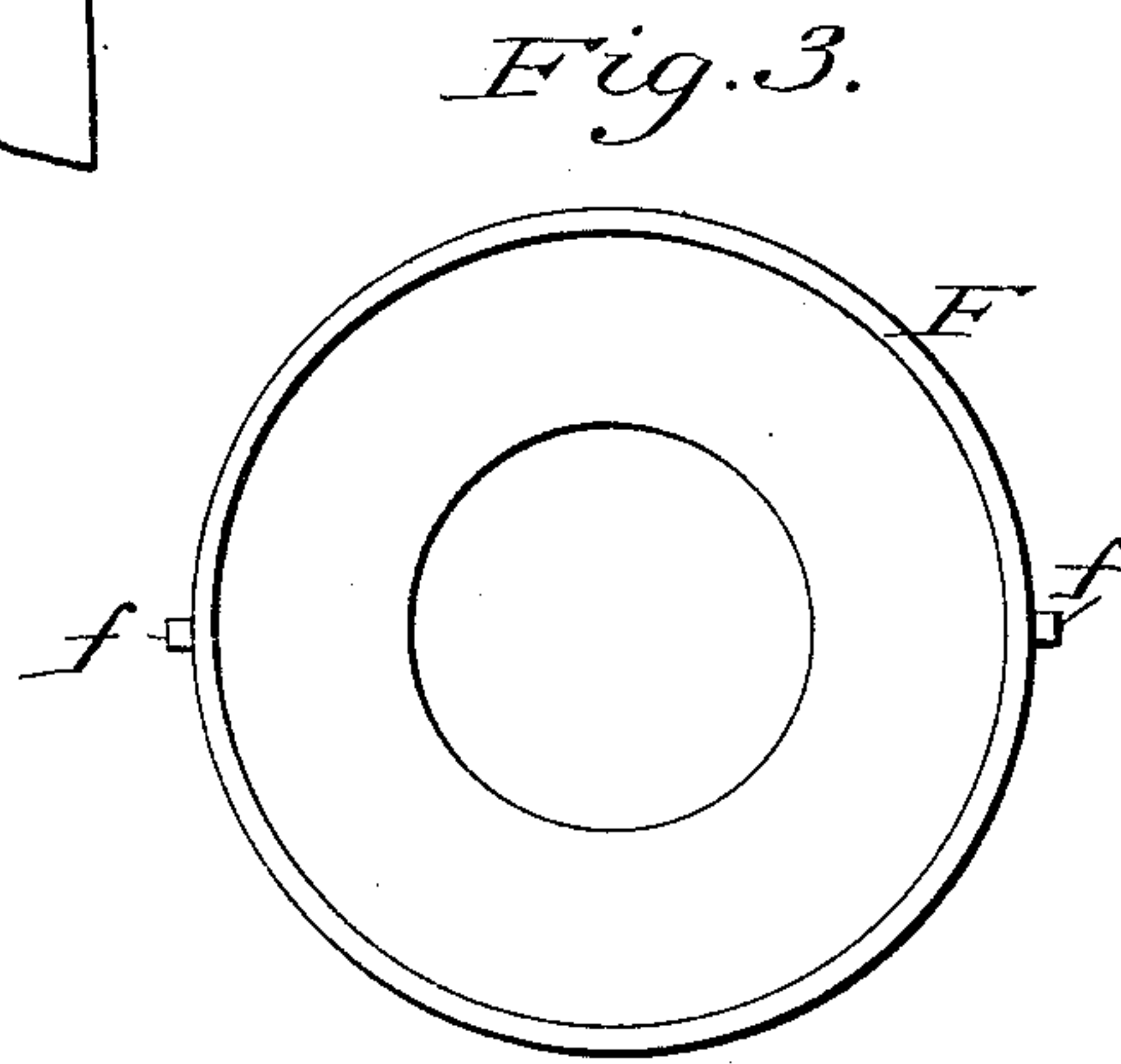
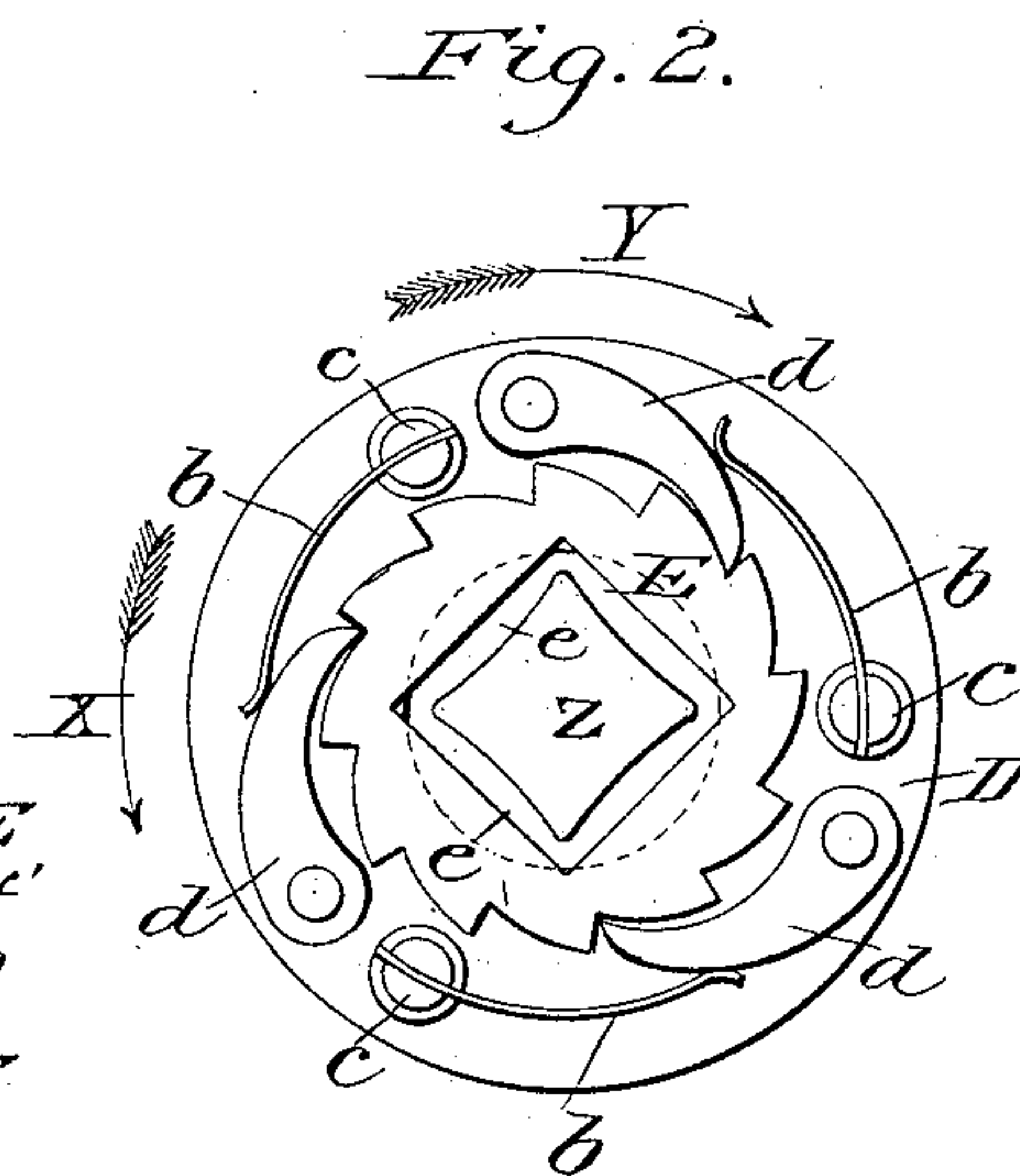
