

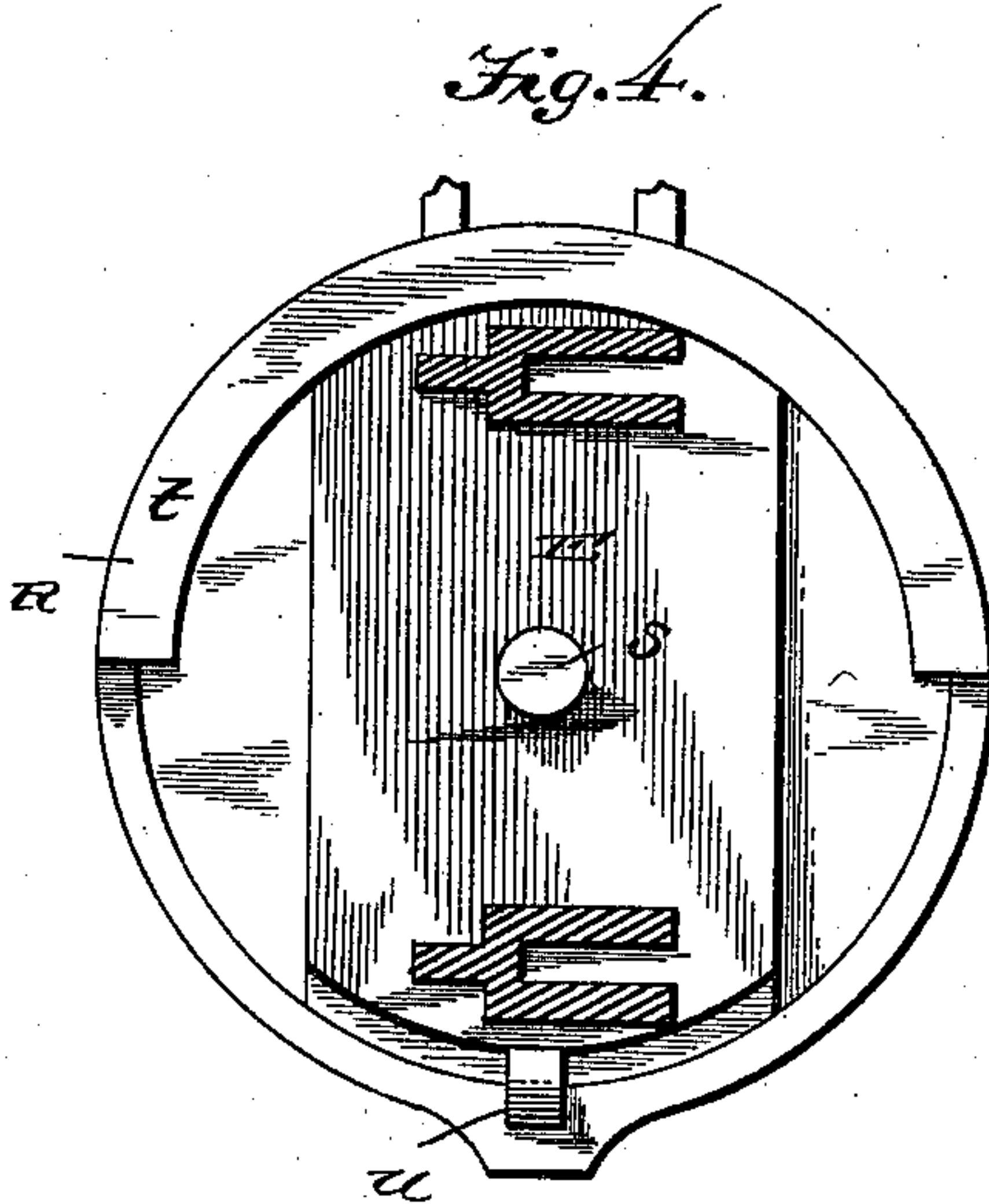
