

(No Model.)

3 Sheets—Sheet 1.

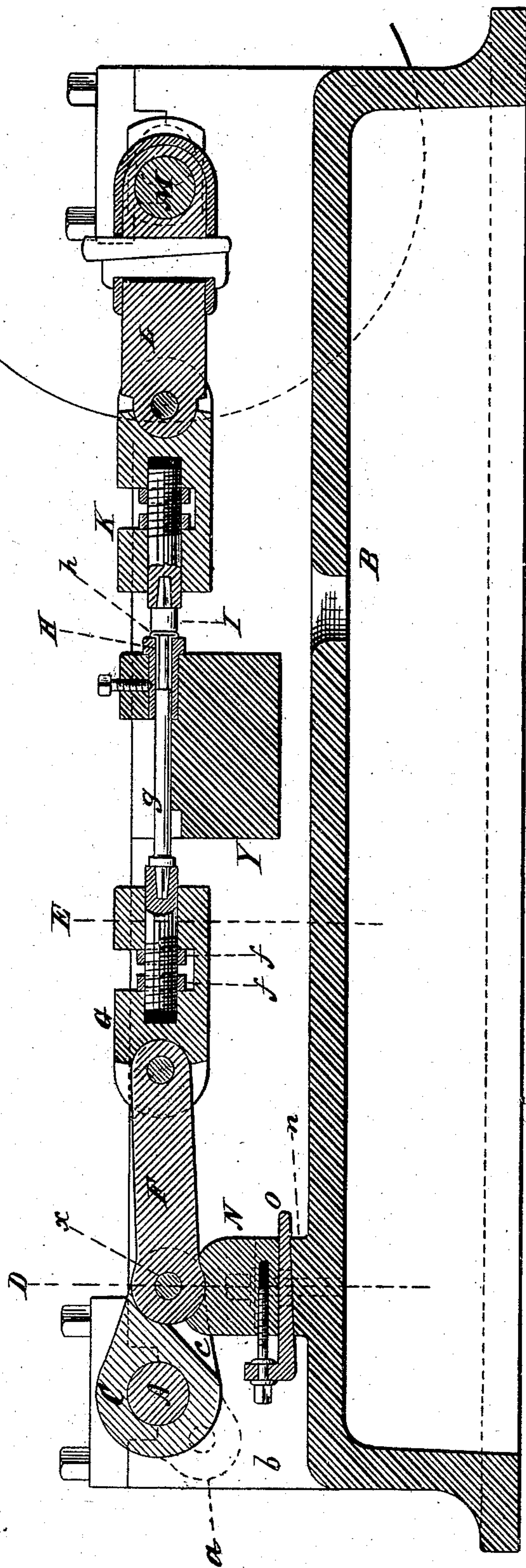
A. C. HOBBS.

Machine for Heading Cartridge Shells.

No. 240,826.

Patented May 3, 1881.

Figure 1.



Witnesses:
W. E. Carlisle
Joseph L. Levy.

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Henry H. Brown

(No Model.)

