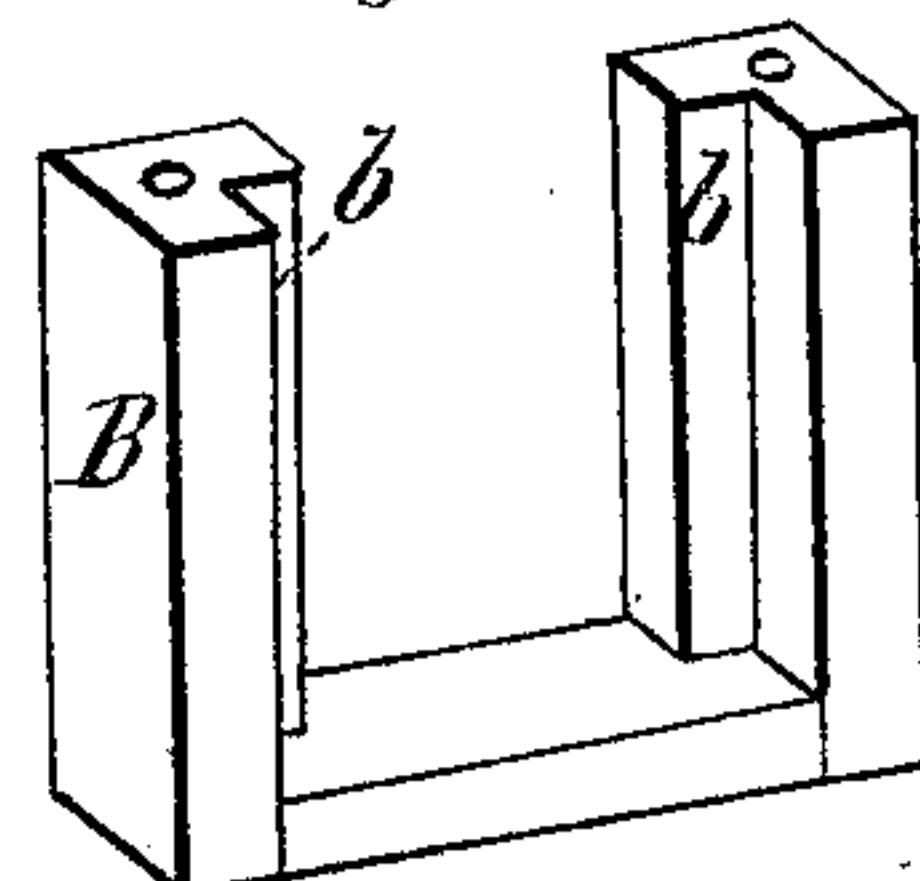
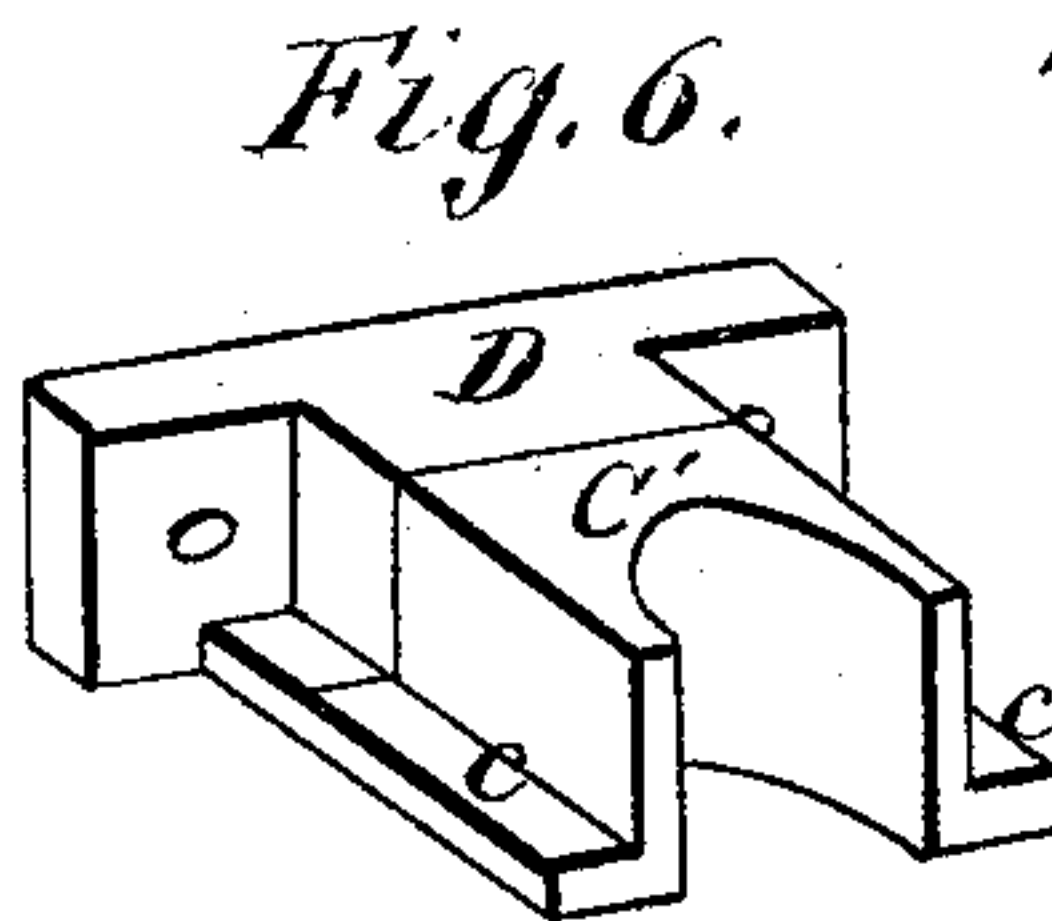
