

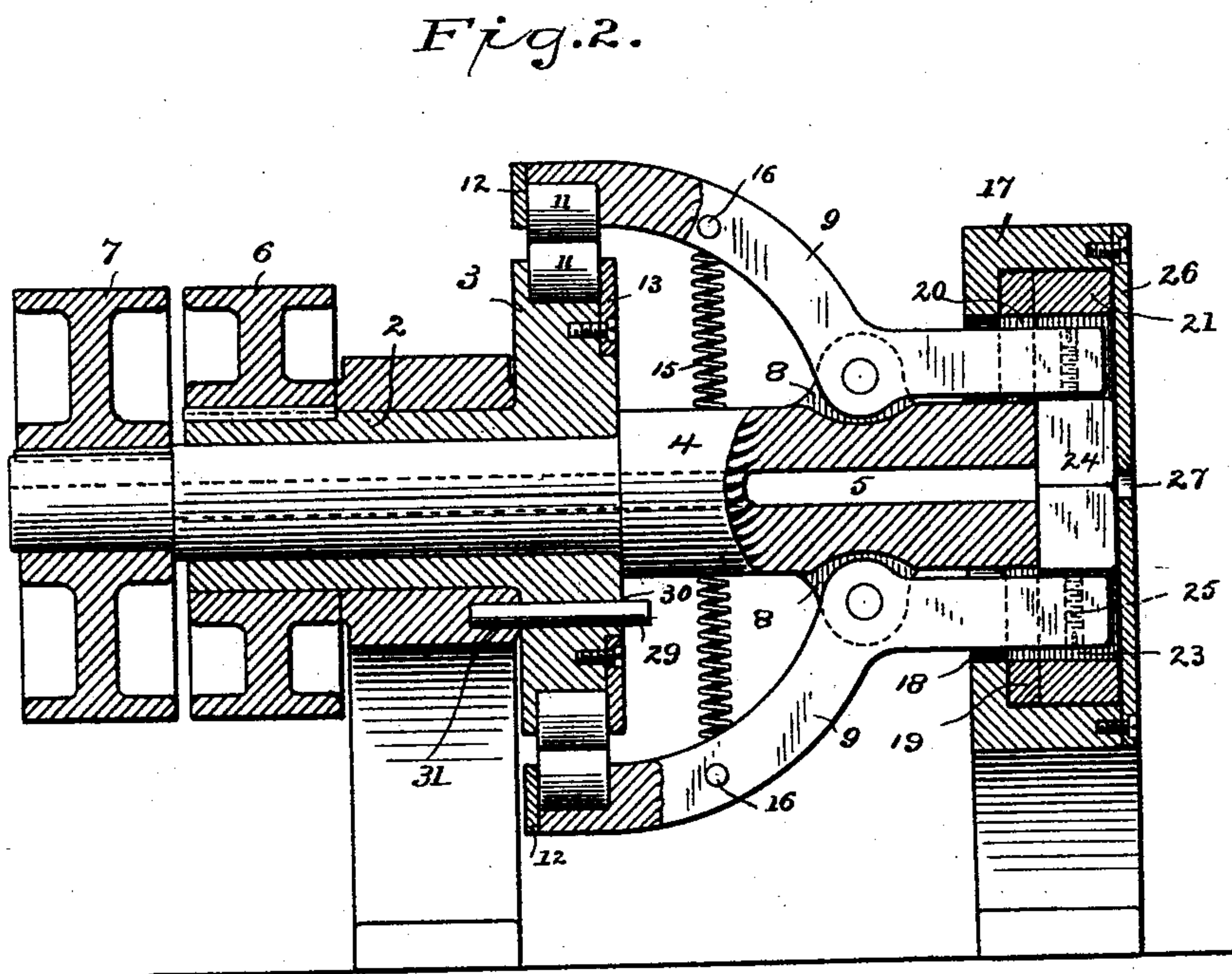
