

(No Model.)

2 Sheets—Sheet 1.

W. W. SHEARER.
WIRE DRAWING DRUM.

No. 353,975.

Patented Dec. 7, 1886.

Fig. 1-

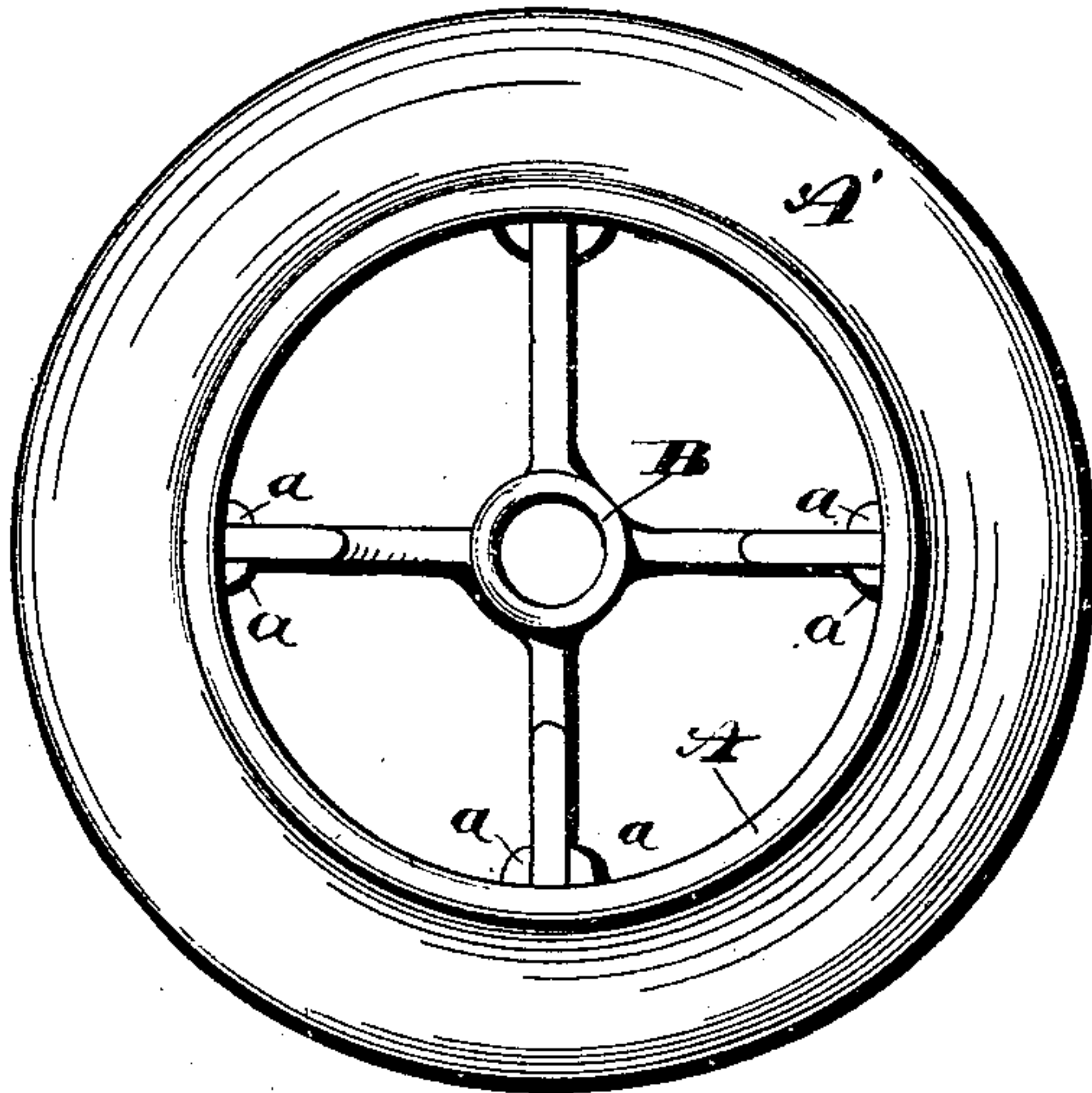


Fig. 2-

