

(No Model.)

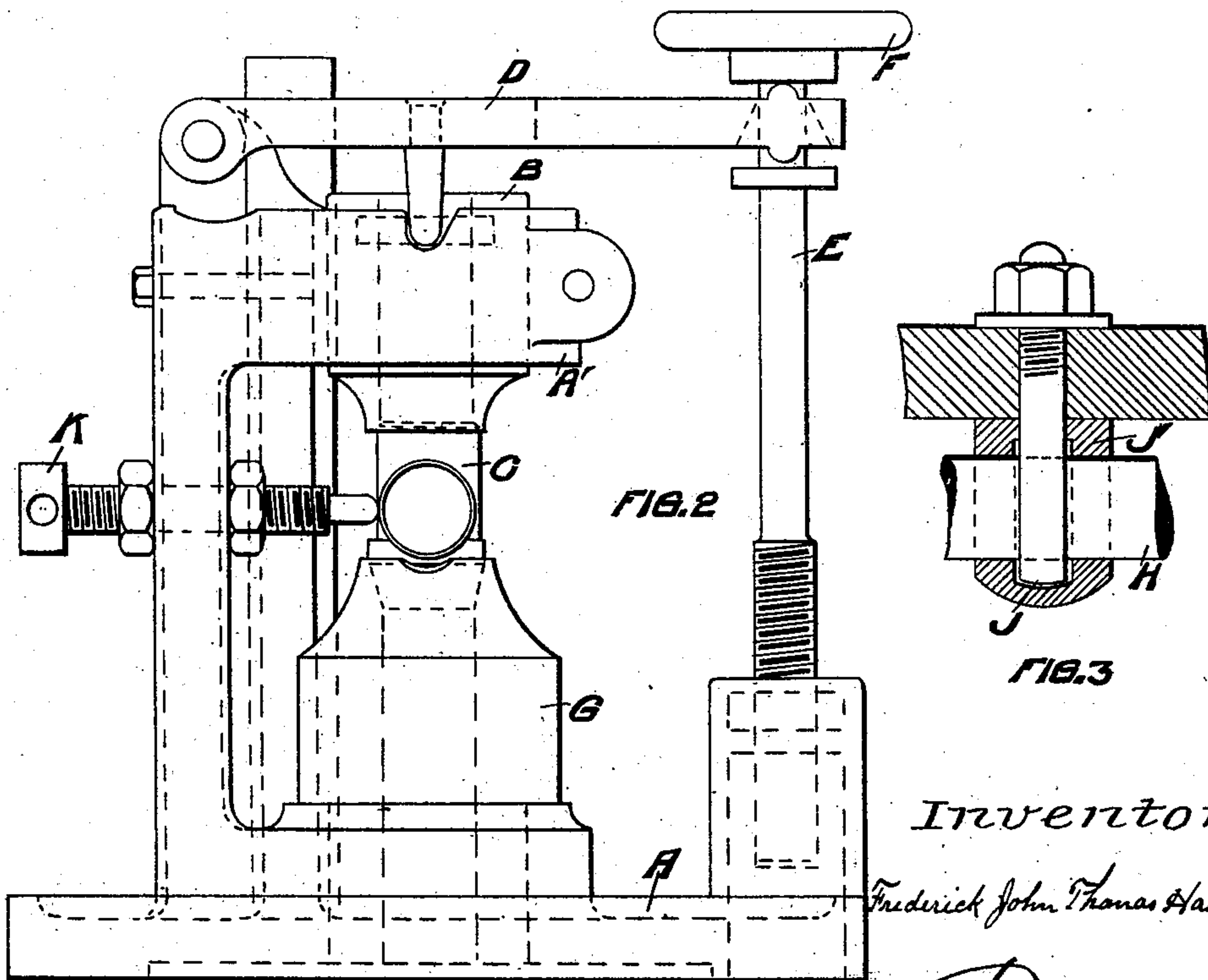