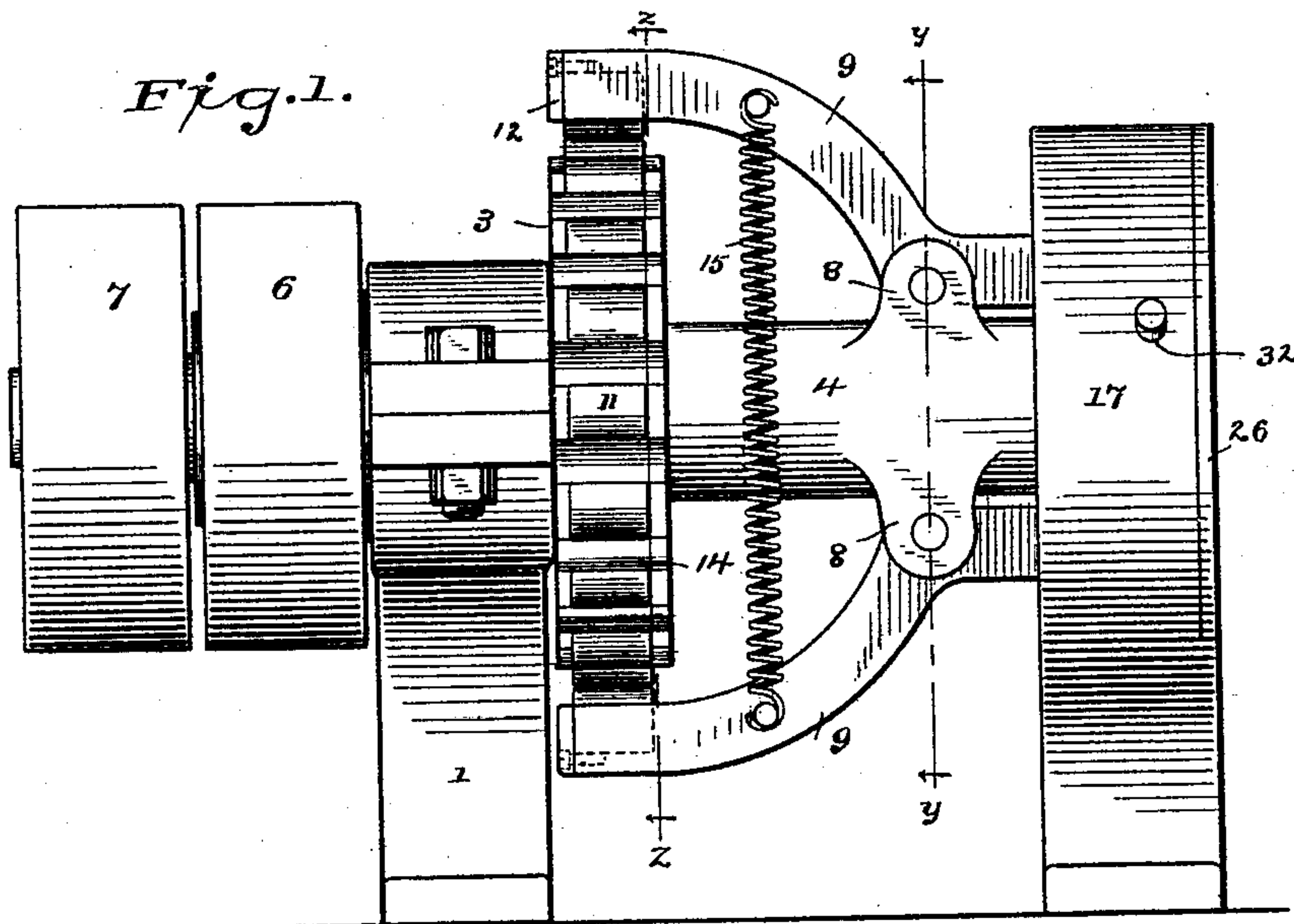
(No Model.)