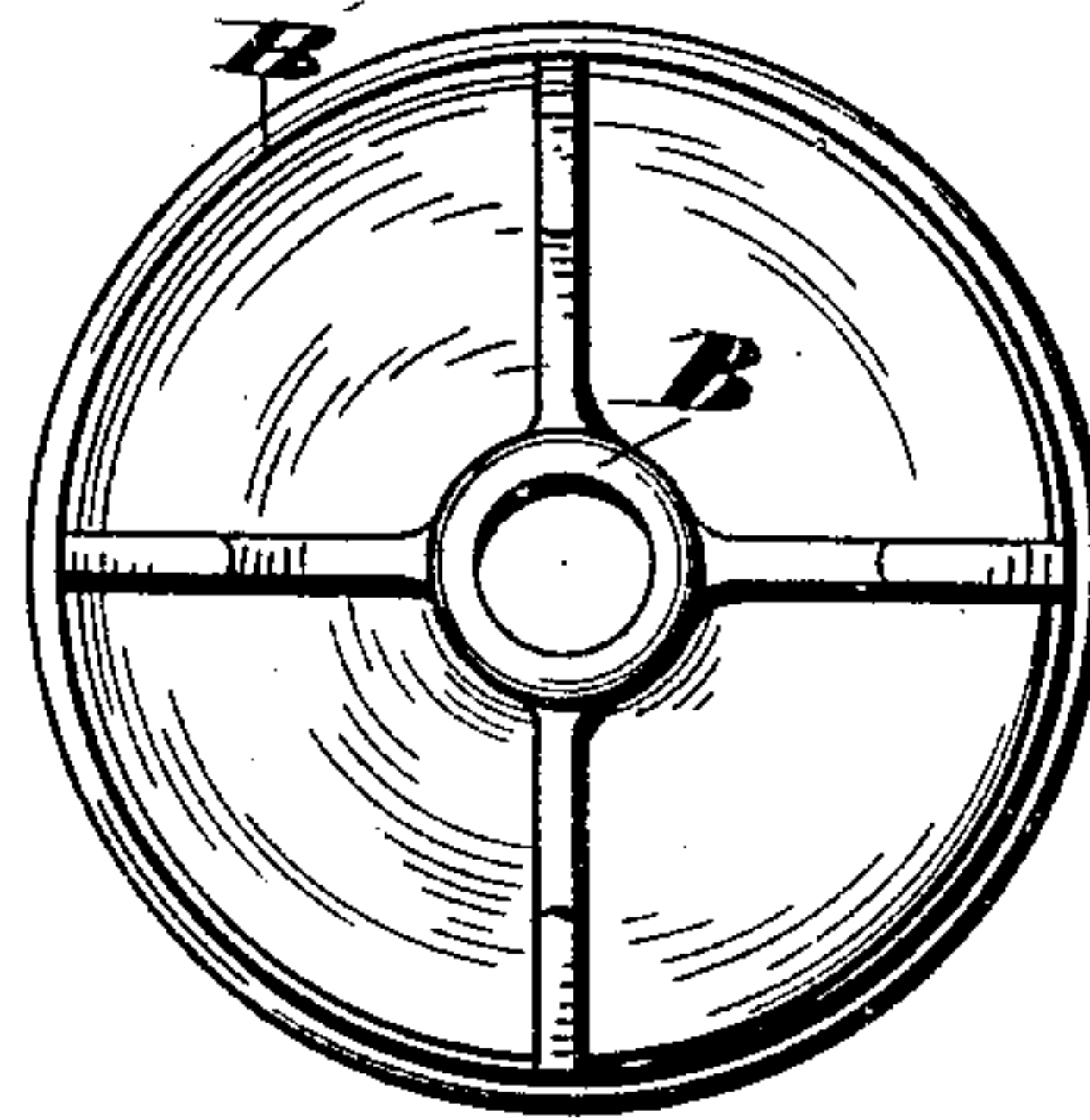


Fig. 3-

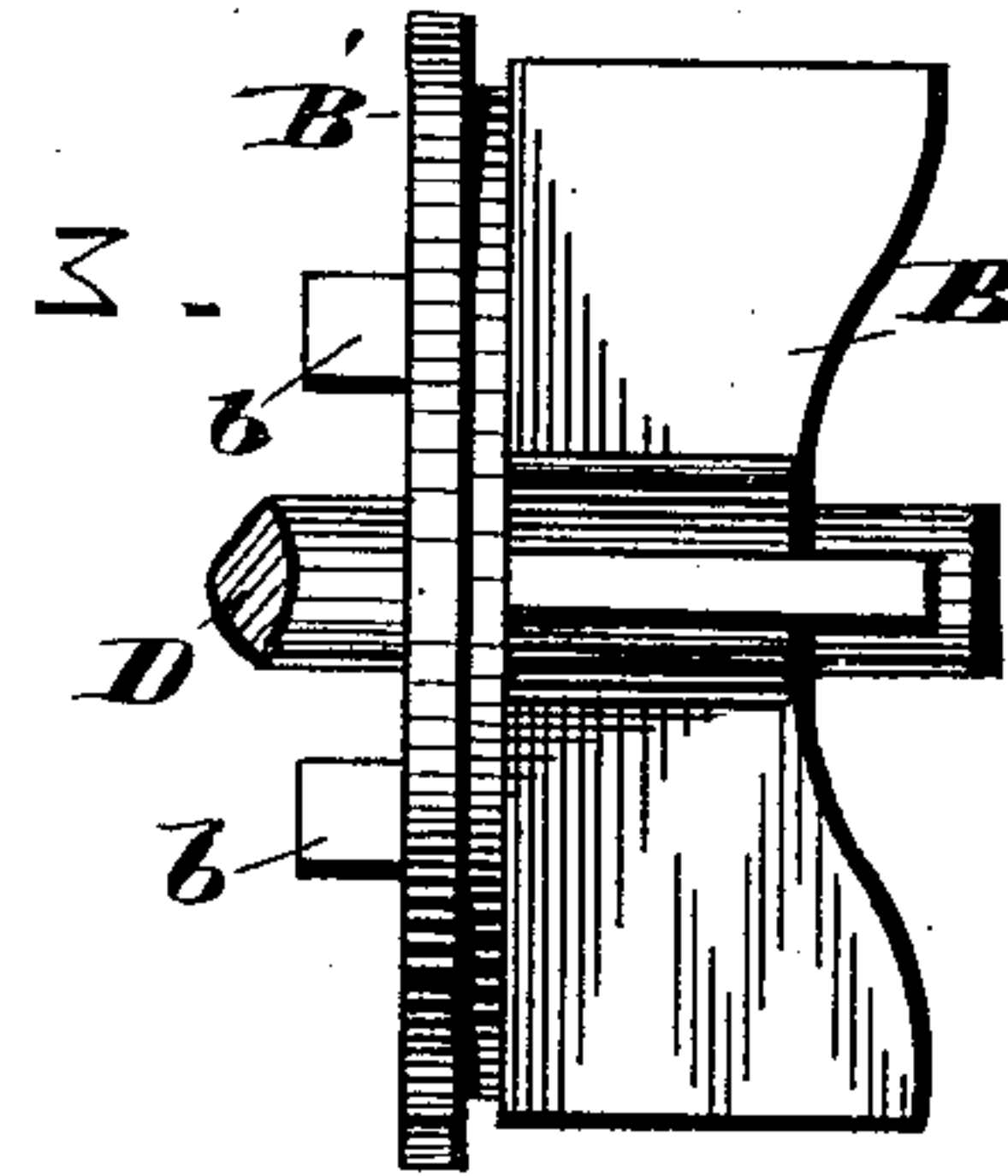