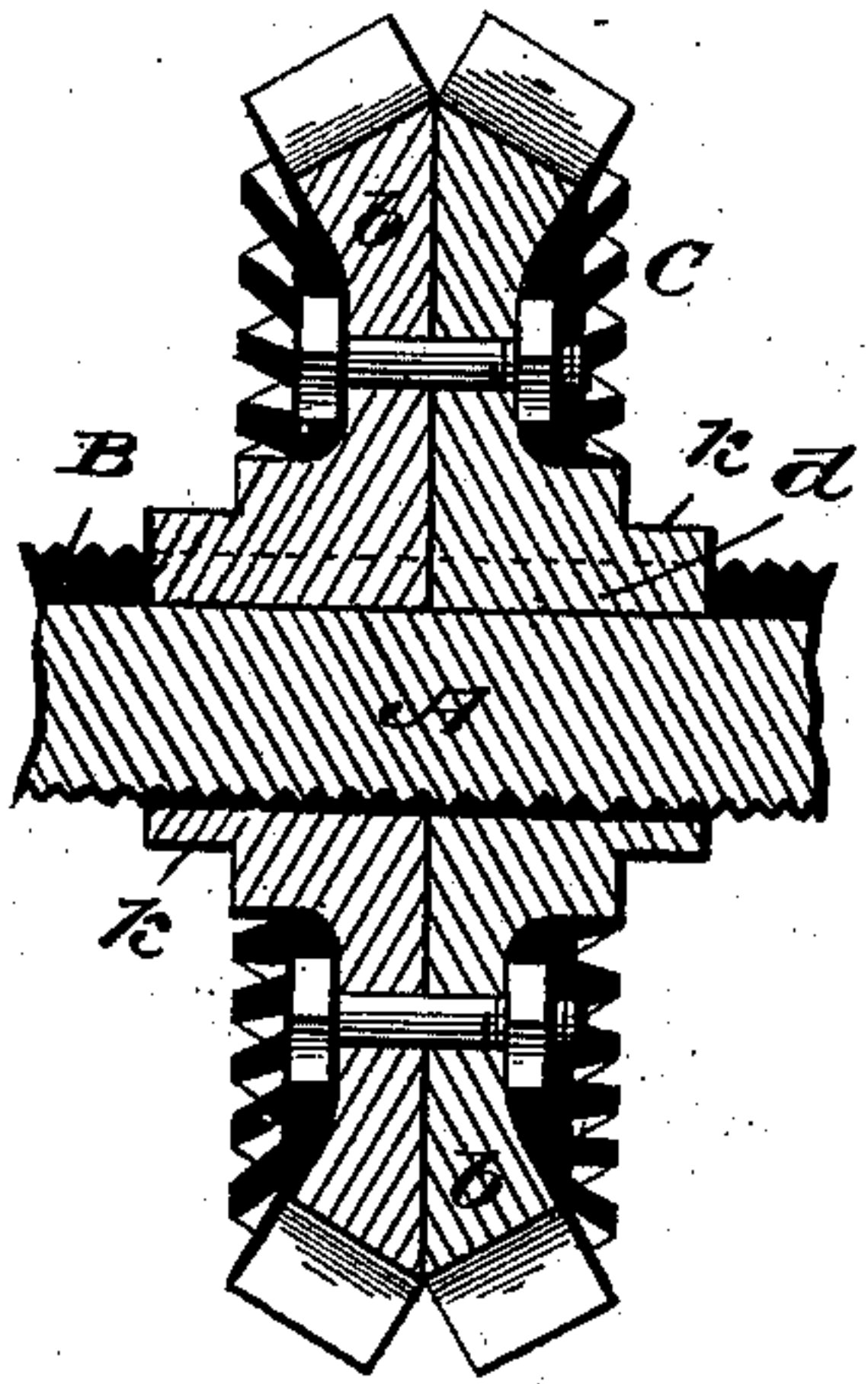
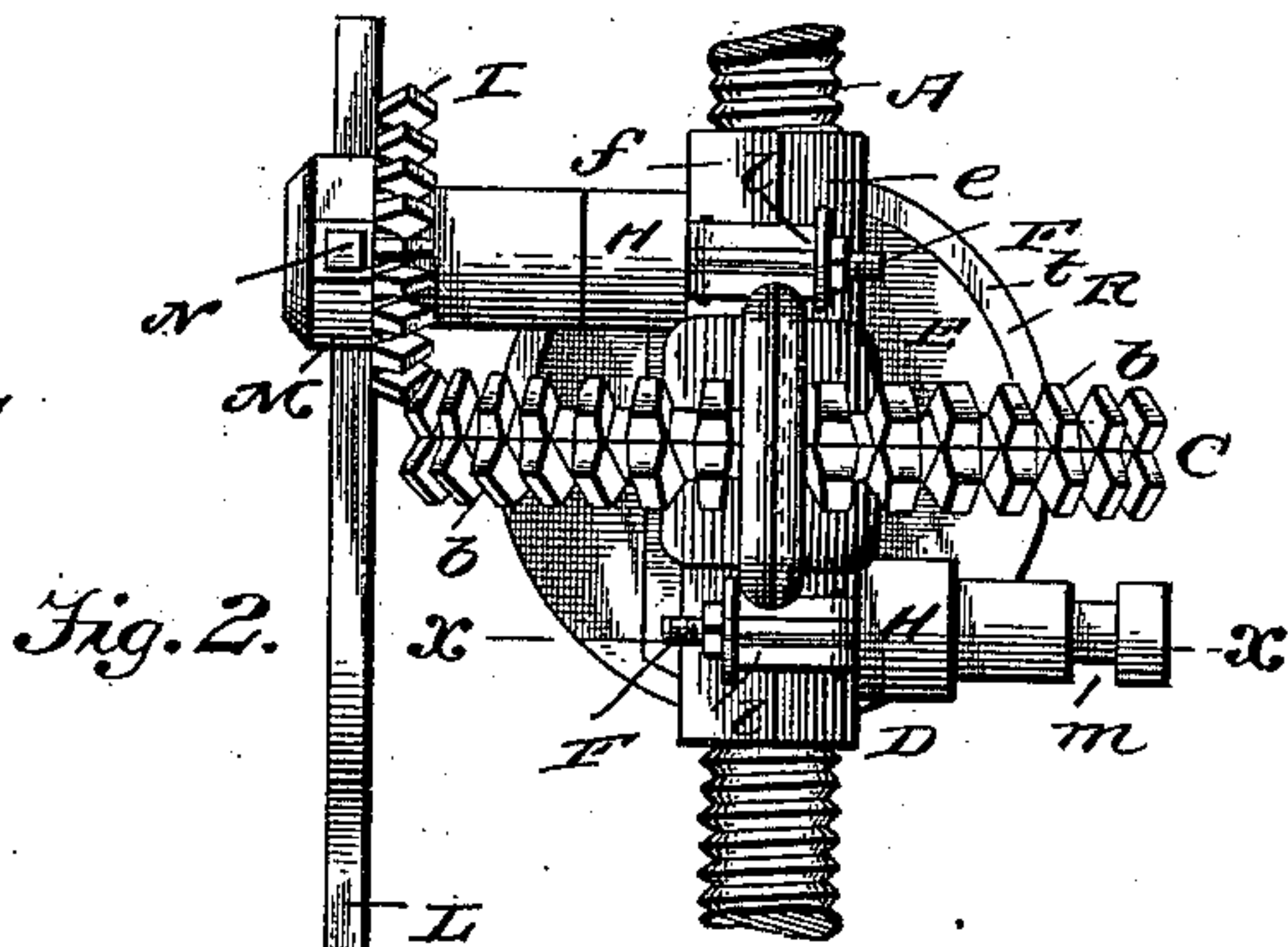
