

(No Model.)

F. E. FARWELL.

WISE.

No. 386,697.

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Fig. 1.

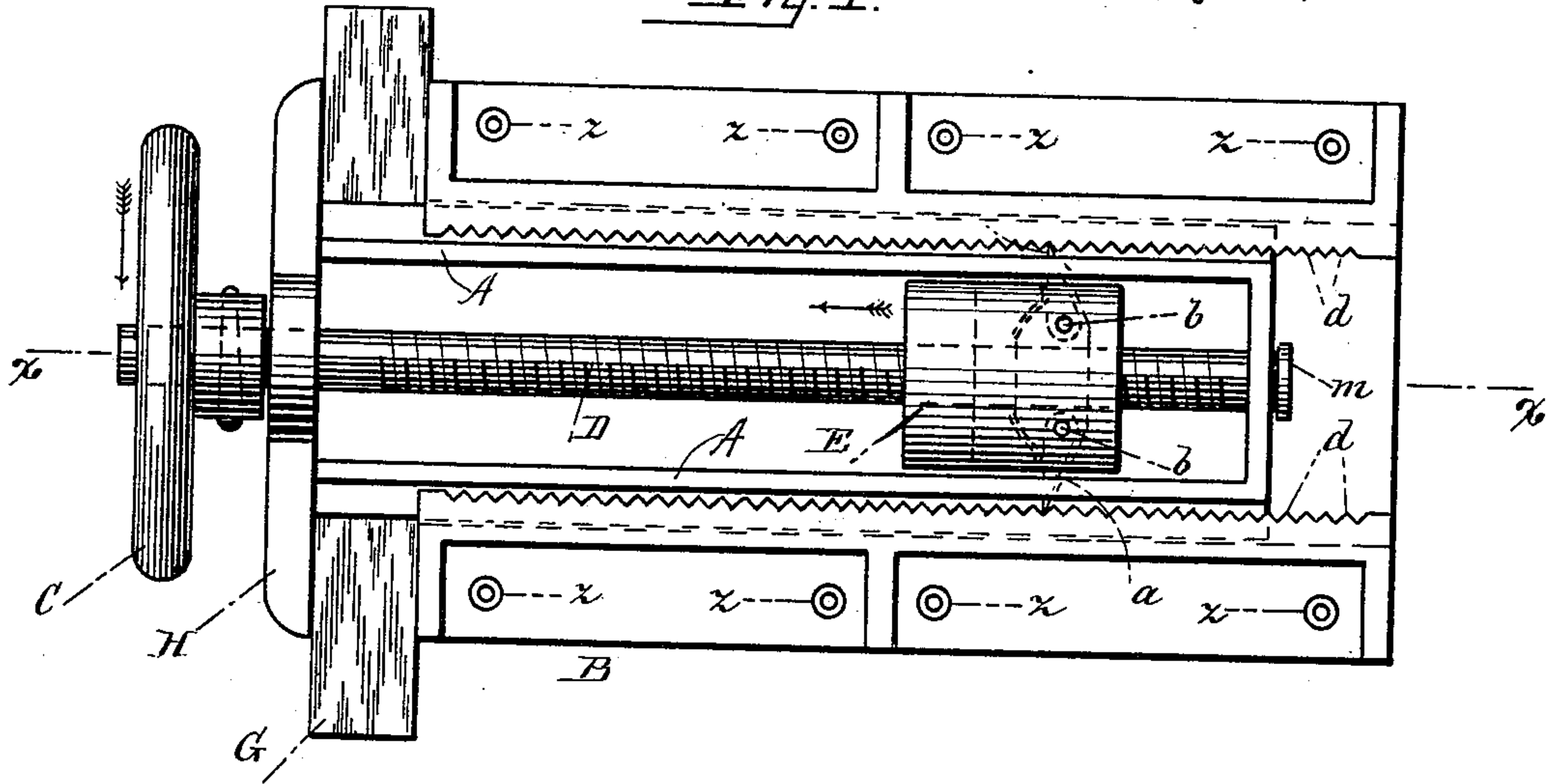


Fig. 2.

