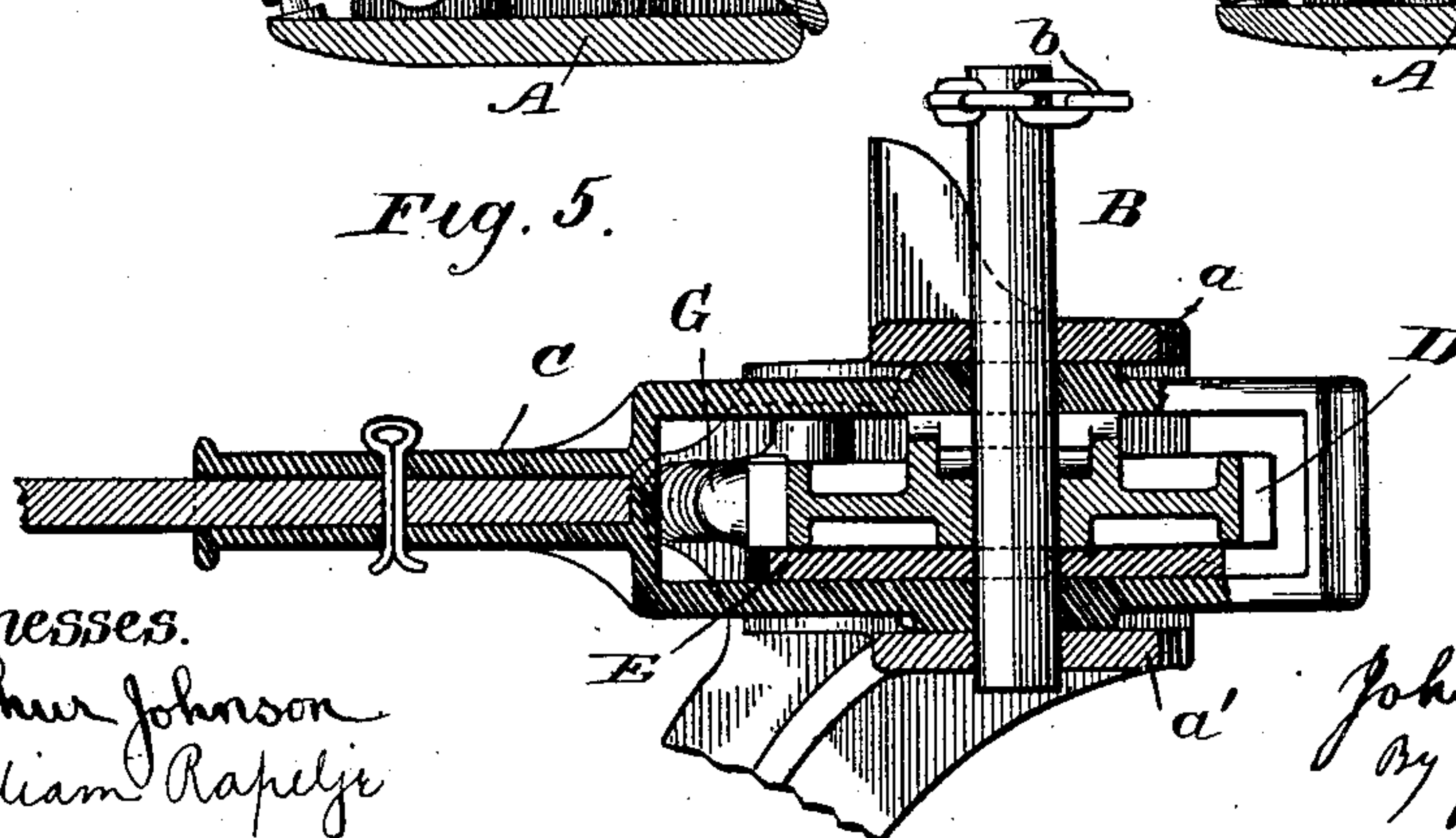