2 Sheets—Sheet 1.

C. H. YARINGTON.
SWAGING MACHINE.

No. 483,091.

Patented Sept. 20, 1892.



WITNESSES

H. A. Lamb
Jessie Mason

INVENTOR

Charles H. Yarrington
By
J. M. Broster
Atty.

(No Model.)

2 Sheets—Sheet 2.

C. H. YARINGTON.
SWAGING MACHINE.

No. 483,091.

Patented Sept. 20, 1892.

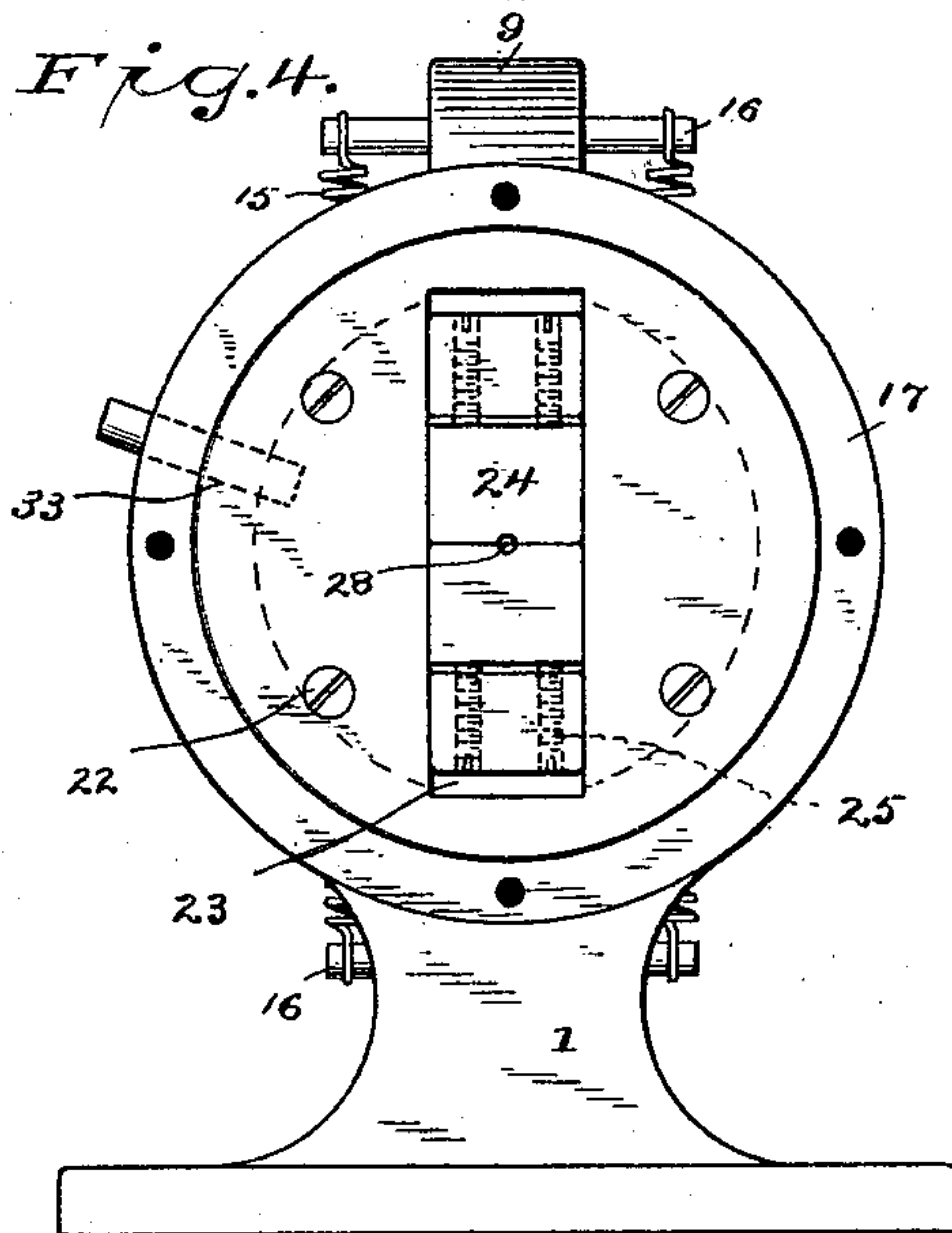
