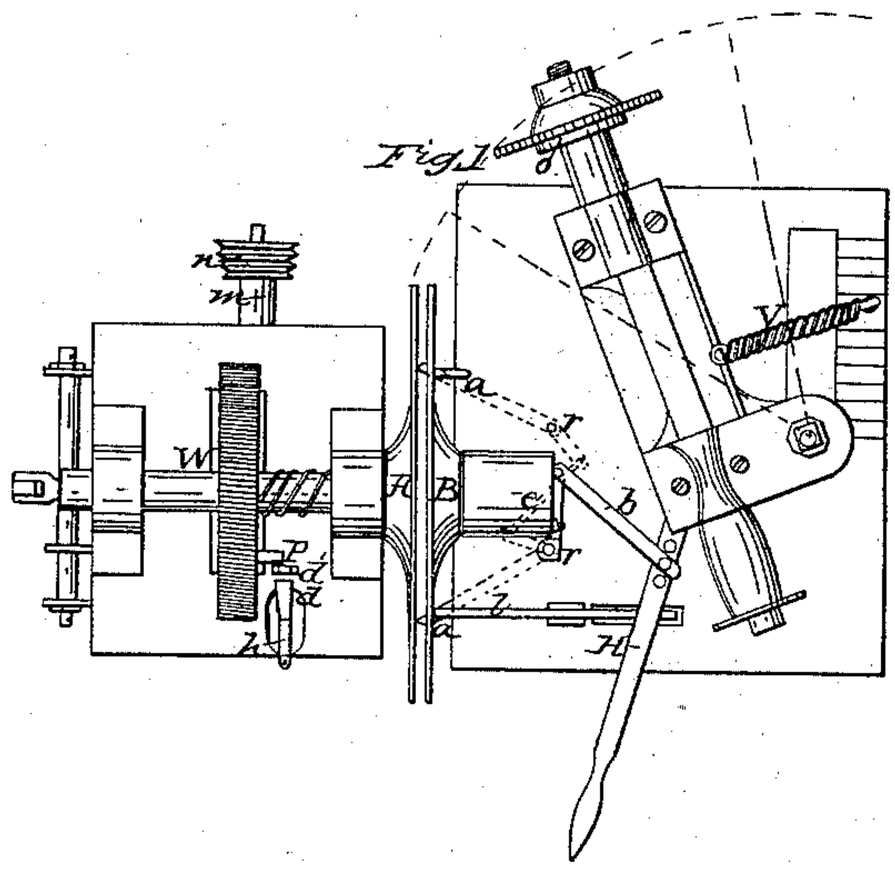
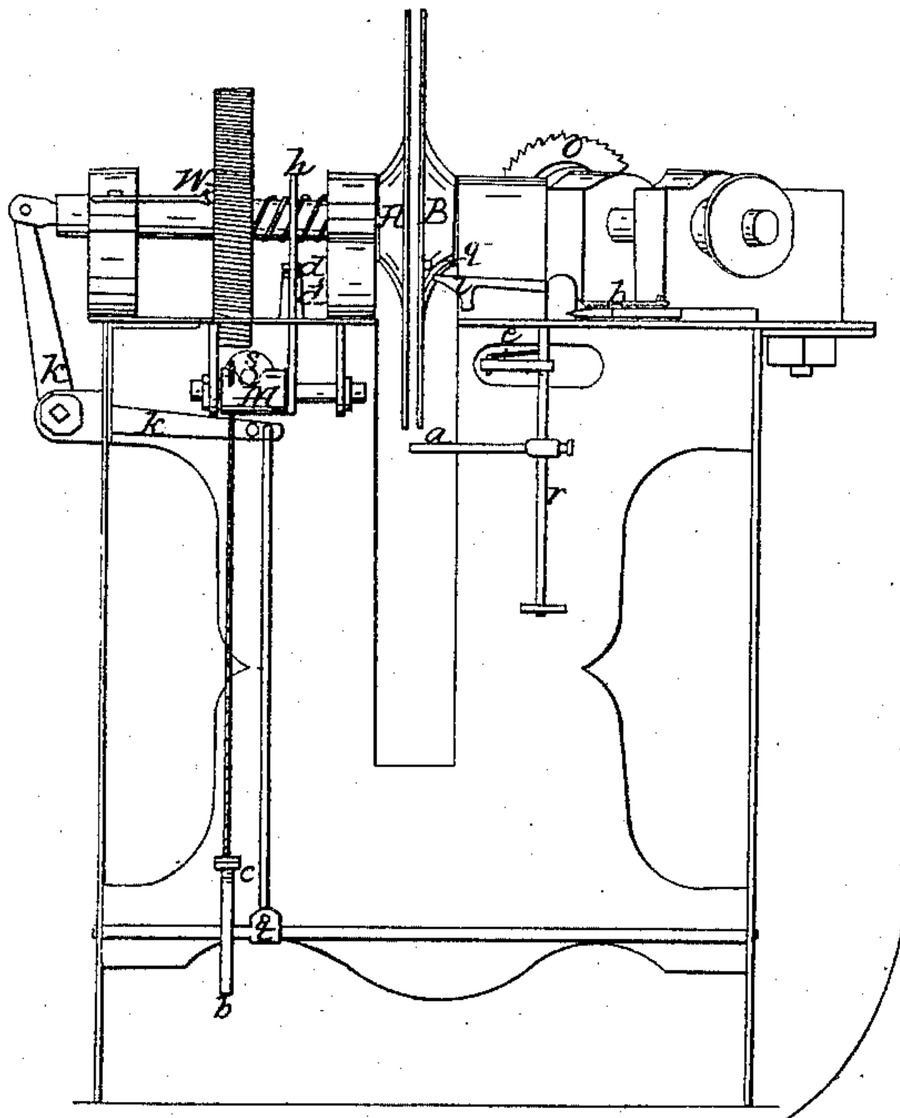
P. H. LAWLER & J. B. DOUGHERTY.