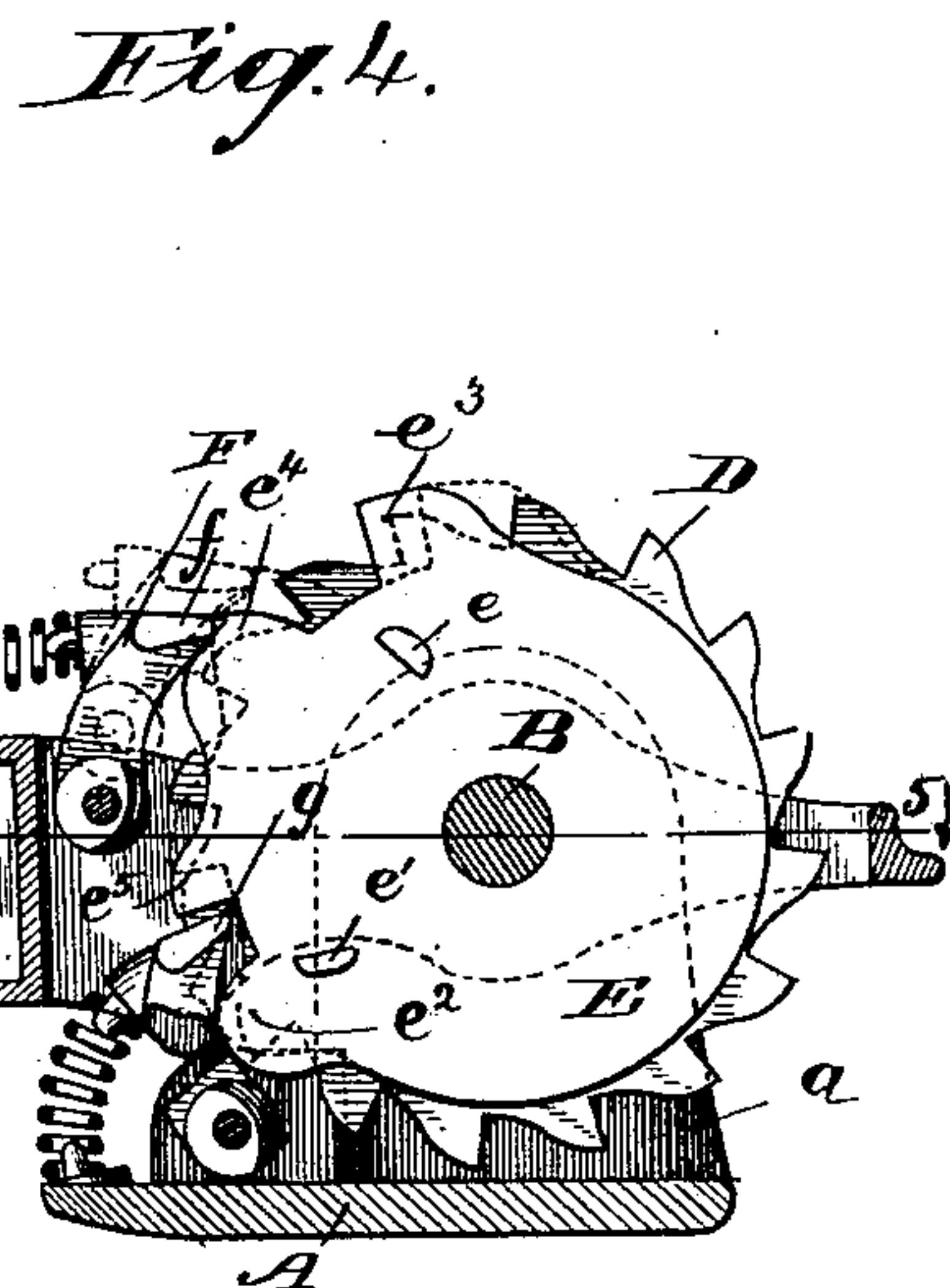
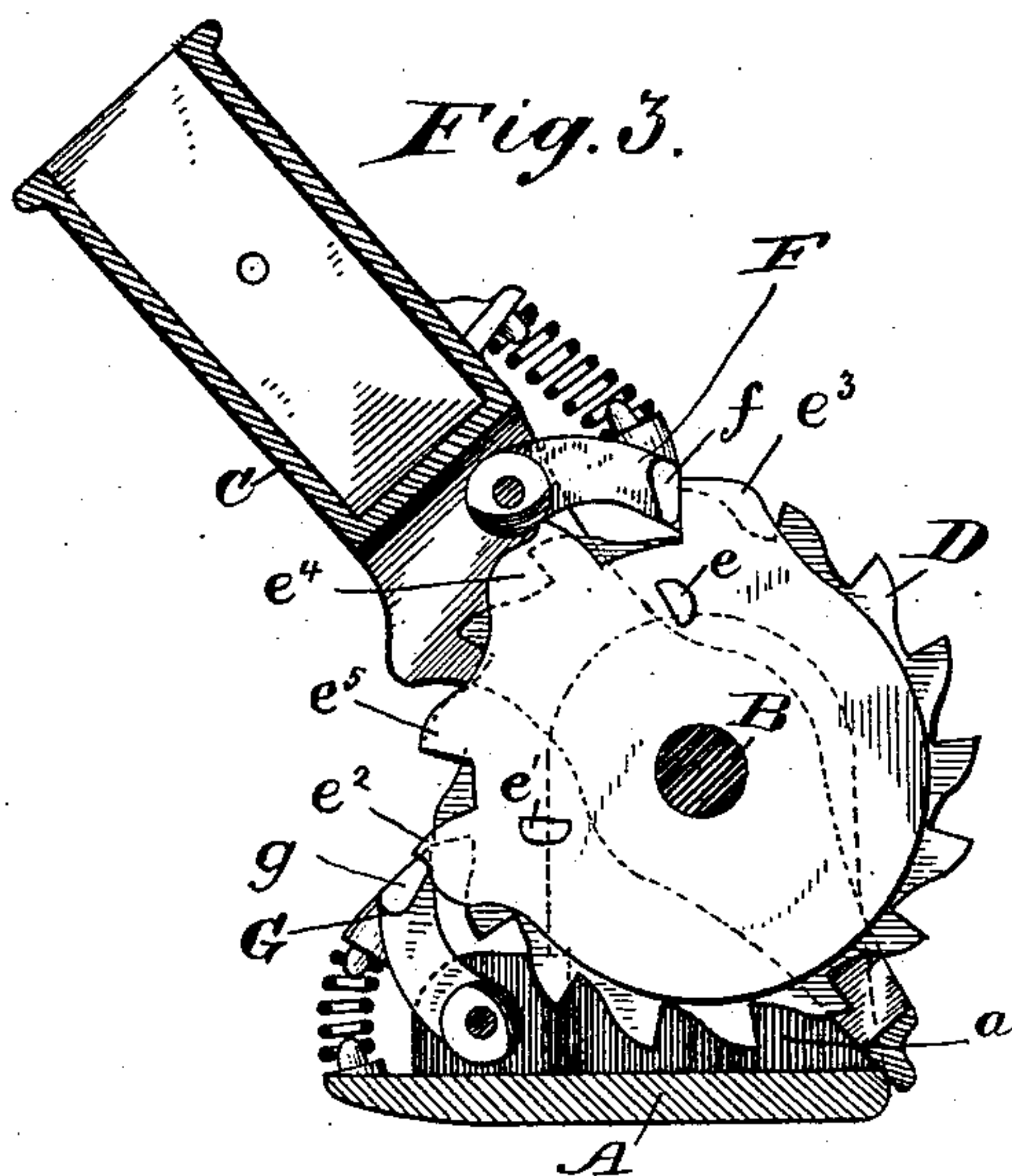
