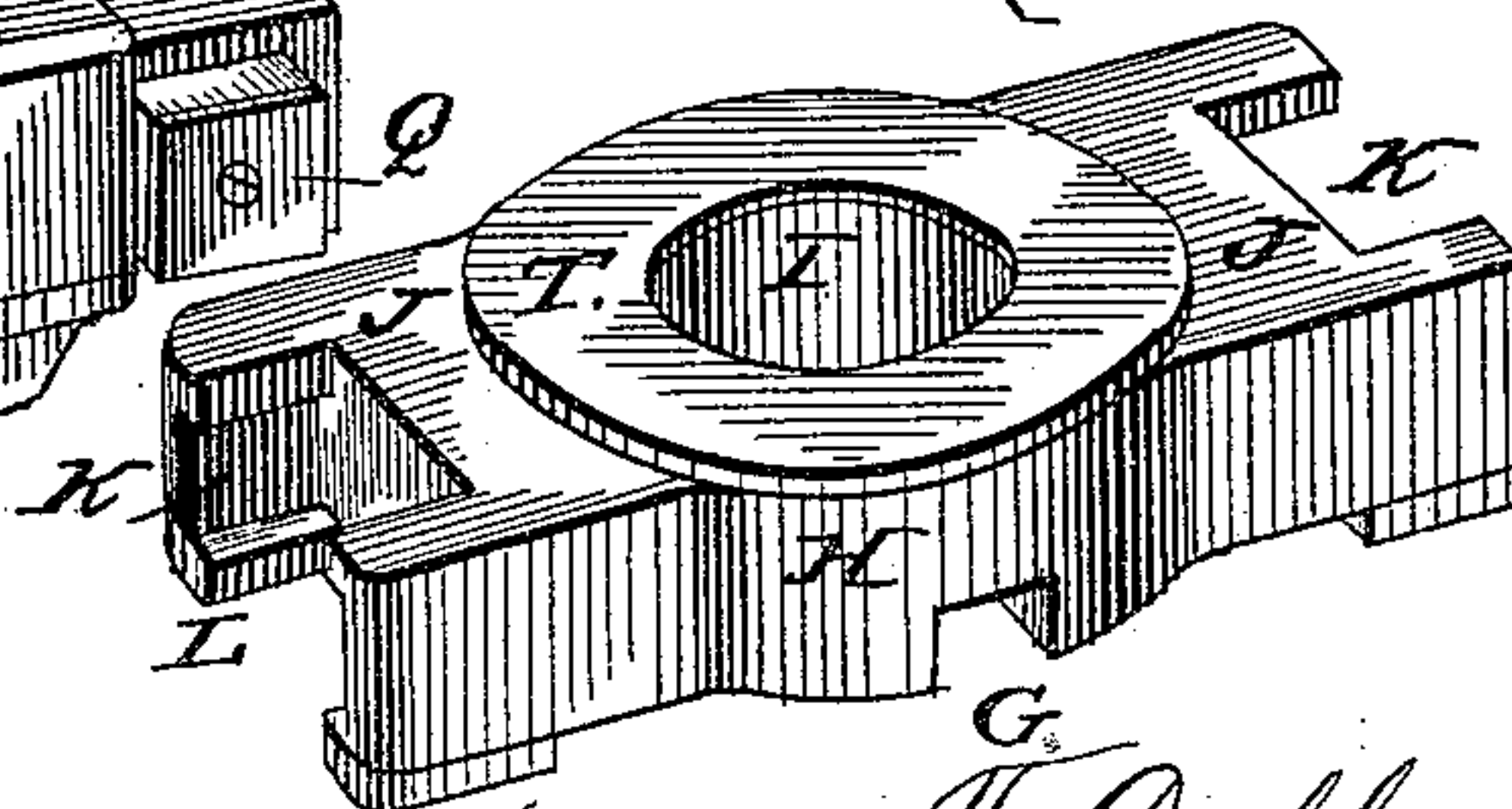
