

(No Model.)

J. S. FREESE.  
Mechanical Movement.

No. 239,480.

Patented March 29, 1881.

Fig. 1.

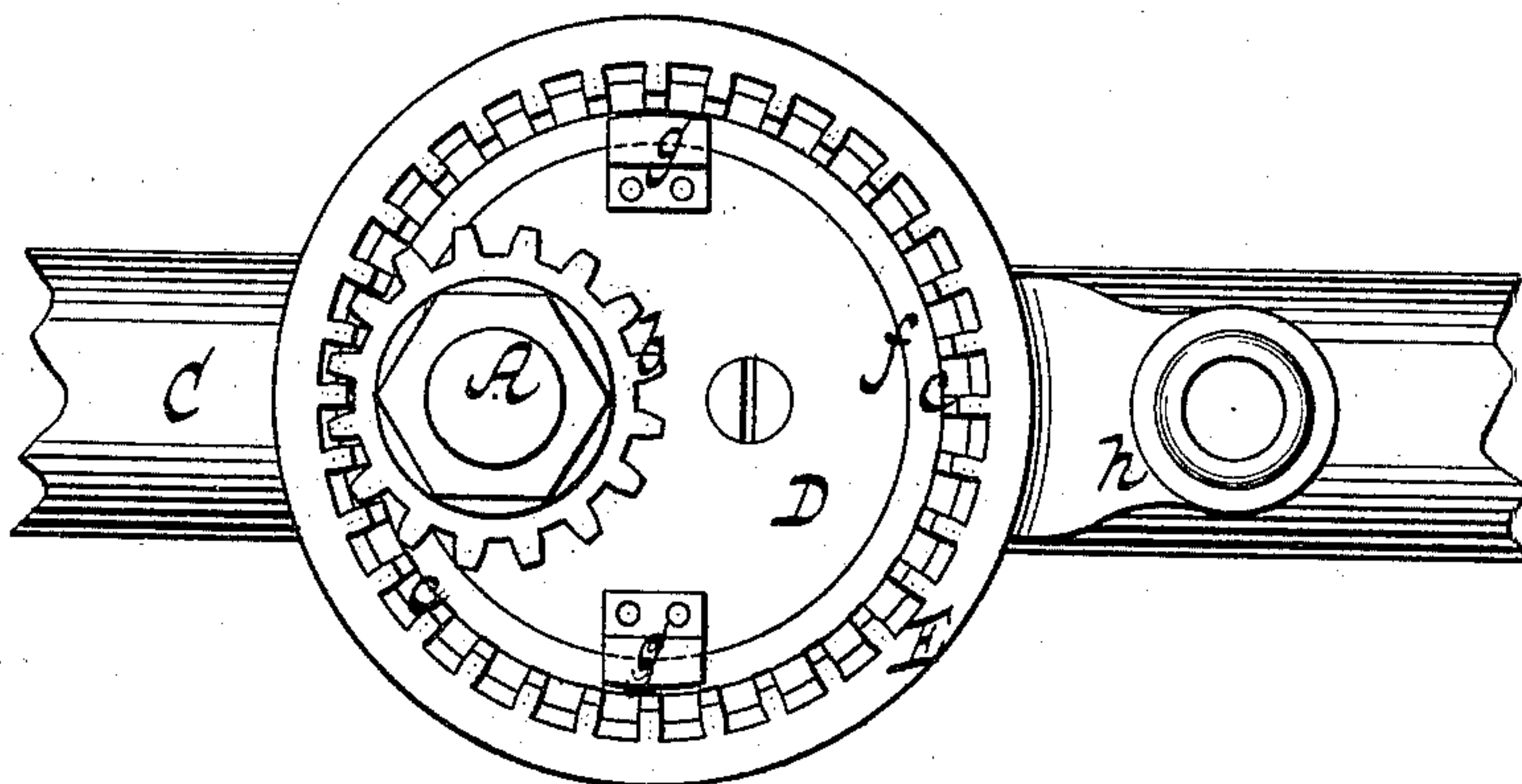
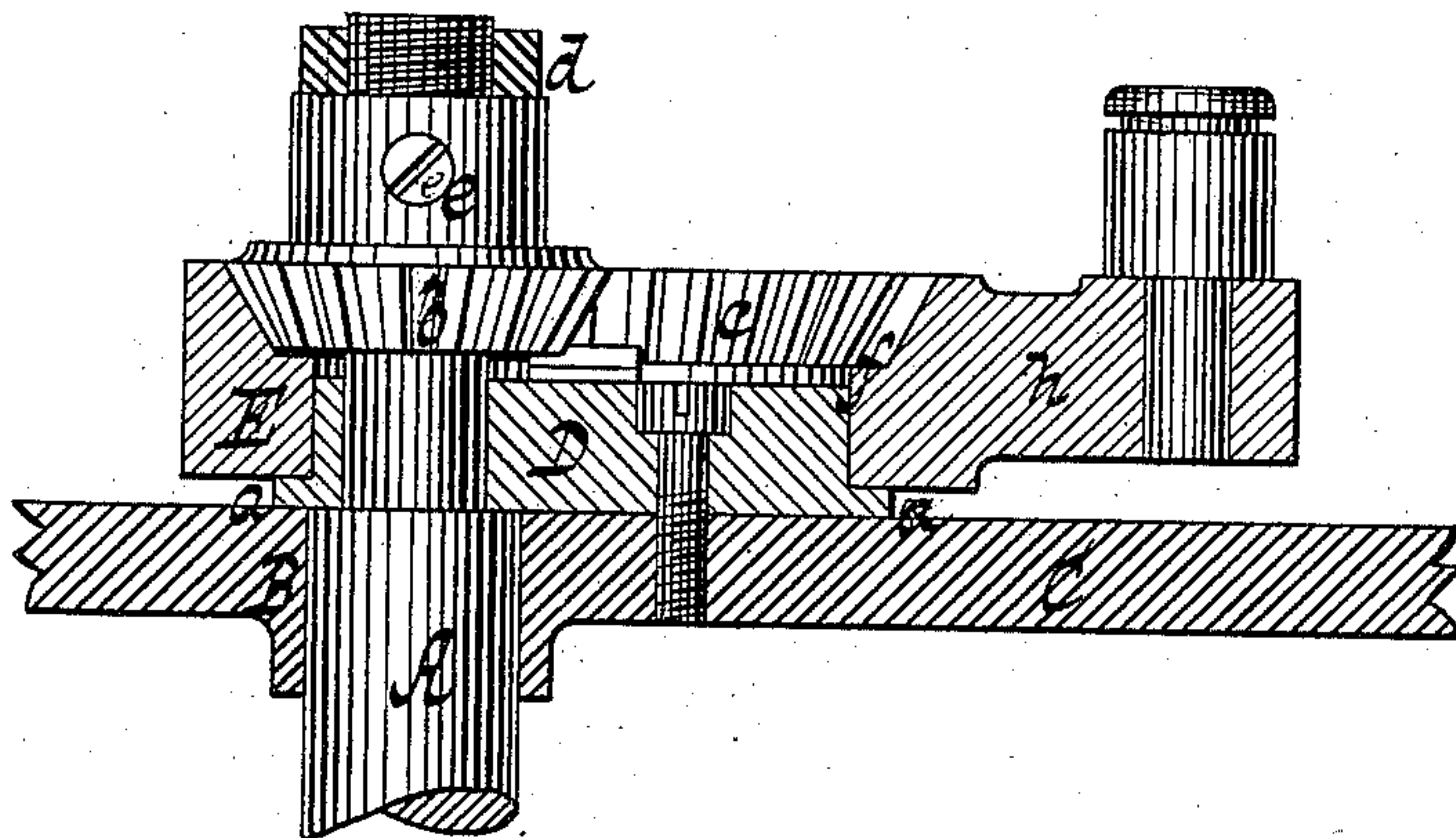