Fig. 4-

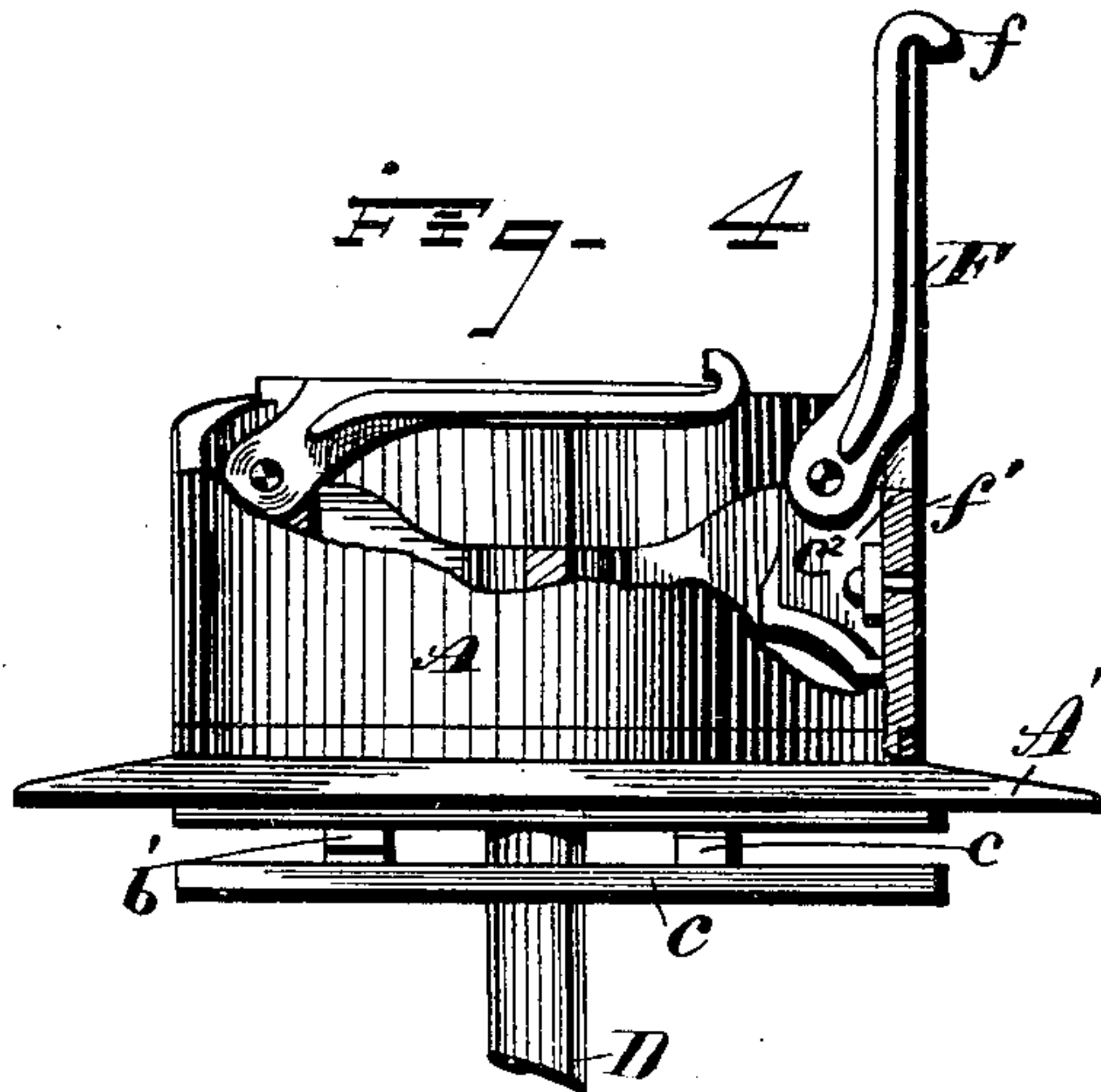
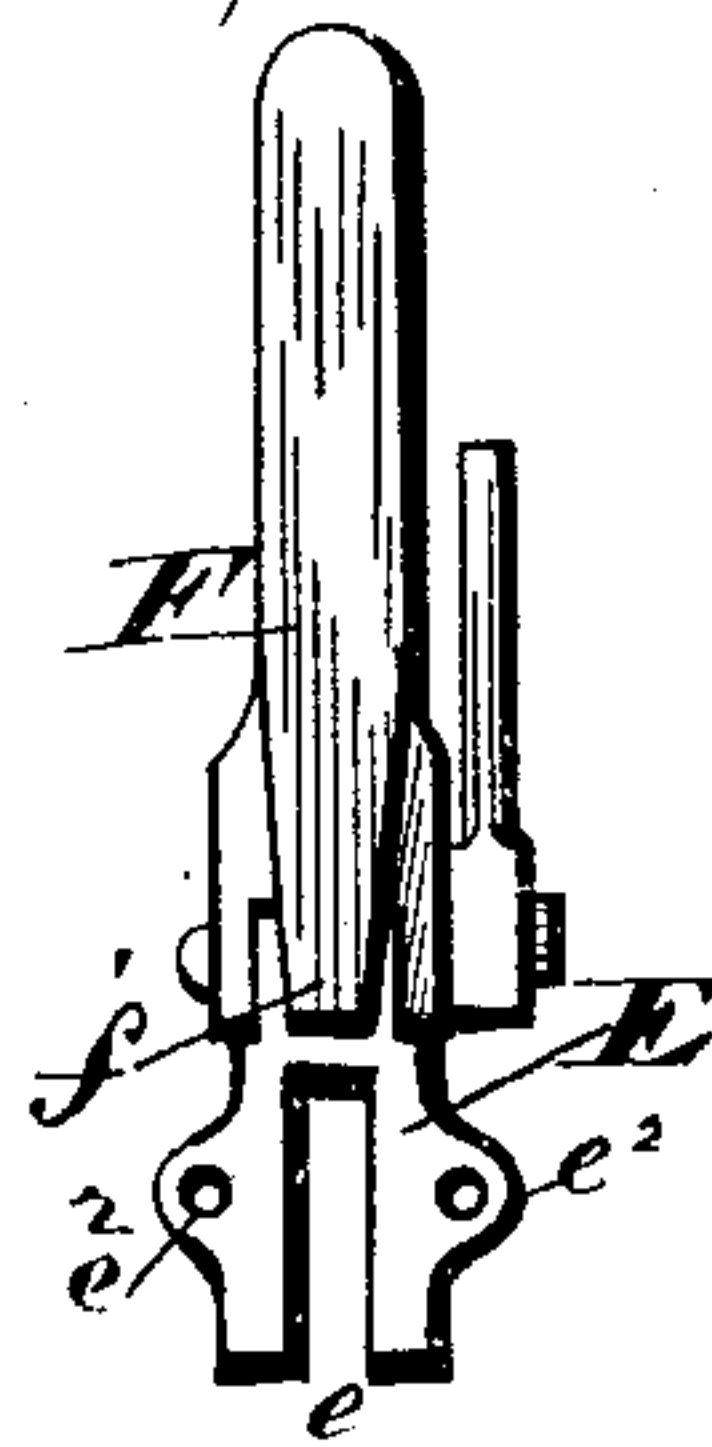