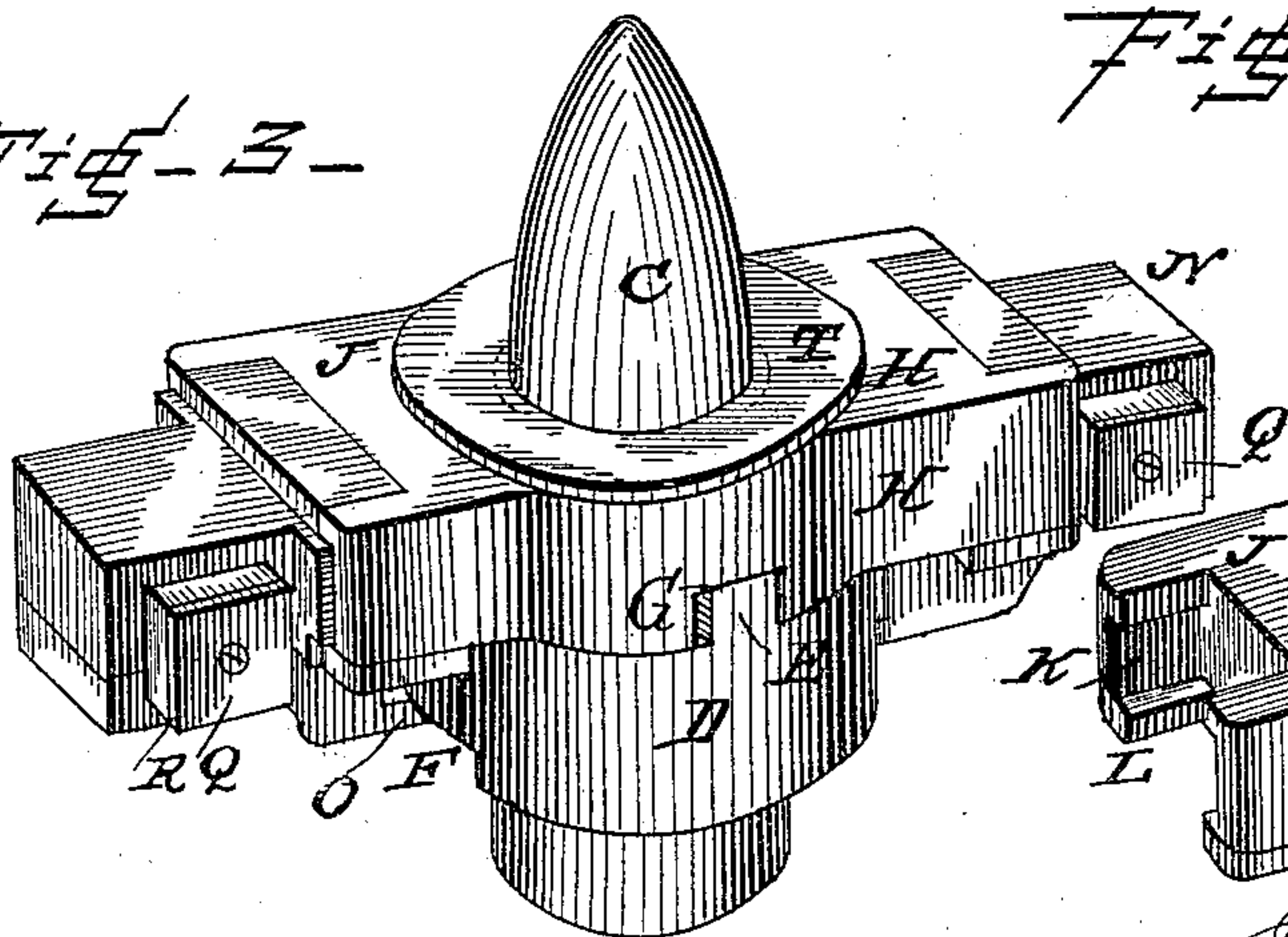
