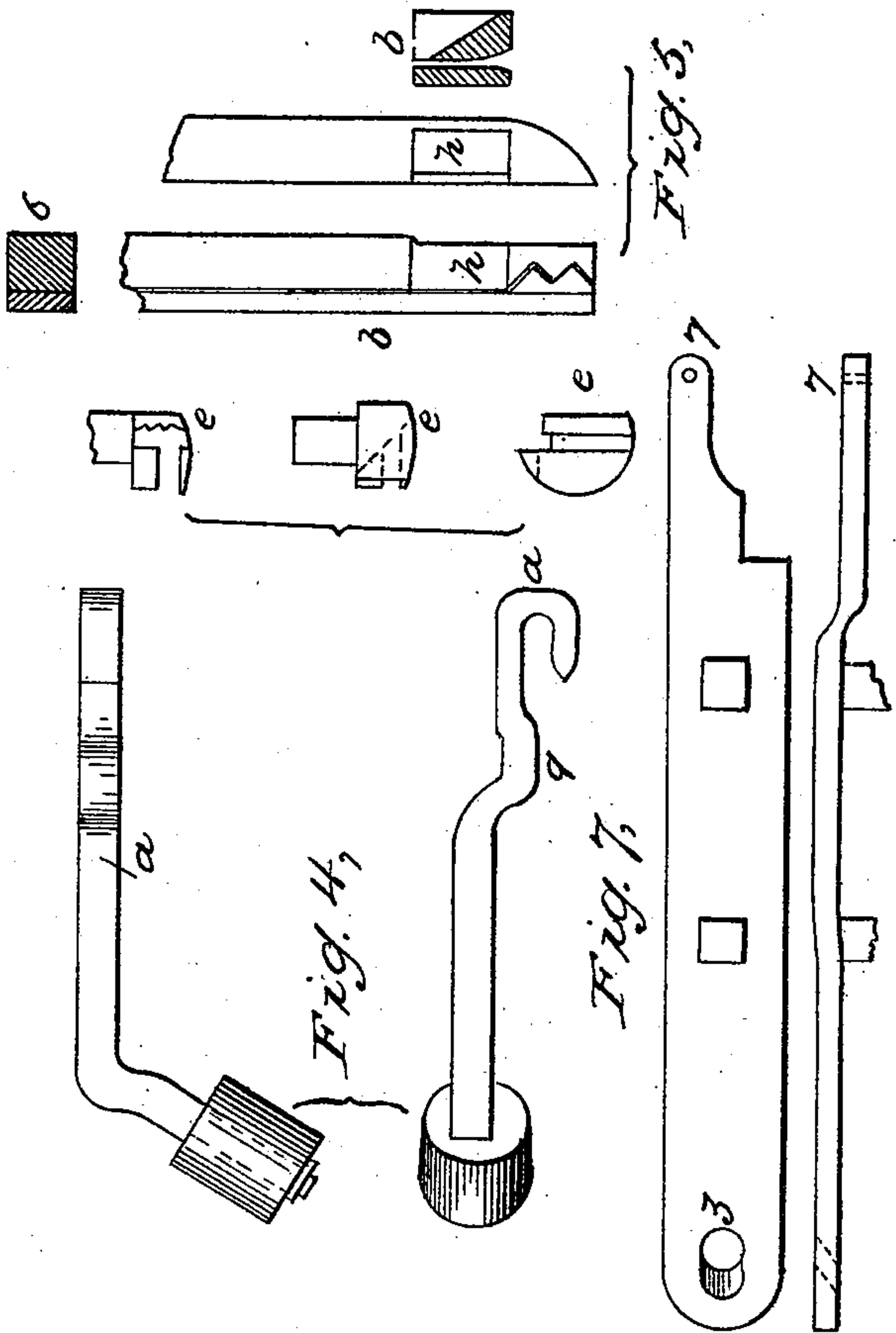
