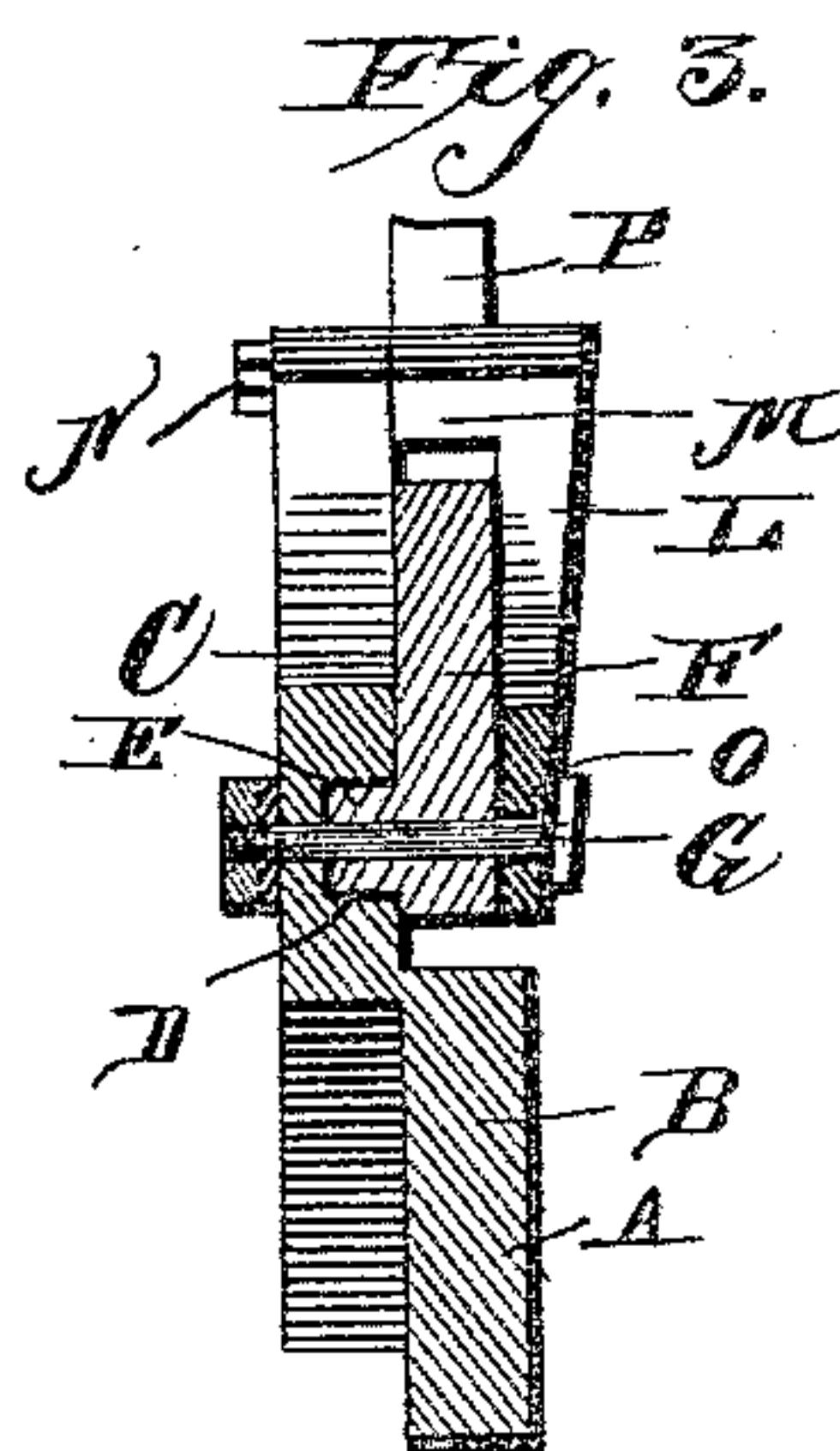
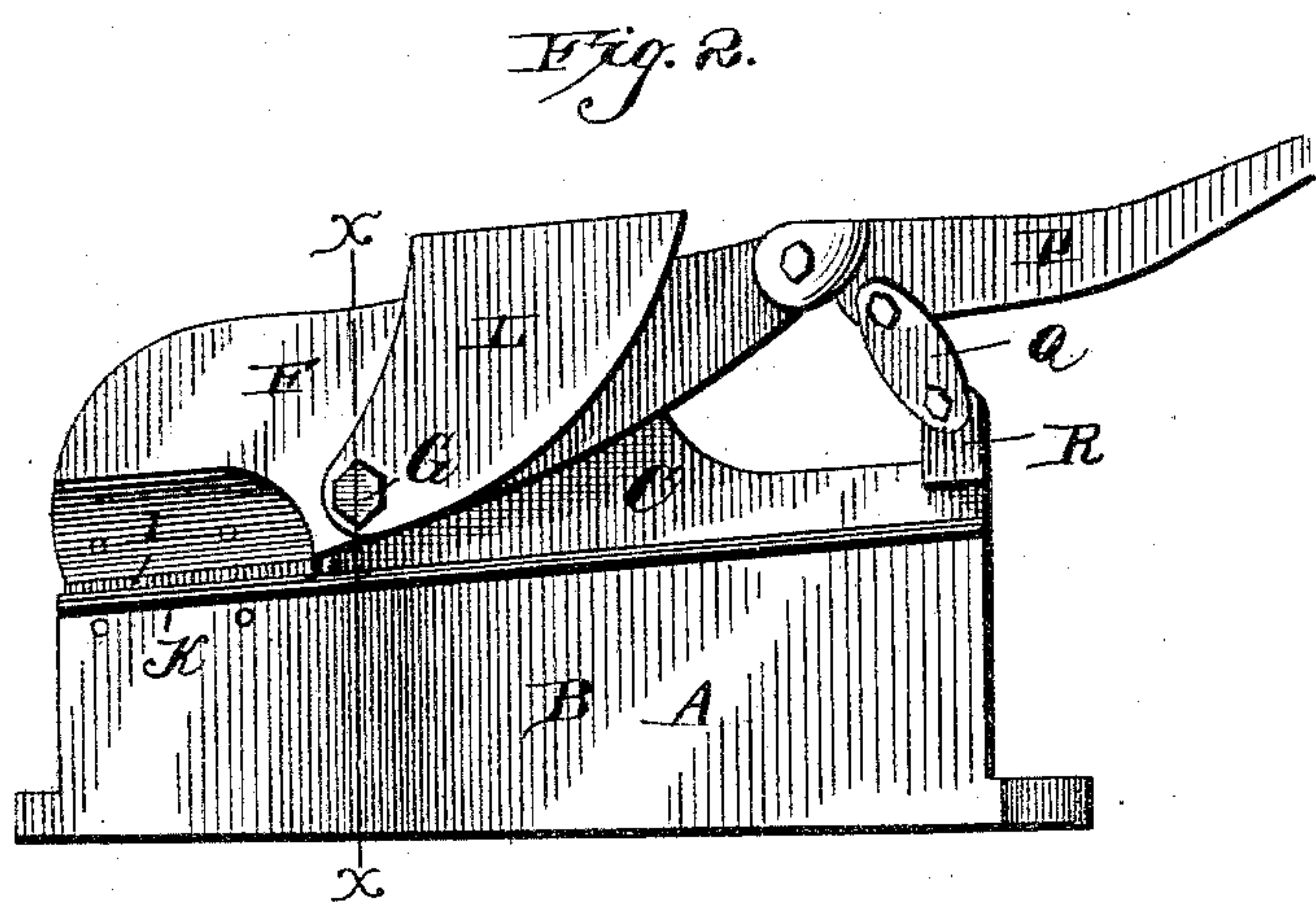