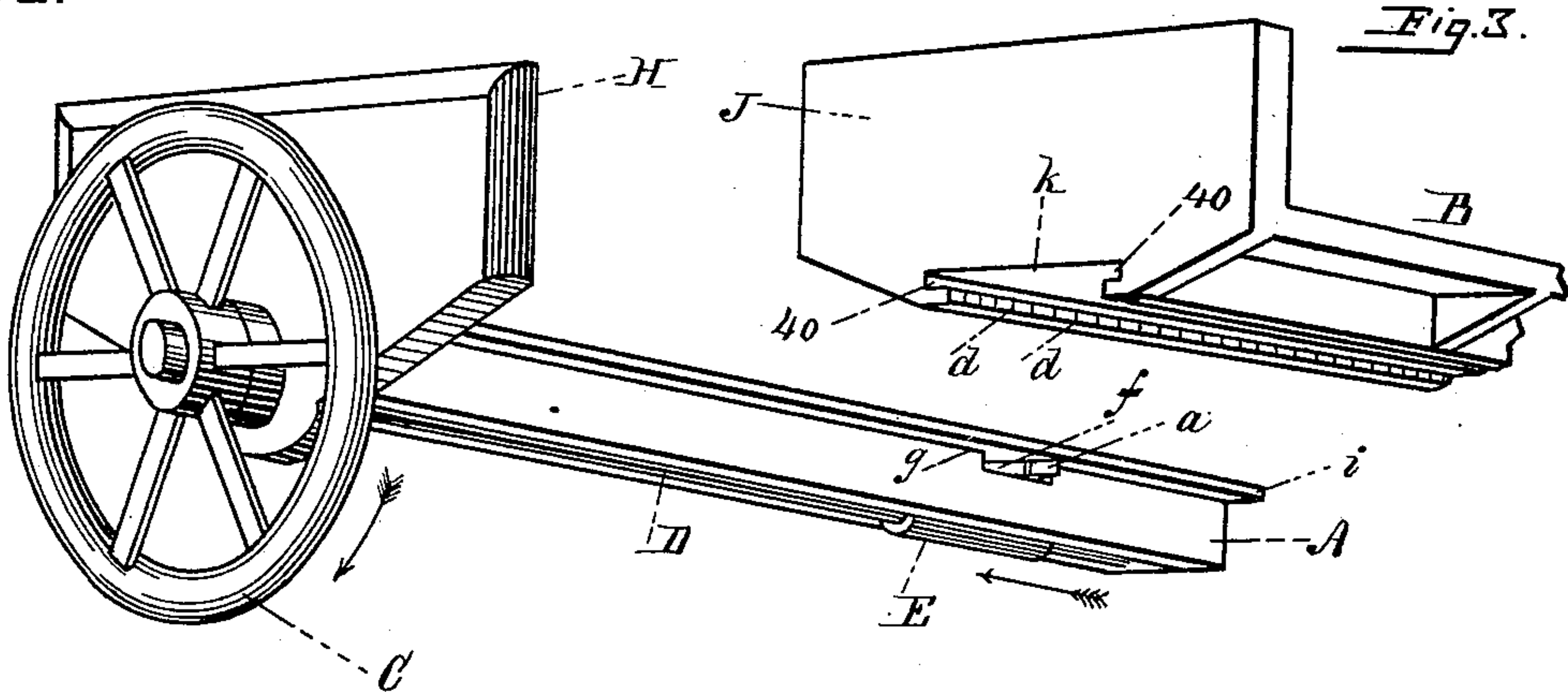