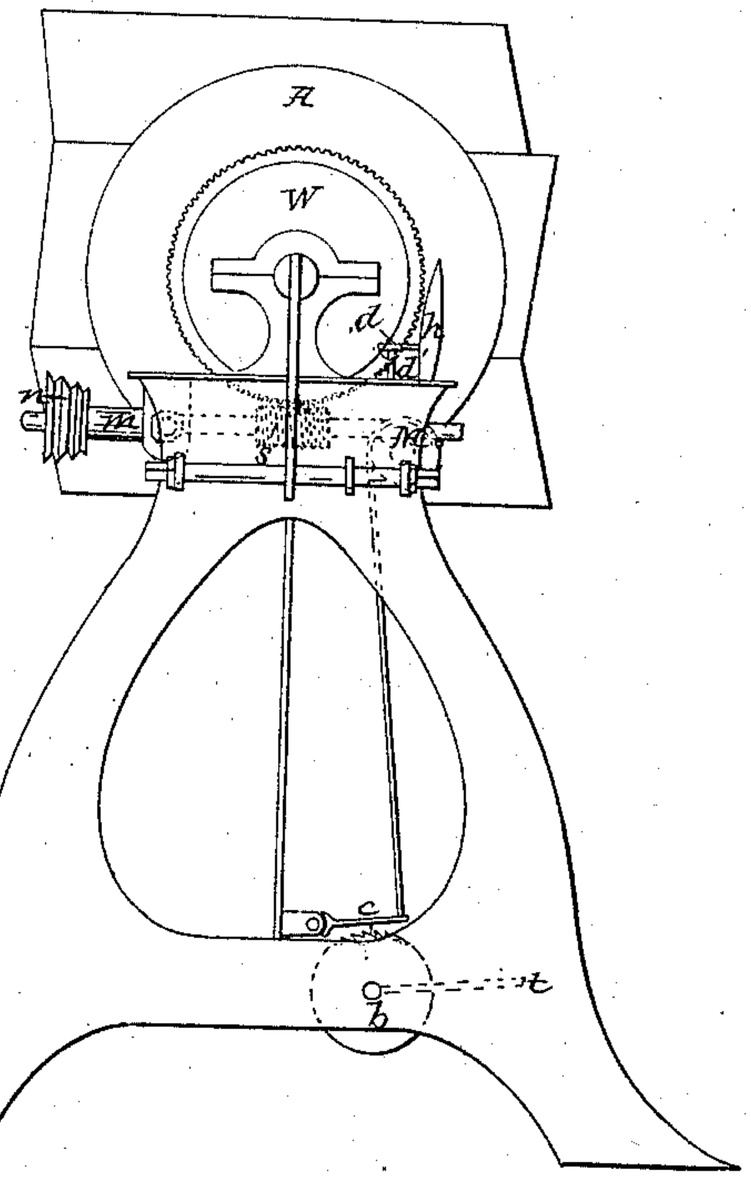
MAKING BARREL HEADS.

No. 33,153. Patented Aug. 27, 1861.

Fig. 1







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UNITED STATES PATENT OFFICE.

P. H. LAWLER, OF SPENCERPORT, AND JOHN B. DOUGHERTY, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN MACHINES FOR FORMING BARREL-HEADS.

Specification forming part of Letters Patent No. **33,153**, dated August 27, 1861.