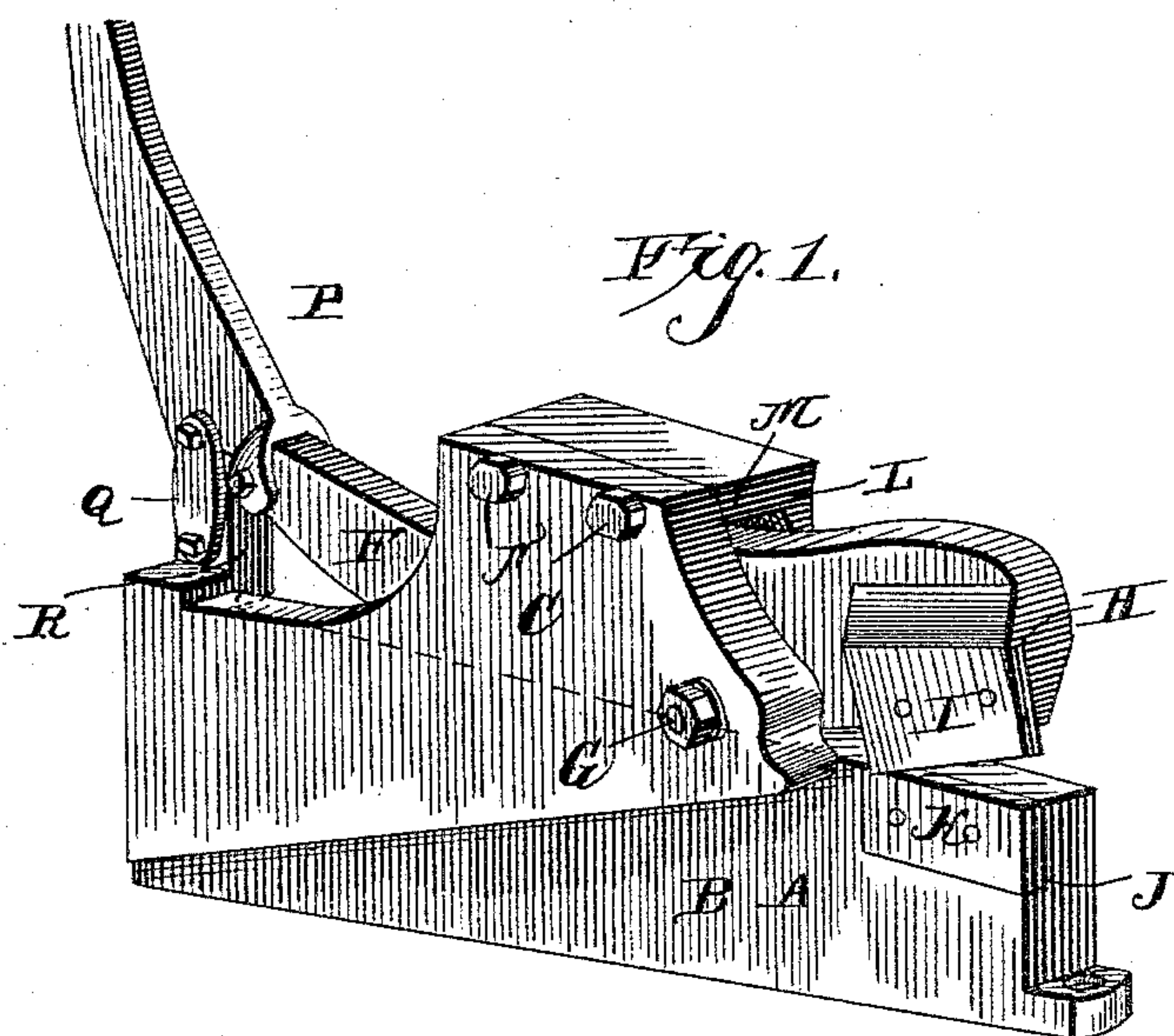