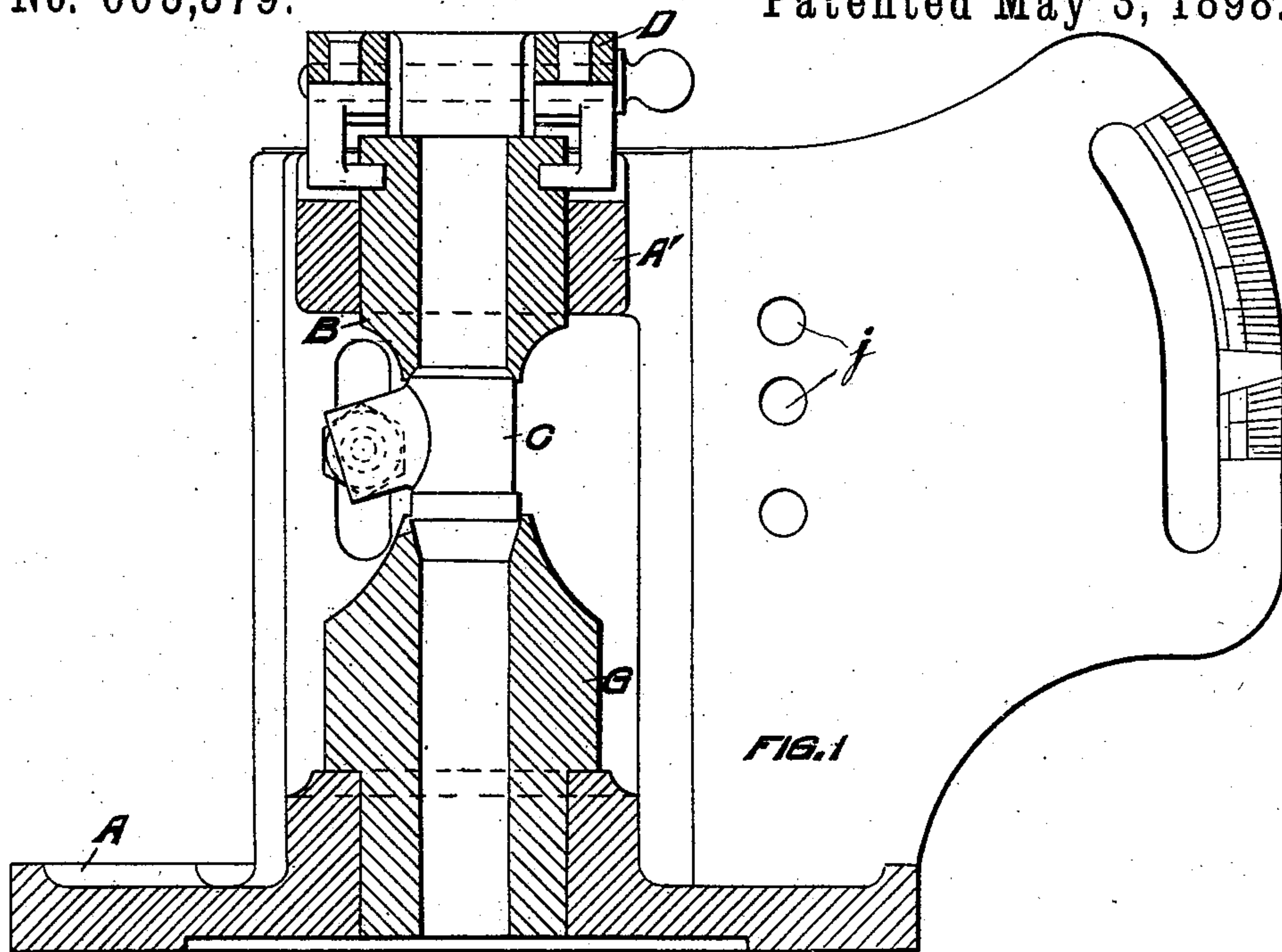
3 Sheets—Sheet 1