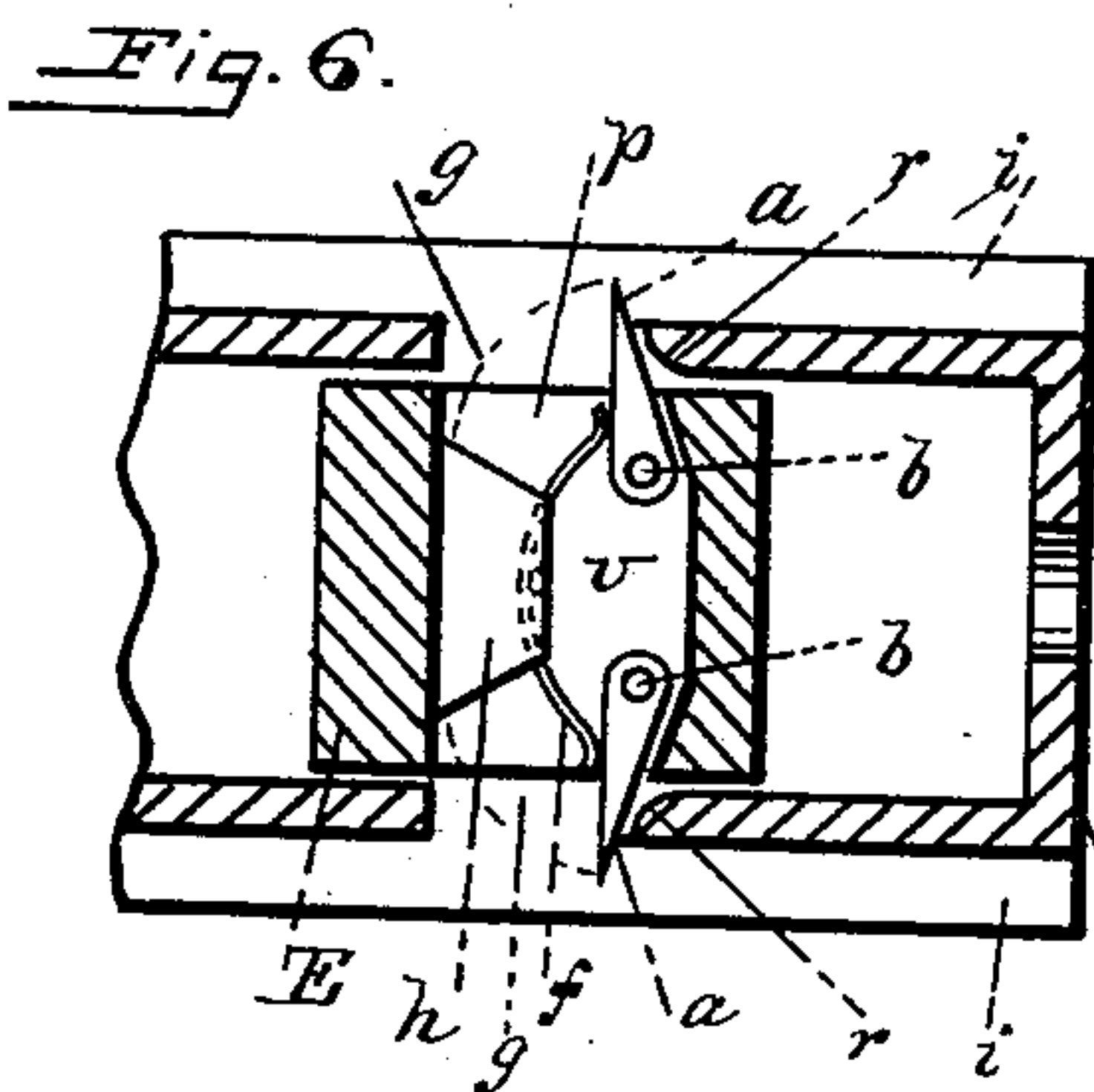


