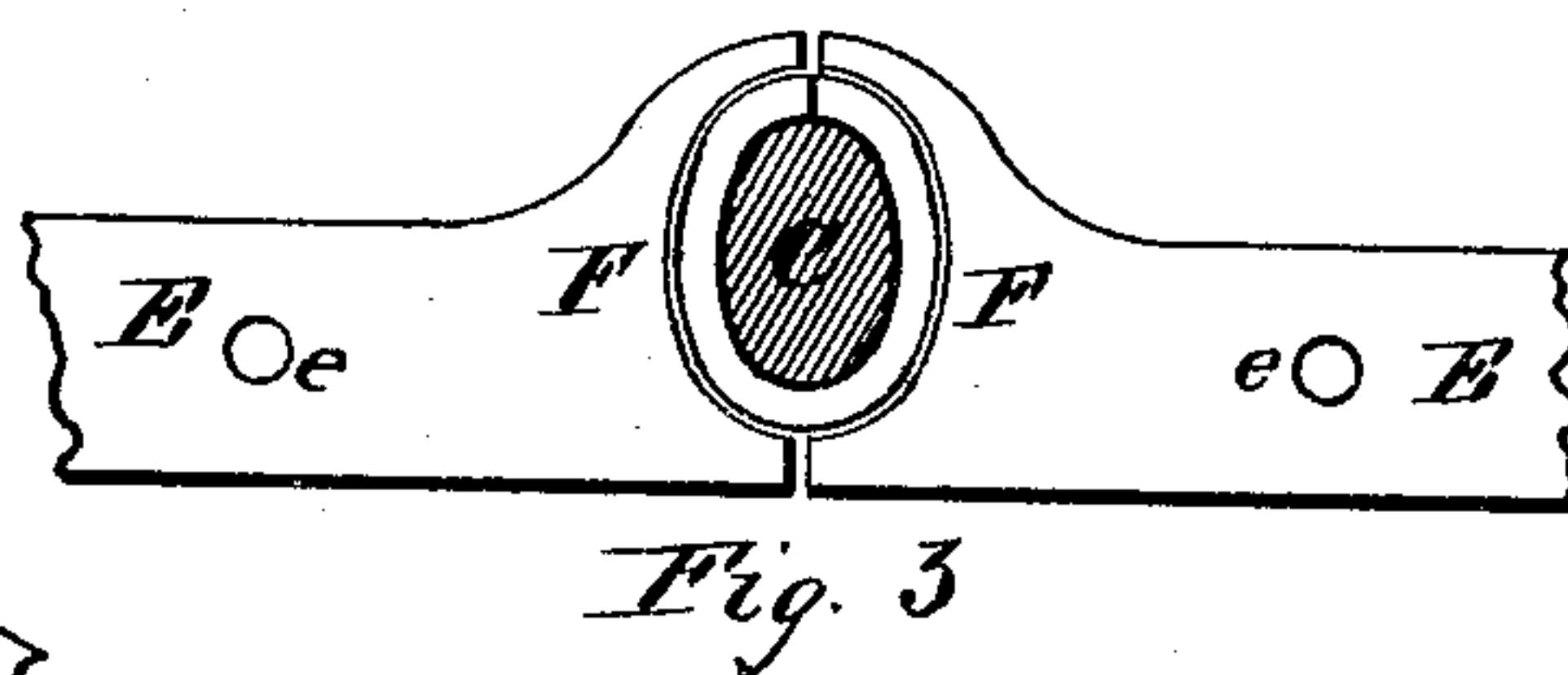
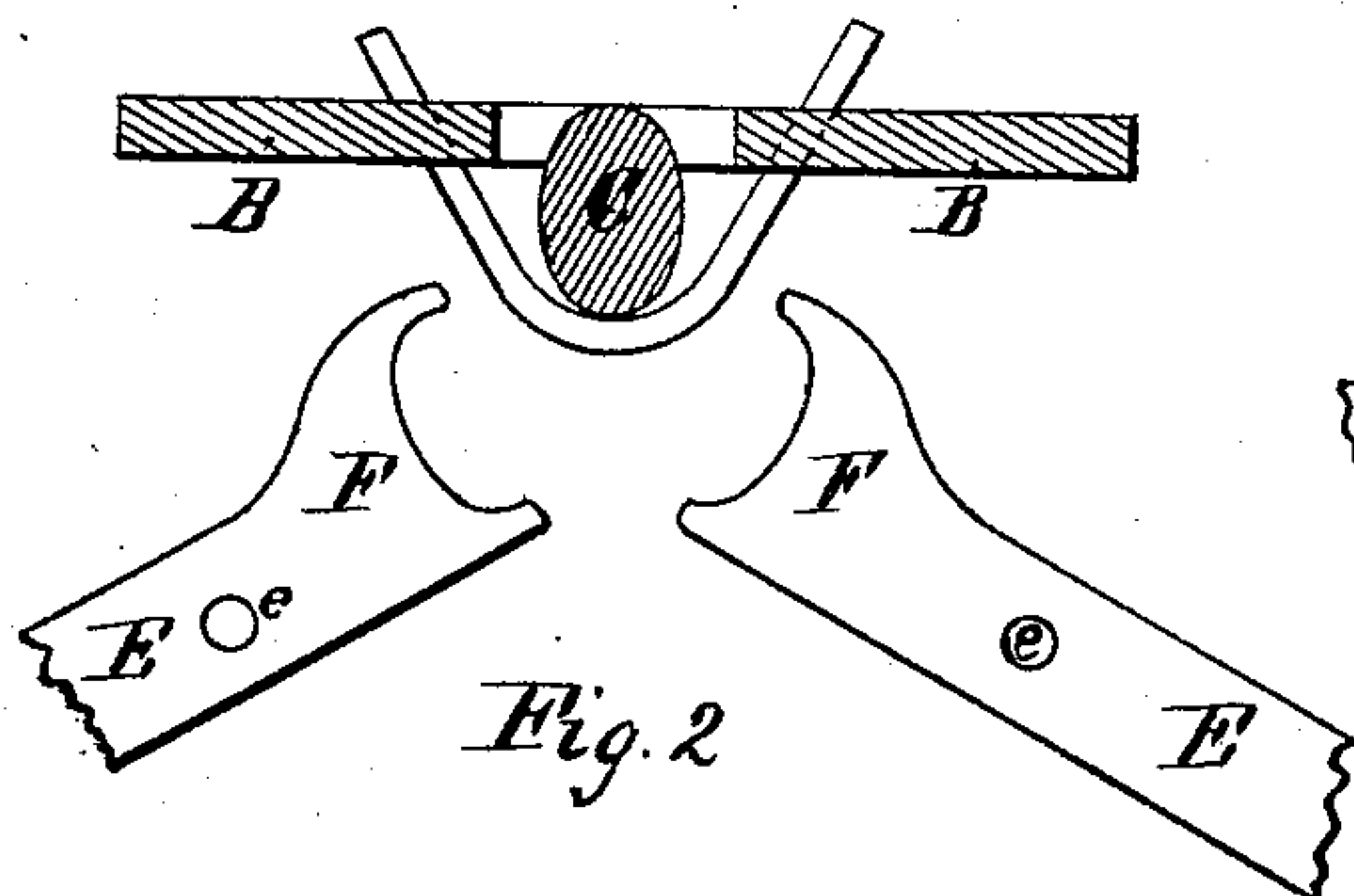
