

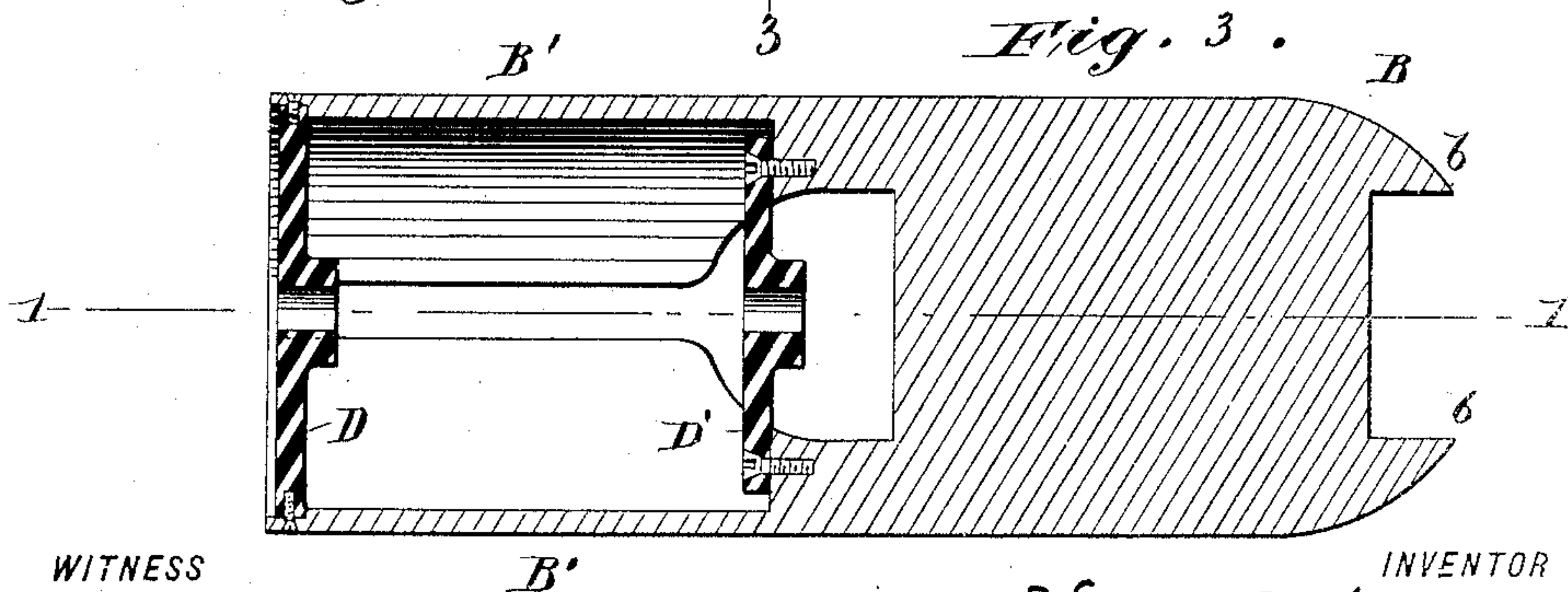