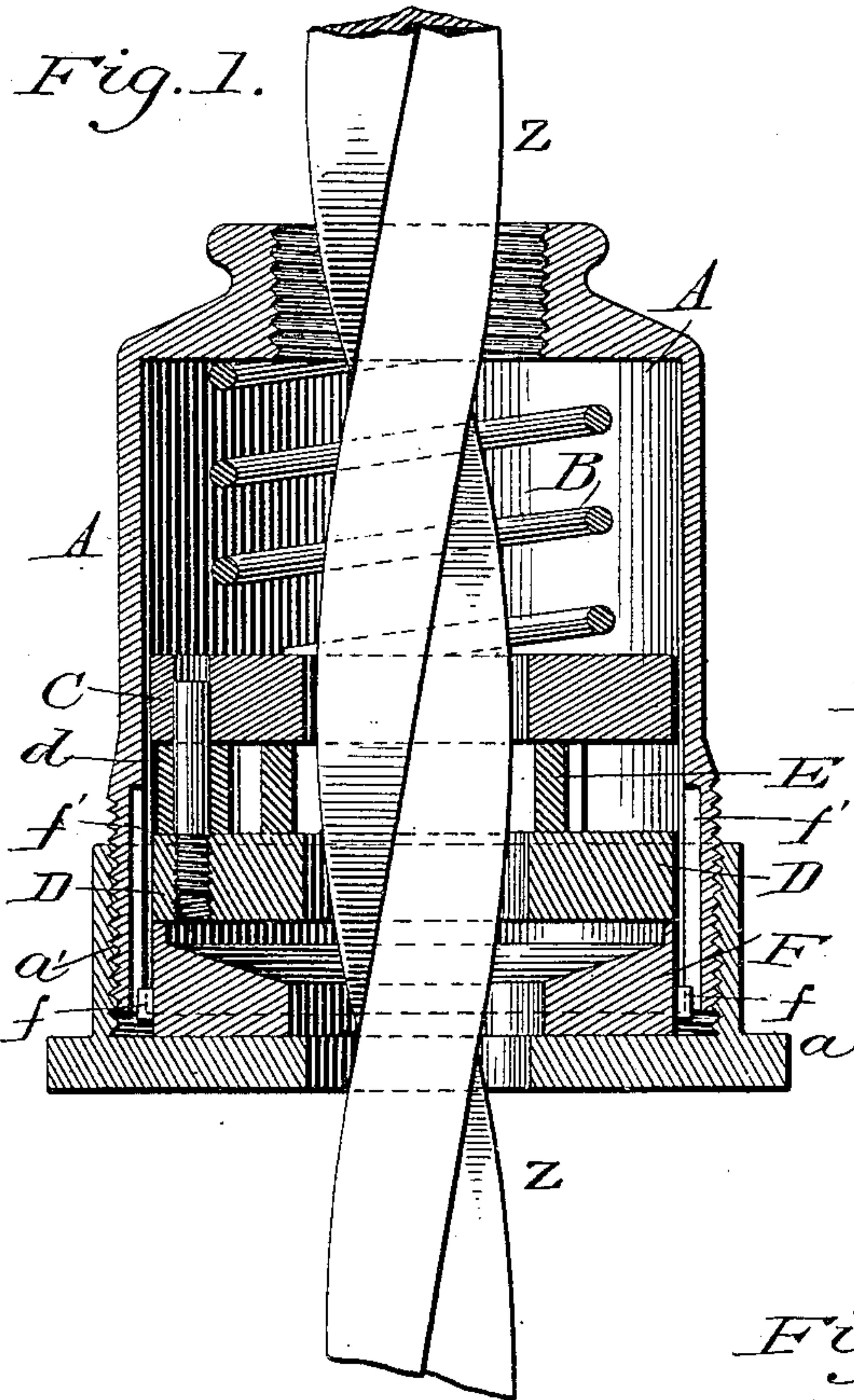