Fig. 5-



WITNESSES

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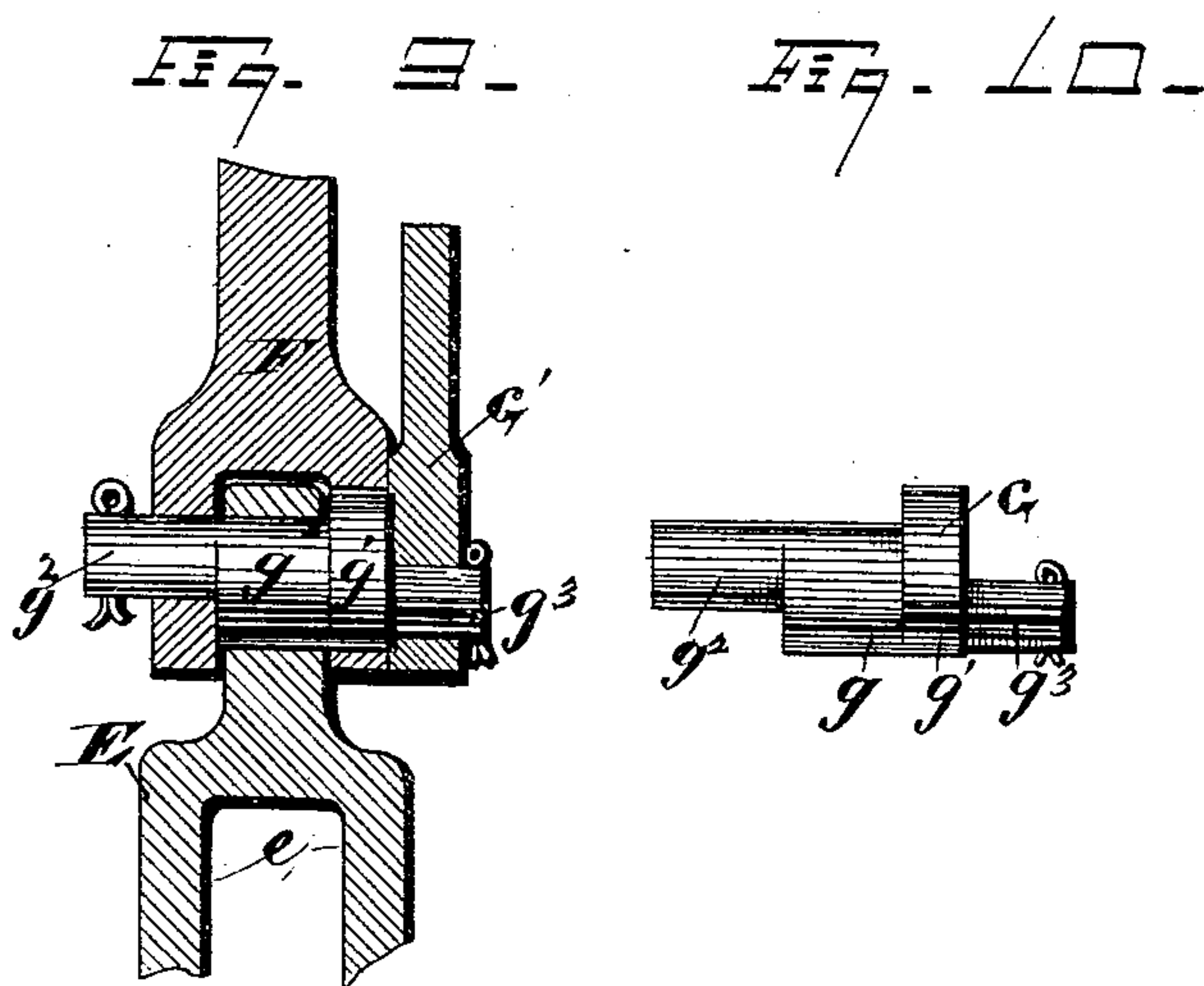