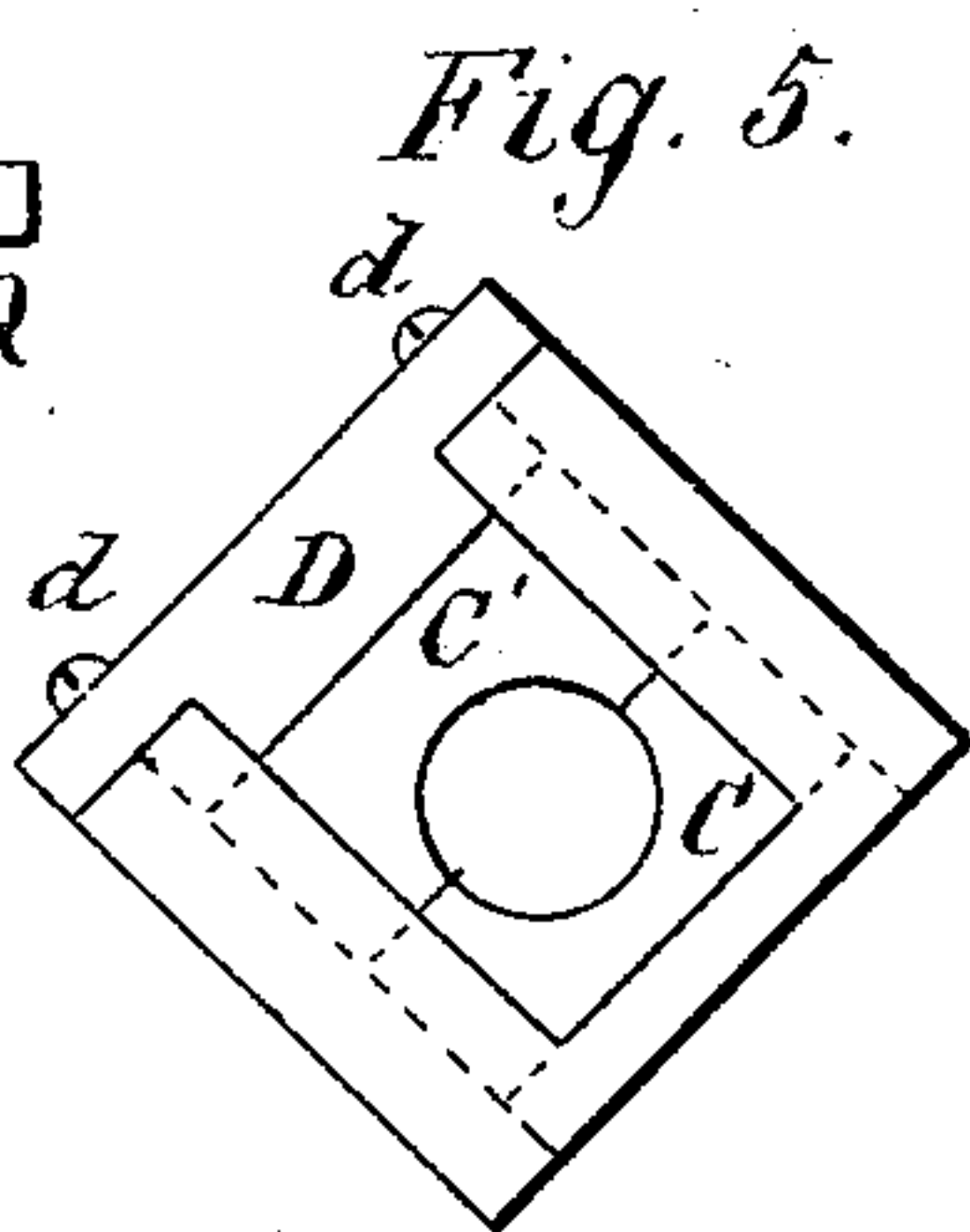