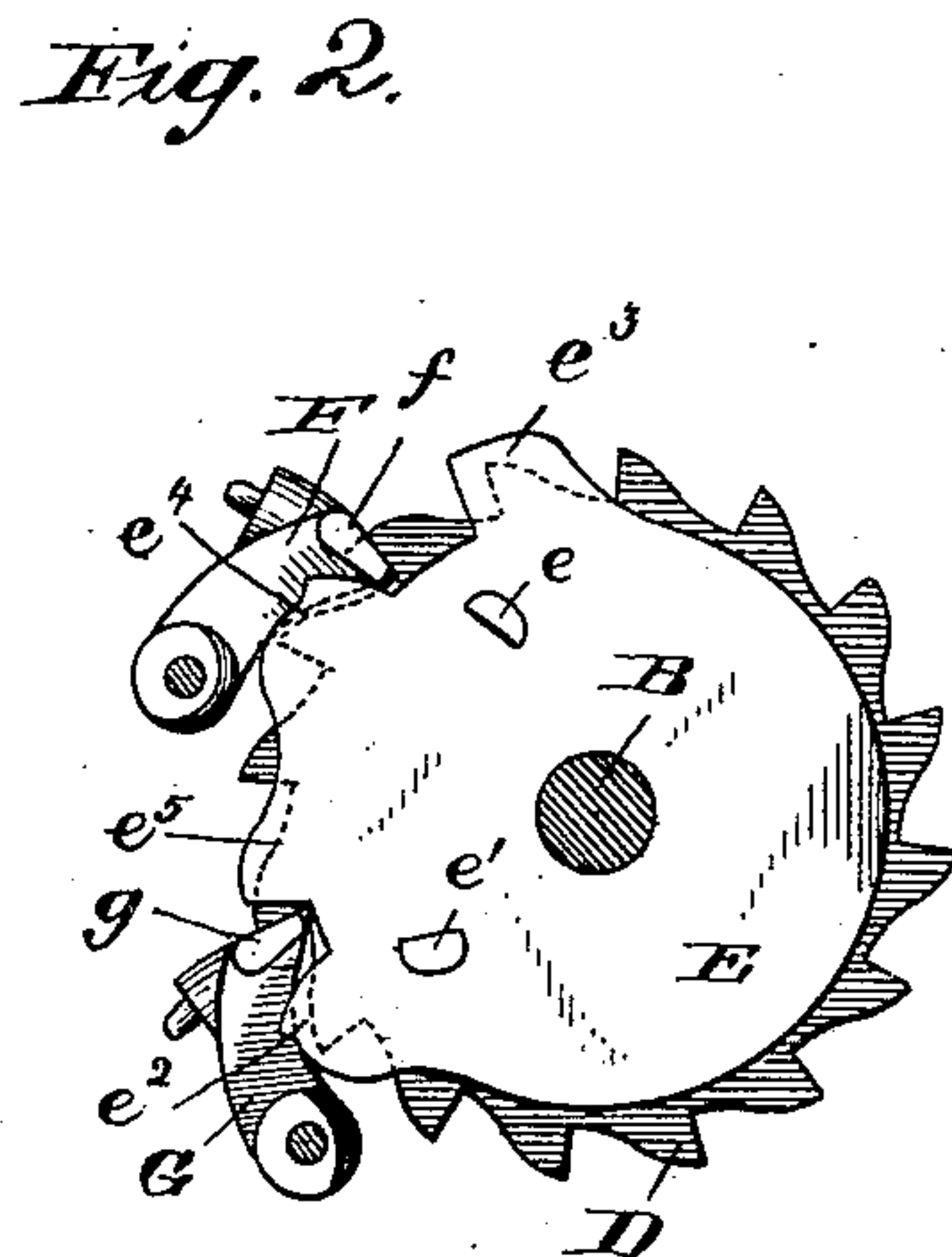