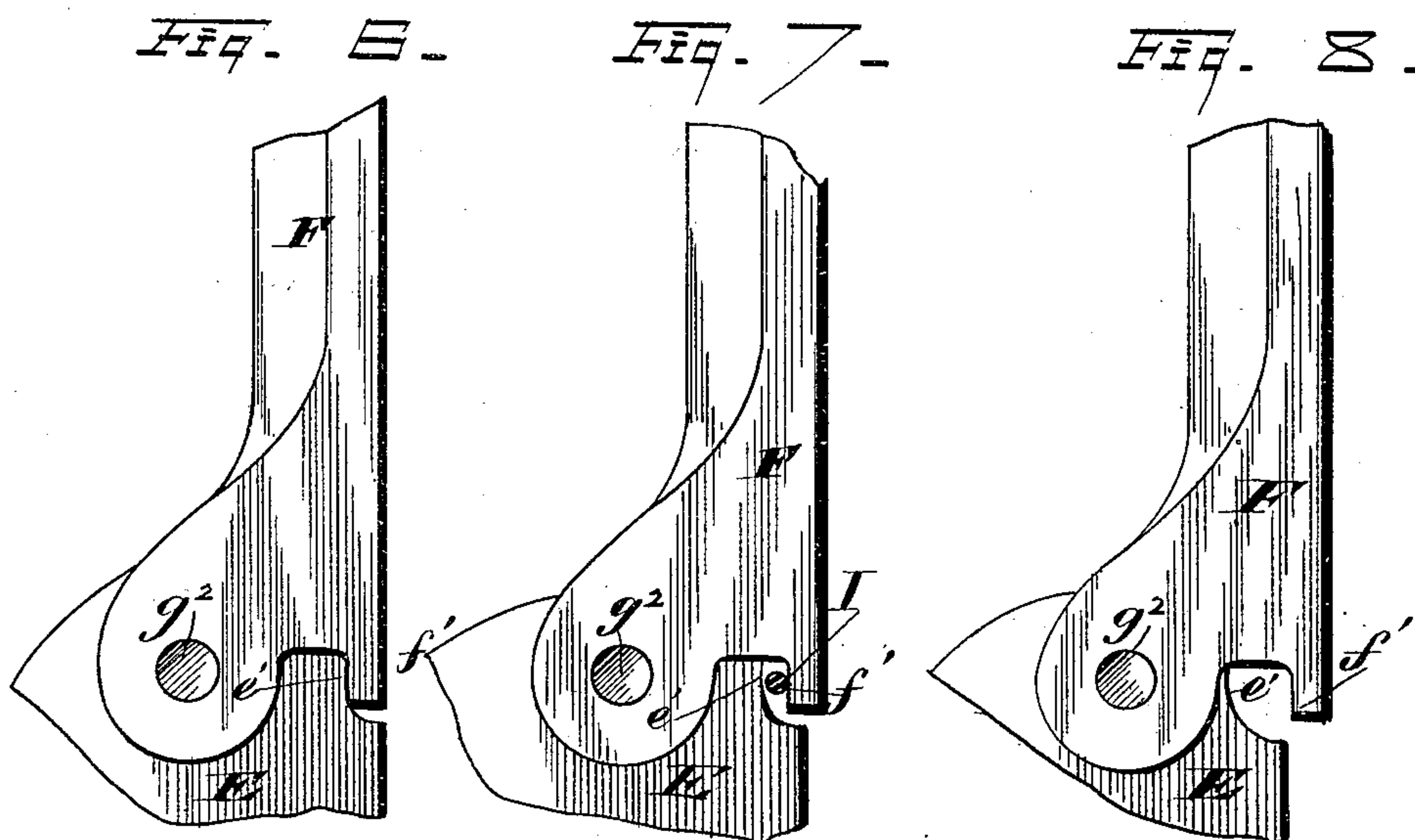
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UNITED STATES PATENT OFFICE.