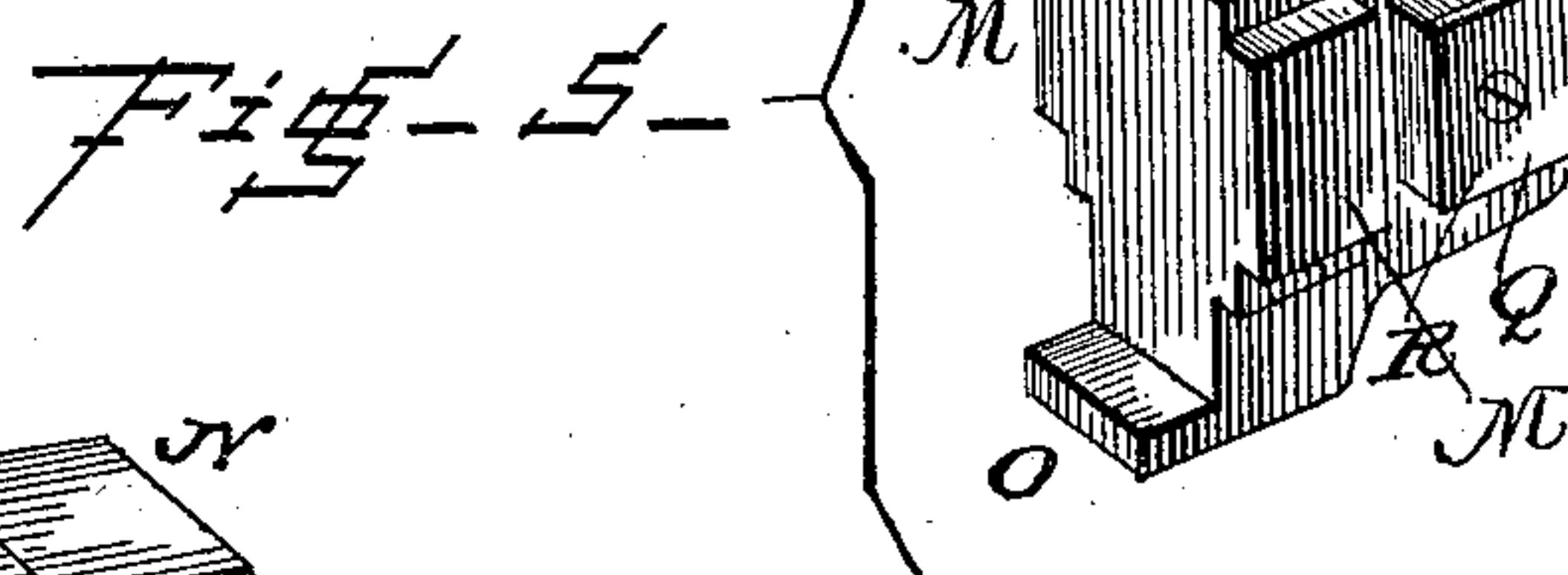