Fig. 2.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 239,480, dated March 29, 1881.

Application filed February 23, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN S. FREESE, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Mechanical Movements, of which the following is a specification.

This invention consists in the combination, with a shaft to which a revolving motion is to be imparted, of a circular disk which is firmly secured to or forms part of the bearing of the shaft, and is in an eccentric position in relation thereto, a ring which fits the circular disk and can be rotated thereon, and which is provided with an internal gearing and a pinion mounted on the shaft and engaging with the internal gearing of the ring, so that by rotating the ring a revolving motion is imparted to the shaft, or vice versa, and that by the circular disk and the ring the gearing is fully protected against extraneous substances from that side where the shaft extends. The ring is provided with an arm for imparting to it a revolving motion, and it is retained in position on the circular disk by brackets secured to said disk, and extending over a circular rim or shoulder formed in the interior of the ring.

My invention is illustrated in the accompanying drawings, in which Figure 1 represents a face view. Fig. 2 is a transverse section in the plane  $xx$ , Fig. 1.

Similar letters indicate corresponding parts.

In the drawings, the letter A designates a shaft to which a revolving motion is to be imparted, and which rests in a bearing, B, of any suitable construction. In the example shown in the drawings this bearing consists of a hole bored through an arm or standard, C, and to this arm is firmly secured a circular disk, D, in an eccentric position relatively to the shaft A, as shown in the drawings. On this circular disk is fitted a ring, E, which rests on a flange,  $a$ , projecting from the inner edge of the disk, so that no extraneous substances can find their way from the inside into the interior of the ring. The shaft A extends through the circular disk D, and on its outer end is mounted a pinion,  $b$ , which engages with an internal gear,  $c$ , formed on the inner surface of the ring E.

The cogs of the pinion and of the internal gear may be straight; but I prefer to use bevel-

gears, as shown in the drawings, and the shaft A is provided at its outer end with a screw-thread and nut,  $d$ , so that the pinion  $b$  can be adjusted on the shaft in case the cogs wear out. A set-screw,  $e$ , retains the pinion in the required position.

In the interior of the ring is formed a circular ring or shoulder,  $f$ , and on the disk D are secured two or more brackets,  $g$ , which extend over said shoulder, so as to retain the ring E on the disk D.

In the example shown in the drawings the diameter of the pitch-circle of the pinion  $b$  is one-half of that of the pitch-circle of the internal gear,  $c$ , so that for each revolution of the ring E the pinion  $b$  and its shaft A make two revolutions. It is obvious that the proportion between these diameters can be varied to suit circumstances.

From the ring E extends an arm,  $h$ , which serves to turn said ring. For this purpose said arm may be connected with any suitable driving mechanism.

My mechanical movement is intended particularly for button-hole sewing-machines, and it is so constructed that the material to be sewed, or threads or fibers which may become disengaged therefrom, are effectually prevented from finding their way between the gears  $b$   $c$ ; but it may also be applied to other classes of machinery.

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

1. The combination, substantially as hereinbefore described, with the shaft to which a revolving motion is to be imparted, of the circular disk which is firmly secured to or forms part of the bearing of the shaft, and is in an eccentric position in relation thereto, the ring which fits the circular disk and can be rotated thereon, and which is provided with an internal gearing, and the pinion which is mounted on the shaft and engages with the internal gearing of the ring.

2. The combination, substantially as hereinbefore described, with the shaft to which a revolving motion is to be imparted, of the circular disk which is firmly secured to or forms part of the bearing of the shaft, and is in an eccentric position in relation thereto, the ring which fits the circular disk and can be rotated



thereon, and which is provided with an internal gearing, the pinion which is mounted on the shaft and engages with the internal gearing of the ring, and the flange which projects from the disk and overlaps the inner edge of the ring.

3. The combination, substantially as hereinbefore described, with the shaft to which a revolving motion is to be imparted, of the circular disk which is firmly secured to or forms part of the bearing of the shaft, and is in an eccentric position in relation thereto, the ring which fits the circular disk and can be rotated thereon, and which is provided with an internal gearing, the pinion which is mounted on the shaft and engages with the internal gearing of the ring, and the arm which extends from the ring and serves to impart motion to the same.

4. The combination, substantially as herein-

before described, with the shaft to which a revolving motion is to be imparted, of the circular disk which is firmly secured to or forms part of the bearing of the shaft, and is in an eccentric position in relation thereto, the ring which fits the circular disk and can be rotated thereon, and which is provided with an internal gearing, the pinion which is mounted on the shaft and engages with the internal gearing of the ring, the circular ring or shoulder formed on the inner circumference of the ring, and the brackets which are secured to the disk and catch over said rim.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

JOHN S. FREESE. [L. S.]

Witnesses:

J. HERMANN WAHLERS,  
CHAS. WAHLERS.