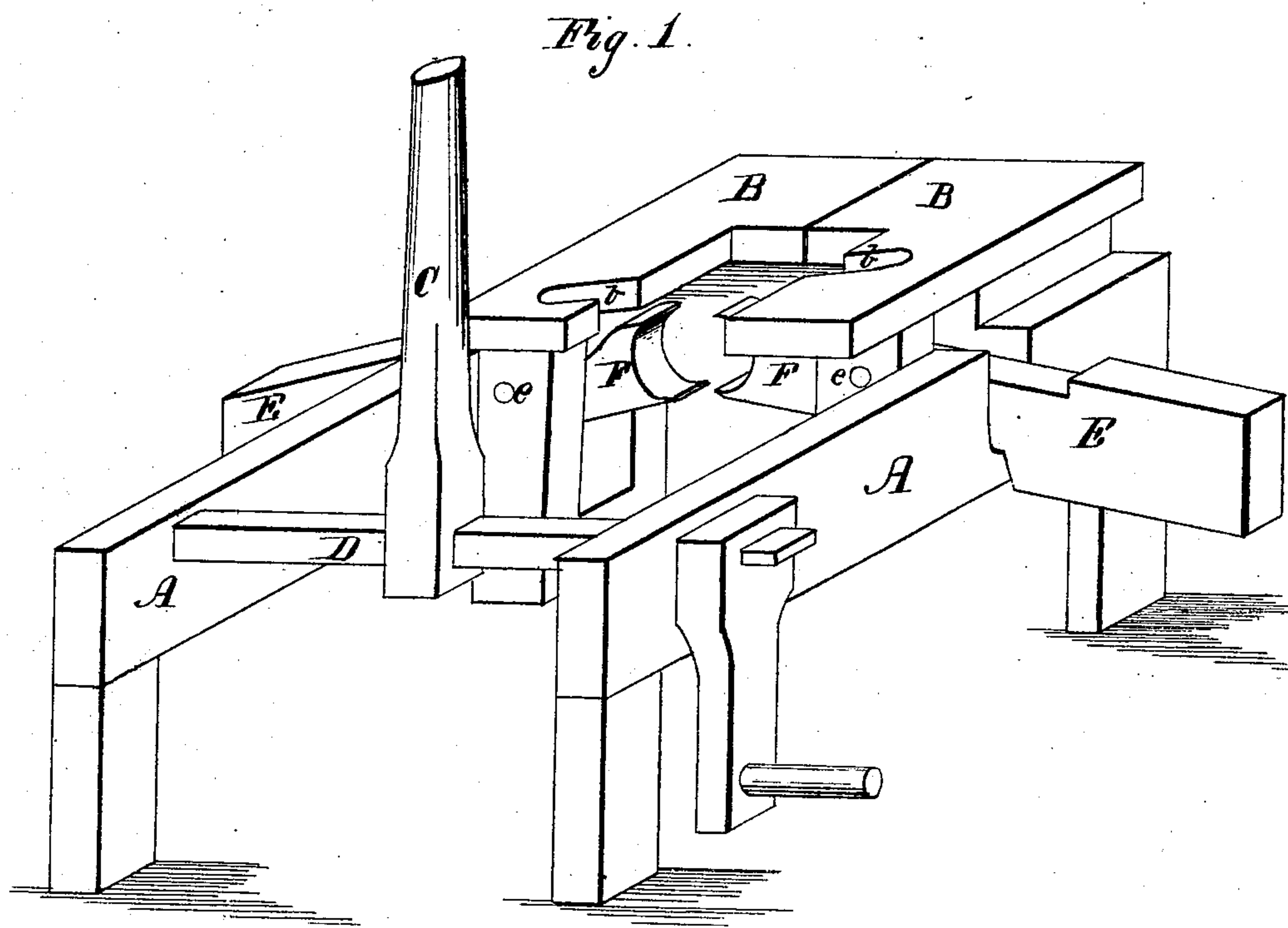