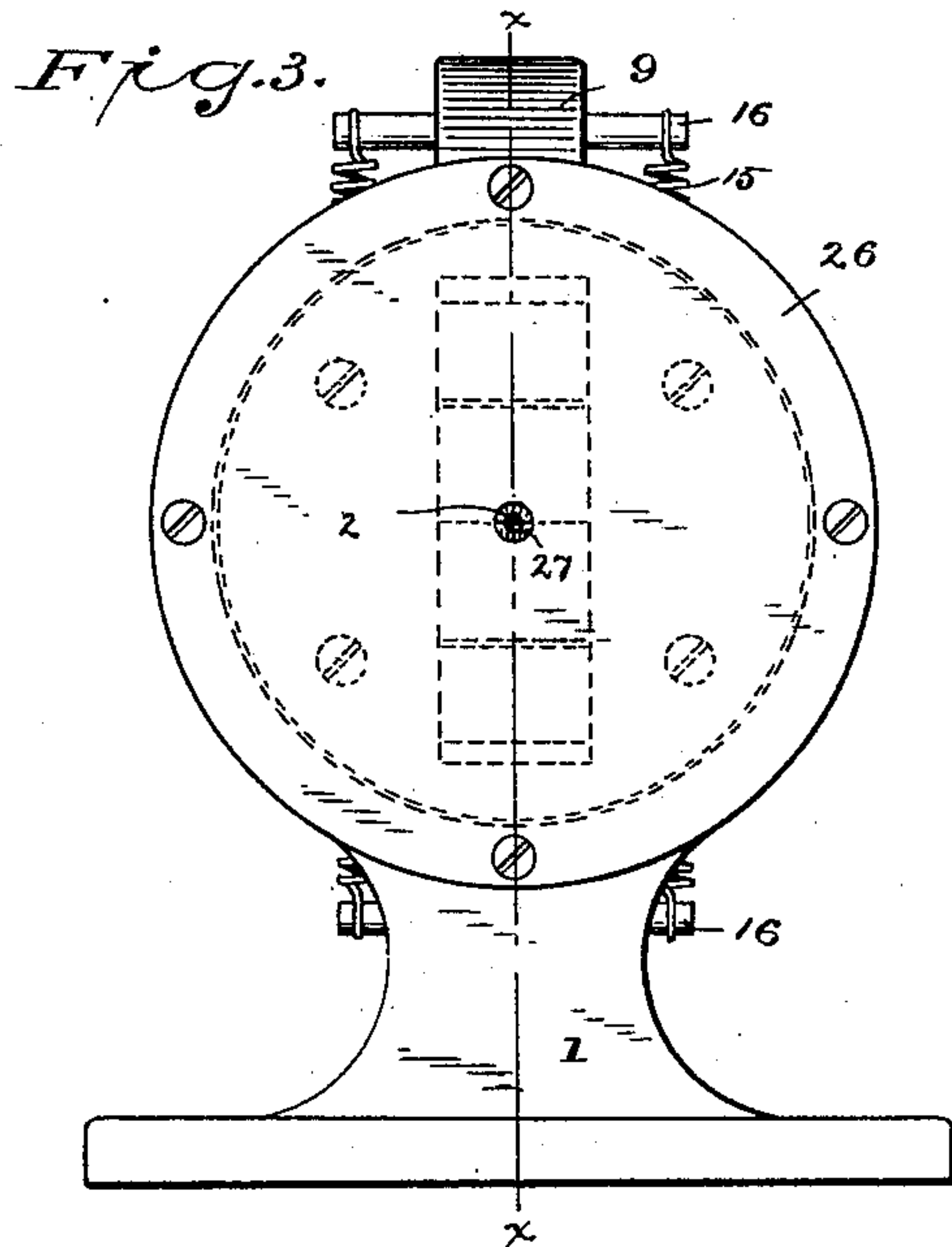
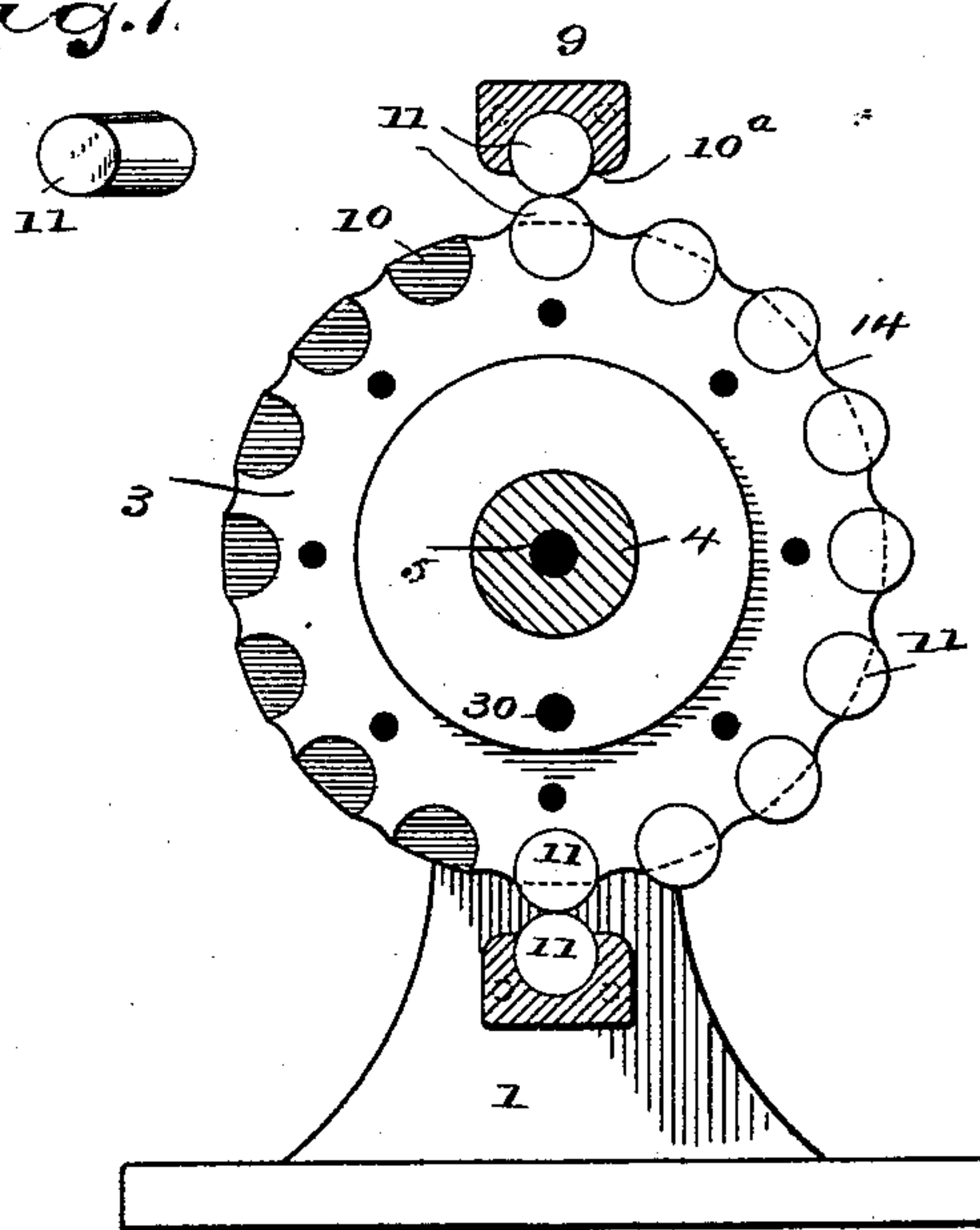
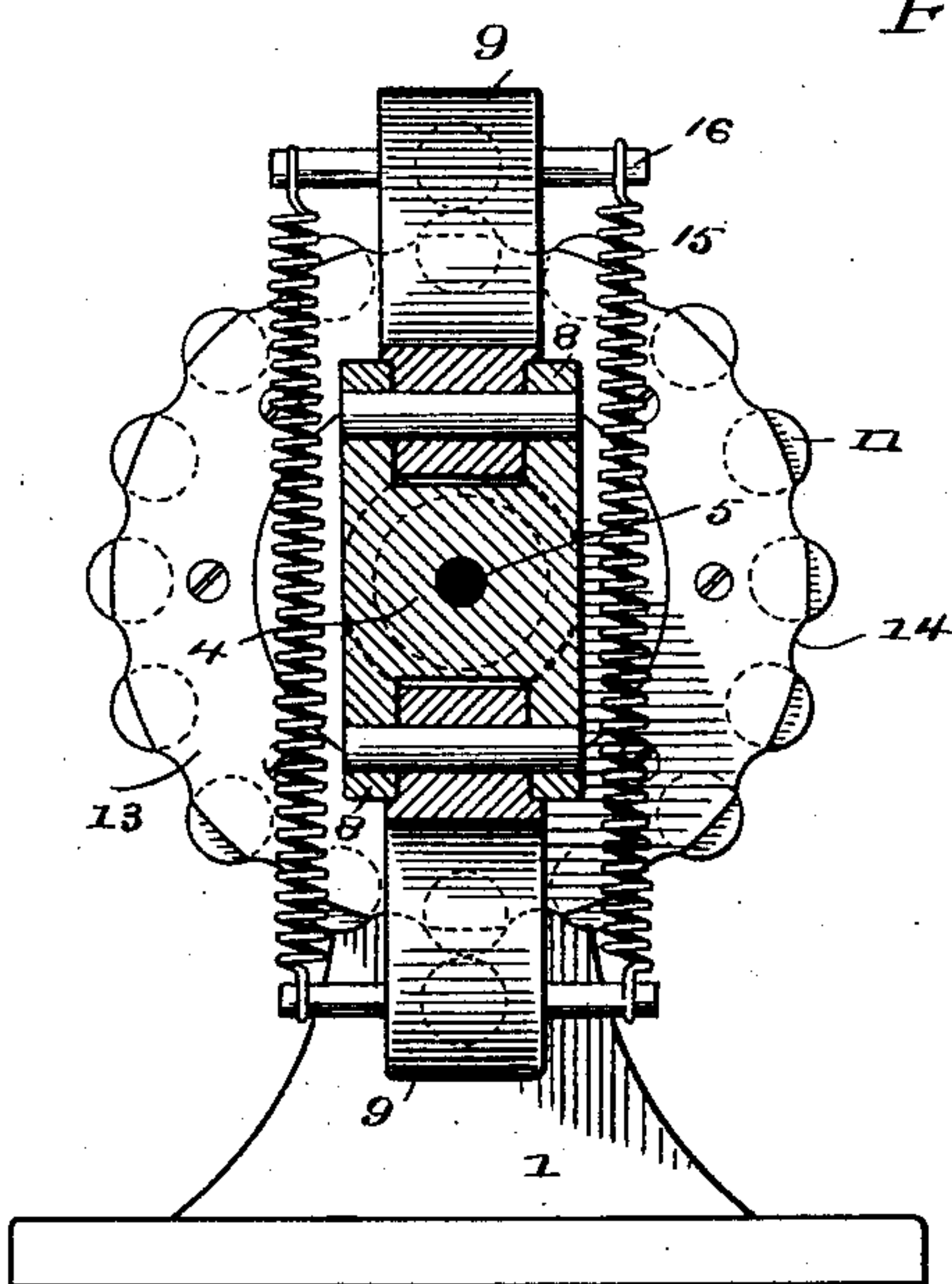