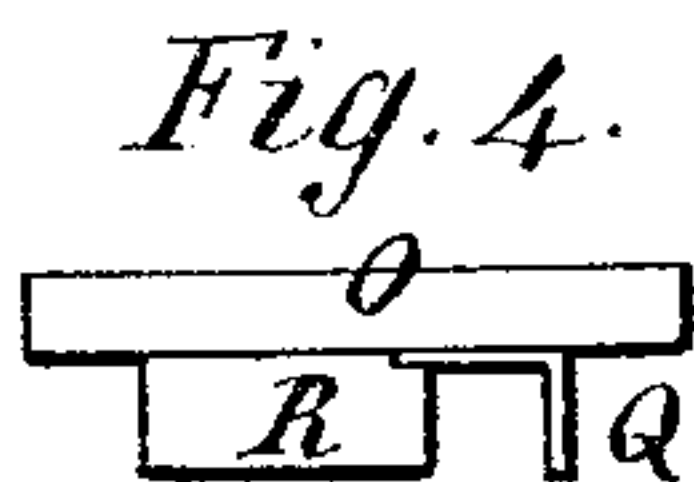
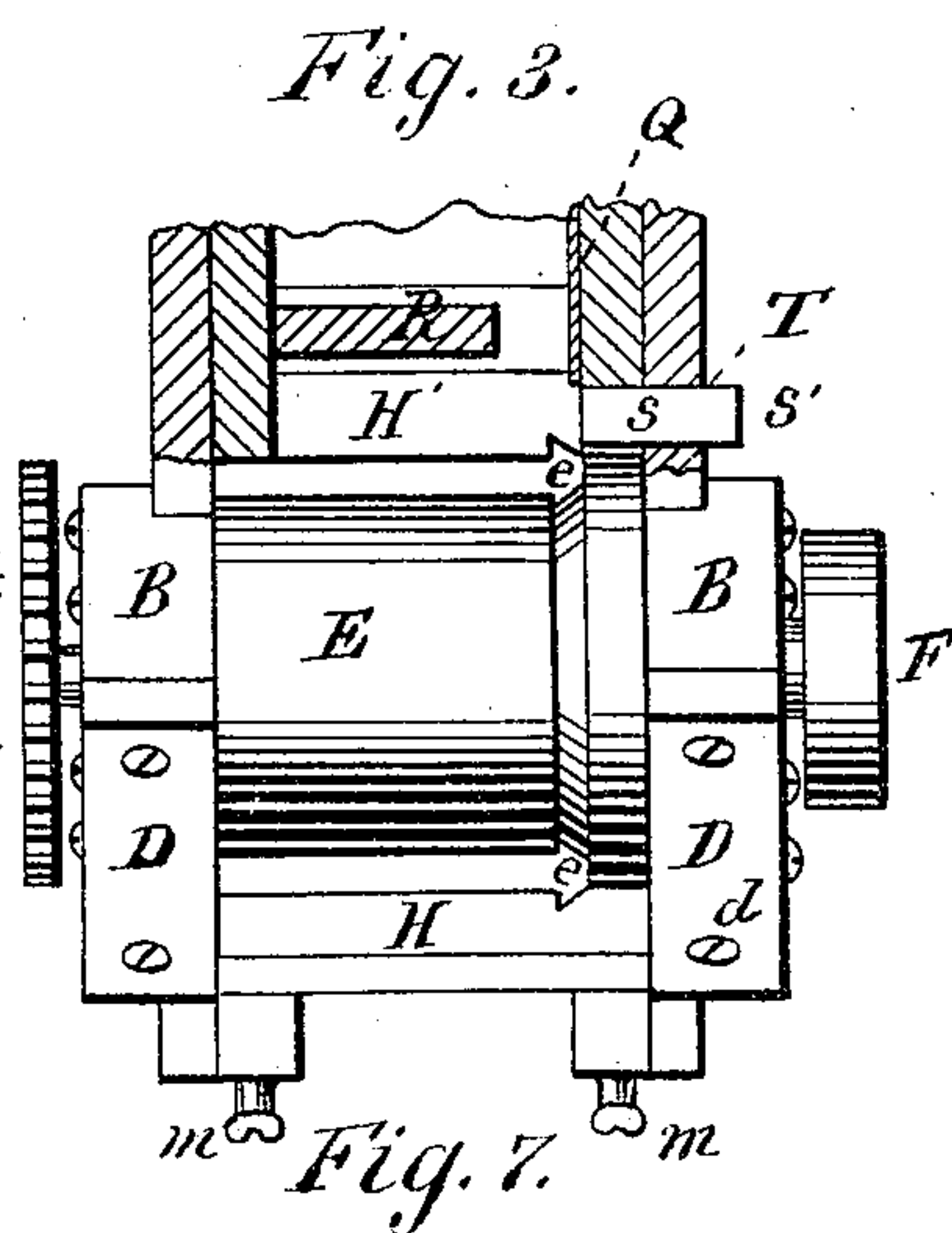