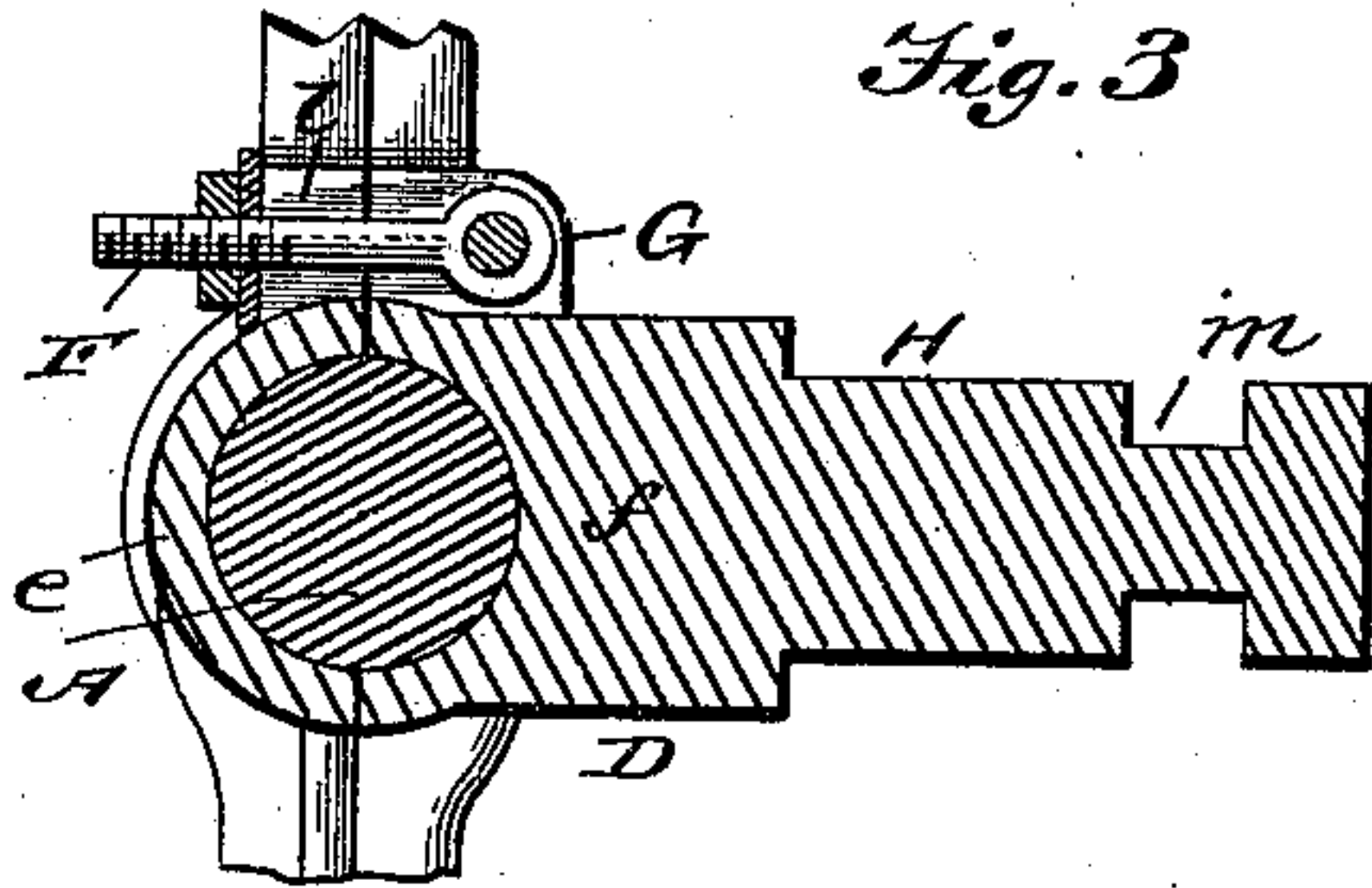
