

(No Model.)

H. F. BRAMMER.
MECHANICAL MOVEMENT.

No. 606,044.

Patented June 21, 1898.

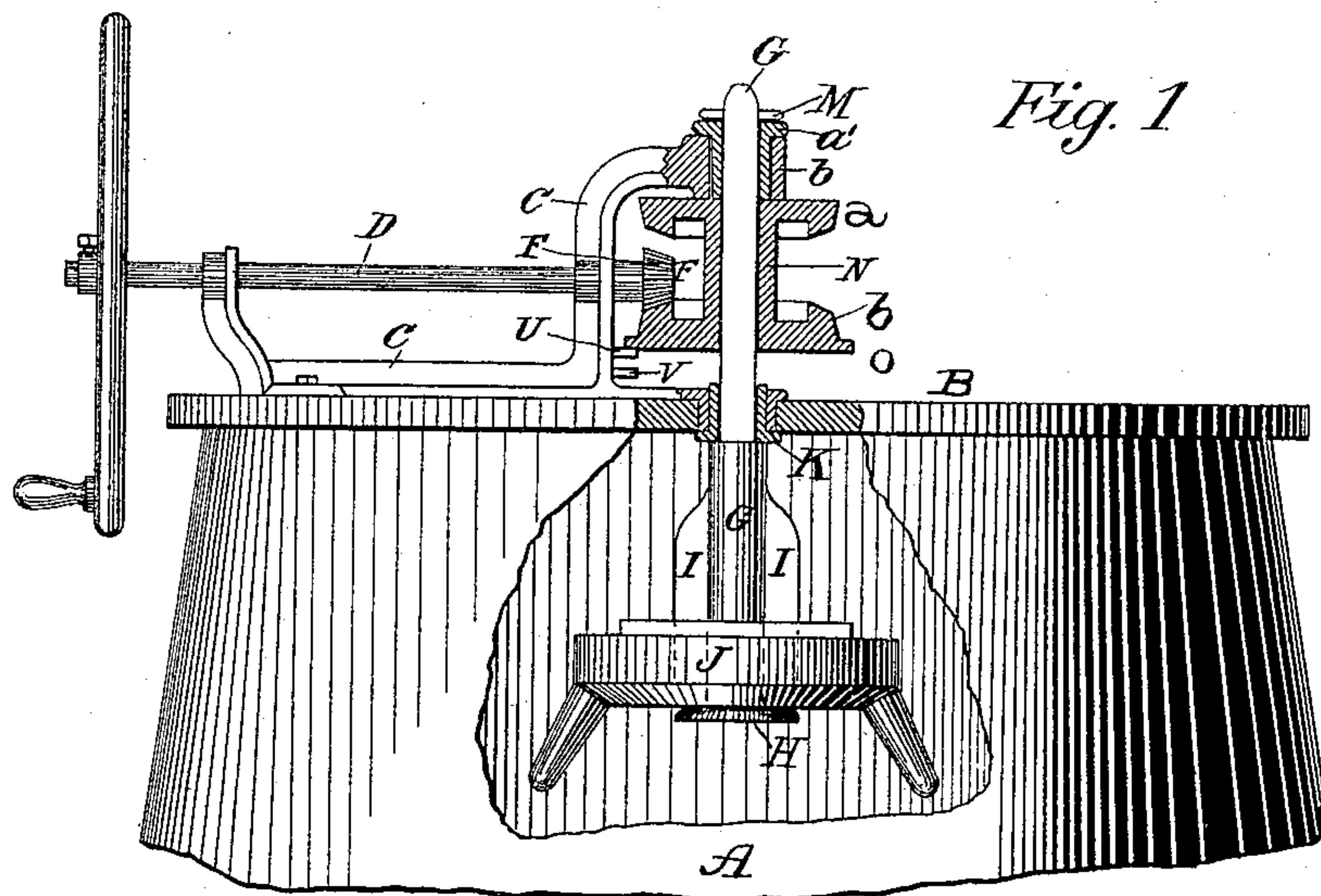


Fig. 1

Fig. 2

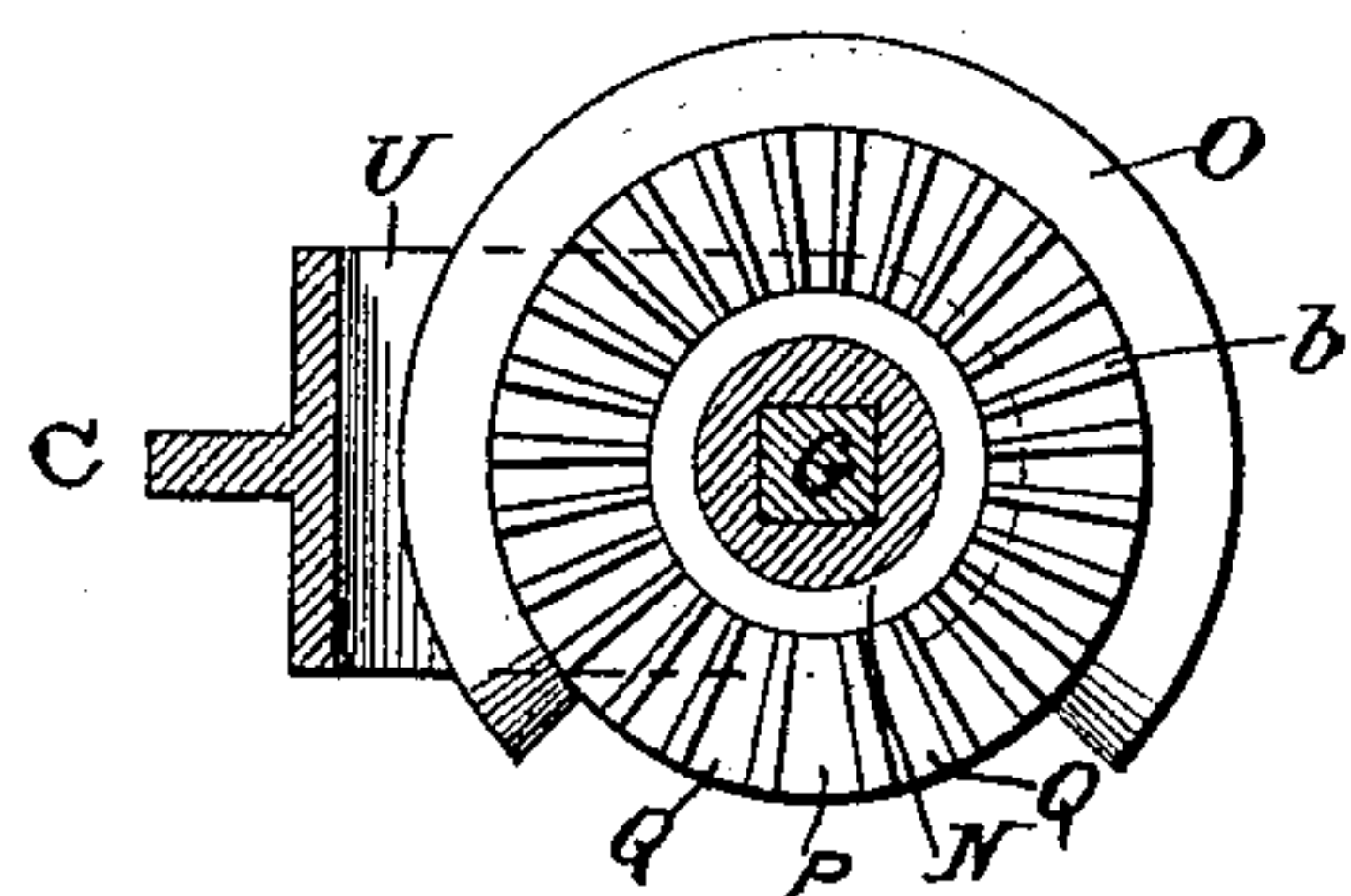


Fig. 4

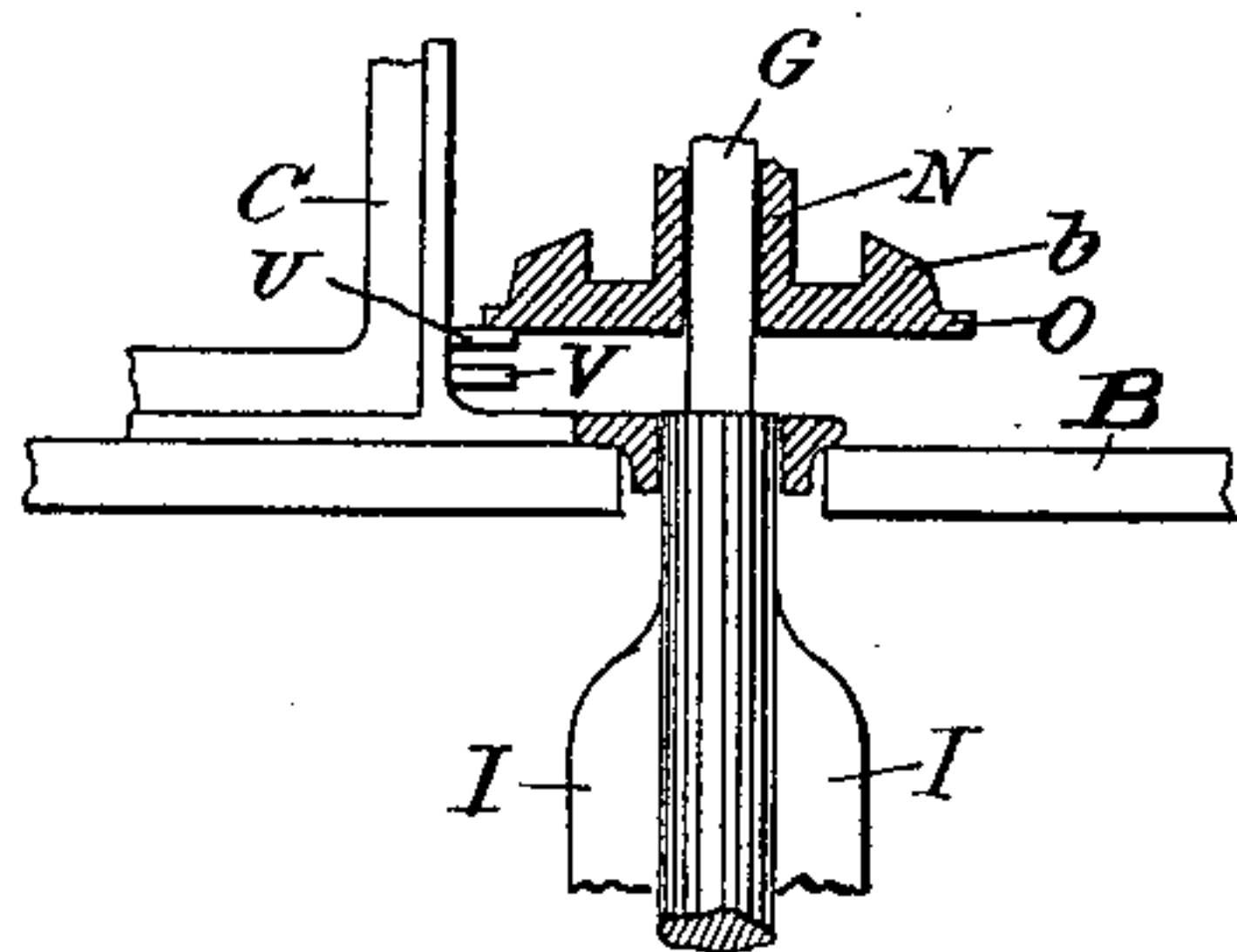


Fig. 3

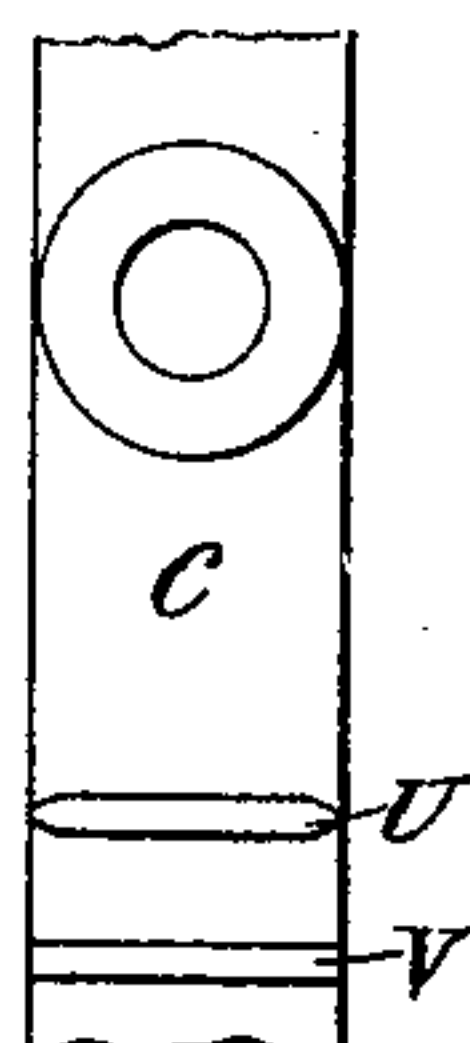


Fig. 5

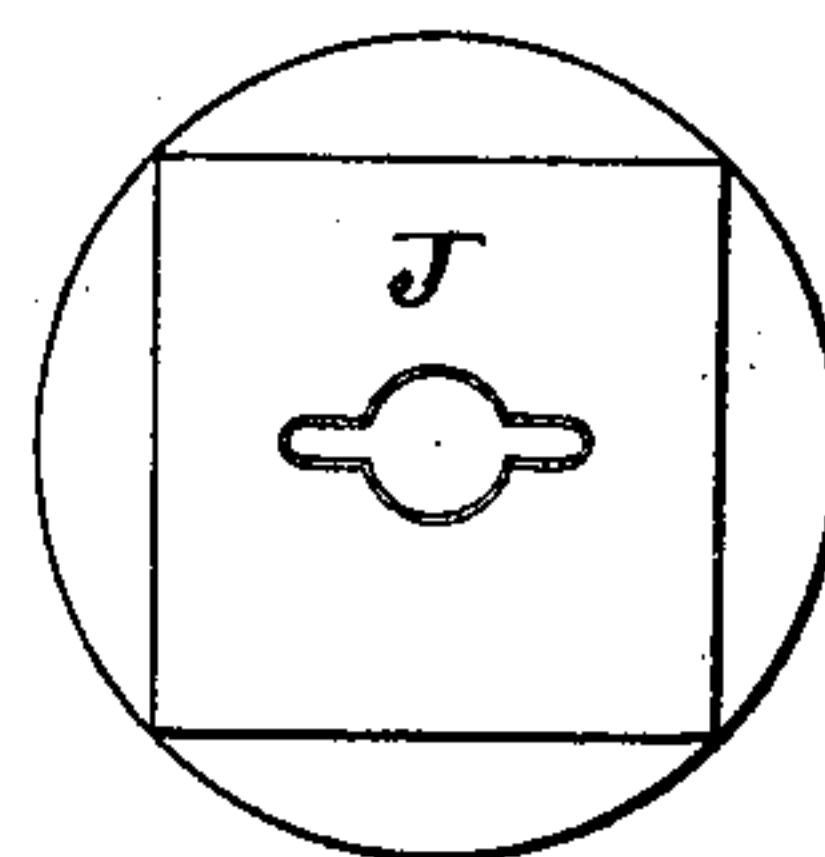


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

HENRY F. BRAMMER, OF DAVENPORT, IOWA.

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 606,044, dated June 21, 1898.

Application filed December 31, 1897. Serial No. 665,027. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. BRAMMER, a citizen of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Mechanical Movements; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in mechanical movements, and is intended more especially as an improvement upon Patent No. 