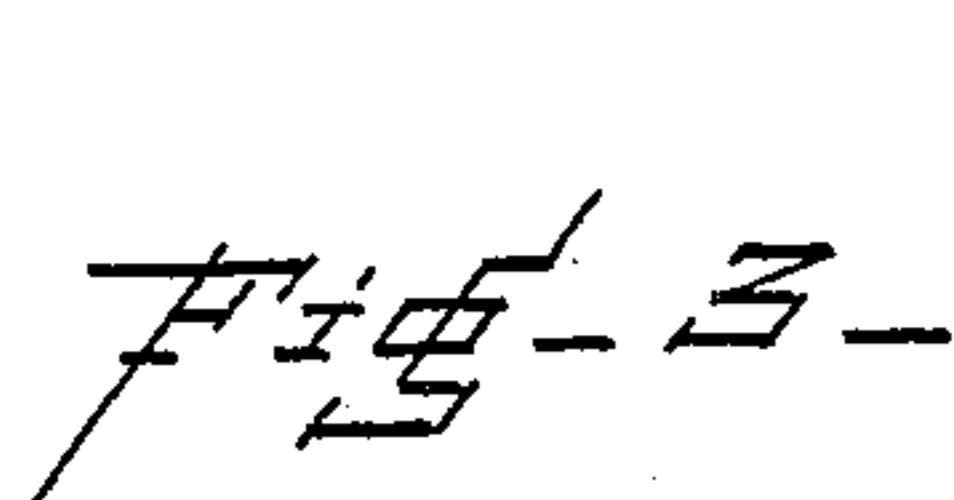
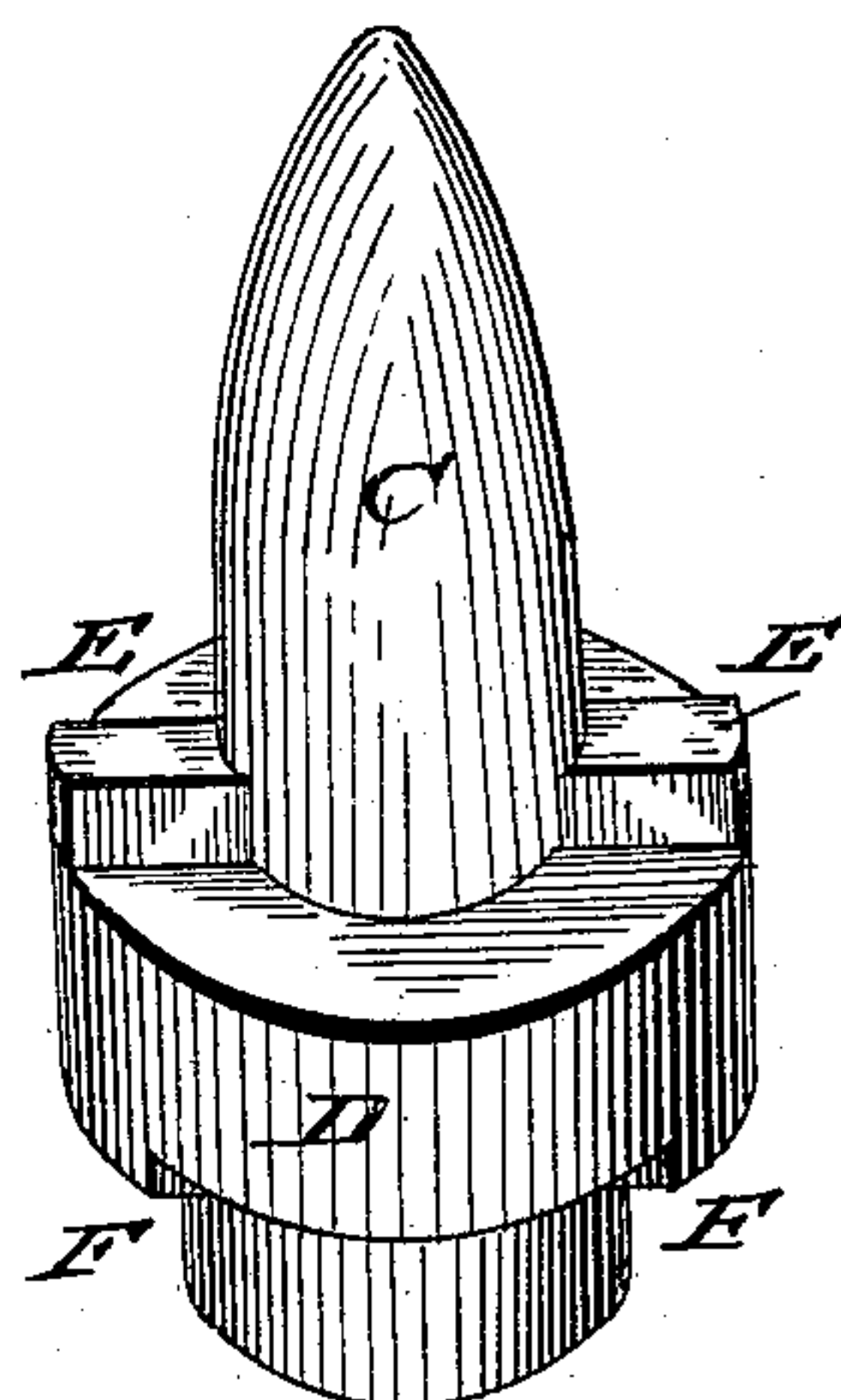