F. J. T. HASKEW.

JIG FOR SECURING CYCLE PARTS, &c., WHILE BEING BORED OR MACHINED.

No. 603,379.

Patented May 3, 1898.



Witnesses:

J. B. Rotton
Chas. Munn

By

Inventor:
Frederick John Thomas Haskeu
Richard R.
his Attorneys.

(No Model.)

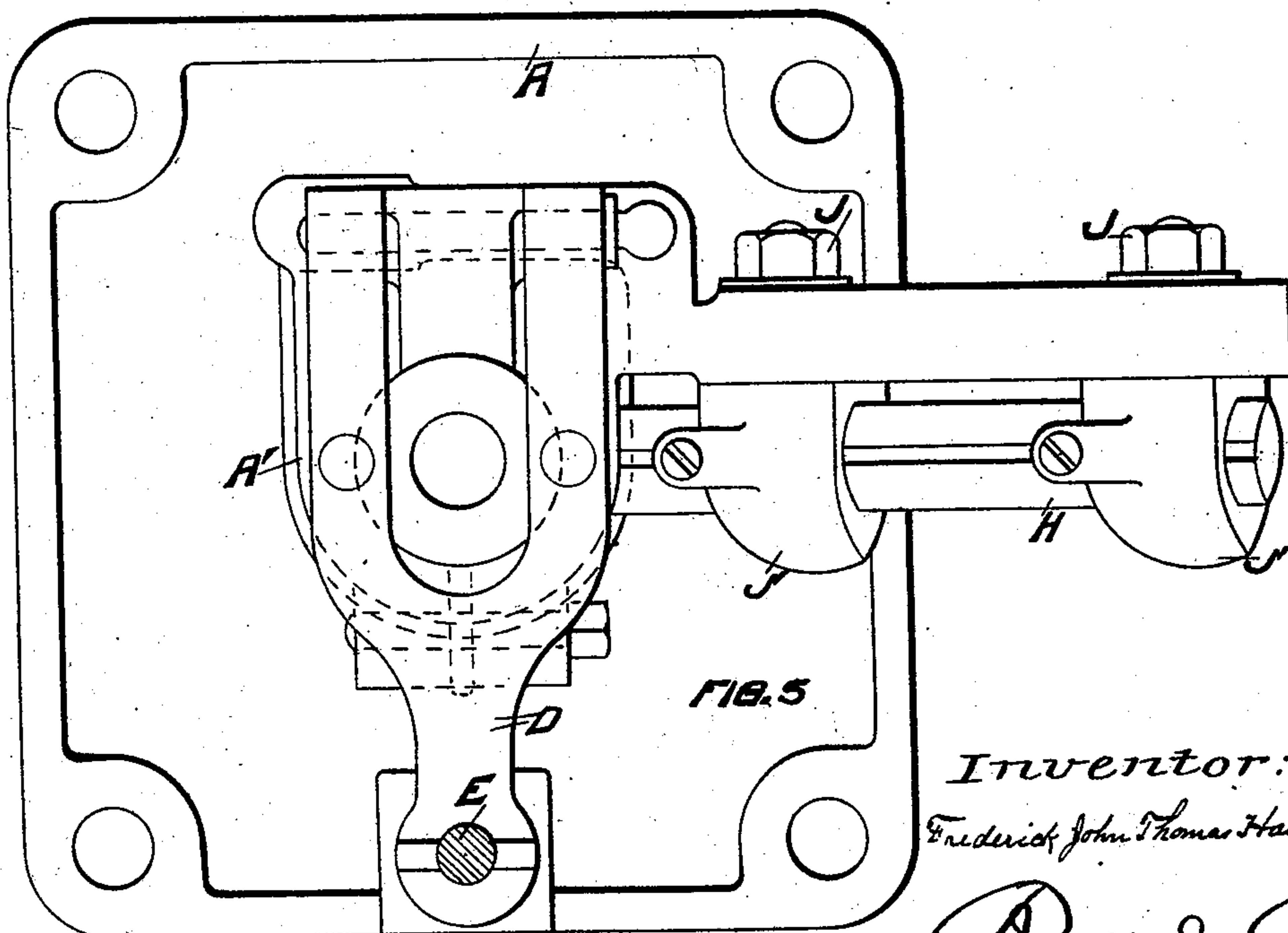
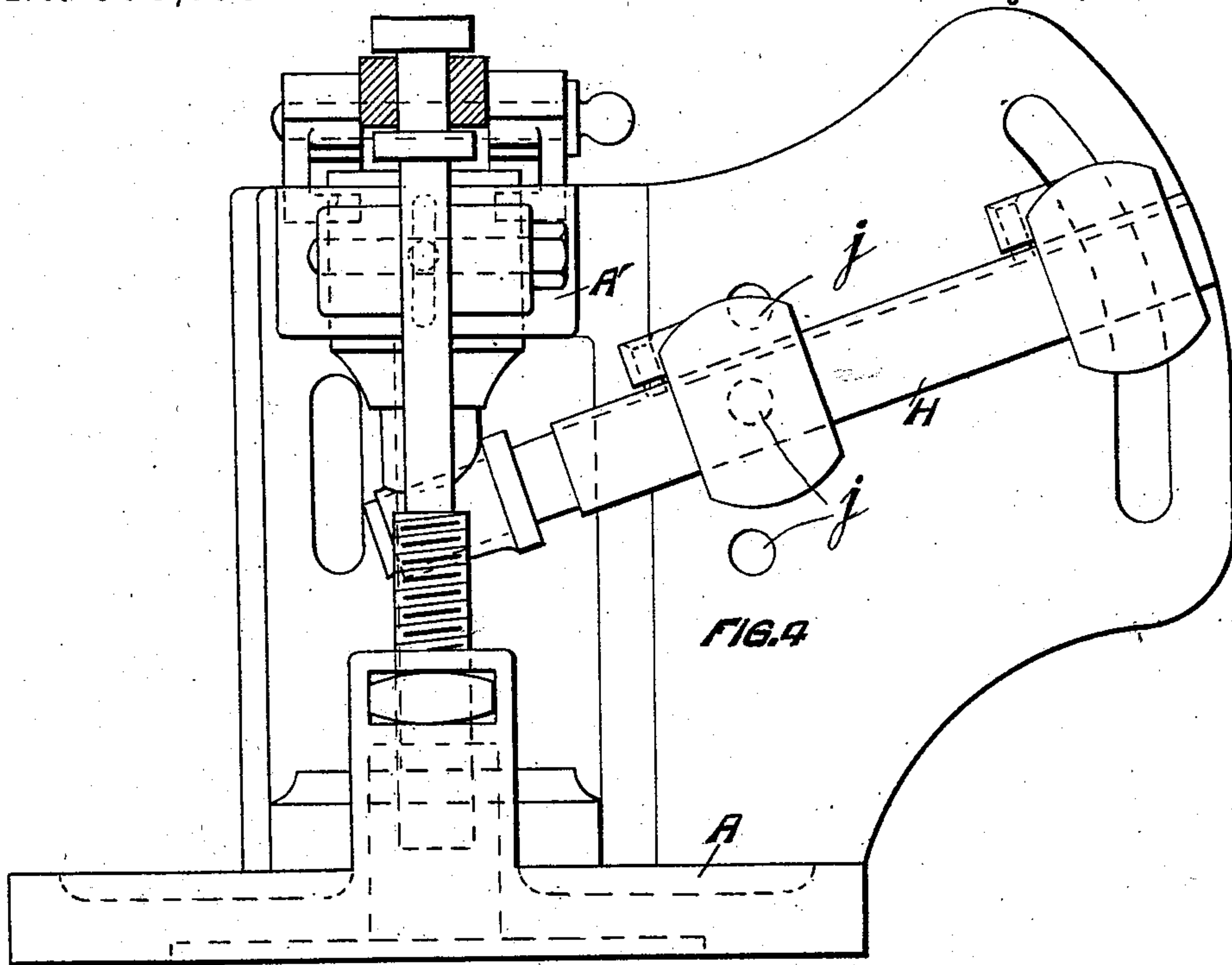
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Witnesses:
J. R. Bolton
C. W. Mum