(No Model.)

L. C. NORTH.
METAL SHEARS.

No. 411,727.

Patented Sept. 24, 1889.



Witnesses:

Henry G. Dietrich

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By his Attorneys

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UNITED STATES PATENT OFFICE.

LOYAL C. NORTH, OF GRIMES, IOWA.

METAL-SHEARS.

SPECIFICATION forming part of Letters Patent No. 411,727, dated September 24, 1889.

Application filed May 10, 1889. Serial No. 310,229. (No model.)

To all whom it may concern:

Be it known that I, LOYAL C. NORTH, a citizen of the United States, residing at Grimes, in the county of Polk and State of Iowa, have
5 invented new and useful Metal-Shears, of which the following is a specification.

This invention relates to metal-shears; and it has for its object to provide a machine of this class in which the knife-carrying lever shall
10 be pivoted to the base in such a manner that it shall be held securely against lateral depression.

The invention consists in the improved construction and arrangement of parts, which
15 will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of my improved metal-shearing machine. Fig. 2 is a side view taken from the opposite
20 side of the machine. Fig. 3 is a vertical transverse sectional view taken on the line *x x* of Fig. 2.

The same letters refer to the same parts in all the figures.

25 A designates the base, which is composed of a lower and an upper portion, designated, respectively, by B C. The said lower portion has a downwardly and forwardly inclined upper surface, from one of the edges of which
30 the upper portion C of the said base extends upwardly, as shown in the drawings. The under surface of the said upper portion is inclined in a downward and rearward direction, as will be seen by reference to the dotted
35 lines in Fig. 1 of the drawings. The upper portion of the base is provided at a point near its front end with a circular recess D, adapted to receive a trunnion E, which extends laterally from and is formed integrally with the
40 knife-carrying lever F. The said trunnion and the bottom of the recess D are transversely perforated to receive the connecting-bolt G. The front end of the knife-carrying lever is provided with a shoulder H, formed
45 at its outer side, and forming a seat for the knife or cutter I, and a seat J for the lower stationary knife or cutter K is formed in the outer side of the lower portion B of the base.