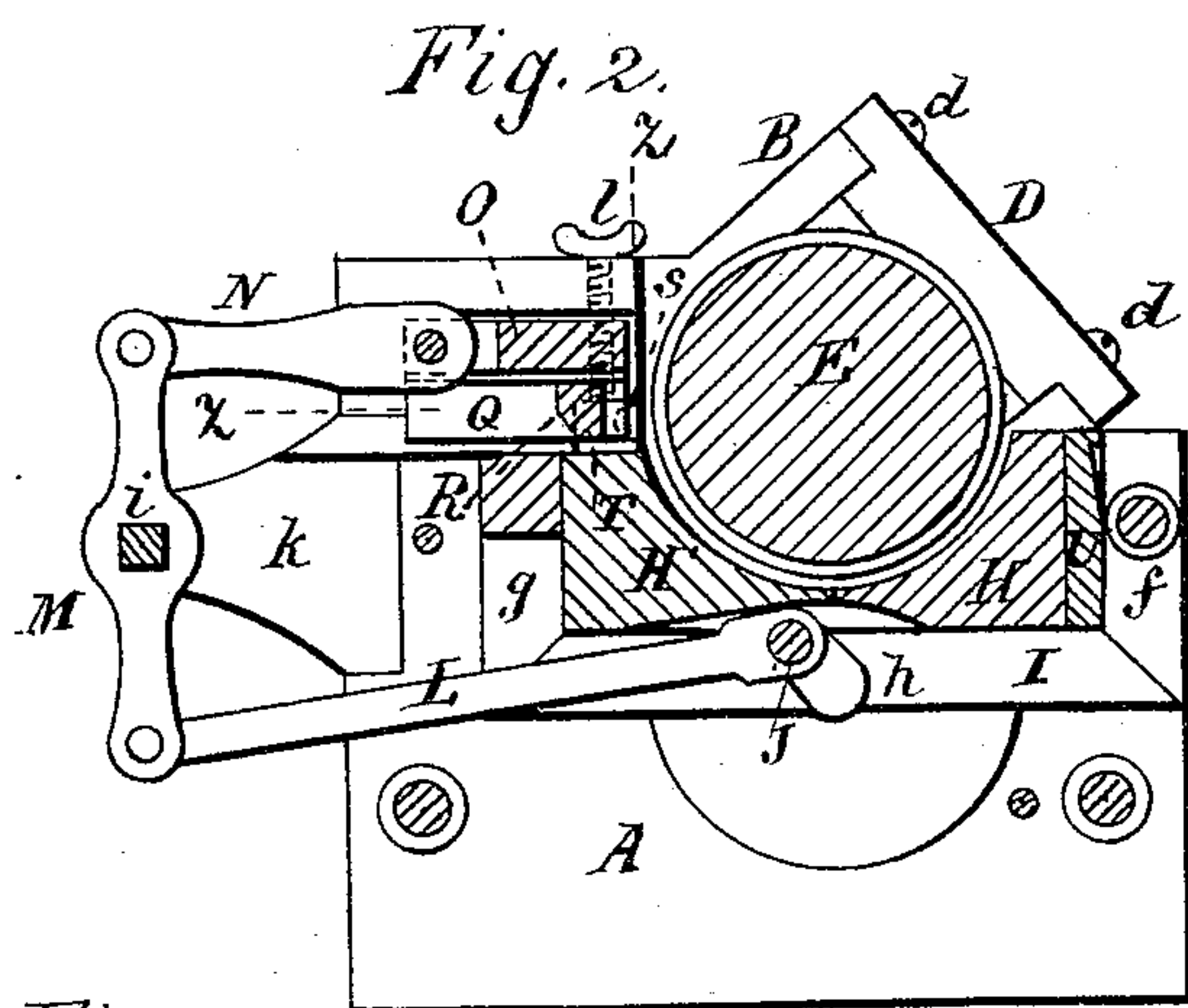