WILLIAM WATTS SHEARER, OF CLEVELAND, OHIO.

WIRE-DRAWING DRUM.

SPECIFICATION forming part of Letters Patent No. 353,975, dated December 7, 1886.

Application filed May 3, 1884. Serial No. 130,232. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WATTS SHEARER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Wire-Drawing Drums; and I do hereby 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 pertains to make and use the same.

My invention relates to wire-drawing "drums" or "blocks," so called, the object being to provide a drum in two parts, the lower part made of chilled iron to make it more durable.

A further object is to make the drum detachable from the hub and arms to make it lighter to handle.

A further object is to provide adjustable arms or wire-guards secured to the drum and projecting upward, to keep the wire from flying off about the drum.

A further object is to arrange one or more of the adjustable arms so as to form a clamp for holding the end of the wire.

With these objects in view my invention consists in certain features of construction, and in combination of parts, hereinafter described, and pointed out in the claims.

Wire-drawing drums have heretofore usually been made much like an ordinary flanged pulley with the drawing-arms integral with the drum and made of ordinary cast-iron with pendent lugs that engaged the upwardly-projecting lugs of a driving-disk below, that was attached to the driving shaft. The driving-shaft extended up through the hub of the drum with an easy fit, so that the drum could be lifted from the shaft, which was frequently necessary. There were serious objections to this construction. The wire first engaged the drum next to the flange, and a groove was soon worn around the drum that prevented the wire from slipping along up the drum, as was necessary. The face of the drum had therefore frequently to be turned off to the depth of this groove that had been worn therein. The rim of the drum had therefore to be made much thicker than would otherwise have been necessary. The drum and arms together were so heavy that it was not convenient to lift them.

With my improved device the arms are made separate from the rim, and are held in position

by ribs on the inside of the rim that embrace the ends of the arms, by means of which the rim and flange may be lifted, while the arms remain in place on the shaft. The flange and rim are made separate, and the former is of chilled iron that will wear for a long time, and when it eventually becomes grooved may be renewed without renewing the rim or drum proper. These parts are halved together in a manner hereinafter shown. As the drum becomes filled with wire the latter is liable to fly off above the drum and become tangled. To prevent this various rude devices have been had, such as setting sticks inside of the drum between the arms.

I have invented adjustable arms or wire-guards that when in an upright position extend some distance above the face of the drum, and preferably with hooked ends extending outward, and by means of these arms the wire is kept in a coil without being tangled. These arms may be folded down inside of the drum when the coil of wire is to be renewed. One or more of these arms is provided with eccentric fulcrum-pins, and so arranged that it acts as a clamp to hold the end of the wire or to hold the arm upright.

In the accompanying drawings, Figure 1 is a plan view of my improved wire drum or block and removable spider. Fig. 2 is a plan view of the spider. Fig. 3 is an elevation of the spider turned on its side and with a portion of the driving shaft attached. Fig. 4 is an elevation of the drum with a portion of the rim broken away to show the manner of attaching the adjustable arm or wire-guards. Fig. 5 is a front elevation of an adjustable arm or guard and the attachment by which it is secured to the drum. Fig. 6 is a side elevation of a portion of the guard and supporting-bracket in a locked position. Fig. 7 is an elevation of the same, showing a wire gripped between the jaws. Fig. 8 is an elevation of the same with the jaws separated so that the arm or guard may be tilted or turned down inside the drum. Fig. 9 is a transverse vertical section of the guard, bracket, and lever and in elevation the eccentric-pin. Fig. 10 is an elevation of the eccentric-pin.