50 L designates a guard-plate, which is provided at its upper edge with a laterally-ex-

tending flange M, of a thickness equal to that of the knife-carrying lever. This guard-plate is secured by means of bolts N N to the upper end of the upper portion C of the base. The lower forward end of the guard-plate L
55 is provided with a transverse perforation O for the passage of the connecting-bolt G, by tightening which the said guard-plate may be caused to bear within any desired degree of tension against the outer side of the knife-
60 carrying lever. It will be observed that the fulcrum of the latter is formed by the laterally-extending trunnion E, and that all strain on the connecting-bolt G is thereby relieved, the said bolt serving simply for the purpose
65 of connecting the parts together and of regulating the tension.

The herein-described arrangement of the dowel-plate L serves to prevent all possibility of the knives or cutters spreading apart during operation of the device.

P designates the operating-lever, which is connected pivotally with the rear end of the knife-carrying lever F. The said operating-lever is also connected by toggles Q Q with a
75 lug R, extending upwardly from the rear end of the base.

The base may be provided at its front and rear ends with vertically-perforated ears or lugs S S, adapted to receive bolts by means
80 of which the device may be mounted securely upon a suitable foundation.

The operation and advantages of this invention will be readily understood from the foregoing description, taken in connection with
85 the drawings hereto annexed. The construction of the machine is simple and inexpensive, and the parts are so arranged that the machine may be readily manipulated by one man. The machine is especially designed for
90 continuous shearing of heavy boiler-plates and the like, and it will be observed that the plate which is being acted upon by the shears will pass in a rearward direction resting upon the upwardly-inclined lower portion of the
95 base, while the shearing is being guided away under the downwardly-inclined under side of the upper portion of the base. The shearing will thus be forced apart from the plate without forcing it outwardly from the same, and
100

but little force will therefore be required to hold the plate in its proper position for being acted upon.

Having thus described my invention, I claim—

1. In a metal-shearing machine, the herein-described base, composed of a lower portion having an upwardly and rearwardly inclined surface, and an upper portion rising from the edge of the lower portion and having a downwardly and rearwardly inclined lower surface, substantially as and for the purpose set forth.

2. In a metal-shearing machine, the combination, with the base composed of a lower portion and an upper portion extending upwardly from the edge of said lower portion, of a knife-carrying lever connected pivotally to the inner side of said upper portion, a flanged guard-plate secured to the upper end of the upper portion of the base, and a connecting-bolt extending transversely through the said guard-plate, knife-carrying lever, and the upper portion of the base, substantially as and for the purpose set forth.

3. In a metal-shearing machine, the combination of the base composed of a lower portion and an upper portion extending upwardly from the edge thereof and having a circular recess near its front end, the knife-carrying lever having a laterally-extending trunnion mounted in said recess, and a transverse connecting-bolt, substantially as herein described, and for the purpose set forth.

4. In a metal-shearing machine, the combination, with a base composed of a lower portion and an upper portion extending upwardly from the edge of the same and hav-

ing a circular recess near its front end, of a knife-carrying lever having a laterally-extending trunnion mounted in said recess, a guard-plate having a laterally-extending flange bolted to the upper end of the base, and a transverse connecting-bolt extending through said guard-plate, knife-carrying lever, and the upper portion of the base, substantially as and for the purpose set forth.

5. In a metal-shearing machine, the combination of the base composed of a lower portion having an upwardly and rearwardly inclined upper surface, and an upper portion extending vertically from the edge of said lower portion and having an upwardly and rearwardly inclined lower surface, and provided near its front end with a laterally-extending circular recess, the knife-carrying lever having a laterally-extending trunnion, the flanged guard-plate bolted to the upper end of the upper portion of the base, a connecting-bolt extending transversely through the guard-plate, the knife-carrying lever, and the upper portion of the base, an operating-lever connected pivotally with the rear end of the knife-carrying lever, and toggles connecting said operating-lever with the lug extending upwardly from the rear end of the base, substantially as and for the purpose herein shown and specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

LOYAL C. NORTH.

Witnesses:

C. L. WEISER,
C. E. STEWART.