Inventor:
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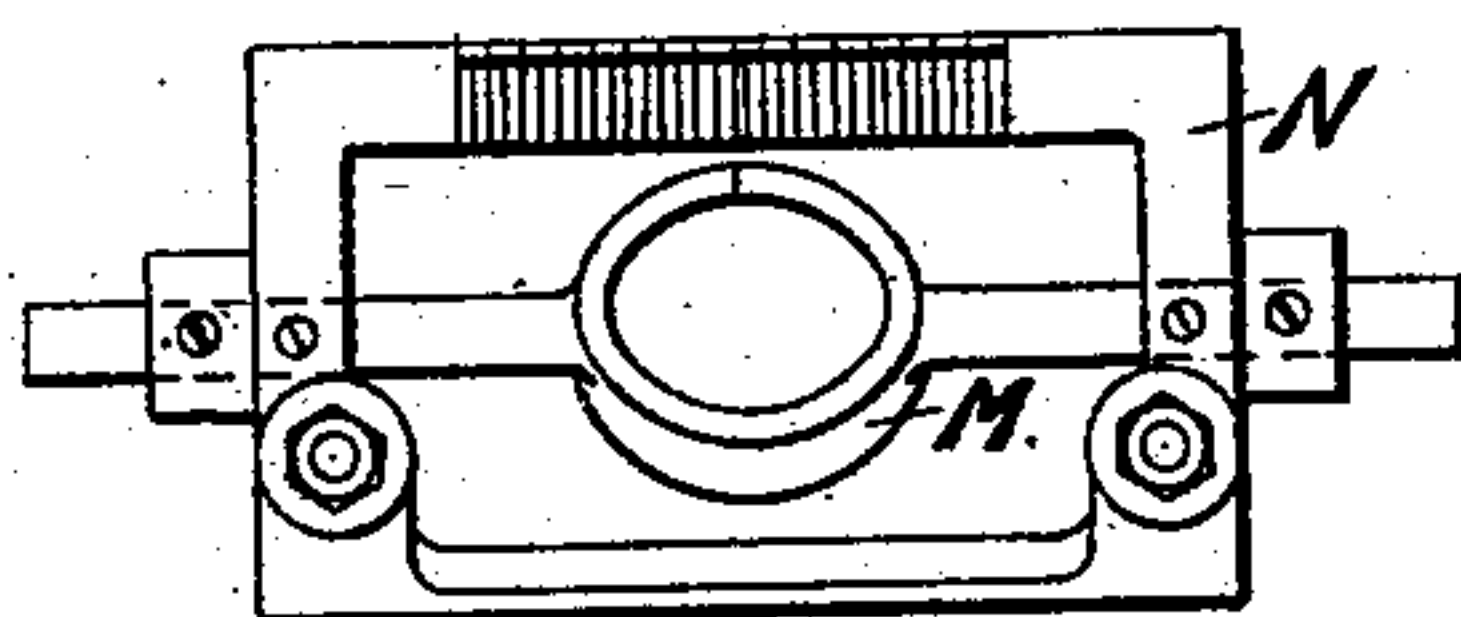
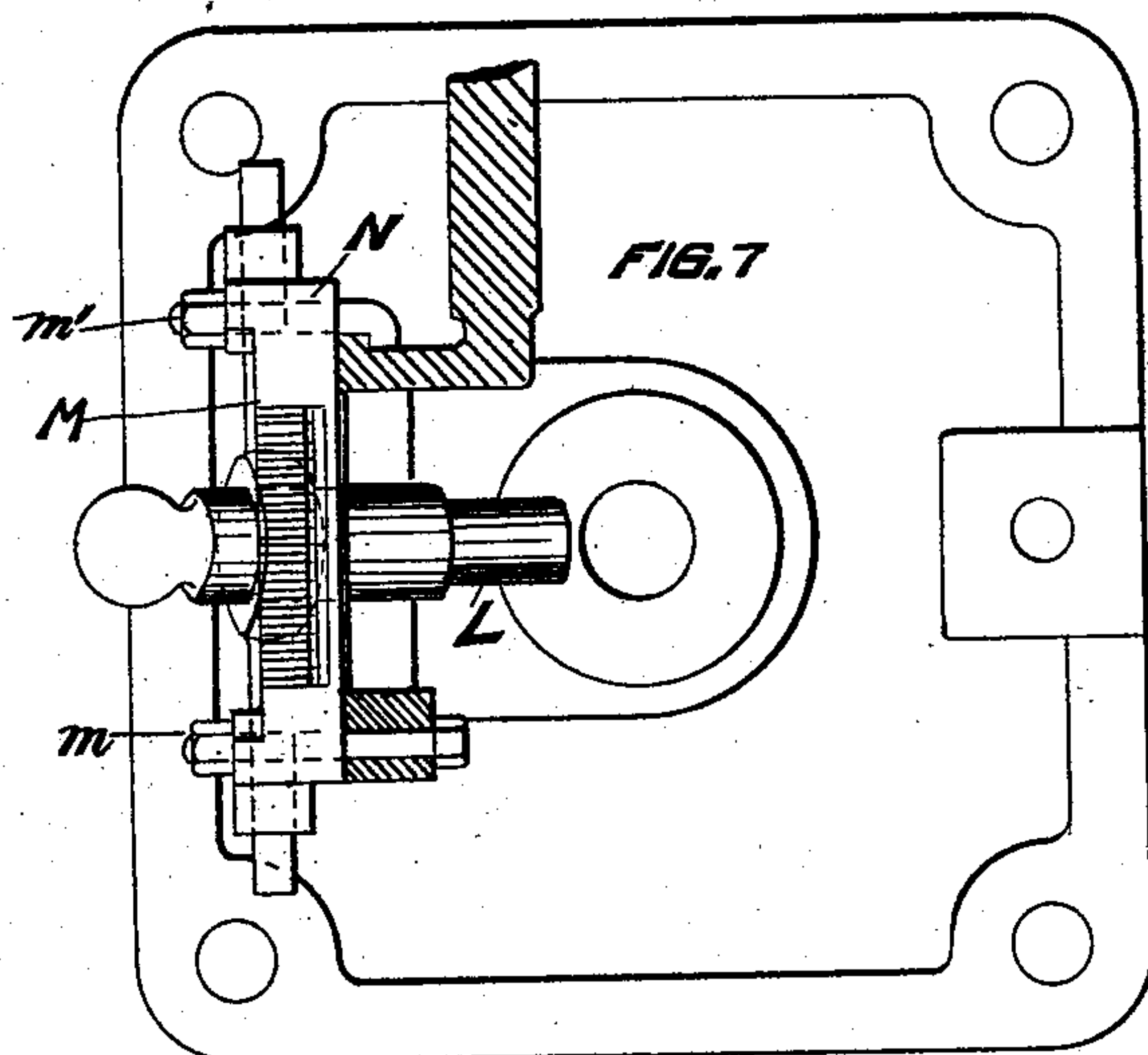