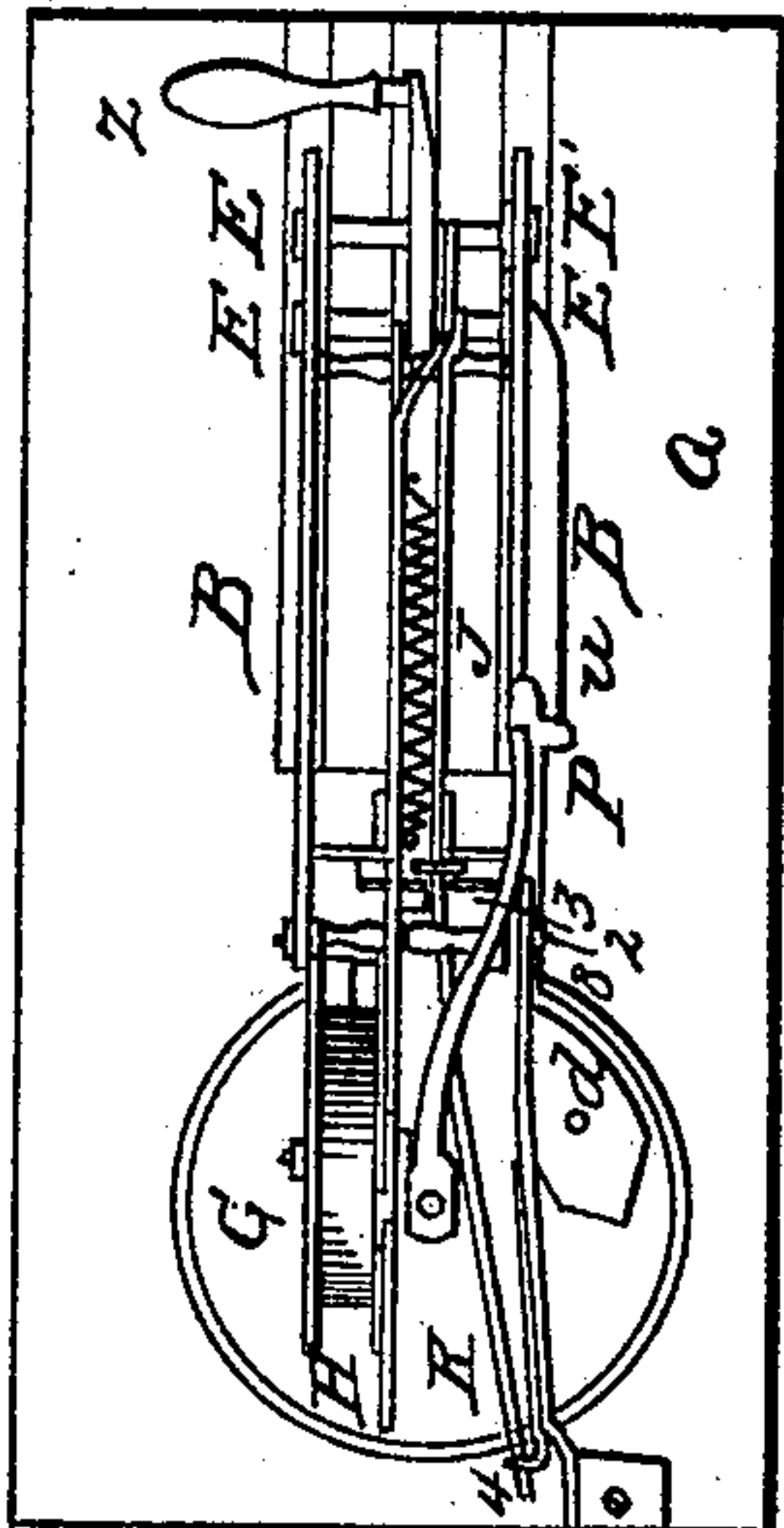
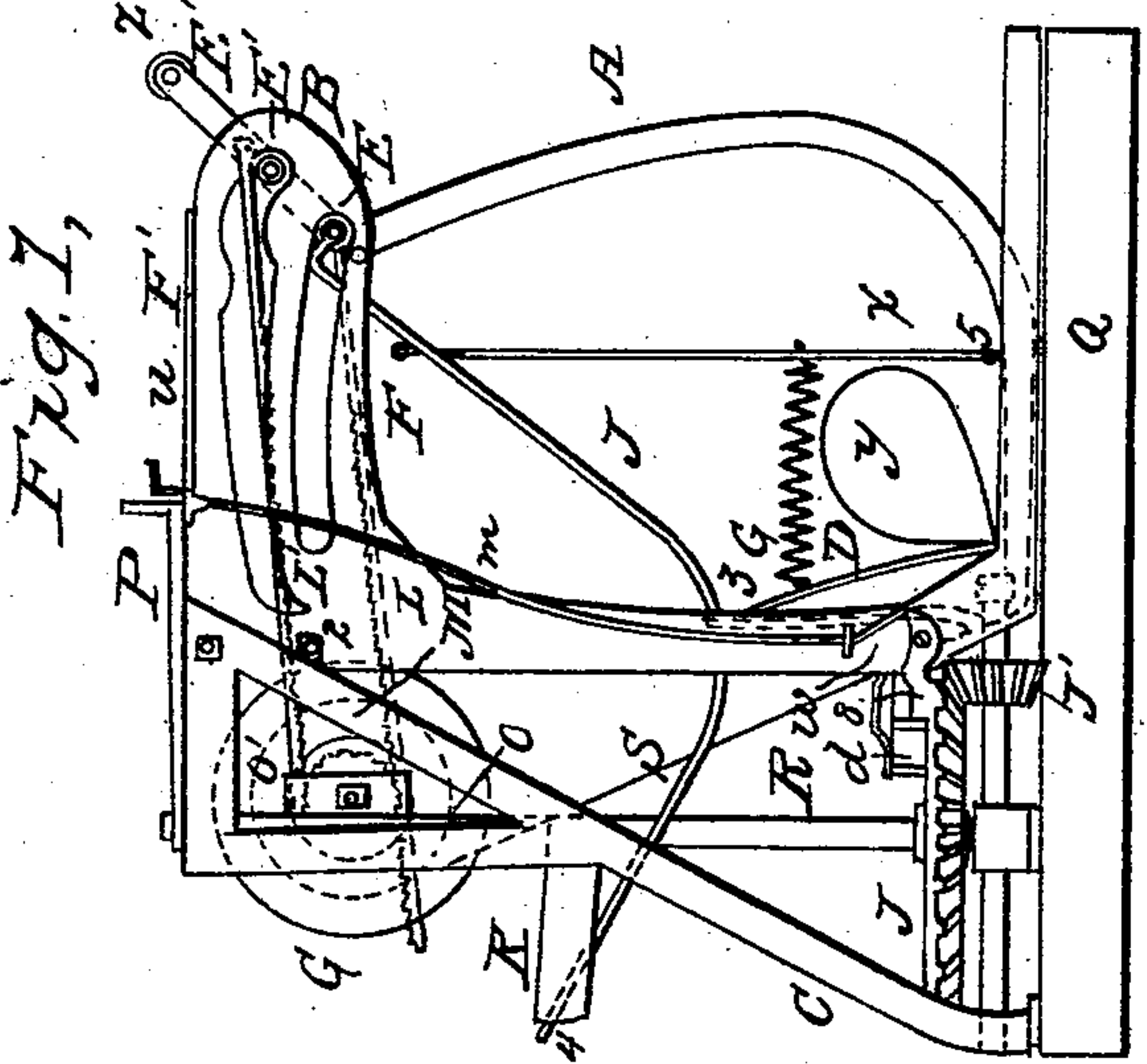