Fig. 3.



*Fig. 6.*

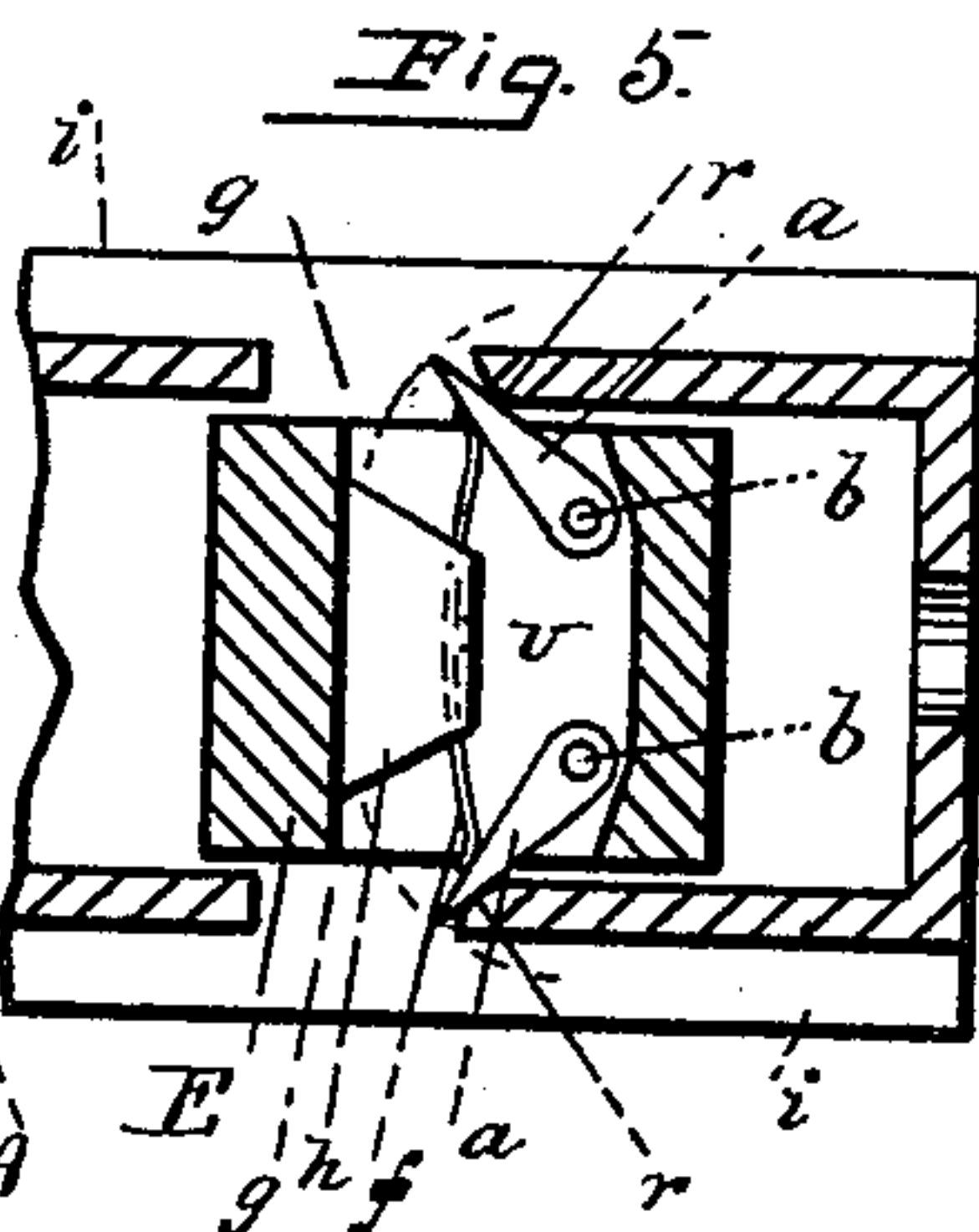


Fig. 5.