539,790, dated May 28, 1895; and it consists in a revolving shaft carrying a vertically-moving stirrer upon its lower end, combined with a vertically-moving double-cogged casting, which slides freely upon the upper portion of the shaft, as will be more fully described hereinafter.

The objects of my invention are to so construct the parts that the shaft has simply a rotary movement and so that all of the operating mechanism is located closely together in a compact and practical form.

In the accompanying drawings, Figure 1 is a side elevation of a mechanical movement which embodies my invention, partly in section. Fig. 2 is a plan view of the lower half of the casting which is applied to the vertically-moving shaft. Fig. 3 is a detail view showing the supports upon the frame for the casting. Fig. 4 shows a slightly-different form of construction. Fig. 5 is a detail view of the shaft and stirrer, and Fig. 6 shows a detached side view of one of the operating gear-wheels.

A represents the tub of a washing or other suitable machine, and upon the top of which is placed the cover B, which has an opening through its center for the vertically-moving shaft to pass through. Upon the top of this cover is secured the frame C, in which the operating-shaft D is journaled. This shaft D is made to revolve continuously in one direction and is provided with a wheel or handle at its outer end and the pinion F, which

is rigidly secured to its inner end, and which pinion has about eight teeth formed upon it, all of which are regular.

Passing down through the top of the cover 55 and through the inner end of the frame C is the shaft G, which has only a rotary movement, and which shaft is provided with a supporting-flange H upon its lower end and has its upper end made square, while its lower 60 one is made round and is provided with the fins I for the purpose of preventing the stirrer J from turning independently of the shaft. The round portion of the shaft G may either extend up through the frame C or the round 65 portion may stop below the top of the tub and the revolving collar K be applied to the shaft. This collar, having a square opening to correspond to the shaft and being round upon its outer side, is made to rotate in the 70 frame C, as shown. Applied to the upper end of this shaft G is a second collar *a'*, which is similarly shaped to the one K, and just above this collar through the shaft is passed the pin M, which serves to support the shaft 75 and its attachments in position. By removing this pin M the shaft will drop, and then the parts connected therewith can be readily removed.