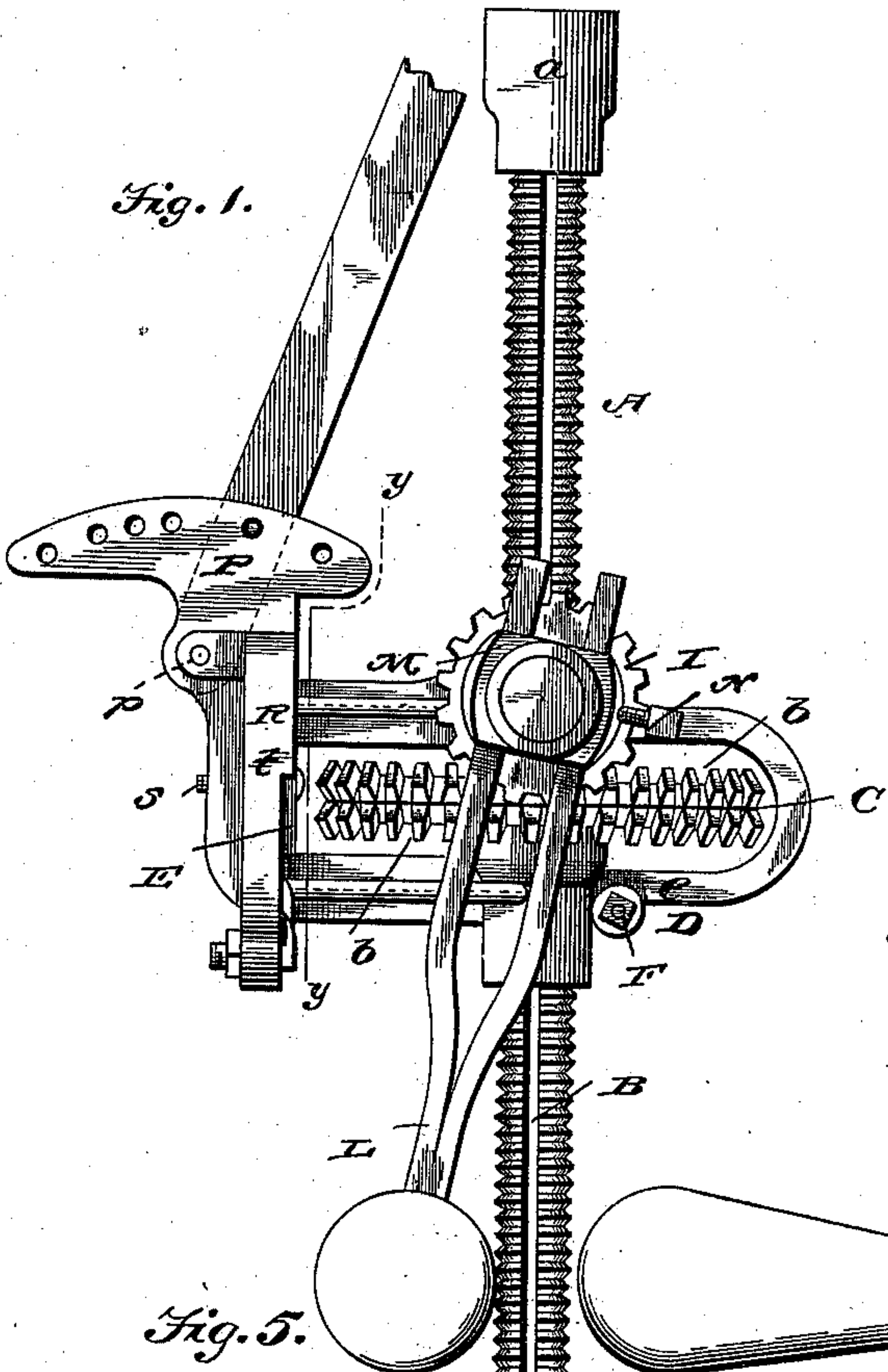
(No Model.)