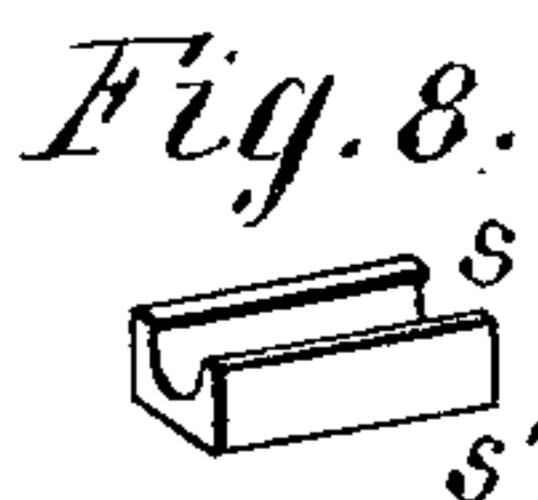
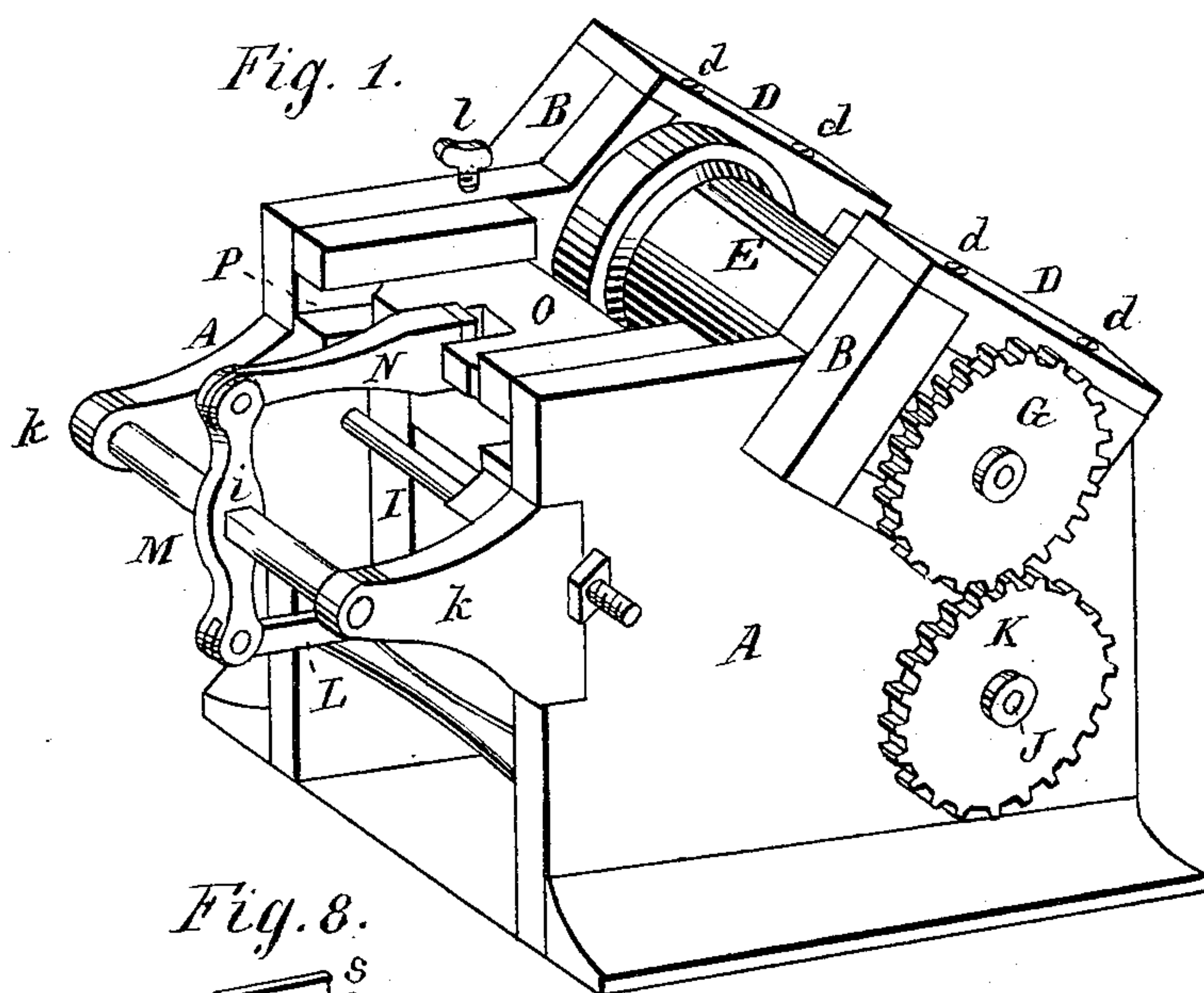