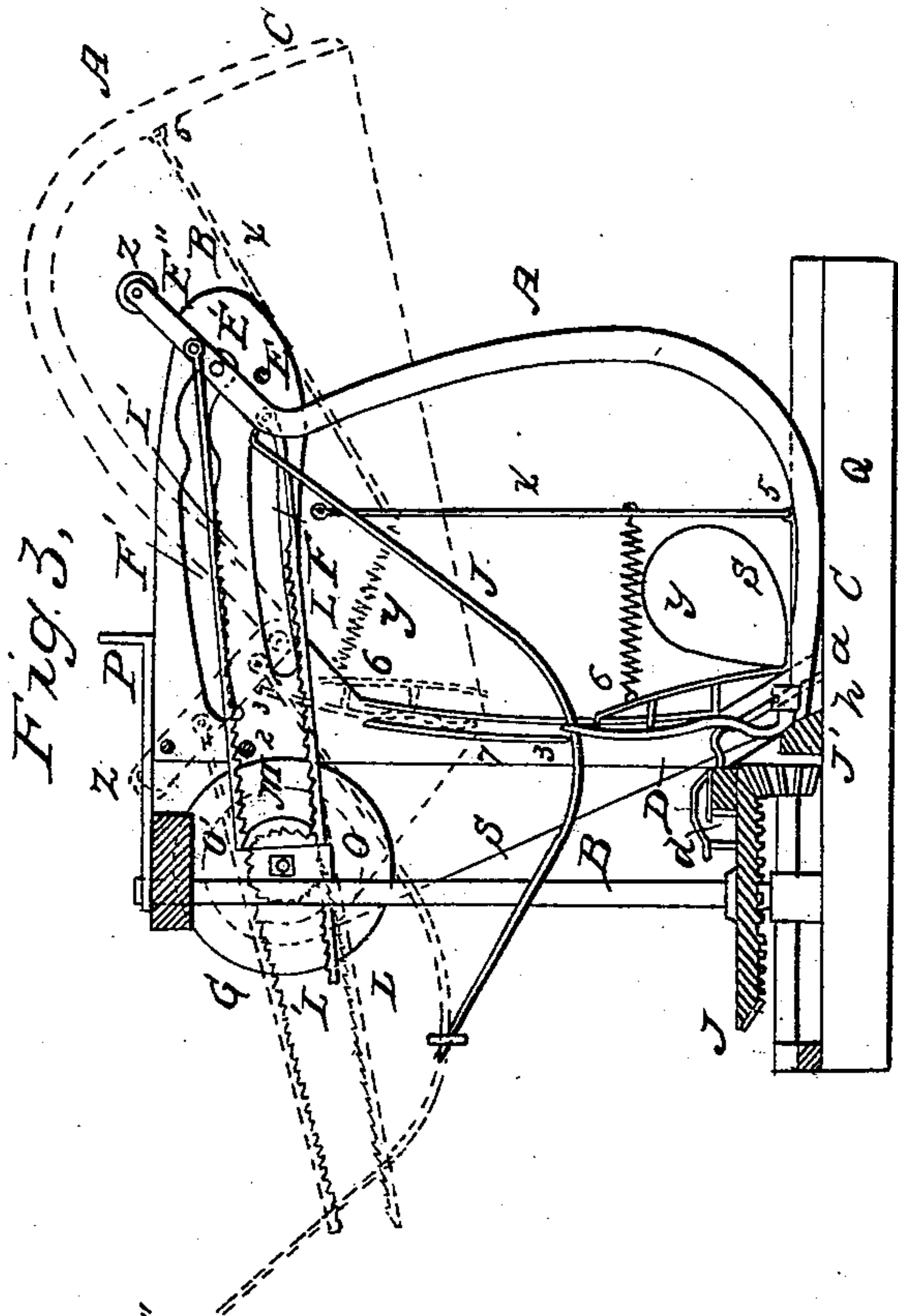