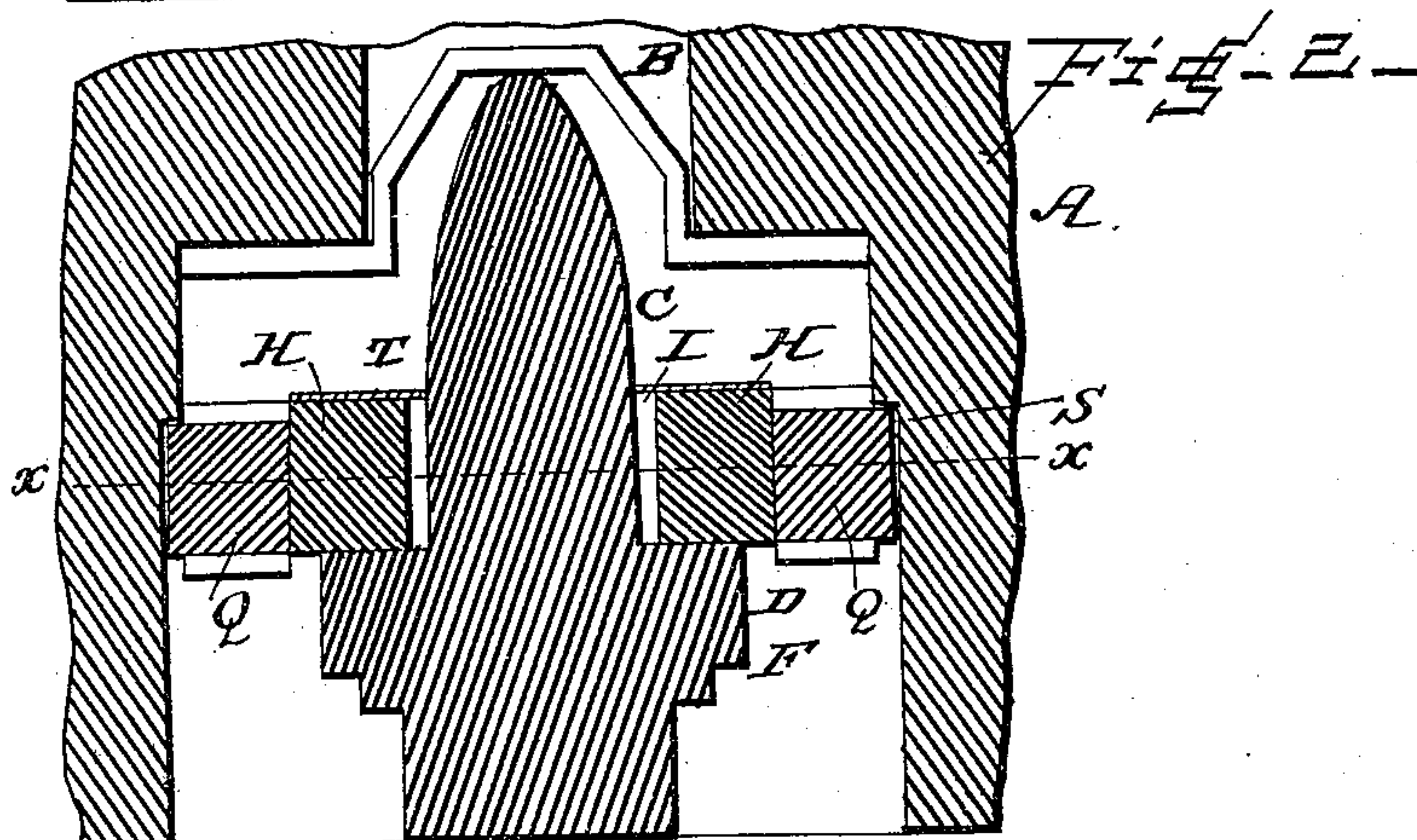