W. R. JENKINS, Jr.
Machines for Making Bolts.

No. 151,597.

Patented June 2, 1874.



Witnesses
R. n. Dyer,
C. Thurman.

Inventor *William R. Jenkins*
by Geo. W. Dyer & Co
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM R. JENKINS, JR., OF WILLIAMSPORT, ASSIGNOR TO WILLIAM P. DUNCAN, OF BELLEFONTE, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR MAKING BOLTS.

Specification forming part of Letters Patent No. **151,597**, dated June 2, 1874; application filed February 2, 1874.

To all whom it may concern :

Be it known that I, WILLIAM R. JENKINS, Jr., of Williamsport, in the county of Lycoming and State of Pennsylvania, have invented a new and useful Improvement in Bolt and Rivet Machines; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object I have in view is the construction of a simple, strong, cheap, and effective machine for rolling (lengthwise) bolts and rivets, or other articles, of different sizes, from merchant rod-iron; and the invention therein principally consists in the combination of a removable roll, a removable roll-bed, and means for cutting off the rod and placing it between the roll and roll-bed; also, in the combination of the journal-frames, journal-boxes, a covering-cap, the roll, the roll beds, and a block, constructed and arranged for the purpose of conveniently changing the rolls and roll-bed for making various sorts of bolts and rivets, all as more fully hereinafter explained.

To enable others skilled in the art to make and use my machine, I now proceed to describe the same in connection with the drawings, in which—

Figure 1 is an elevation, in perspective, showing the gear side of the machine; Fig. 2, a vertical section, nearly central, of Fig. 1; Fig. 3, a top view of the machine, with the part shown in lines *zz* of Fig. 2 removed; Fig. 4, a separate view of the reciprocating plate, carrying triangular knife and scraper; Figs. 5, 6, and 7, separate views of the journal-frame, boxes, and cap; and Fig. 8, a separate view of the stationary knife and holder.

Like letters of like kinds denote similar parts in each figure.