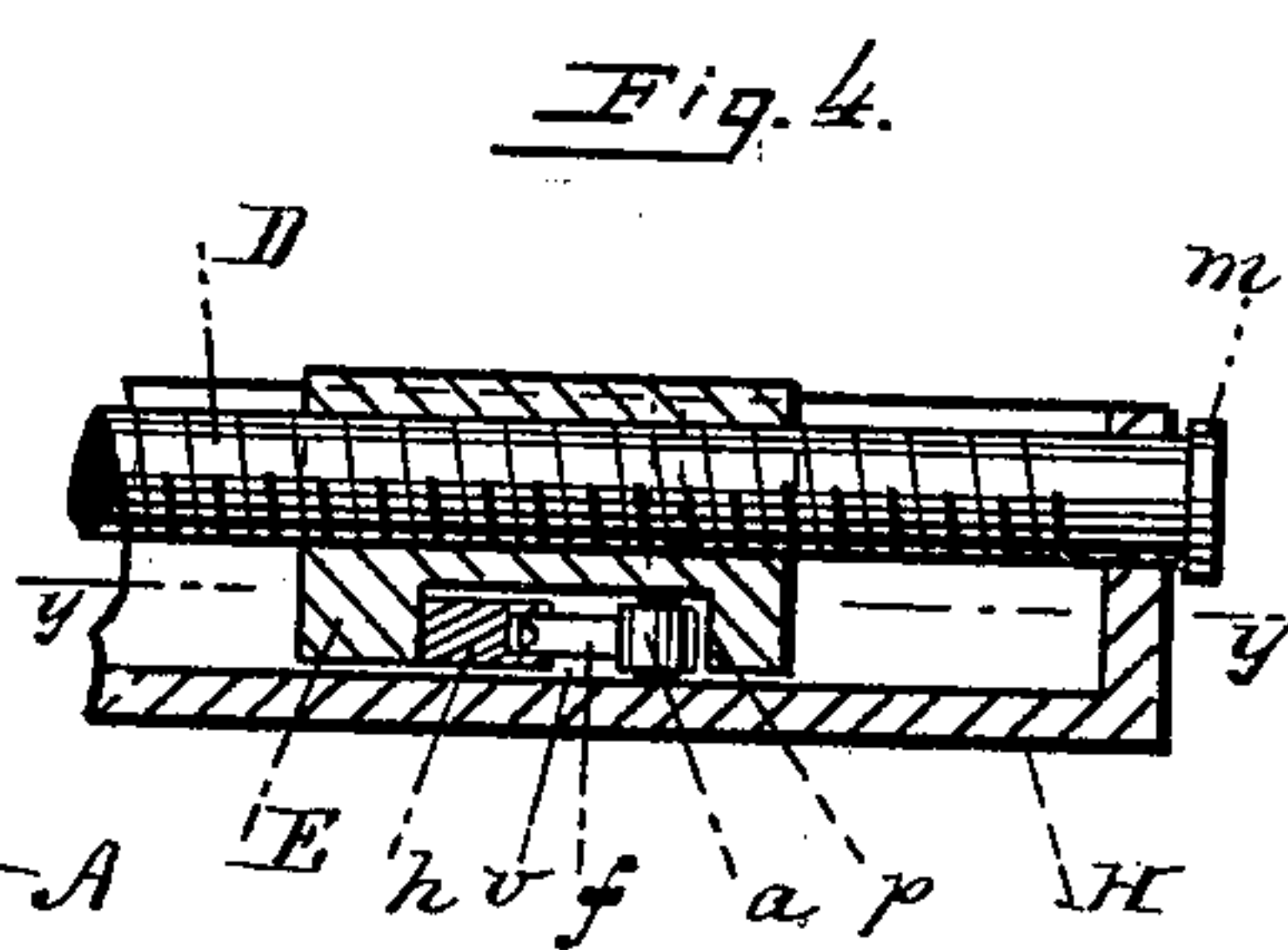


Fig. 4

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# UNITED STATES PATENT OFFICE.

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## WISE.

SPECIFICATION forming part of Letters Patent No. 386,697, dated July 24, 1888.