Fig. 5.

Fig. 6.



WITNESSES

H. A. Lamb
Jessie Mason.

INVENTOR

Charles H. Yarrington
By A. M. Wooster
att'y.

UNITED STATES PATENT OFFICE.

CHARLES H. YARINGTON, OF TORRINGTON, CONNECTICUT, ASSIGNOR OF
ONE-HALF TO PATRICK F. DEELEY, OF SAME PLACE.

SWAGING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 483,091, dated September 20, 1892.

Application filed February 29, 1892. Serial No. 423,805. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. YARINGTON, a citizen of the United States, residing at Torrington, in the county of Litchfield and State of Connecticut, have invented certain new and useful Improvements in Swaging-Machines; 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 appertains to make and use the same.

My invention has for its object to produce a simple, inexpensive, and durable machine for swaging and reducing wire rods, bars, &c., and for pointing needle-blanks and similar uses, the machine being equally adapted to swage round and angular rods and bars.

With these ends in view I have devised the simple and novel machine of which the following description, in connection with the accompanying drawings, is a specification, numbers being used to designate the several parts.

Figure 1 is an elevation of the machine complete; Fig. 2, a vertical section on the line $x x$ in Fig. 3; Fig. 3, a front elevation; Fig. 4, a similar view with the face-plate removed; Fig. 5, a section on the line $y y$ in Fig. 1, looking toward the left; Fig. 6, a section on the line $z z$ in Fig. 1, looking toward the left; and Fig. 7 is a view of one of the rollers detached.

1 denotes a standard in which a sleeve 2, having at its inner end a disk 3, is journaled. Within the sleeve and adapted to turn freely therein is a mandrel 4, having an opening 5 through it.

6 denotes a belt-pulley keyed to the sleeve, and 7 a belt-pulley keyed to the mandrel. Near the forward end of the mandrel is a pair of ears 8, in which arms 9 are pivoted. The rear ends of these arms are outwardly curved, as shown, and are provided with sockets 10, adapted to receive rollers 11. These sockets are circular in form and comprise more than half a circle, so that the rollers are held against dropping out in use by means of the overhanging portions of metal 10^a of the sockets. The rollers are held in place against lateral displacement by plates 12, secured to the ends of the arms. Disk 3 is provided with similar

sockets 10 in its periphery, which also receive rollers 11, said rollers being held against being thrown out by centrifugal force by means of overhanging portions of metal 10^a, the same as the rollers in the arms, and being held against lateral displacement by means of a circular plate 13, which is screwed to the face of the disk. Between the sockets in the periphery of the disk are depressions 14, which receive the rollers on the arms in use, as will be more fully explained. The rear ends of the arms are drawn toward each other, so as to keep the rollers at their ends in contact with the disk by means of a spring or springs 15. In the drawings I have shown two springs, the ends of which are connected to pins 16 upon the arms.

17 denotes the die-case, in the inner face of which is a circular opening 18, through which the mandrel and arms extend into the case. At the end of the mandrel within the die-case is a disk 19, having slots 20, through which the arms pass freely and to which the die-plate 21 is secured by screws 22. The die-plate is provided with a slot 23, which receives the forward ends of the arms and also the dies 24, which lie between the arms, as clearly shown.

25 denotes adjusting-screws in the ends of the arms which bear against the backs of the dies. These screws are turned in or out in adjusting, as may be required, depending upon the size of the rod that is between the dies, the screws being of course turned in far enough so that the blows of the arms will be communicated to the dies. The dies are held in place by a face-plate 26, which is fastened to the die-case and is provided with a central opening 27, which serves as a guide for the rod when it is inserted in the dies.

28 denotes the opening in the dies, half of which is formed in each die. The outer end of the opening in the dies is beveled, as shown in Fig. 4, to permit the rod to be conveniently inserted between them.

29 denotes a pin adapted to pass through a hole 30 in disk 3 and into a corresponding hole 31 in standard 1, as in Fig. 2, in order to lock the disk against rotation, for a purpose

presently be explained, or to pass through a hole 32 in the periphery of die-case 17 and into a corresponding hole 33 in die-plate 21, as in Fig. 1, to lock the die-case against revolution for another purpose presently to be explained.

The operation is as follows: Suppose that a round rod is to be swaged. Pin 29 is passed through hole 30 in disk 3 and into the standard, as in Fig. 2, so as to lock the sleeve and disk against rotation. The belt (not shown) is placed upon belt-pulley 7, so that motion is communicated to the mandrel, arms, die-plate, dies, &c., all of which revolve together. Springs 15 act to draw the rear ends of the arms against the rollers in disk 3, and as they pass the rollers into depressions 14 between them thereby producing a constant succession of blows upon the dies which are rotated constantly about the rod. Should it be required to swage an angular or polygonal rod or bar, pin 29 is removed from hole 30 in disk 3 and is passed through hole 32 in the periphery of the die-case and into the die-plate, as in Figs. 1 and 4, thereby locking the die-plate against rotation, but leaving the sleeve and disk 3 free to rotate as soon as the belt (not shown) is placed upon pulley 6. It will be understood that the mandrel, arms, die-plate, dies, &c., are now held against rotation, but that the sleeve and disk are free to rotate. The principle of operation is precisely the same as before, except that the blows of the arms upon the dies are delivered in the same plane instead of in a constantly-changing plane, as in the other form.