3 Sheets—Sheet 2.

A. C. HOBBS.
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Figure 2.

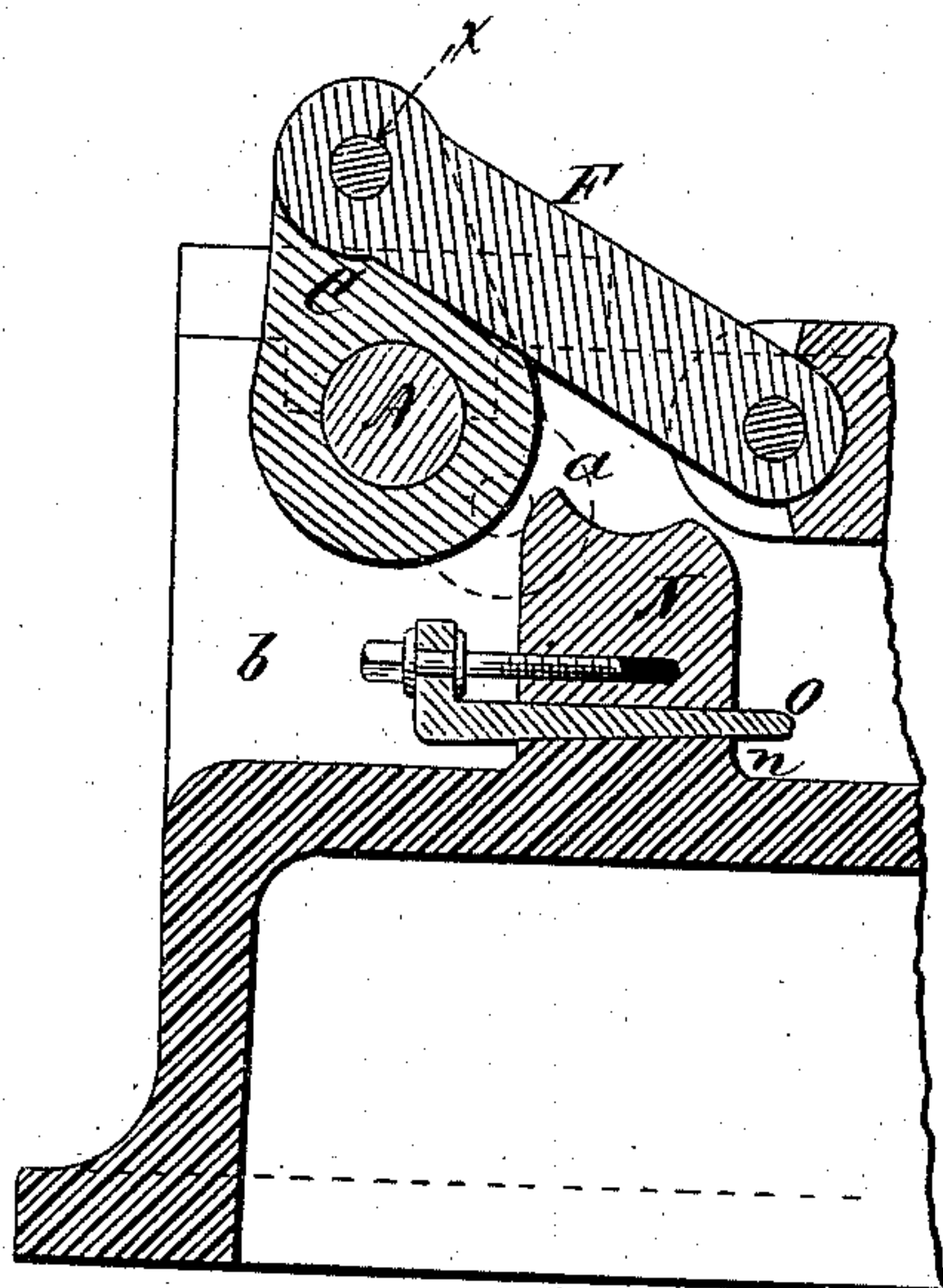
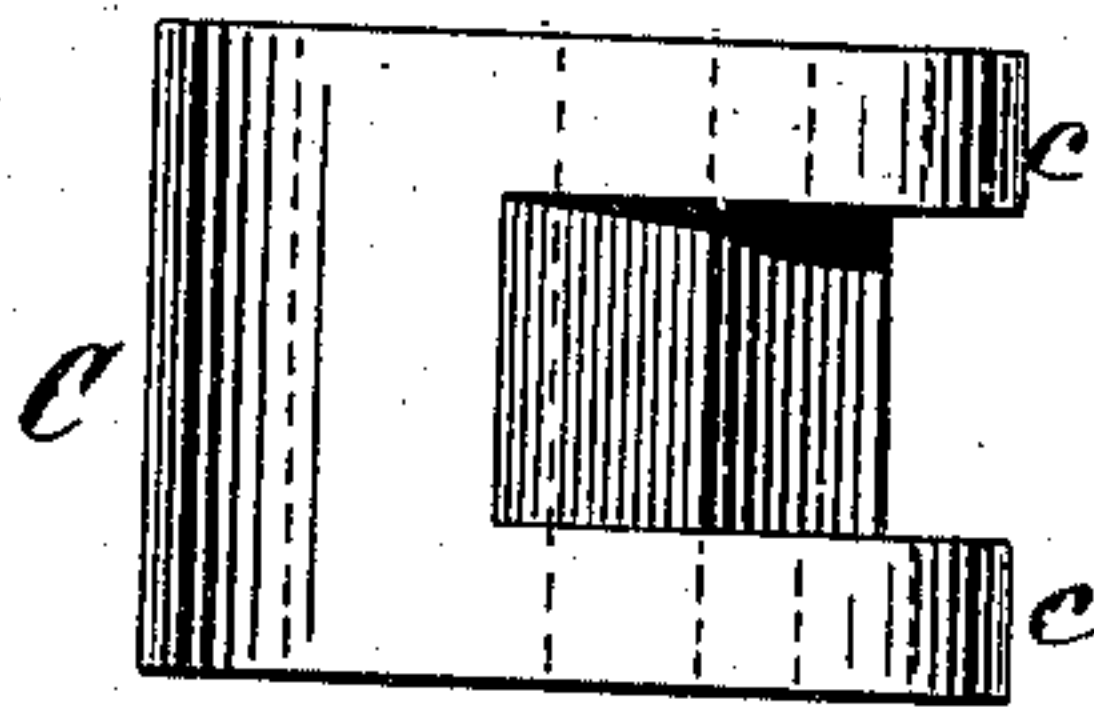