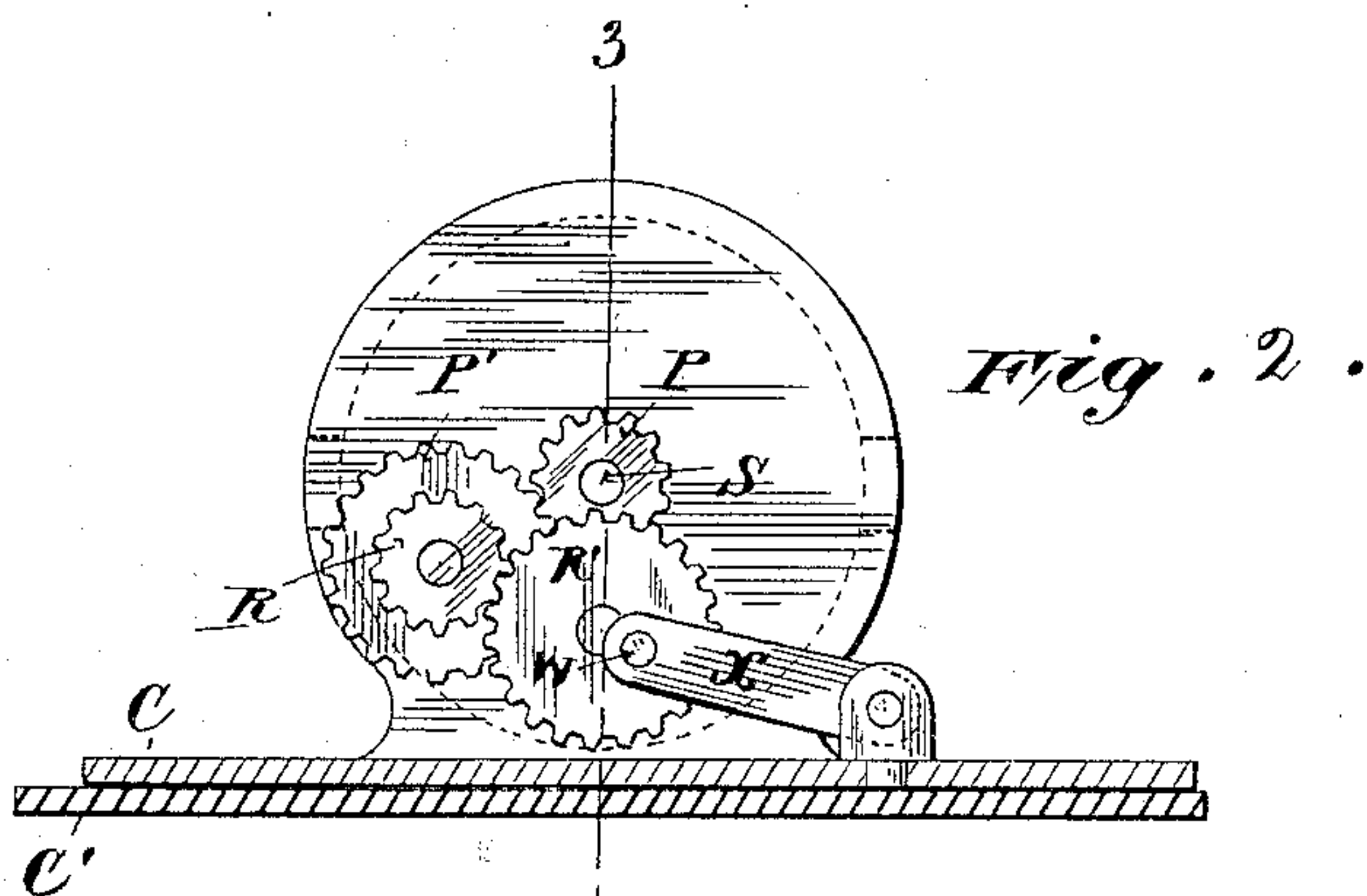