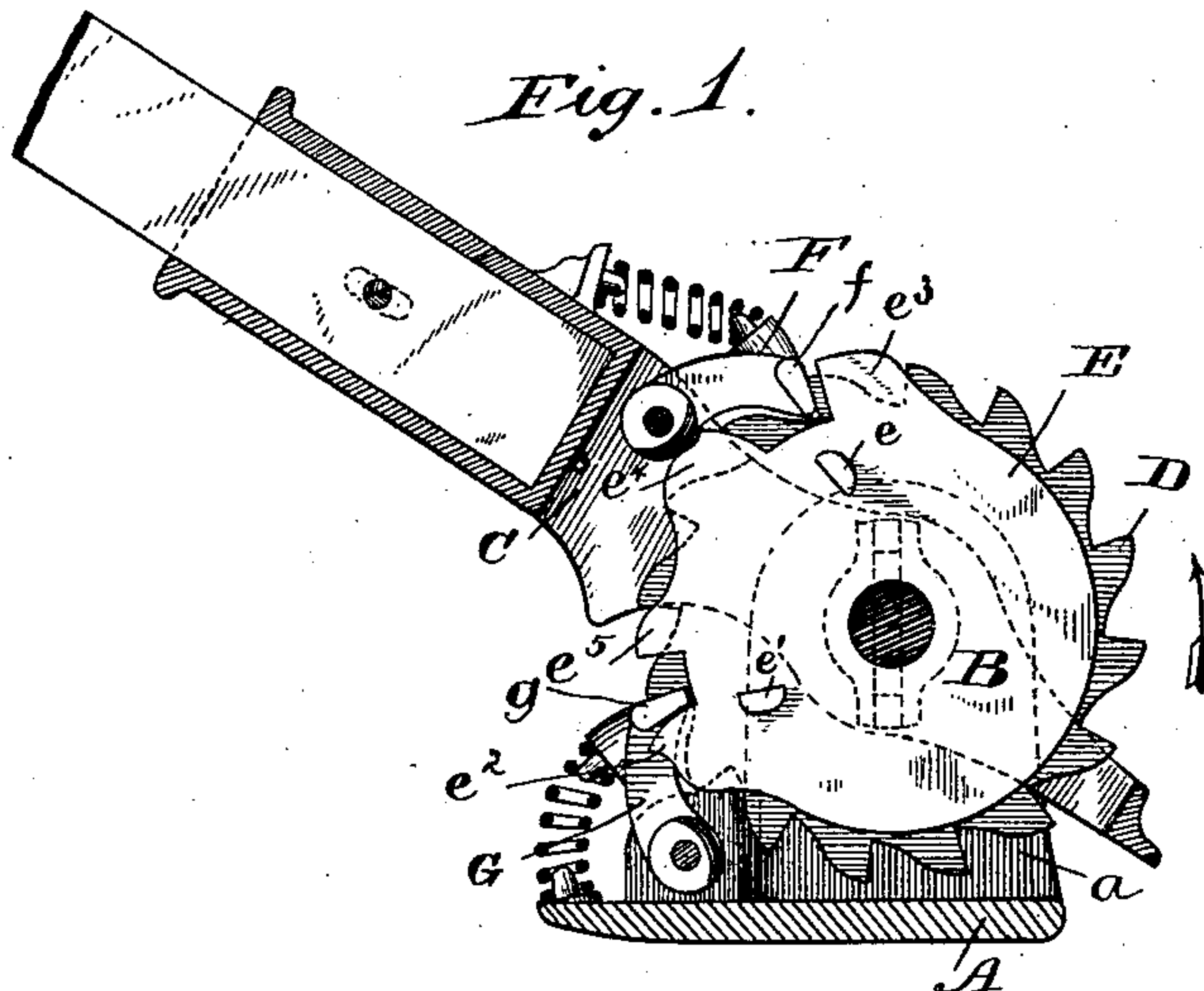


