the several views.

The nature of this invention relates to a barrel-machine, and the object of which is to square or level up the ends of the barrel, chamfer, and croze the same, thereby dispensing with the hand-tools in ordinary use for doing the same work.

Of the construction and operation of the aforesaid machine the following is a detailed description:

In the drawings, A represents a bench, in the top whereof is secured the barrel-machine referred to by means of the arm B, projecting from the stem or upright C, Fig. 3. The machine consists of the head or wheel D. Said wheel or head is composed of a hub, E, and a flange, F. In said flange are secured two bits or blades, *a*, having straight cutting-edges projecting sufficiently far from the face of the flange to enable them to cut. The blades are secured in the flange by wedges *b*. In the periphery of the hub is secured in a similar manner two bits or blades, G, the cutting-edges whereof are straight and lie in the plane of the face of the hub, and projecting therefrom far enough to permit them to cut.

It will be observed that the hub is tapering from the flange downward, the purpose of which will presently be shown.

Arranged across the inside of the hub are two guides or ways, H H, Figs. 1 and 4. In said ways are fitted slides I I', one on each side of the center or axis of the head. The slides are caused to tend outward toward the periphery of the hub by a pair of semicircular springs, *c*, arranged between them, as shown in Fig. 4. In the outer end of each of the

slides is secured an angular cutter or croze, *d*. On the shaft K is secured a small drum, *i*, Fig. 2, between the ways or guides H H. Around said drum is wound a cord or wire, *e*, Fig. 4. One end of the cord is attached to the slide I, whereas the opposite end is secured to the slide I'. To the shaft K is also attached a lever, L, Fig. 1, whereby the crozing-slides are operated, as will hereinafter be shown.

It will be seen that the upper part of the post C referred to is square and made to fit and slide in a corresponding hole in the top of the bench. The lower end of the post is round and fitted in a corresponding hole in the cross-piece M under the bench. N is a cord, one end whereof is attached to the cross-piece, from which it extends through the end of the post to the treadle O, where it is made fast. A sheave in the end of the post, also one in the side of the bench, through which the rope passes, allow the rope to move with freedom for lifting the post, for a purpose presently shown.

The operation of the machine is as follows: The operator takes his place in front of the machine. The barrel to be leveled, chamfered, and crozed is stood upright in the semicircle P, Fig. 4, formed in the edge of the bench. In order to do this the head or wheel is lifted up above the top of the bench by placing the foot on the treadle O. The head is then swung around over the bench, as indicated by the dotted lines in Fig. 1. The barrel being in position, the head is again brought over it, and the hub dropped down therein. The square section of the post now in the top of the bench will hold the head steadily and prevent it from turning laterally. At this time the croze-cutters are drawn in from the face of the hub out of the way by means of the lever L, which is then locked by the catch Q. The head is now made to revolve in the direction of the arrow by means of the gearing R R', operated by the crank A'. The end of the staves or barrel will be planed down and leveled by the cutters *a* in the flange as the head revolves, during which the bevel or chamfer of the chime is made by the chamfer-cutters G G in the tapering hub of the head. The leveling and chamfering of the edge of

the barrel having been done, the croze or groove for the heading is now cut by the croze or cutters *d d*, which are now sprung out or allowed to be forced outward by the springs *e e*, by unlocking the lever *L*, whereby they were retained in the hub while the leveling and chamfering were being done.

The groove having been cut, the croze-cutters are now withdrawn from the groove by the lever *L*, which, on turning it in the proper direction, winds the cord *e* upon the drum *i*, thereby drawing back the slides *I I'*, and, per consequence, withdraws the croze from the groove, so that the head can be lifted from the barrel by the treadle, to make way for its removal, to be replaced by another.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. Slides *I I'*, springs *e e*, drum *i*, cord *e*, and lever *L*, in combination with the head *D*, in the manner as described, and for the purpose set forth.

2. The combination of the head *D*, arm *B*, upright *C*, gearing *R R'*, cord *N*, treadle *O*, and bench *A*, substantially in the manner as described, and for the purpose set forth.

SAMUEL S. STEEL.  
SHUBAL MUNSON.

Witnesses:

J. H. H. UTHOFF,  
HENRY HARNEL.