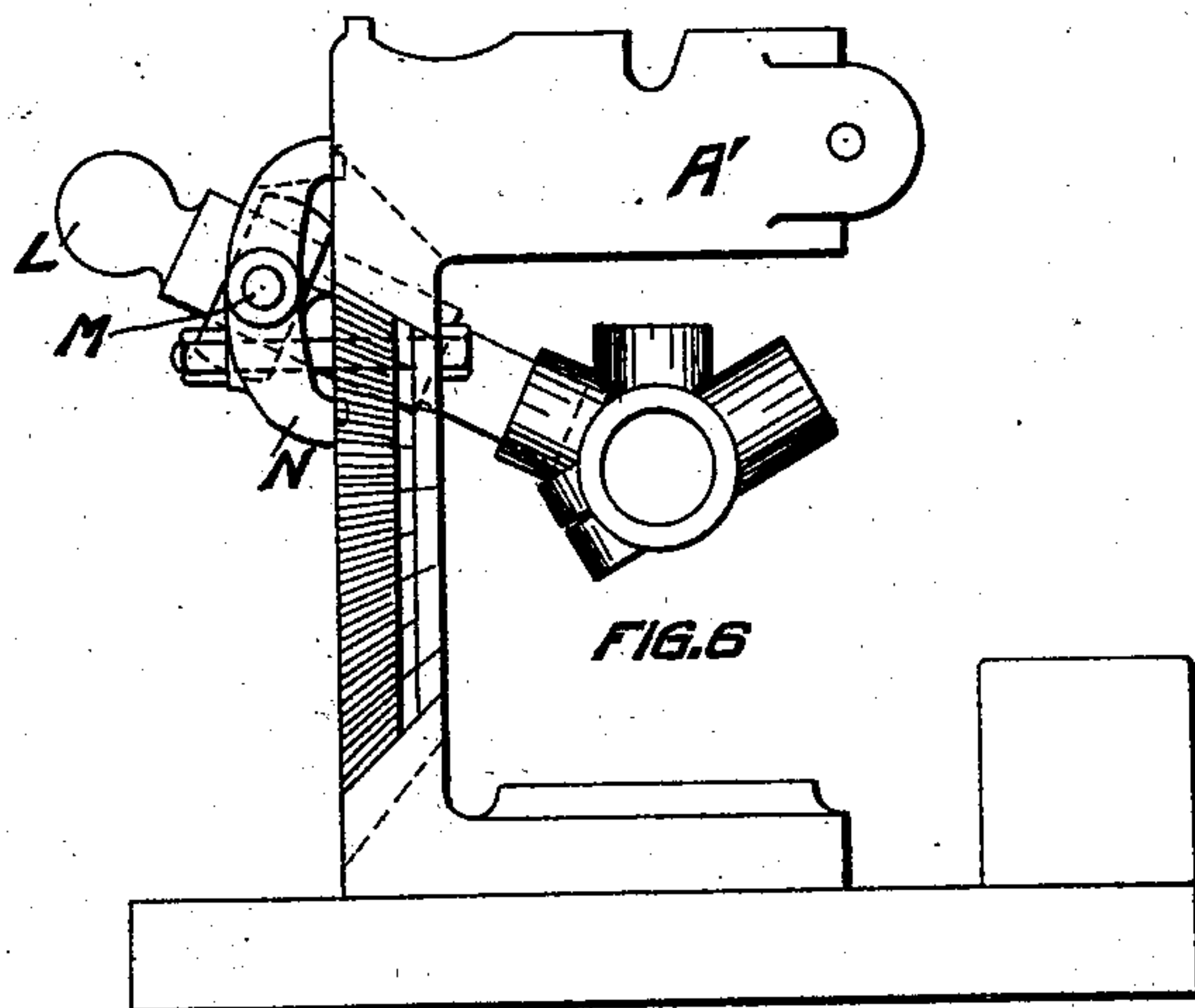
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Witnesses:

E. B. Bolton

O. W. Munk

FIG. 8

Inventor:

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UNITED STATES PATENT OFFICE.

FREDERICK JOHN THOMAS HASKEW, OF STOURBRIDGE, ENGLAND.

JIG FOR SECURING CYCLE PARTS, &c., WHILE BEING BORED OR MACHINED.

SPECIFICATION forming part of Letters Patent No. 603,379, dated May 3, 1898.

Application filed October 12, 1897. Serial No. 654,925. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK JOHN THOMAS HASKEW, a subject of the Queen of Great Britain and Ireland, and a resident of Enville Street Works, Stourbridge, in the county of Worcester, England, have invented certain new and useful Improvements in Jigs or Appliances for Securing Cycle Parts and Similar Objects while being Bored or Machined, of which the following is a specification.

This invention consists of improvements in jigs or appliances for securing cycle parts during boring and for other like purposes, my object being to construct a convenient and effective jig of few and simple parts readily adjustable to suit the work to be machined.

In the three accompanying sheets of explanatory drawings to be hereinafter referred to, Figure 1 is a sectional side elevation, and Fig. 2 an end elevation, of my improved cycle-jig. Fig. 3 is a detail view representing one of the mandrel-clamping bolts. Fig. 4 is a side elevation, and Fig. 5 a plan, of the jig with the adjustable supporting-mandrel in position. Figs. 6 and 7 are smaller scale views representing the jig fitted with a locating-plug. Fig. 8 is a separate view of the locating-plug holder and its bracket.

The same reference-letters in the different views indicate the same parts.

I employ a standard or framing, preferably of cast-iron, having a base or foot A formed with it for mounting upon a drilling or boring machine. I form a suitable boss or projection A' at the upper part of the standard to receive a sliding bush B, preferably of steel, by means of which one end of the ball-head lug, seat-lug, or other cycle part, such as C, is held in position during the boring. The bush is pressed onto the lug or cycle part by a forked lever D, pivoted upon the standard and operated by a screwed stem E, provided at its upper end with a hand-wheel F or lever, by which it may be turned or revolved, and engaging at its lower end with a nut carried in the base or foot of the standard. On turning the stem in the required direction the lever D is caused to descend, carrying with it the steel retaining-bush B until the latter is forced tightly against the

cycle part C. The lower end of the aperture through the bush is made of a conical shape and suitable for the reception of the cycle part. The connection between the bush B and the forked lever D is formed by projecting lugs from the latter, which engage with a groove formed on the exterior of the bush.

When boring the first clear way through the ball-head lug, seat-lug, or other cycle part C, the lower or opposite end of such part is supported on a seating-block G, Figs. 1 and 2, the stem of which is placed in a bored hole in the base of the jig in a direct line with the steel bush B, hereinbefore described. The seating-block G is secured in position and prevented from movement by an ordinary screwed set-pin. The act of screwing down the stem E, hereinbefore described, to force the top bush onto the cycle part also clamps the part between the two supports, and thus effectually secures it in position. I provide bushes and blocks of varying forms and sizes to suit the various parts to be machined.