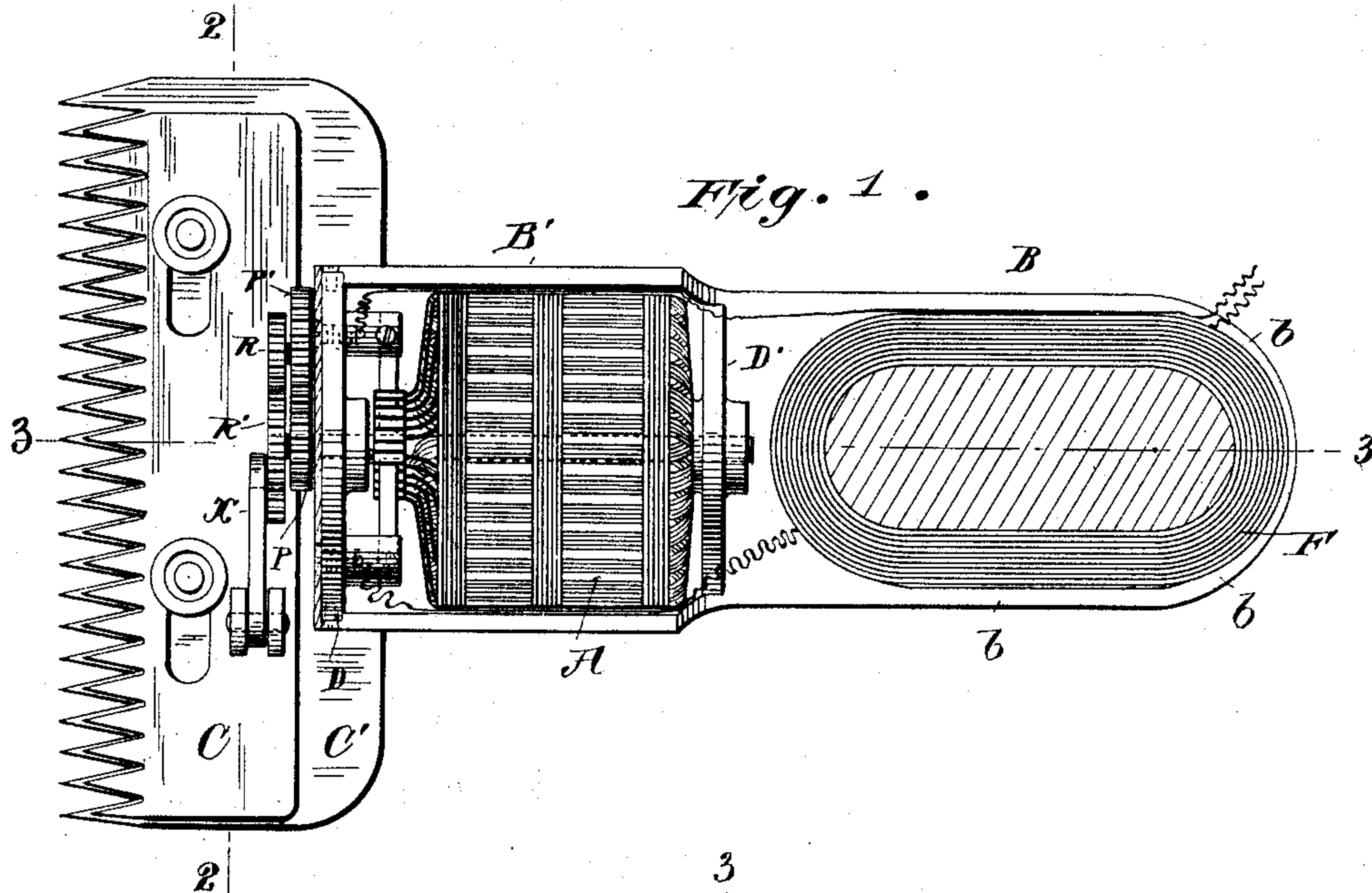
No. 621,560.