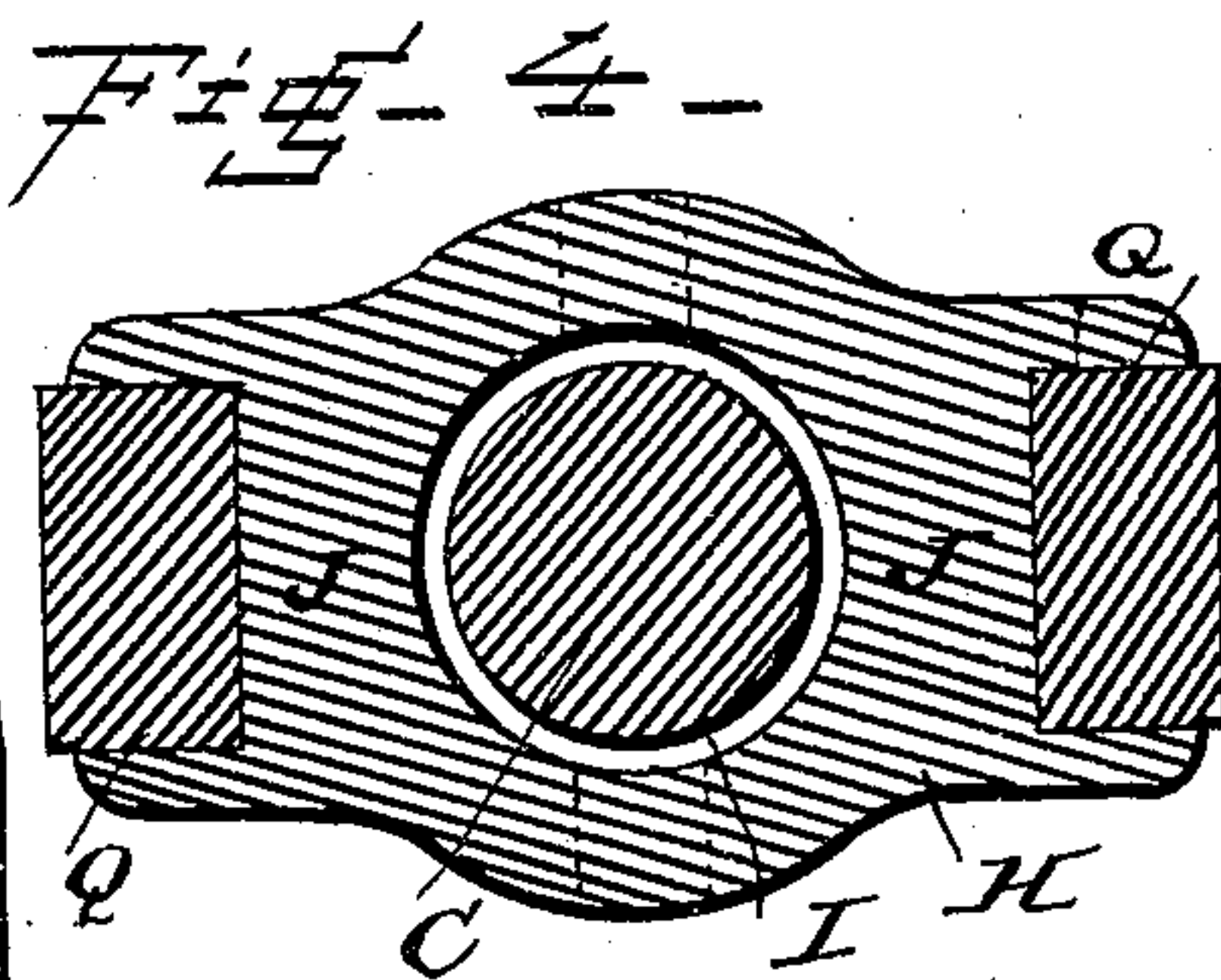