2 Sheets—Sheet 1.

J. NOICE.  
COAL DRILLING MACHINE.

No. 400,593.

Patented Apr. 2, 1889.



*Witnesses:*

*"Schied"*  
D. E. Turpin.

*Inventor:*

Joseph Noice.  
By, James Shuey.  
Attorney.

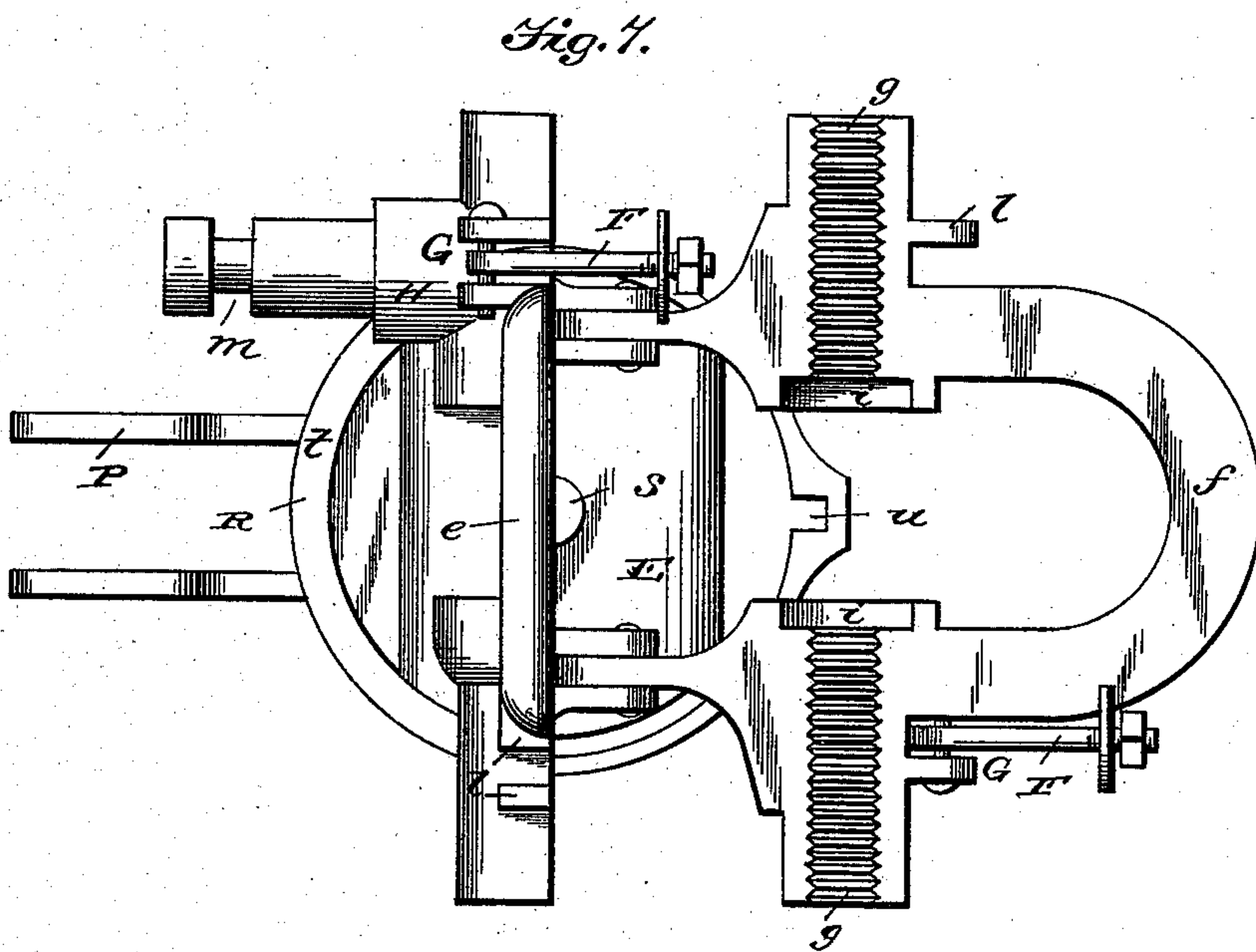
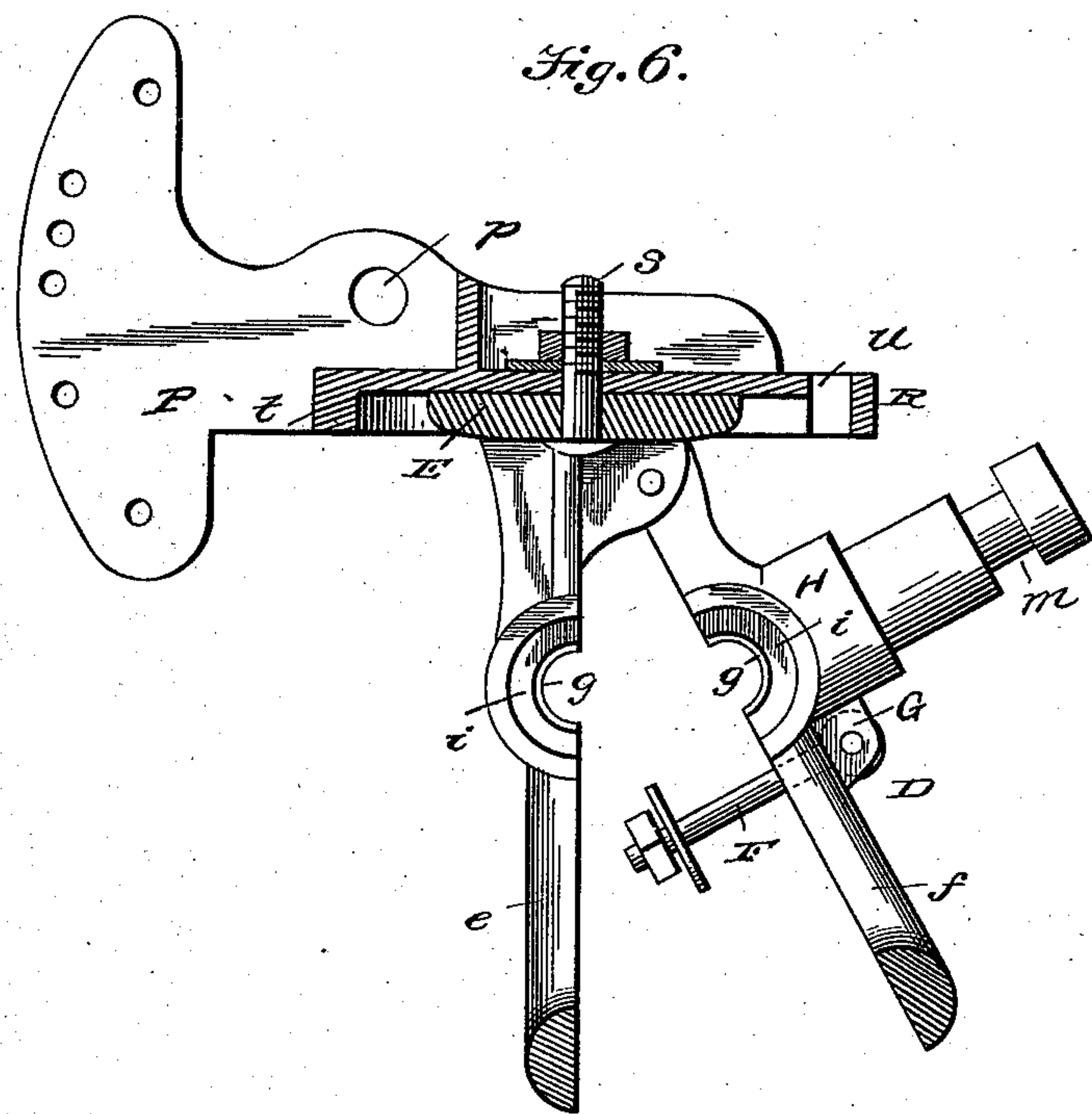
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*D. E. Turpin*  
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Inventor.