(No Model.)

J. F. APPLEBY.  
WINCH.

No. 475,376.

Patented May 24, 1892.



*Witnesses.*

Arthur Johnson  
William Rapelje

*Inventor:*

John F. Appleby  
By J. F. Steward  
His atty



# UNITED STATES PATENT OFFICE.

JOHN F. APPLEBY, OF CHICAGO, ILLINOIS, ASSIGNOR TO WILLIAM DEERING  
& COMPANY, OF SAME PLACE.

## WINCH.

SPECIFICATION forming part of Letters Patent No. 475,376, dated May 24, 1892.

Application filed March 14, 1892. Serial No. 424,934. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN F. APPLEBY, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful

5 Improvements in Winches, of which the following is a full description, reference being had to the accompanying drawings, in which—  
Figures 1 to 4 are side elevations, and Fig. 5 a sectional plan of the parts as if cut on the  
10 line 5 5 of Fig. 4.

The principal object of my invention is to provide a raising and lowering device for harvesting-machines and for other purposes to which it may be applicable. I locate my winch,  
15 when used on a harvester, in a position adjacent to the driver's seat, which will be seen by reference to my application for improvements in self-binding harvesters filed simultaneously herewith.

20 In the drawings, A is the base, having the lugs *a* and *a'*. Through these lugs pass the shaft B, that is to be rotated in one direction to take up the chain *b* wound around it and in the other direction to let the chain out.  
25 Upon the shaft B as an axis I support the lever-socket C, and so slot it out as to provide space for a ratchet-wheel D and the pawl-controlling plate E. The said ratchet-wheel is firmly secured to the shaft, and the pawl-controlling plate is loosely applied to the shaft.  
30 Upon the outer side of the controlling-plate E are bosses *e* and *e'*, and between these vibrates one of the side portions of the slotted lever. The bosses *e* and *e'* are placed somewhat farther apart than the width of the part  
35 of the lever which plays between them, so that considerable lost motion is provided for. On the periphery of the pawl-guiding plate are the cam-shaped projections *e*<sup>2</sup> and *e*<sup>3</sup> and also  
40 the cam-like projections *e*<sup>4</sup> and *e*<sup>5</sup>.