Application filed April 9, 1888. Serial No. 270,131. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERIC E. FARWELL, of Fitchburg, in the county of Worcester, State of Massachusetts, have invented a certain new and useful Improvement in Vises, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a bottom plan view of my improved vise, represented as in use; Fig. 2, an isometrical perspective view of the movable jaw detached; Fig. 3, a like view of the fixed jaw detached, the inner end of the jaw being represented as broken off; Fig. 4, a vertical section of a portion of the movable jaw, taken on line *xx* in Fig. 1; and Figs. 5 and 6, horizontal sections taken on line *yy* in Fig. 4, showing the clutch.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to that class of vises which are known as "bench-vises;" and it consists in certain novel features, as hereinafter fully set forth and claimed, the object being to produce a more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the body of the movable jaw; B, the body of the fixed jaw; C, the hand-wheel, and D the screw. The body of the fixed jaw B consists of a metallic plate having an upwardly-projecting lip or jaw proper, J, at one end, and is provided with screw-holes *z* (see Fig. 1) for receiving the screws by means of which it is secured to the under side of the bench. The under side of the body is grooved centrally and longitudinally to form a run or ways, *k*, (see Fig. 3,) adapted to receive the body A of the movable jaw, the edges of said groove being provided with teeth or serrations *d*, the use of which is hereinafter described.

The body A of the movable jaw consists of a metallic box having laterally-projecting

flanges *i* at its upper side, which are fitted to slide in corresponding grooves, 40, at the sides of the way *k* in the jaw B. The body A is also provided at its outer end with an upwardly-projecting lip or jaw proper, H, adapted to register with the jaw proper, J, when in use. A horizontally-arranged screw-threaded rod, D, is journaled longitudinally in the body A, said rod being provided with a hand-wheel, C, at its outer end and an annular flange, *m*, on its inner end to permit the rod to be rotated in said box, but not withdrawn therefrom. Fitted to work on the rod D and disposed within the box A is an interiorly-screw-threaded nut, E, said nut being provided in its upper portion with a chamber, *v*, open at its sides, as shown at *p* in Fig. 6. The sides of the box are provided with corresponding openings, *g*, the rear end of said openings being beveled, as shown at *r* in Figs. 5 and 6. Pivoted at *b* to the nut E within the chamber *v* are two horizontally-arranged pawls, *a*, of such length that their points will protrude through the openings *g* in the box A and respectively engage the teeth *d* at the sides of the ways *k* when in use.

Secured at the forward end of the chamber *v* is a block, *h*, and fastened centrally to said block is an elliptic spring, *f*, the ends of which respectively engage the pawls *a* and tend to keep their points projecting through the opening *g* in the box A.

In the use of my improvement the fixed jaw B is first secured to the bench, as described. The wheel C is then turned from right to left, causing the nut E to travel backward on the rod D and the pawls *a* to engage the beveled ends *r* of the openings *g*, thereby compressing the spring *f* and withdrawing the points of the pawls through the openings *g*. The body A of the movable jaw is then inserted in the ways *k* and the block G or other article to be clamped placed between the jaws proper, H J, the jaw H being forced inward against said block. The hand-wheel C is next turned from left to right, thereby causing the nut E to travel forward on the rod D and the points of the pawls *a* to protrude through the openings *g* and engage the teeth *d* at the sides of the ways *k*, thus acting as a clutch to prevent the further advance of said nut, when, by continuing the revolutions of the wheel in the same direction,

the block G will be firmly clamped between the jaws H and J in a manner that will be readily understood by all conversant with such matters without a more explicit description.

5 It will be readily seen that as the movable jaw slides freely in the ways *k* until it reaches the article to be clamped it can be "set" with much greater facility than in vises as ordinarily constructed, or where the movable jaw is  
10 operated entirely by a screw.

Having thus explained my invention, what I claim is—

15 In a vise, the combination of the movable body A, provided with the jaw H and having the lateral openings *g*, provided with the beveled edges *r*, the rod D, journaled longitudi-

nally in said body and provided with the wheel C, the threaded nut E, disposed on said rod and provided with the chamber *v*, the pawls *a*, pivoted to said nut in said chamber and 20 adapted to project through the openings *g*, the spring *f*, secured in said chamber in engagement with said pawls, and the body B, provided with the fixed jaw J, and having the ways *k*, provided with teeth *d*, with which the 25 pawls engage, all being constructed, combined, and arranged to operate substantially as specified.

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