(No Model.)

B. CHURCHILL.
EXTENSION GAS CHANDELIER.

No. 350,806.

Patented Oct. 12, 1886.



Witnesses.
J. W. McKnight.

Inventor.
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by W. J. Thomas
att'y.

UNITED STATES PATENT OFFICE.

BARTHOLOMEW CHURCHILL, OF NEW YORK, N. Y., ASSIGNOR TO THE
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EXTENSION GAS-CHANDELIER.

SPECIFICATION forming part of Letters Patent No. 350,806, dated October 12, 1886.

Application filed October 16, 1885. Serial No. 180,101. (No model.)

To all whom it may concern:

Be it known that I, BARTHOLOMEW CHURCHILL, a citizen of the United States, and a resident of the city of New York, of the county and State of New York, have invented new and useful Improvements in Extension Gas-Chandeliers, of which the following is a specification.

My invention relates, generally, to gasaliers, and more especially to that class of gasaliers having a sliding bar for lowering one or more burners of the gasalier to any desired point beneath its ordinary arm or branch lights.

My invention is a peculiar construction of the box through which the sliding bar (which is a spiral rib) passes in its descent and ascent, and the mechanism in said box for sustaining the weight of the bar and its lights, &c.

The object of my invention is to provide the box with peculiar and simple mechanism that will sustain with safety and reliability the weight of the extension or sliding bar and its lights in any position, that will require no undue strength to lower the bar, and will allow it to slide upward by applying force enough to lift it and its lights.

My invention consists of a sliding spiral-ribbed bar, a box through which the bar passes in its ascent and descent, having a ratchet-case made by securing a ratchet-wheel having a square opening in its center between two metal disks with round openings in their centers, secured together by posts passing through both disks, in such position as not to come in contact with the ratchet-wheel, and also having secured between said disks two or more ratchets or pawls, to prevent a backward motion of the wheel, a spiral spring, and an independent disk or washer with at least one flat side. The other may be convex, if desired, its flat side being forced against the ratchet-case, by means of the spiral spring, with sufficient force to produce friction enough between the disk and ratchet-case to sustain the weight of the bar and its lights, as will be more fully described hereinafter.