F is a spring-held pawl pivoted to the lever, and G is a spring-held pawl pivoted to the base-plate. These pawls are adapted at their free ends to engage the teeth of the ratchet.

45 The pawl F has a sideward projection *f*, adapted to engage and be operated upon by the cam-shaped projections *e*<sup>3</sup> and *e*<sup>4</sup> of plate E. The latch G has a projection *g*, adapted to be engaged by the cam-shaped part *e*<sup>2</sup> of plate E.  
50 Into the handle-socket I secure a lever, as partly shown.

Bearing in mind that the stress of the lifting-chain is always such as to tend to rotate the ratchet-wheel in the direction indicated by the arrow in Fig. 1 the operation of my  
55 device will be readily understood. Let it be first understood, however, that the action of the lever to raise the weight depends upon a short stroke and the action to lower the weight depends only upon a long stroke of the  
60 lever, and that the pawl-controlling plate E has sufficient freedom of movement to allow the lever to move a short distance without controlling the pawls. Starting with the parts as in the position shown in Fig. 1, it will be  
65 readily understood that if the lever be moved downward the pawl F will be permitted to engage a notch in the ratchet-wheel lower than the one it is shown in. When the part *f* reaches the part *e*<sup>4</sup> of plate E, the said plate E will  
70 move with the lever far enough to permit the pawl to enter the new notch. The lever raised, the ratchet will be turned and the spring-pawl G will be forced to enter a proper notch on the ratchet-wheel and prevent retrograde motion.  
75 This operation may be repeated indefinitely. If now it be desired to lower the weight, the lever will be carried to a high position—as, for instance, that shown in Fig. 3. So carried, the part *f* will have engaged the part *e*<sup>3</sup>  
80 of the controlling-disk and moved it in the same direction until the cam-like part *e*<sup>2</sup>, engaging the part *g*, will have forced the pawl G out of the notch it had entered to hold. The lever then lowered, the ratchet-wheel will  
85 move in a direction to let the weight down. After the lever has permitted the ratchet-wheel to turn so far that the tooth that was held by the pawl G has passed the point of engagement the side of the lever strikes the  
90 stud *e'* and forces the controlling-plate so far that the cam-like part *e*<sup>2</sup> shall not hold the pawl G out of contact, and the spring will force the latter to engage the new notch that has been brought down. While the lever was  
95 passing downward the ratchet-wheel followed its motion until the pawl G had stopped the rotation. The plate E is prevented from a downward movement to too great an extent by its lug *e* striking the side piece of the lever.  
100 With the pawl in the position for holding, as shown in Fig. 1, the further downward



movement of the lever causes the cam-like part  $e^4$  to pass under the pawl F and force it upward to the position shown in Fig. 4. The lever may next be raised to take a new hold, 5 and as the pressure of the spring is sufficient to force the pawl F against the controlling-plate E sufficiently to carry the latter with the pawl, the said pawl is held from becoming engaged with the ratchets until the lever is 10 carried so high that the cam-like part  $e^2$  strikes under the projecting part  $g$  of the pawl G sufficiently forcibly to prevent it moving any farther, when the pawl F, passing on, drops behind it and enters a new notch on the ratchet- 15 wheel. A slightly-forward movement, however, overcomes the pressure of the spring-held pawl G upon the plate and carries it to the unlatching position, as shown in Fig. 3. The lever may again be lowered and the op- 20 eration repeated.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the ratchet-wheel,

the pawl-controlling plate, the stationary pawl G, and the pawl F on the lifting-lever, substantially as described. 25

2. The combination of the base-plate having the lugs  $a$  and  $a'$ , the shaft B, journaled therein and having secured thereto the ratchet-wheel D, the pawl-controlling plate E, 30 loosely supported upon the said shaft, the lever having the pawl F, and the stationary pawl G, all arranged substantially as described.

3. The slotted lever loosely pivoted on the shaft B, the ratchet D and pawl-controlling 35 plate located within said slot, the said ratchet-wheel firmly secured to the said shaft and the pawl-controlling plate loosely pivoted to said shaft, the stationary pawl G, and the pawl F, mounted on the said lever, all arranged and combined substantially as described.

JOHN F. APPLEBY.

Witnesses:

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