Patented Mar. 21, 1899.

W. P. FREEMAN.
MECHANICAL CLIPPER.

(Application filed Feb. 25, 1898.)

(No Model.)



WITNESS
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UNITED STATES PATENT OFFICE.

WARREN P. FREEMAN, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE EMPIRE ELECTRICAL MACHINERY COMPANY, OF NEW JERSEY.

MECHANICAL CLIPPER.

SPECIFICATION forming part of Letters Patent No. 621,560, dated March 21, 1899.

Application filed February 25, 1898. Serial No. 671,688. (No model.)

To all whom it may concern:

Be it known that I, WARREN P. FREEMAN, of New York, in the State of New York, have invented certain new and useful Improvements in Mechanical Clippers, of which the following is a description, referring to the accompanying drawings, which illustrate one preferred embodiment of the invention and form a part of this specification.

The object of the invention is to produce an electrically-operated clipper which may be extremely simple in construction and convenient in operation.

In the drawings, Figure 1 is a central cross-section through the handle or frame of the apparatus. Fig. 2 is a cross-section on the plane 2 2 of Fig. 1, and Fig. 3 is a cross-section of the field-magnet on the plane 3 3.

Throughout the drawings like letters of reference indicate like parts.

The field-magnet B preferably consists of a single casting, as shown, and provided with the projecting pole-pieces B', which inclose the armature A. The field-magnet coil F is wound around the core of the field-magnet, so as to be protected by the overhanging projection b. The field-magnet therefore not only protects the armature, but the greater part of the field-coil as well. The shaft of the armature A is supported in the two non-magnetic bearing disks or plates D D', which are secured directly to the field-magnet. The commutator-brushes and brush-holders may be secured to one of these plates or disks and the circuits arranged in the usual manner. These electric features of my invention may be widely varied to suit different electrical conditions, and I make no point of these details. The shaft of the armature S carries a pinion P on its outer end which meshes with the gear or pinion P'. Pinion R, turning with pinion P', meshes with gear or pinion R', which carries a wrist-pin or crank W. This wrist-pin W gives reciprocating motion to the cutter-bar C by means of a connecting rod or pitman X. The lower cutter-bar C' is preferably secured directly to one of the pole-pieces B'. The details of the cutter-bars need not differ in any material respect from familiar types used for clipping animals.

From the foregoing description and drawings it will now be seen that the field-magnet and indeed all parts of the electric motor are contained within a cylindrical outline and form, in fact, a cylindrical handle by which the instrument may be grasped. I prefer to make the parts in approximately the proportions shown in the drawings, the handle being only about two inches or less in diameter. If the handle is covered by a thin protecting material, as is usual in portable motors, it may still be within two inches in diameter. It will also be seen that the shaft of the motor corresponds to the axial line of the cylinder and that the gears upon the forward end of the cylinder—that is to say, upon the disk D—form reduction-gearing between the shaft of the motor and the clippers. By means of the present invention I have attained extreme simplicity both in construction and operation.

I claim, and desire to secure by these Letters Patent as the novel features of my invention, the following:

1. An electrically-operated clipping mechanism combining *inter alia* a field-magnet presenting a substantially cylinder-like exterior and forming the frame and handle of the mechanism, a field-magnet coil F wound longitudinally of and included within the outlines of such cylinder, one or more non-magnetic transverse disks or supports secured to the said field-magnet, an armature and armature-shaft coaxially and concentrically mounted within the said cylinder upon the said supports and cutting mechanism comprising a fixed member carried by and secured to one of the pole-pieces of the said magnet, a movable member supported by and sliding upon the fixed member, and operating connections from the armature-shaft to the movable member, substantially as set forth.

2. An electrically-operated clipping mechanism including in combination the following: a field-magnet core and coil provided with pole-pieces which extend laterally from the core and form therewith the frame of the mechanism, an armature supported between the said pole-pieces and at one side of the said core and coil, two relatively-movable cut-

ters, one of which is secured to and supported solely by one pole-piece of the magnet, and the other of which is operatively connected to the said armature-shaft, substantially as set forth.

3. An electrically-operated clipping mechanism including in combination the following: a field-magnet core and coil provided with pole-pieces which extend laterally from the core and form therewith the frame of the mechanism, an armature supported between the said pole-pieces and at one side of the said core and coil, two relatively-movable cutters, one of which is fixed across and secured to one pole-piece, and the other of which is mounted to slide upon the first, and a pitman

pivotally secured at one end to the sliding cutter and at its other end provided with a wrist-pin connection actuated by the said armature-shaft, whereby the transverse cutter movement will take place in the immediate vicinity of the said pole-piece, and the magnet with its pole-pieces form a convenient handle as well as frame for the said mechanism, substantially as set forth.

In testimony whereof I have hereunto set my hand this 14th day of February, 1898.

WARREN P. FREEMAN.

Witnesses:

FREDERICK H. DAVIS,
HAROLD BINNEY.