Figure 3.



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(No Model.)

3 Sheets—Sheet 3.

A. C. HOBBS.
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Figure 4.

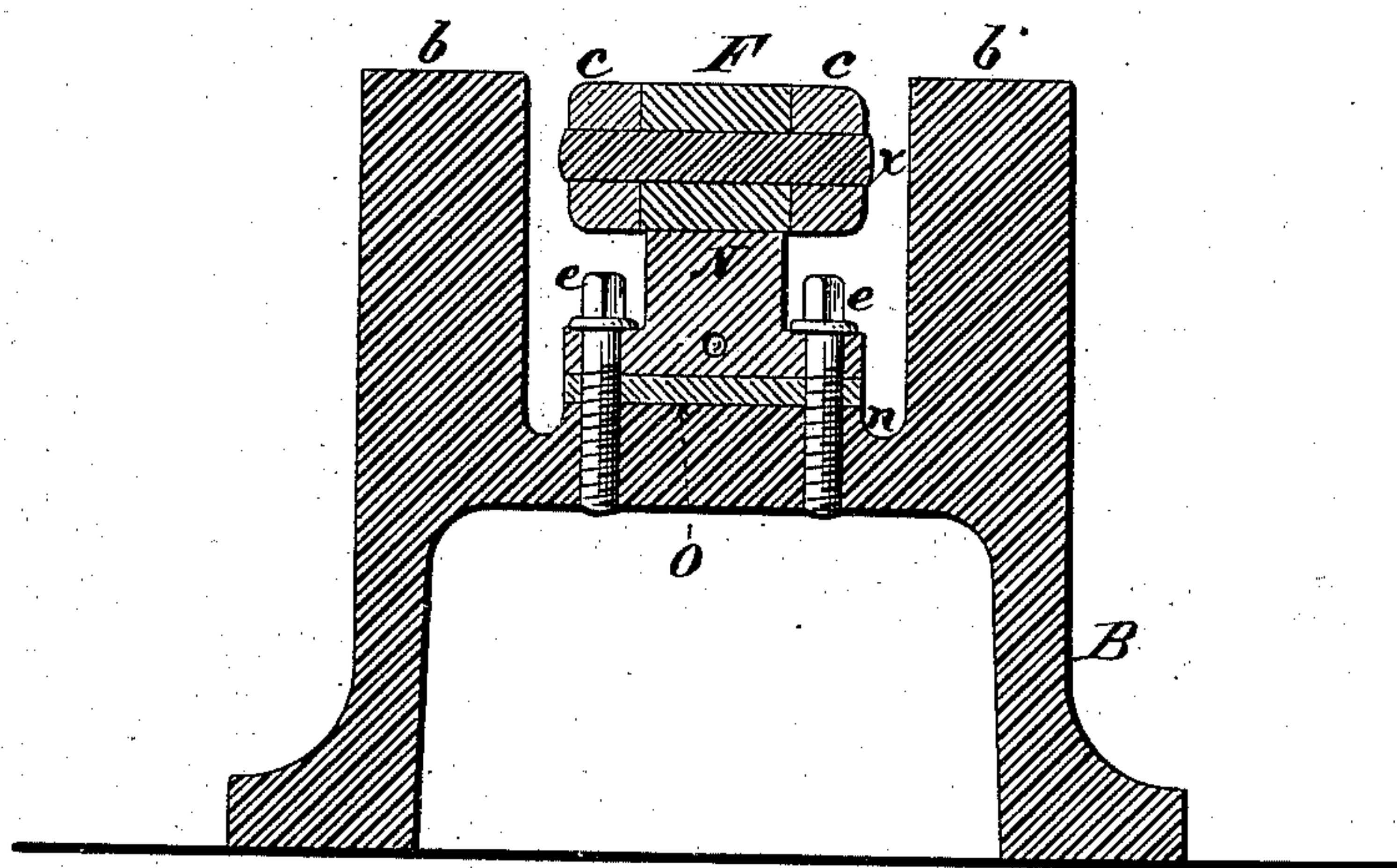
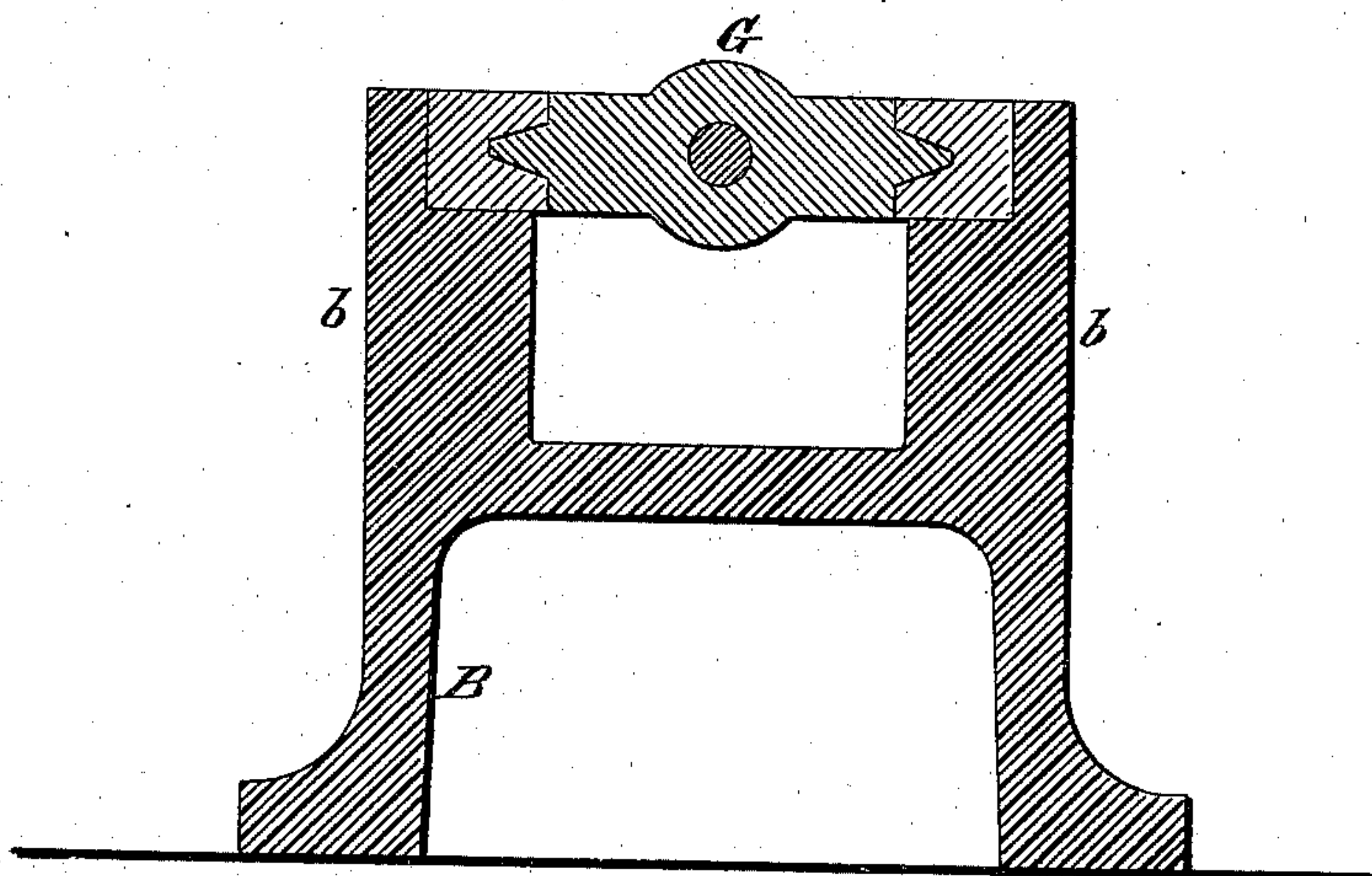