During the boring of the apertures formed at an angle with the clear way through the cycle part such part is supported upon the free inner projecting end of an adjustable arm or mandrel, as H, Figs. 3, 4, and 5, which can be placed in a horizontal or inclined position, as may be required. The part is secured upon such support by means of the sliding bush B, operated by the lever D, as hereinbefore described. The mandrel H is carried by clamping-bolts J in conjunction with caps J', as illustrated at Fig. 3, the bolts fitting within slots or apertures formed in the standard. The outer bolt fits within a slot, as illustrated, such slot being of sufficient length to permit of the necessary range of adjustment. For the inner bolt I provide in place of a slot apertures, as j, Figs. 1 and 4, in either of which the inner bolt can be inserted. The graduations on the framing beyond the outer slot, Fig. 1, are for the purpose of indicating varying angles or positions to which the mandrel may be set.

The adjustable stop-bolt K, Fig. 2, prevents rotation of the cycle part during the boring or machining process.

For boring or machining apertures formed at a very acute angle with another aperture through the same cycle part I provide a man-

drel having its front end bent or inclined, as may be required.

For boring or machining a bottom bracket or like cycle part, such as illustrated at Fig. 6, I prefer to employ a locating and steadying plug L, fitting loosely within the holder M, carried by the bracket N, Figs. 6, 7, and 8, the jig-standard being arranged to receive such parts. The bracket N is bolted to the back of the jig-standard, as illustrated, by the bolts *m m'*, and the locating and steadying plug L can be caused to slide within the central eye of the holder M to permit of its insertion within and withdrawal from the cycle part to be bored or machined. The graduations shown on the frame at Fig. 6 indicate various angles at which the locating-bar bracket N can be set, while the graduations on the bracket N itself, as shown at Figs. 7 and 8, represent various distances from the center of the jig to which the plug L can be adjusted and secured thereat by set-pins or collars.

The cycle-fitting during the boring of the aperture formed at an angle with the clear way through the fitting is supported on the end of the mandrel in the manner shown at Fig. 4, being held thereon by the sliding bush B. The support G is not used for this purpose. Except in the case of very acute angles there is no tendency for the fitting to slide off the mandrel, but any such tendency in the case of a fitting having an aperture at a very acute angle with the clear way through the fitting is prevented or counteracted simply by placing (after the fitting is in position on the mandrel) a movable peg or stud in a hole through the extremity of the mandrel projecting beyond the fitting.

With reference to Fig. 6 it must be understood that although the mandrel H is not shown, (as such view is simply intended to illustrate the locating-plug,) yet of course a mandrel must be employed in conjunction with such plug. The support G is not used when the mandrel is used.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a boring-machine, a sliding bush engaging the work to be machined, an operating-lever, and a seat-block below the said bush, substantially as described.

2. In combination, the standard, the bush movable through the same to engage the work, and a mandrel arranged to one side of the standard and projecting toward the same to receive the work upon its end and to hold it in line with the bush, substantially as described.

3. In combination, the standard, the sliding bush with operating-lever, the seat-block below the said bush and a sliding locating and steadying plug mounted on an adjustable holder and bracket, substantially as described.

4. In combination, the standard, the hollow bush for engaging the work arranged in said standard, a seat-block below the bush and a mandrel arranged to one side of the standard and projecting laterally in between the seat-block and bush to hold the work, substantially as described.

5. In combination, the standard, the bush for holding the work arranged in said standard, the boss *a* projecting laterally from the standard and the mandrel adjustably secured to the face of said boss and projecting laterally with relation to the standard and having its inner end below the bush to hold the work in the line of boring, substantially as described.

6. In combination, the standard, the bush in said standard to hold the work, the mandrel to one side of the standard and projecting laterally with relation to the same with its end below the bush to form a support for the work and a steadying-plug arranged on the opposite side from the mandrel and projecting laterally in relation to the standard to engage the work, substantially as described.

7. In combination, the standard, the means therein for holding the work including the movable bush, and a steadying-plug projecting laterally with relation to the standard with its inner end in a position to engage the work, and a bracket for supporting the steadying-plug, said bracket being vertically adjustable to the standard while the plug is laterally adjustable in the bracket, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

FREDERICK JOHN THOMAS HASKEW.

Witnesses:

EDWARD MARKS,
HERBERT BOUKETT.