To all whom it may concern:

Be it known that we, P. H. LAWLER, of Spencerport, New York, and JOHN B. DOUGHERTY, of the city of Rochester, county of Monroe, and State of New York, have made and invented certain new and useful Improvements in Machines for Cutting Barrel-Heads; and we do hereby declare the following to be a full and accurate description of the same, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, same letters referring to like parts in all the figures.

Of said drawings, Figure 1 is a plan of our improved machine. Fig. 2 is a side elevation of the same. Fig. 3 is an end elevation.

The nature of this invention will be best understood from a description of the construction and mode of operation of the machine, and in order more fully to describe it we will detail the process of cutting out a barrel-head from the material as usually prepared—that is to say, planed and jointed.

The three pieces which usually go to form a barrel-head are placed between the face-plates or clamps A and B, being supported while being thus arranged by means of the arms or rests *a a*. Then by pressing on the lever or treadle *t* with the foot the shaft carrying the face-plate A is made to slide forward by means of the bell-crank levers *k k* and hold the materials firmly between the two face-plates or clamps, which are still left at liberty to revolve. As soon as the material is firmly clamped, the saw O is moved against the heading stuff, so as to cut through it. This is easily effected, as the frame which carries the saw rotates on the central stud and is easily moved by the handle H in the path of the red-lined arc, Fig. 1. The same movement of the handle H which moves forward the saw withdraws the arms *a a* from beneath the head, thus leaving the latter free to revolve without obstruction. The arms are withdrawn through the intervention of the compound levers *b b*, (seen in Figs. 1 and 2,) which cause the vertical shafts *r r*, which carry the arms *a a*, to rotate. But one of the shafts *r* is seen in Fig. 2, the corresponding one being on the other side of the frame and connected with it by means of the lever *e*. (Shown in red ink in Fig. 1.) The moment the handle H is moved beyond the end of the lever *l*, Figs. 1 and 2, the end *l'* of said lever rises and acts as a pawl to prevent any retrograde motion on the part of the handle H until released by means to be hereinafter described. The arms *a a* being retracted no impediment is now offered to the rotation of the barrel-head, which is therefore set in motion by throwing the screw S into gear with the worm-wheel W by means of the handle *h*, which partially rotates the cam M and thus raises the shaft upon which the endless screw is placed. This arrangement will be easily understood from an inspection of Figs. 2 and 3.

Attached to the handle *h* is the spring-catch *d*, which slipping over the pin *d'*, attached to the frame of the machine, holds the handle and consequently the cam M' and with it the screw in place until it is ready to be released. At the same time that the movement of the handle *h* raises the screw into gear it allows the pawl *c* to fall onto the ratchet-wheel *b*, attached to the shaft which forms the hinge of the treadle. This shaft and with it the treadle and its connections are therefore held steady so long as the handle *h* is retained in place, and the operator is therefore relieved from the necessity of keeping his foot on the treadle to retain the clamps or face-plates A and B tight against the heading stuff. The machine will now go on itself without any supervision, the head being rotated against the saw and thus cut to a proper size and bevel. As soon as the face-plate B has made one complete revolution, the pin *q* will strike the end of the lever *l* and, depressing the other end *l'*, will allow the handle H to move forward into the position shown in Fig. 1 in obedience to the spring *v*, attached to the saw-frame. At the same time the pin *p* upon the worm-wheel lifts up and releases the spring-catch *d*, allowing the cam to rotate and the screw to fall out of gear, and lifting the pawl out of the ratchet-wheel *b* and thus releasing the face-plate A from the forward pressure and allowing it to fly back in obedience to the spiral spring coiled round the shaft. The whole machine is therefore brought to a state of rest, (with the exception of the saw and the shaft and pulley *m n*, which carry the endless screw,) ready to receive another head, the one that has just been cut

having fallen out in front of the machine as soon as the face-plates have been separated.

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

1. The arrangement of the vertical rods or shafts *r r*, carrying the arms or rests *a a* and connected with the lever H, which moves the saw, the whole operating in the manner and for the purpose substantially as described.

2. The combination of the ratchet-wheel and pawl *b* and *c* with the treadle *t* and cam M, so that whenever the screw S is thrown into gear with the wheel W the pressure of the face-plate A against the barrel-head may be maintained while said face-plate is revolving and this without the continued supervision of the operator.

3. The arrangement of the pin *p*, catch *d*, and handle *h* with the cam M, whereby the screw S is thrown out of gear with the wheel W as soon as the latter has completed one revolution.

4. The combination of the pin *p* and lever-catch *l* with the handle H of the saw, whereby the saw is maintained in proper position by means of the spring V while the barrel-head is being cut and is removed by means of the same spring as soon as the face-plate B has completed one revolution

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