By *James J. Sheehy*  
James J. Sheehy  
Attorney



# UNITED STATES PATENT OFFICE.

JOSEPH NOICE, OF WHAT CHEER, IOWA.

## COAL-DRILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 400,593, dated April 2, 1889.

Application filed August 8, 1888. Serial No. 282,223. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH NOICE, a citizen of the United States, residing at What Cheer, in the county of Keokuk, State of Iowa, have invented certain new and useful Improvements in Coal-Drilling Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention has relation to improvements in coal-drilling machines to be used in mining, &c., and the novelty will be fully understood from the following description and claims when taken in connection with the accompanying drawings, in which—

15 Figure 1 is a view of a hole-drilling machine constructed according to my improvements. Fig. 2 is a view taken at right angles to Fig. 1 with the feed-bar broken away. Fig. 3 is a view taken on the line *x x* of Fig. 2. Fig. 20 4 is a sectional view taken on the line *y y* of Fig. 1. Fig. 5 is a diametrical sectional view of the sectional gear on a portion of the feed-shaft. Fig. 6 is a view partly in section of the hinged clamp and bracket; and Fig. 7 is a view of the hinged clamp and bracket, showing the two sections thrown open.

Referring by letter to the said drawings, A indicates an externally-threaded rod or bar, 30 which is adapted to receive the drilling-tool, and which I shall denominate the "feed-bar." This feed-bar may be of any desired length, having the tool-sockets *a* on opposite ends, and is provided throughout its length with an external groove, B, for a purpose which 35 will be presently explained. Arranged upon this external-threaded feed-bar is a main drive-gear, C, which is composed of two similar sections, *b*. These sections comprise 40 beveled tooth-gears, the adjacent sides of which are perfectly plain or smooth, so that they may fit snugly against one another, and they are transversely perforated, as shown, whereby they may be firmly united by means 45 of bolts and nuts or other suitable fastening devices. These gear-sections are respectively provided in their bore with a feather, *d*, which is designed to enter the groove B of the drill-rod, so that the said rod may be gripped 50 thereby and rotated with the gear when motion has been imparted thereto.

D indicates the hinged clamp, designed to embrace the drill-rod or feed-bar, and is composed of a fixed section, *e*, and a hinged section, *f*. The fixed section *e* is provided with 55 an integral plate or head, E, at one end, which is pivoted centrally in the disk of a bracket, which will be presently described. The jaws of this clamp are internally threaded, as shown at *g*, for the reception of the drill- 60 rod or feed-bar, and the said threaded portions are respectively divided by an interspace, *h*, and these clamping-sections are provided in their adjacent ends with recesses *i*, which are designed to furnish a seat for the 65 flanges *k* on the sectional gear C. It will thus be seen that when the gears *b* have been united by the bolts and nuts, as described, they may be locked in the jaws of the clamp, so as to freely rotate therein. I have pro- 70 vided this threaded clamp with pivoted bolts F, there being one attached to each section of the clamp, and carrying a nut at their outer ends to engage the lugs *l* after their bolts have passed into the forked portion G. While 75 this is a very convenient means for fastening the parts, yet I do not wish to be confined to such, as it is obvious that other suitable means may be employed.