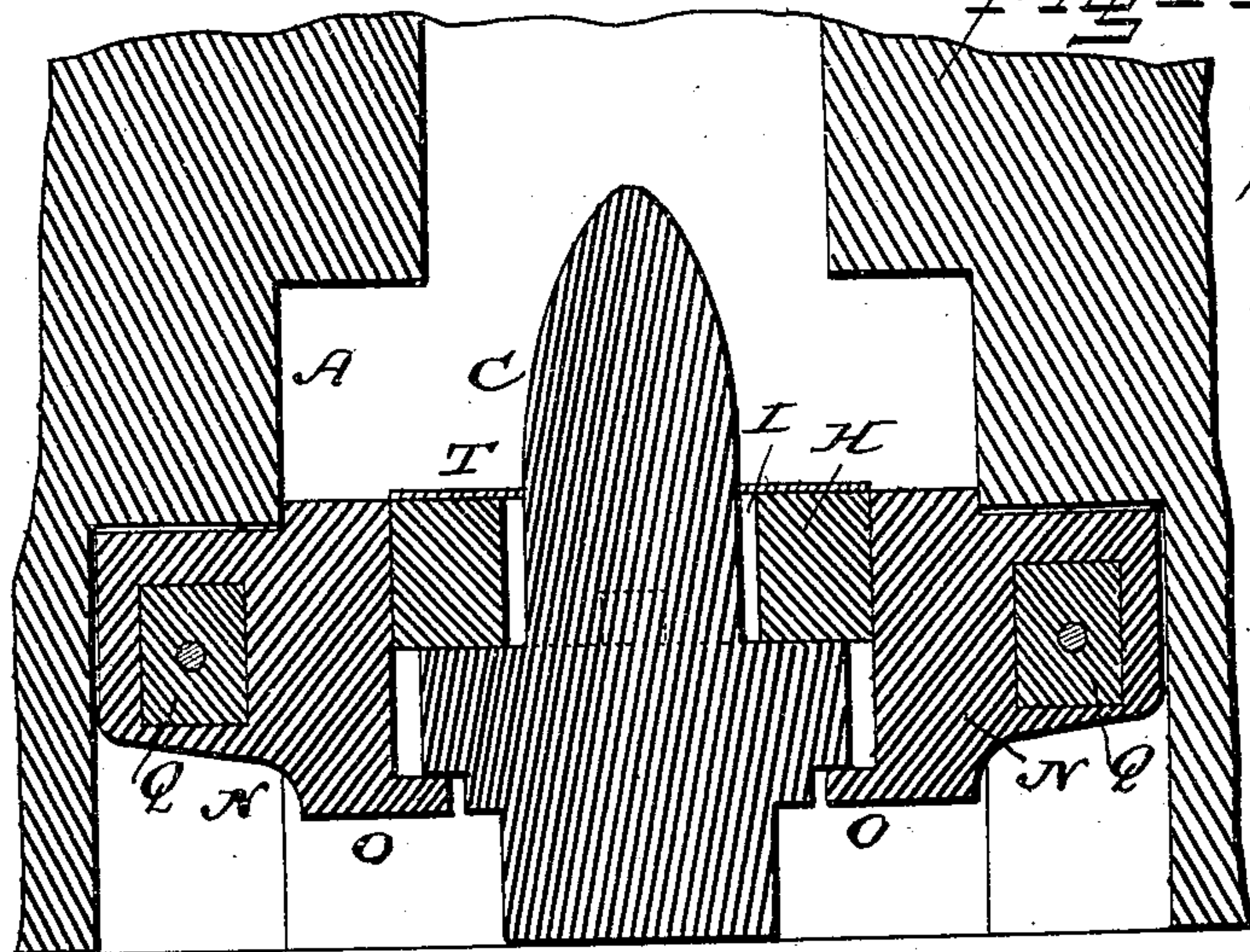