W. W. BURSON.

Grain Binder.

No. 39,463.

Patented Aug. 11, 1863.



Witnesses:  
Joseph G. Ewing  
George H. P. P. P.

Inventor  
W. W. Burson.



# UNITED STATES PATENT OFFICE.

W. W. BURSON, OF ATKINSON, ILLINOIS.

## IMPROVEMENT IN GRAIN-BINDERS.

*Specification forming part of Letters Patent No. 39,463, dated August 11, 1863.*

*To all whom it may concern:*

Be it known that I, W. W. BURSON, of Atkinson, in the county of Henry and State Illinois, have invented a new and useful Machine for Binding Grain upon the Platform of the Reaper; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, forming part of this specification, in the several figures of which similar characters of reference denote the same part.

Figure 1 is a side elevation, the wire-lever A being in position closed around the gavel. Fig. 2 is a plan view of the parts in the same position as in Fig. 1. Fig. 3 is a side elevation, the upright B and brace C being removed; the full lines show the parts in the same position as in Fig. 1, the dotted lines the position of the parts ready to receive the gavel. Fig. 4 shows hook *a*. Fig. 5 shows spring-pliers *b* on the end of lever A. Fig. 6 shows twisting-claws *c*. Fig. 7 shows slide D.

My invention has reference to the binding of grain with wire upon the reaper-platform; and consists of certain combinations of devices, hereinafter to be described.

In the drawing, Figs. 1 and 3, A is the wire-lever carrying the band around the gavel, supported on the trunnions *EE'*, moving in grooves *F F'* in uprights B B.

The spool G, Fig. 2, has wound upon it the wire to be used in binding in such manner as to be unwound from the under side, covering which is the belt H fitting between the flanges of the spool and secured to the cross-bar 2, which prevents its turning with the spool, and being slotted underneath, the wire is drawn off, being thus prevented from bounding off the spool in the rapid motions of binding, should the wire become slack. The cam-rod I passes through eyelet 3 in slide D, also through eyelet 4 in support-bar K. The ratchet-rods L and L' attach lever A at E and E'', and act upon ratchet-pulley M of spool G, regulating the length of wire given off and the degree of tension put upon the same by means of the springs O O'.

The crank P upon shaft R, upon which is secured bevel-wheel T, meshing in pinion T', is stopped over spring U by drop-catch W, in which position the twisting-claws are in position to receive the wire.

The spring-rod X, attached to lever A, at 5, and coil-spring Y, attached to slide D, at 6, being thrown around the gavel each time the band is, assist in compressing, and hold it while the band is being secured.