Having thus described my invention, I claim—

1. The combination, with the sleeve having a disk 3 at its outer end and rollers in the periphery thereof, of a mandrel journaled in said sleeve and having pivoted thereto arms having rollers at their rear ends adapted to engage the rollers in the disk, means for imparting rotation to said sleeve and said mandrel independently of each other, a die-plate at the forward end of the mandrel, dies in said plate the backs of which are adapted to be engaged by the forward ends of the arms, a suitable case inclosing the die-plate and the forward ends of the arms, a spring for holding the rollers in the arms in contact with the rollers in the disk, and means for locking said disk and said die-plate against rotation, so that the successive blows of the dies may be delivered in the same plane or in a constantly-changing plane.

2. The combination, with the mandrel, die-plate, and dies, of arms 9, pivoted to the mandrel, the forward ends of said arms being adapted to engage the backs of the dies and their rear ends being provided with rollers, a disk between the rear ends of said arms, provided with peripheral rollers and depressions between said rollers, means for revolu-

bly supporting said mandrel and disk, and a spring adapted to hold the rear ends of the arms in contact with the disk.

3. The combination, with the mandrel and dies, of arms 9, pivoted to the mandrel and adapted to actuate the dies, disk 3 between the rear ends of said arms, said arms and said disk being provided with sockets comprising more than a half-circle, rollers in said sockets, plates for retaining said rollers against lateral displacement, and means for revolvably supporting said mandrel and disk.

4. The combination, with the mandrel, the arms pivoted thereto, disk 3 between the rear ends of said arms and having peripheral projections, and the spring acting to press the arms against the disk, of the die-plate and the dies adapted to be actuated by said arms, a case therefor having an opening to receive the mandrel and arms, and means for revolvably supporting said mandrel and disk.

5. The combination, with the disk, mandrel, die-plate, and dies, of arms 9, pivoted to the mandrel and having screws at their forward ends the points of which are adapted to engage the dies and the rear ends of which are provided with rollers adapted to engage other rollers upon the disk, a spring for holding said arms and said disk in engagement, and means for revolvably supporting said mandrel and disk.

6. Standard 1, having hole 31, sleeve 2, journaled in said standard, disk 3, carried by the sleeve and having a hole 30, adapted to register with hole 31, and rollers in its periphery, and the mandrel journaled in said sleeve, in combination with the die-plate and dies, arms 9, pivoted to the mandrel, the forward ends of said arms being adapted to engage the backs of the dies and the rear ends provided with rollers to engage the rollers on the disk, a spring acting to hold the arms in contact with the disk, and a pin adapted to engage holes 30 and 31 to hold the disk against rotation when the mandrel is rotated, and means for revolvably supporting said mandrel and disk.

7. The combination, with the mandrel, disk 3, and the arms pivoted to the mandrel, said disk and said arms having rollers 11, of a spring acting to hold the arms in contact with the disk, the dies, the die-plate having hole 33, the die-case having hole 32, and a pin adapted to engage said holes to lock the die-plate against rotation when the disk is rotated, and means for revolvably supporting said mandrel and disk.

8. Disk 3, having rollers in its periphery, the arms pivoted to the mandrel and having rollers adapted to engage the rollers on the disk, and the mandrel having at its forward end a disk 19, in combination with the die-plate secured to said disk, said disk and said die-plate having slots to receive the ends of the arms, dies lying between the ends of the

arms and adapted to be acted upon thereby, and means for revolvably supporting said mandrel and disk.

5 9. The combination, with the dies, mandrel, and arms pivoted thereto and adapted to actuate the dies, of disk 3 between the rear ends of said arms, having in its periphery sockets comprising more than a half-circle, rollers in said sockets, a plate secured to

the disk to retain the rollers in place, substantially as described, and means for revolvably supporting said mandrel and disk. 10

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

CHARLES H. YARINGTON.

Witnesses:

A. M. WOOSTER,
JESSIE MASON.