D. ROY.
Machines for Bending Chain-Links.
 No. 145,072. Patented Dec. 2, 1873.



Witnesses.
Jno W Hullock
Samuel S. Coughley

Inventor,
Daniel Roy

UNITED STATES PATENT OFFICE.

DANIEL ROY, OF MILLCREEK TOWNSHIP, ERIE COUNTY, PENNSYLVANIA,
ASSIGNOR OF ONE-HALF HIS RIGHT TO SAMUEL S. CAUGHEY, OF SAME
PLACE.

IMPROVEMENT IN MACHINES FOR BENDING CHAIN-LINKS.

Specification forming part of Letters Patent No. **145,072**, dated December 2, 1873; application filed
April 11, 1873.

To all whom it may concern:

Be it known that I, DANIEL ROY, of Millcreek township, in the county of Erie and State of Pennsylvania, have invented a Chain-Link-Bending Machine, of which the following is a specification:

The object of my invention is to provide a machine whereby chain-links may be formed ready for welding together.

The accompanying drawing illustrates my invention, as follows: Figure 1 is a perspective view of my machine. Fig. 2 is a front view of the bending device, and shows a blank being bent. Fig. 3 is a like view of the same parts, and shows the operation of bending the link at a more advanced stage than Fig. 2.

In Fig. 1, A A A is the frame-work of the machine. B B are the jaw-plates, which are bolted to the frame-work. *b b* are the jaws proper, and, as will be seen, are at an angle to the jaw-plates. C is the forming-mandrel, around which the link is bent. It is represented in the drawing as forming an arm from the shaft D, which is rotated by any desirable mechanical attachment. The mandrel C may, however, be in the form of a plunger.

I do not propose to be confined to any form or mode of operating the mandrel. Suffice it to say that the mandrel C passes between the jaws *b b*, and, a link-blank being placed thereon, it is carried down, as seen in Fig. 2, when it soon comes in contact with the shaping-

clamps F F, which are attached to, or form a part of, the levers E E, which are pivoted at *e*. The blank having been drawn down through the diagonal jaws *b b*, it is bent spirally around the mandrel, and when it reaches the clamps F F it is so grappled and bent or pressed to the mandrel as to maintain the spiral position, and to give it a perfect open link form. The clamps F F being at the ends of the pivoted levers E E, and operated in the manner shown, they exert, in bending the link around the mandrel, all the power of a toggle-joint. The upper lips of the clamps pass by each other when in the position shown in Fig. 3, and hence the ends of the links are as closely formed to the mandrel as any other part.

In connection with the above-described device, can be operated a pair of cutting-shears, with gages, &c., and when this is done chain-links can be made from the rod.

Link-blanks can be bent by my machine either hot or cold.

What I claim is as follows:

The combination, substantially as herein shown, of the mandrel C, jaw-plates B B with diagonal jaws *b b*, and the clamps F F, all arranged and operating together substantially as and for the purposes shown.

DANIEL ROY.

Witnesses:

JNO. K. HALLOCK,
SAMUEL S. CAUGHEY.