(No Model.)

J. F. CALLAHAN.  
MILLSTONE DRIVER.

No. 308,464.

Patented Nov. 25, 1884.



WITNESSES:

Hed. G. Dietrich.  
Wm. Lecher



James F. Callahan  
INVENTOR.

By Louis Bagger & Co.  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

JAMES F. CALLAHAN, OF KNOXVILLE, TENNESSEE.

## MILLSTONE-DRIVER.

SPECIFICATION forming part of Letters Patent No. 308,464, dated November 25, 1884.

Application filed April 7, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES F. CALLAHAN, a citizen of the United States, and a resident of Knoxville, in the county of Knox and State of Tennessee, have invented certain new and useful Improvements in Millstone-Drivers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a vertical sectional view of a portion of the runner in a mill, showing my improved driver. Fig. 2 is a similar view showing the driver used with a runner on which the so-called "fork-driver" has been used. Fig. 3 is a perspective view of the driver detached. Fig. 4 is a horizontal section on line *x x*, Fig. 2; and Fig. 5 is a perspective view of the several parts of the driver and the spindle, showing them detached.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has relation to millstone-drivers; and it consists in the improved construction and combination of parts of the same, as hereinafter more fully described and claimed.

In the accompanying drawings, the letter A indicates the runner, and B the balance-rynd, by which the runner is poised upon the top of the spindle C, which may be either round or square. In the drawings the spindle is shown round, and the parts corresponding to the spindle are as a consequence shown round; but it follows that the spindle may be polygonous, when the apertures in the parts corresponding to the spindle may also be of a corresponding shape. An annular flange, D, is secured around the spindle, and the upper surface of this flange is provided with two diametrically-opposite lugs or projections, E, while the lower surface of the flange has two diametrically-opposite steps or shoulders, F, at right angles to the lugs, the said steps being segmental. The lugs upon the upper side of the flange project up into two diametrically-opposite recesses, G, in the driver H, in the under side of the same, in which recesses the

lugs may slide lengthwise, and also have a certain amount of lateral play, the recesses being wider than the lugs, and the central perforation, I, of the driver being larger than the end of the spindle, so as to allow it to move freely in all directions upon the flange or collar upon which it rests. The driver is provided with two diametrically-opposite arms or projections, J, at right angles to the recesses in its under side; and the ends of these arms form recesses K, having each two outwardly-projecting arms, one at each side, the upper and lower edges of which arms or flanges are provided with inwardly-projecting flanges L, thus forming ways in which two lateral projections, M, upon the inner ends of two blocks, N, slide. The lower surfaces of these blocks are provided with inwardly-projecting lips, O, which catch under the steps upon the under side of the flange upon the spindle, and the outer ends of the blocks have transverse recesses P in which elastic blocks Q or similar springs are placed, having plates R upon their projecting ends, which plates bear against the sides of the "coffins" S, or recesses in the eye of the runner into which the arms of the driver project. An annular plate, T, fitting around the end of the spindle is placed upon the upper surface of the driver, preventing the meal from passing between the eye of the driver and the spindle, thus choking it and destroying the meal. Where a so-called "fork-driver" has been used, the blocks are removed, and the elastic blocks or springs are placed in the recesses formed by the outwardly-projecting flanged arms upon the arms of the driver, their ends pointing outward and bearing against the ends of the coffins.

It will be seen that the runner will be able to adjust itself upon the arms of the driver, the elastic blocks or springs yielding when the runner is either set in motion or stopped, and the driver will have full play in all directions by having the recesses in its under side sliding upon the lugs upon the upper side of the flange; and by having the eye larger than the spindle, thus enabling the runner to be evenly balanced, and preventing all jars by sudden stoppage or starting, there being always a certain amount of play in the several parts of the driver.

Having thus described my invention, I claim



and desire to secure by Letters Patent of the United States—

1. The combination, in a millstone-driver, of the spindle, an annular flange secured upon  
5 the spindle and having two diametrically-opposite lugs upon its upper surface, and the driver having an eye larger than the end of the spindle, two diametrically-opposite re-  
cesses in its under side, larger than the lugs  
10 upon the flange, and two arms at right angles to the recesses, and provided with springs or elastic cushions, as and for the purpose shown and set forth.

2. In a millstone-driver, the combination of  
15 the spindle, an annular flange secured upon the spindle, and having two diametrically-opposite projections upon its upper side, and two steps or shoulders upon its under side at right angles to the lugs, the driver having an

eye larger than the spindle, two diametrically- 20  
opposite recesses in its under side, larger than the lugs upon the flange, and two diametrically-opposite arms at right angles to the re-  
cesses, having flanged recesses in their ends,  
25 and two blocks fitting in the flanged recesses in the arms, having projecting lips upon their under sides, and having elastic blocks or  
springs secured in transverse recesses in the  
ends of the blocks, as and for the purpose  
shown and set forth. 30

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

JAMES F. CALLAHAN.

Witnesses:

EDDIE BRUSO,  
B. F. CALLAHAN.