Figure 5.



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UNITED STATES PATENT OFFICE.

ALFRED C. HOBBS, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE
UNION METALLIC CARTRIDGE COMPANY, OF SAME PLACE.

MACHINE FOR HEADING CARTRIDGE-SHELLS.

SPECIFICATION forming part of Letters Patent No. 240,826, dated May 3, 1881.

Application filed February 17, 1881. (No model.)

To all whom it may concern:

Be it known that I, ALFRED C. HOBBS, of the city of Bridgeport, in the county of Fairfield and State of Connecticut, have invented
5 a new and useful Improvement in Machines for Heading Cartridge-Shells and the Like, of which the following is a description, and which, when taken in connection with the accompanying drawings, is sufficiently full, clear,
10 and accurate to enable my invention to be practiced.

In machines ordinarily used for heading cartridge-shells a toggle-joint device is used for supporting, carrying, and moving that portion
15 of the device which is carried in guides or grooves in the machine, and which receives the strain due to the heading of the shell. This strain is very severe, and it is found that in the use of such machines the greatest accuracy is
20 necessary to enable the machine to turn out perfect work, and that the wear of the mechanism soon renders the machine unfit for the performance of accurate work without readjustment, which requires time and careful ma-
25 nipulation.

My invention consists in so combining the toggle-joint device with a stop, which may, if desired, be adjustable, that the strain may al-
30 ways be so received by said stop as to insure the accuracy of the operation of the machine, even though a certain amount of wear may have taken place in the parts.

Figure 1 shows a longitudinal section of a cartridge-heading machine containing my in-
35 vention. Fig. 2 shows a portion thereof with the toggle-joint mechanism in the doubled-up position. Fig. 3 shows a view from below of one of the members of the toggle-joint mechanism. Fig. 4 shows a section on the line D
40 of Fig. 1, and Fig. 5 is a section on the line E of Fig. 1.

Like letters in all the figures refer to like parts.

A is the rock-shaft, turning in bearings at-
45 tached to the frame B of the machine. To this shaft, and within the trough-like frame shown at *b b*, is the crank C, which, by the shaft A, is given partial rotation or caused to rock.

50 F is the connecting-rod, which connects the crank C with the slide G. The slide G carries

the adjustable punch *g*, upon which the shells are held when they are to be headed. This punch *g* is made adjustable by the two nuts *f f*.

At H is shown the die, within which the
55 shells are supported while the head is being formed upon them.

At I is seen the bunter or device which is used to form the head of the shell, in connec-
60 tion with the die H and punch *g*. The bunter is adjustably attached to its slide K, in the same way as the punch *g*, by two nuts. The slide K is, in turn, connected by a pivot to the link or connecting-rod L, and this connecting-
65 rod, in its turn, is attached to the crank formed in the shaft M, which shaft, like the shaft A, is journaled in the side frames of the machine. The revolution of the shaft M causes the bun-
70 ter I to be reciprocated to and from the position it occupies, as shown in Fig. 1, and the partial rotation or rocking of the shaft A causes the punch to be alternately moved back to the left, out of the die H, and again into the die H, carrying upon it an unheaded shell at each forward stroke.