In the accompanying drawings, Figure I is a vertical sectional view of my invention; Fig. II, a plan view of the ratchet-case with one of the disks removed; Fig. III, a plan view of the metal washer, with the concave side upward.

It is unnecessary to go into detail as to the general construction of gasaliers of the character to which my invention relates, with reference to the manner of introducing the gas, making gas-lights, &c., as it is well known to all persons familiar with the art, and as my improvements are on the friction-box at the end of the rigid or main tube and below the distributor, being the point from which the extension-tube is drawn out. It may not be out of place to state, however, that the most approved construction of gasaliers of the kind referred to is as follows: The drop or extension tube is made to slide upon a stationary supply-tube, with a gas-light joint at the upper end of the drop-tube, the whole incased in the outer or main tube of the gasalier.

Referring to the drawings, A is the friction-box, having the spiral spring B more or less compressed, and pressing against the ratchet-box, which in turn presses against the flat side of the washer F. The ratchet-case is made by securing the ratchet-wheel and its pawls between the two metal disks C and D, as is shown in Fig. II, which is a view of the ratchet-case with the disk C removed, in which E is the ratchet-wheel having the square opening C' in its center, said opening corresponding in size to the diameter of the sliding bar Z, (heretofore mentioned,) a portion of which is shown in Fig. I.

d d d are the ratchets or pawls.

c c c are the posts or bolts for securing the two disks C and D together.

b b b are small springs, each having one end passed through or around the posts *c c c*, the other end resting on the back of the pawls *d d d*, to press the pawls against the teeth of the ratchet-wheel, to insure more perfect engagement of the pawl and wheel when the latter is moved backward.

When the spiral bar Z is pushed upward, it causes (in its passage through the square opening C') the ratchet-wheel E to revolve between the two disks in the direction indicated by the arrow Y, and hence meets with no resistance, as the wheel E will revolve freely between the disks, and as the pawls will slide over the teeth of the wheel with little or no friction, and the ratchet-box itself will remain stationary. When the bar is drawn downward, the pawls will engage with the teeth of the wheel and

prevent the independent motion of the wheel, but compel the whole ratchet-case to revolve in the reverse direction, or that indicated by the arrow X, and thereby make it necessary to
 5 apply sufficient force to overcome the sliding friction caused by the contact of the flat surface of the disk D of the ratchet-case and the similar surface of the washer F, which will be greater or less in proportion to the strength of
 10 the spiral spring B, which can be adjusted by raising or lowering the head *a* of the friction-box by means of the screw-thumb *a'* on the inside of the head and outside of the box, as shown in Fig. I of the drawings.
 15 The spring should be adjusted so as to be able to sustain a weight of from two to five pounds above the weight of the bar and its lights, which amount of increased friction can be readily overcome in drawing the bar down.
 20 Should the spring become weak, or should greater weight be added to the bar, the spring may be further compressed, and thereby made stronger, by screwing the head *a* up farther.
 By the above combination it will be appar-
 25 ent that a bar and lights of any weight will be sustained in any position in which it is placed, and by mechanism so simple that it is difficult to see how it can get out of order. The washer F has two small projections on the opposite
 30 side of its edge, that fit into corresponding grooves, *f'*, on the inside of the box at the head end. The object of these projections and

grooves is to prevent the disk F from being revolved with the ratchet-case when the bar is drawn down. The reasons why this washer
 35 should not revolve are twofold: First, it would reduce the friction, which is not desirable, and, second, if allowed to revolve it would unscrew the head *a* of the box, or otherwise interfere with its adjustment.
 40

What I claim is—

1. The combination, with an extension gas-chandelier, of the ratchet-case constructed with disks C D, ratchet-wheel *e*, pawls *d d d*, posts *c c c*, springs *b b b*, and sliding rod Z, substan-
 45 tially as herein described, and for the purposes set forth.

2. The combination, with an extension gas-chandelier, of the ratchet-case constructed with disks C D, ratchet-wheel *e*, pawls *d d d*, posts *c c c*, springs *b b b*, sliding rod Z, the friction-
 50 box *a*, having grooves *f'*, and the washer F, provided with projections or lugs *f*, registering with and sliding in said grooves, the whole co-operating in the manner and for the purpose
 55 herein shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 4th day of February, 1885.

BARTHOLOMEW CHURCHILL.

Witnesses:

JOSEPH F. MERRIAM,
 WM. E. ZABRISKIE.