The hook *a*, Fig. 4, is held in its grooved support upon upright B; the upper end is bent so as to rest upon wheel T, the lower end being under the spring-pliers *b*, which is its position of rest.

The wheel T has upon its upper surface the cam *d*. The rotation of said wheel raises hook *a*, which, driving between the jaws of pliers *b*, parts them enough to allow the end of the wire to be drawn out and a new hold taken, when the hook is forced down, the elevation 9 closing the pliers by pressing thereon.

The twisting-claws are formed by slotting the enlarged end of shaft *g* obliquely, the front end being cut to the center, the rear end being raised enough from the circumference of the shaft that the wire is thrown into the opened pliers by the rotation of the shaft.

The spring-pliers are formed by corrugating the end of lever A, from the recess *h*, transversely, the end being serrated. A spring is made to match the end already prepared and is riveted to A, both pieces being beveled underneath to admit point of hook *a*, the spring-jaw being provided with a cutting-edge meshing closely into recess *h*, by which the wire is severed. The wire is held in the twisting-claws by the front piece of slide D, flanges of B B, and upper surface of pliers *b*.

In operating, we wind the wire upon spool G, and having fastened the belt H over it, we draw the end of the wire S through the slot of said belt, through eyelet 7 of slide D, Figs. 3 and 7, and, opening spring-pliers *b*, place the wire therein, Fig. 3, dotted lines. The gavel being placed upon the platform Q, the handle Z of wire-lever A is shoved forward, the trunnions *EE'* moving in grooves *F F'*, which brings lever A in position shown in Fig. 1. While lever A is being thus brought around the gavel, the ratchet-rod L' acts continually upon ratchet-pulley M, putting any desired tension upon the wire S as it is thrown around the gavel. At the same time the cam-rod I presses down slide D, forcing the wire into position seen in Figs. 1 and 3. By this same movement the spring compressors X and Y are



thrown around the gavel, thereby relieving the tension upon the wire.

The above-described movement puts the band around the gavel, and while lever A is being firmly held down with one hand, the other takes hold of crank P, with the finger presses down spring U, acting by rod *m* upon the rear end of drop-catch W, raises it out of notch S, when the crank is turned to the left one revolution, the drop-catch W stopping it in position of starting. The rotation of crank P turns wheel T, the cam *d* of which raises hook *a*, forcing the end of said hook between the jaws of pliers *b*, whereby they are opened, receiving the wire S, which the rotation of twisting-claws *c* brings to them, and also allowing the end of the wire before held to be drawn out, when cam *d* forces down hook *a* and, pressing the elevation 9 of said hook upon the spring-jaw of pliers *b*, assists said spring in cutting the wire. The band of the gavel being thus severed from the spool portion of the wire, the continued rotation of twisting-claws *c* securely fastens the two ends of the wire together, being held in the oblique claws by slide D, flanges on uprights B B, and upper surface of pliers *b*.

The gavel being thus bound, the handle Z is drawn back, when the end of lever A is raised slightly above the platform Q. The sheaf should be removed with the foot, when the lever is fully raised. While the lever A is being raised the arrangement of ratchet-rod L is such that the motion of trunnion E in groove F shall prevent the further paying off from the spool G and take up any slack wire which may have run off.

The wire S being raised by slide D, as shown in Fig. 3, dotted lines, is entirely out of the way of the gavel, which may be shoved to the

binder endwise or sidewise, a consideration of the highest importance on all reapers which require the grain to be drawn back in removing from the platform.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the wire-lever A and double-grooved supports B B overhanging the gavel, constructed and operating substantially as described.

2. The combination of the slide D, cam-rod I, and lever A, acting substantially as described and for the purpose set forth.

3. The combination of the spring-rod X and coil-spring Y with lever A and slide D, acting as set forth.

4. The combination of the spring-pliers *b*, slide D, and twisting-claws *c*, substantially as described.

5. The combination of the ratchet-rods L L', ratchet-pulley M, springs O O', and lever A, acting substantially as described and for the purpose set forth.

6. The combination of the spool G, wire covering-belt H, and bar 2, substantially as set forth.

7. The combination of the crank P, spring U, rod *m*, drop-catch W, and wheel T, acting substantially as described.

8. The combination of the hook *a*, cam *d*, and pliers *b*, acting substantially as described and for the purpose set forth.

In testimony whereof I have hereunto subscribed my name in the presence of two witnesses.

W. W. BURSON.

Witnesses:

JOSEPH GEKRIG,  
GEORGE W. PETERS.