H indicates the journal, there being one 80 formed on each section of the clamp. These journals are provided with a seat, *m*, to receive a bevel pinion, I, and are also annularly grooved, as at *k*, to receive the crank-arm L. The beveled-pinion I is of a peculiar 85 construction, being extended on its outer side, as shown at M. This extended portion is provided with two apertures, which partly intersect the bore, and are designed to receive the forked branches of the crank-arm. 90 The extension is furthermore provided at right angles to the apertures for the reception of the crank-arm with a threaded aperture, as shown, to receive a set-nut, N, the object of which is to fix the said crank-arm to the 95 pinion. It should be here observed that when the pinion has been seated on the journal H the apertures in the extended portions will coincide with the groove K on the said journal. Consequently when the fork branches of 100 the crank-arm have been inserted in the apertures of the pinion-extension they will also



enter the annular groove K of the journal. It will therefore follow that when the set-nut is turned up to fix the crank-arm in the apertures thereof it will also prevent the pinion from leaving the journal, as it is absolutely necessary to first remove the crank-arm before the pinion can be removed.

It will also be observed that by having a journal on each section of the clamp the pinion may be changed, and consequently the crank-arm, so as to work either right or left. This is very desirable in some positions in mining.

P indicates the bracket for the attachment of the machine to a suitable point. This bracket is shown as having an arm, *n*, provided with an aperture, *p*, so as to pivotally receive a connecting-bar or the like, as more fully shown in Fig. 1 of the drawings. The arms of this bracket are provided with a plurality of apertures in the arc of a circle to receive a pin, whereby the said bracket may be stayed, and the drill brought to any desired position with respect to the point of attachment. This bracket is provided with a fixed disk, R, which is centrally perforated to receive a bolt, *s*, whereby the threaded hinged clamp may be pivotally connected therewith. The disk is also provided with a semicircular flange, *t*, which is designed to confine the edge of the plate E upon the said disk, thereby allowing it to freely rotate. The disk R is also provided adjacent to the margin with an aperture, *u*, which is designed to receive a headed bolt, the head being so formed as to overlap the edge of the plate E to assist the flange *t* in confining it. It will thus be seen that when the pivot-bolt *s* has been removed by simply removing the bolt in the aperture U the hinged clamp may be removed from the bracket for repairs or the like.

Having described my invention, what I claim is—

1. The bracket P, having the fixed disk R, which is provided with a central aperture, and also having a semicircular flange, as *t*, in combination with the fixed clamp-section having a fixed head or plate, E, also perforated, and having its edge adapted to en-

gage the flange of said disk, a bolt for pivotally connecting the said head with the disk, and the pivoted clamping-jaw adapted to cooperate with the rigid jaw in sustaining a drive-gear, substantially as specified.

2. The clamp composed of the rigid jaw *e*, having the internally-threaded portions *g*, separated by an interspace, in combination with the pivoted jaw, also having threaded portions *g*, separated by an interspace, and both jaws having corresponding recesses *i* to form journal-boxes, the sectional gear C, having annular grooves *k*, to enter the said boxes in the clamping-jaws, the said jaws also having journals to receive a beveled pinion, whereby motion may be imparted to the main drive-gear, substantially as specified.

3. The pinion I, having an extension, M, and also having a journal-aperture, said pinion also having one or more apertures traversing the journal-aperture, in combination with the hinge-clamp, each section of which is provided with a journal having a groove, whereby the operating-handle may serve as a means of securing a pinion to either of the journals, substantially as specified.

4. In a coal-drilling machine, the combination, with the hinge-clamp comprising a rigid and a pivoted jaw, said jaws being respectively provided with the threaded portions *g* and the journal-boxes *i*, of the main drive-gear, comprising two separable sections secured together, and having the extensions, as *k*, and the spline *d*, substantially as specified.

5. In a coal-drilling machine, the combination, with a clamp constructed as described and provided with the two journals, of a pinion having an extension provided with apertures to receive a crank-arm, and the journals, also having a groove to receive the said arm, and suitable means for securing the arm to the pinion, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH NOICE.

Witnesses:

J. A. OSBORN,

. ASHER HEADLY.