Placed loosely upon the square portion of 80 the shaft G is a vertically-sliding casting N, which has its two ends formed into two beveled wheels *a b*, which have the teeth set facing each other and which are alike, with the exception of the flange O upon the lower end, 85 and which wheels alternately engage with the pinion F, the upper one of the two wheels causing the shaft G to revolve in one direction and the lower one causing it to revolve in the opposite one. Both of these wheels 90 are provided with about fifteen teeth, all of which are alike, with the exception of three upon one side. The central one, P, of these three is larger and higher than either one of the two, Q, next to it; but these two teeth Q 95 are higher than the other twelve teeth, and the recesses between each of these teeth Q and the next following teeth are not as deep as those between the other twelve teeth. The object in making the three teeth P and Q as 100 here shown is to make the ascent from the twelve regular teeth to the highest one, P,

gradual, so that as the teeth of the pinion approach the tooth P the movement will be regular, and thus avoid all jarring of the parts. The pinion causes each of the two wheels at the end of the casting L to revolve evenly until the teeth P and Q are encountered, and then the teeth Q, being higher than the other twelve, begin to force the casting N in an endwise direction upon the shaft G, and when the tooth P is reached, which is larger and higher than any of the others, this tooth P strikes against and rides on the top of one of the teeth upon the pinion, and thus forces the casting N endwise upon the shaft G until the side of the opposite tooth P contacts with the side of another one of the pinion-teeth, the parts being so arranged that the other wheel on the opposite end of the casting is then in position to gear with the pinion F, and thus instantly reverse the movement of the shaft. The rotary movement of the shaft G and the casting N continues until this tooth P strikes upon the pinion, and then the endwise movement of the shaft takes place and immediately the rotary movement is reversed.

The two wheels *a b* are exactly alike, with the exception that the one *b* has a flange O, which extends about three-quarters of the distance around its lower edge, and then the flange is cut away, as shown, and has its ends beveled so as to correspond to the bevel upon the ends of the top support U. Upon the side of the frame C next to the shaft G the two supports U V are formed, the upper one serving to support the casting N in its raised position and the lower one serving to regulate the distance the casting shall drop and at the same time assist the pinion in supporting the weight of the casting. When the shaft and casting revolve until the opening in the flange O is reached, the tooth P on the lower wheel *b* causes the casting to sink upon the shaft until the upper wheel *a* comes in contact with the pinion, and then the flange O rests upon the lower support V and revolves thereon. When the tooth P on the upper wheel *a* strikes the pinion and forces the casting N upward, the flange O catches upon the upper support U. These supports prevent the casting from coming in contact with such force as to cause the pinion to be hard to turn. Were it not for the upper support the weight of the casting would cause the upper wheel *a* to remain in contact with the pinion, except when its tooth P causes the casting to rise.

The stirrer J, being placed loosely upon the shaft G, automatically adjusts itself to the height of the clothes in the tub; but owing to the fins I it can only revolve in either direction as the shaft G is turned.

By making the casting vertically adjustable independently of the shaft the parts can be more readily taken apart and put together, and the ease of operation is greatly increased, because the shaft does not have to be raised and the operating mechanism is placed in a compact operative position.

Having thus described my invention, I claim—

1. In a mechanical movement, a continuously-revolving shaft and a pinion upon its inner end, combined with a vertical shaft having a rotary movement, and which shaft is made angular at its upper end, a casting loose upon the shaft and provided with teeth of unequal size upon both of its ends, and which casting is adapted to have a rising-and-falling movement upon the shaft; the two toothed wheels of the casting being adapted to alternately come in contact with the pinion, and thus reverse the movement of the shaft, substantially as shown.

2. In a mechanical movement, a continuously-rotating shaft provided with a pinion upon its inner end; the shaft G and the casting N loose upon and adapted to have a rising-and-falling movement upon the shaft, but revolving therewith; each end of the casting being provided with wheels which face toward each other, and having the teeth P Q of greater height than the other teeth, substantially as described.

3. The continuously-rotating shaft D, provided with the pinion F, the vertical shaft G, the casting N placed loosely thereon and adapted to have a rising-and-falling movement upon the shaft but turning therewith, each end of the casting being provided with wheels which are set facing each other, the teeth being of unequal size; and the flange upon the lower end of the casting; and the supports U, V, upon the frame, substantially as set forth.

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

HENRY F. BRAMMER.

Witnesses:

T. A. MURPHY,
I. C. ANDERSON.