A represents the rim or drum proper, and A' the flange made as aforesaid of chilled iron, and the two parts are dovetailed or interlocked together, as shown in Fig. 4, and

may be united; but a tight fit is all that is necessary to secure them. The rim on the inside has attached the vertical ribs *a*, arranged in pairs to embrace the ends of the arms of the spider B. This spider may have any number of arms desired. In large drums or for heavy work four arms are preferable, as shown in Figs. 1 and 2. In small drums or for light work two arms will answer. The spider is provided with the disk B', that has attached the pendent driving-lugs *b*, that engage the lugs *c* on the driver C, that is secured to the driving-shaft D. With this construction the parts A and A', that are made very light, may be lifted off, while the heavier part, B, and attachments remain on the driving-shaft.

E are brackets slotted at the bottom, as shown at *e*, Figs. 5 and 9, to embrace an arm of the spider and are preferably secured thereto, but are provided with the ears *e*², that project laterally from opposite sides, by means of which the bracket may be attached to the rim of the drum in cases where this attachment is applied to old drums, the arms of which are not of suitable shape for attaching the brackets.

To the brackets E are pivotally attached the arms F, that may be tilted to an upright position, as shown on the right hand in Fig. 4, or may be turned down inside the rim of the drum, as shown on the left hand in the same figure. Two of these brackets and attachments are secured on opposite sides of the drum. The arms in their raised position preferably curve outward at *f*, so that the wire will not rise above the arms. When the wire is to be removed, the arms are folded down inside the drum.

The arms F are slotted and embrace the bracket E, as shown in Figs. 5 and 9, and are pivoted thereto by the eccentric-pin G, an enlarged view of which is shown in Fig. 10. The central part, *g*, fits in a hole in the bracket E, and the parts *g*¹ and *g*², that are eccentric with the part *g*, but concentric with each other, fit, respectively, in holes in the sides of the arm. A part, *g*³, is squared to receive the lever G', by means of which the pin G may be turned in its bearings. The arm F has a part, *f*¹, that overhangs the part *e*¹ of the bracket E. When the arm F and the lever G are in their respective vertical positions, the relation of parts is such that the parts *e*¹ and *f*¹ are separated far enough to insert between them the end of the wire I, that is drawn on the drum. Next, by turning down the lever G' toward the center of the drum the pin G is also turned in its bearings, and by means of the eccentricity of the different parts of the pin the arm F is drawn back toward the center of the drum, causing the part *f*¹ to approach the part *e*¹ until they grip the wire firmly between them, by means of which, when the drum is set in motion, the wire is wound around the drum in the usual manner as it is drawn through the reducing dies. These dies (not shown) are located so that the

wire leads onto the drum next the flange A', and the coil is crowded along up the drum by the wire, that, as it engages the drum, wedges in between the flange and the coil on the drum. When the piece of wire has been drawn through the disk and coiled around the drum, the drum is stopped, the end of the wire is loosened from the clamp by means of the lever G', the arms F are loosened, and the coil is slipped off over the top of the drum. The arm F, that is not used for grasping the wire, is locked in an upright position by turning the lever G' until the parts *e*¹ and *f*¹ engage each other. The rim of the drum is usually cut away when the arms F operate, except in cases when the spiders are of such width that the arms F come above the rim A.

Where wire-drawing drums are already in use, my improved drum, consisting of the rim A and the part A', secured together, may be slipped on over the old drum, by means of which the advantage of these two parts may be had without changing the other parts. In such case also the brackets E may be attached to the new rim A by means of the ears *e*², and the arms F secured and operated as before described.

If the new rim does not extend far enough above the old rim for the attachment of the brackets, the old rim may be cut away.

What I claim is—

1. A wire-drawing drum or block consisting, essentially, of a rim and a flange of harder metal than the rim, the said rim and flange being dovetailed together so as to revolve concentrically on a common axis, substantially as set forth.

2. In a wire-drawing drum, the combination, with a spider or arms detachable from the rim, of the flanged rim divided circumferentially near the flanges, the two parts of the rim properly secured so as to revolve concentrically on the spider, substantially as set forth.

3. The combination, with a wire-drawing drum, of arms, the eccentric or cam pins for pivotally securing the arms in position, and levers for turning the said pins.

4. In a wire-drawing drum or block, wire guards or arms pivoted with eccentric-pins on the inside of the rim in such a manner that the arms may be tilted to an upright position with the faces flush with the faces of the drums, and the arms provided with an overhanging part contiguous to the part to which the arms are pivoted, and so arranged that the arms may be drawn toward the center by the eccentric-pin to form a clamp for holding the end of the wire and for holding the arms in an upright position, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 18th day of April, 1884.

WILLIAM WATTS SHEARER.

Witnesses:

ALBERT E. LYNCH,
CHAS. H. DORER.