The frame-work of my machine is composed of two similar side plates or castings, A, having feet *a*, arranged parallel to each other, a proper distance apart, and connected by suitable bolts and ties. Upon the upper portions of the side plates are rectangular journal-frames B, cast with the side plates, or otherwise properly secured to them, and coinciding

in their inner surfaces with the inner face of the plates A, but extending outwardly from the outer faces of the same plates. These journal-frames stand at an angle of about forty-five degrees, inclining toward the front of the machine, and have rectangular channels or ways *b* up in their inner portions. The journal-boxes C and C' have flanges *c* upon their inner sides, which fit into the channels or ways, so that they may be conveniently inserted and removed, and do not extend quite to the top of the journal-frames. A cap, D, is cut away, so that its lower parts fit in between the uprights and down upon the upper box C', and also into the channel or ways, and is secured in place by suitable screws *d*. Thus the journal-boxes are held in place in the journal-frame by the pressure from the ends of the roll, hereinafter to be described, and can be readily removed for the purpose of changing the rolls. In these journal-boxes thus described a roll, E, works, the shoulders of the roll running against the inner sides of the journal-boxes and cap just described. This roll has a groove, *e*, cut around it, of a size and shape to form or swage the head of the bolt, rivet, or other articles to be made, and at one end a driving-pulley, F, and at the other end a gear-wheel, G, each made removable. A roll-bed, H H', in two parts, for convenience of removal, fits between the side plates of the machine below the roll, resting upon a suitable rectangular frame, I, cast with or secured upon the inside of the side plates, and having end pieces *f* toward the rear end of the machine, and grooved to correspond with the roll above it. A shaft, J, passes through the machine from side to side, having a central crank, *h*, and upon one end a gear-wheel, K, to mesh with the gear-wheel G. A pitman, L, upon the crank is pivoted to one end of a rocking lever, M, upon a shaft, *i*, suitably journaled in projections *k* of the side plates, the opposite end of which rocking lever is in turn pivoted to a second pitman, N, which in turn is pivoted to a plate, O, which is reciprocated in ways P cast upon, or otherwise secured upon, the upper inner walls of the side plates just behind the journal-frames B. To the bottom of the plate

O, upon one side, is removably secured a triangular knife, Q, whose cutting-edge coincides with the front edge of said plate, and upon the bottom of the same is also secured a scraper, R, of suitable dimensions. Another knife, S, is secured upon the inner end of a suitable holder, S', which passes through an opening, T, in one of the side plates A, and is held in place and adjusted by set-screws *l*. This holder S' is grooved upon one side for the convenient reception of an iron rod, and the knife upon it has a curved cutting-edge to correspond. On the front of the machine a block, *u*, is arranged to fit against one end of the roll-bed, and set-screws *m* serve to press it more or less, as desired, against the same.

The operation of my machine is as follows, viz: Power being applied to the driving-pulley, and the same rotated in the direction toward the rear of the machine, carries with it the roll, which makes one revolution in precisely the same time that the plate which carries the cutting-off knife and the scraper makes one reciprocation. A heated rod being then introduced into the machine through the opening T, is cut off by the knives and pushed into the space between the roll and its bed, which space gradually diminishes in thickness from its mouth to its place of discharge. In the rotation of the roll the portion of the rod thus cut off is rolled over and over between the roll and its bed, that part which is to be the body constantly lessening in size, and that portion to become the head increasing in size, and assuming the shape of the grooves in the roll and roll-bed, until it is discharged a perfect headed bolt or rivet, with its body tapered or not, as desired. The different sizes and forms of the bolts and rivets are determined, of course, by the rolls and roll-beds, which re-

quire to be changed for the purpose. To make this change the caps D are first removed, then the upper journal-boxes taken out, then the block U removed, when the roll-bed can be taken out. The driving-pulley and gear-wheel G can then be removed from the roll and placed upon the roll intended for immediate use, the corresponding roll-bed put in place, the roll placed in its bearings, and the other parts returned to their proper places, and secured in the manner before described.

In some instances it may be necessary to remove the holder S' and replace it with another having a different groove.

The object of the slope to the journal-frames for the rolls is to increase strength in the direction of greatest pressure, and for convenience in removing the rolls.

The advantages of my machine will appear from the foregoing description of its parts, and their manner of operation.

Having thus described my machine, what I claim as new therein, and my invention, is—

1. In combination with the roll E and roll-beds H H', the scraper R and knife Q, constructed and arranged substantially as set forth.

2. In a rivet and bolt machine, the combination of the journal-frames B, the journal-boxes C C', cap D, roll E, removable roll-beds H H', and block U, all constructed and arranged substantially as described and shown, for the purpose of convenient changing of the rolls and roll-beds, as set forth.

This specification signed and witnessed this 23d day of January, 1874.

WILLIAM R. JENKINS, JR.

Witnesses:

BERNHARD BERNDT,
JOHN WELKER.