75 At *a* is seen in dotted lines the crank or arm attached to the rock-shaft A at one side of the frame of the machine, and which crank or arm is operated by a connecting-rod, (not shown in the drawings,) which is connected with suit-
80 able operating mechanism upon the shaft M, at the right-hand side of the machine.

In Fig. 1 the toggle-joint mechanism, consisting of the rocker-shaft A, the crank C, and the connecting-rod F, is seen in the position
85 which it occupies when the bunter I is heading a shell and the strain is being received through the toggle-joint mechanism.

At Fig. 2 the toggle-joint mechanism is shown when rocked upward or bent, and when
90 the machine is in the act of being fed with a shell upon the receiver Y, and before the shell is carried by the punch *g* into the die H. When the machine is in the position shown in Fig. 1, and the bunter I is heading the shell *h* upon
95 the punch *g*, a very great strain is received by the toggle-joint mechanism, which strain is transmitted through the punch *g* and the slide G.

I have discovered that by attaching a block,
100 N, to the bed of the machine, as shown in Figs. 1, 2, and 4, I am enabled to so receive the

strain upon the parts as to insure steadiness and certainty as to the location of the punch *g* in relation to the die *H* and bunter *I*. As seen in Figs. 1, 2, and 4, the block *N* is shown as upon a slight projection, *n*, rising from the base of the machine, and having between the bottom of the block *N* and the upper surface of the projection *n* the beveled piece *O*, adjustable in relation to the block *N* by a set-screw. Two clamp-screws, *e* and *e*, operate to hold the block *N* in the desired position upon the frame of the machine, and which are loosened to enable the adjustment to be made, the beveled sliding piece *O* being slotted for the passage of the set-screws *e* and *e*. The upper portion of the block *N* is formed, as shown, with a semi-cylindrical depression, as seen in Figs. 1 and 2. This semi-cylindrical depression should preferably correspond in shape with the semi-cylindrical end of the connecting-rod *F*, so that when the center of the pin *X*, which connects the connecting-rod *F* with the crank *C*, has passed slightly below a line drawn through the center of the shaft *A* and the center of the other pin of the connecting-rod *F*, said end of the connecting-rod *F* will rest upon the semi-cylindrical depression of the block *N*, and in this way the strain due to the forming of the head of the shell by the bunter *I* will be mainly received by the block *N*, and the slight wear incident to use will not affect the accuracy of the machine.

It is intended that the toggle-joint arrangement and the stop *N* should be so adjusted in relation one to the other as that but a very slight passing of centers will be necessary.

Many other means of adjusting the block *N* will suggest themselves to an ordinary mechanic, and, indeed, the machine may be made serviceable and useful without any adjusting device in connection with the block *N* whatsoever.

At Fig. 3 is shown a bottom view of the crank *C*, (shown in Fig. 1 as attached to the rocker-shaft *A*,) showing how said crank is cut out at the under side to admit of the resting of the end of the connecting-rod *F* upon the surface of the block *N*, and also so as to permit of its being operated in connection with the connecting-rod *F*. This stop device, in connection with the toggle-joint arrangement, is useful in many devices other than cartridge-heading machines, and I have merely shown it in connection with this machine for the purpose of giving an illustration of its utility in connection with one form of mechanism.

The width of the block *N*, as shown in Fig. 4, should not be so great as to prevent the arms *c c* of the crank *C* from passing the sides of the block, and the adjustment of the operating devices must be so arranged and connected as at the end of the stroke to bring the end of the connecting-rod *F* into contact with the block *N* firmly, but without a severe blow or jar.

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

1. The combination of a toggle-joint mechanism, consisting of a crank, rocker-shaft, and connecting-rod, and a stop combined therewith, and arranged in the proper relation to such toggle-joint mechanism, for the purpose substantially as herein stated.

2. The toggle-joint mechanism consisting of an operating-shaft, a crank, and connecting-rod, combined with an adjustable stop, arranged substantially as herein described.

ALFRED C. HOBBS. [L. S.]

Witnesses:

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