

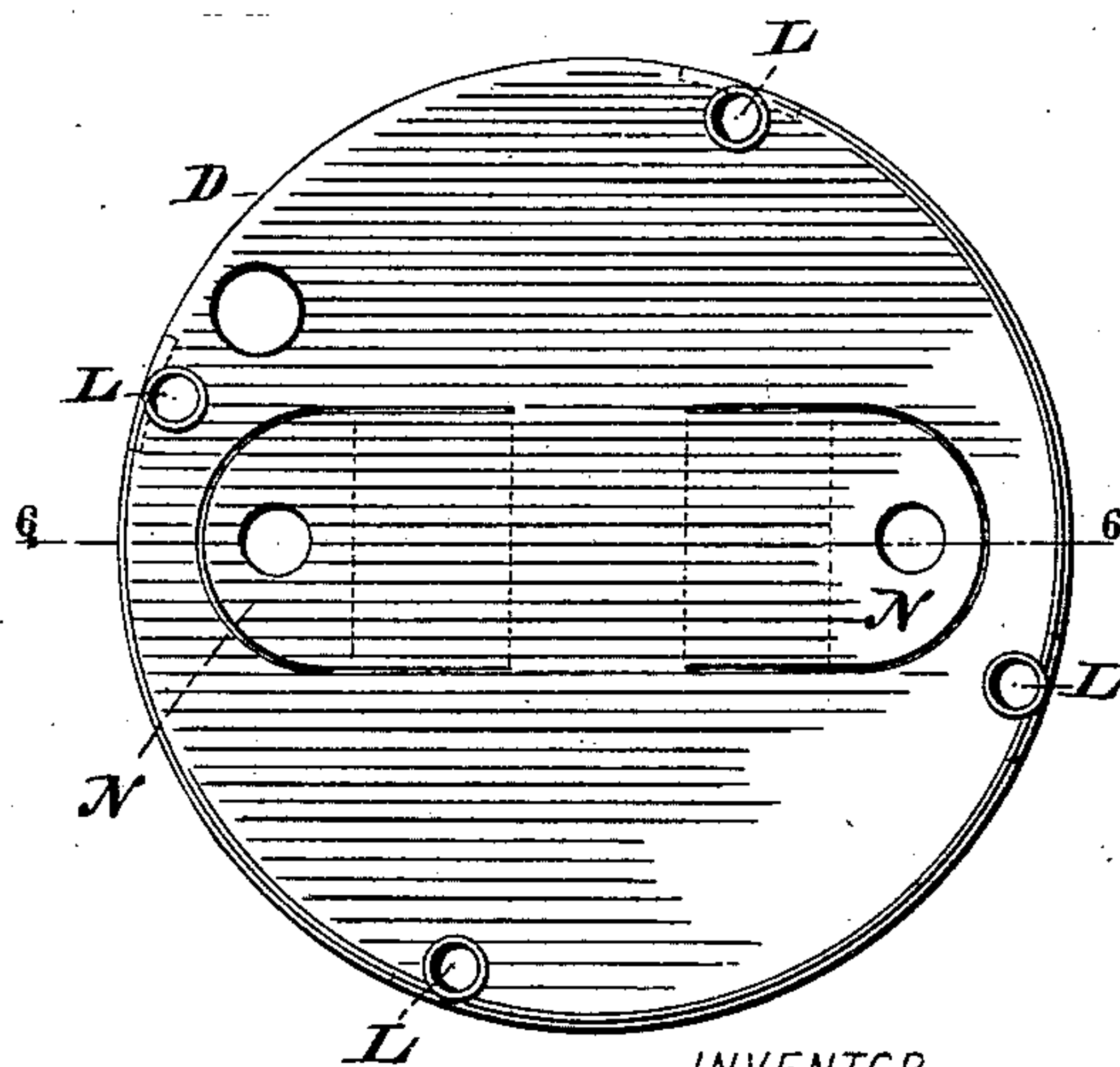
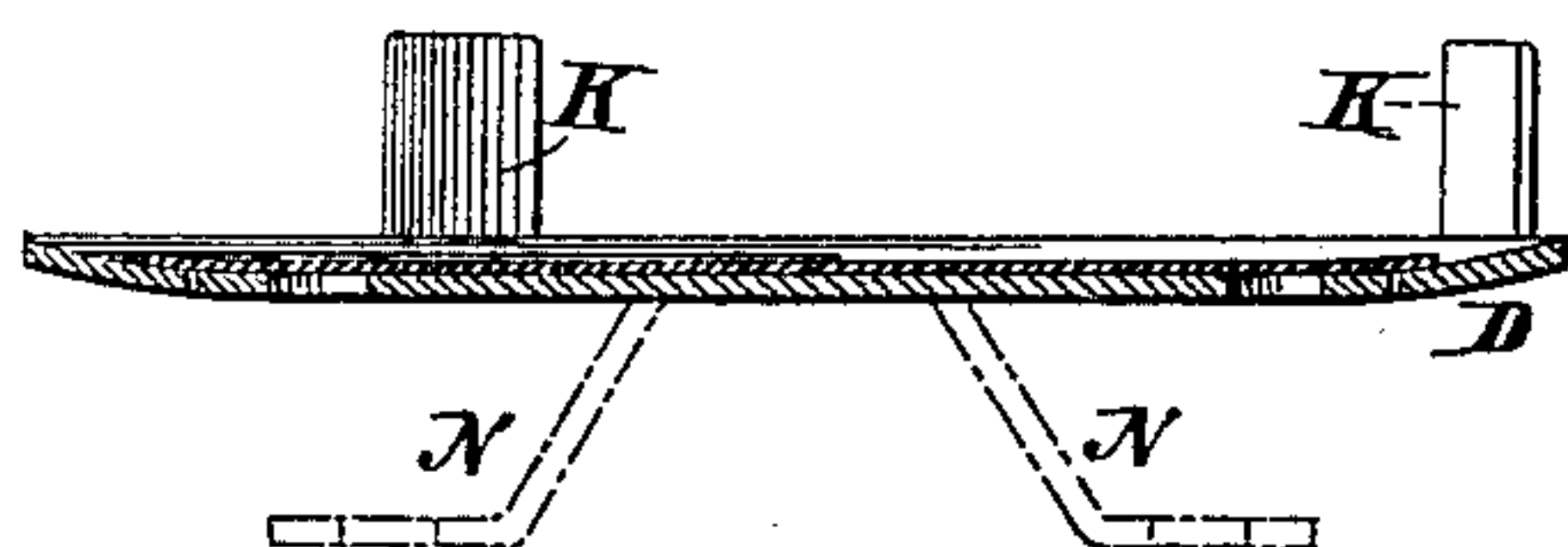
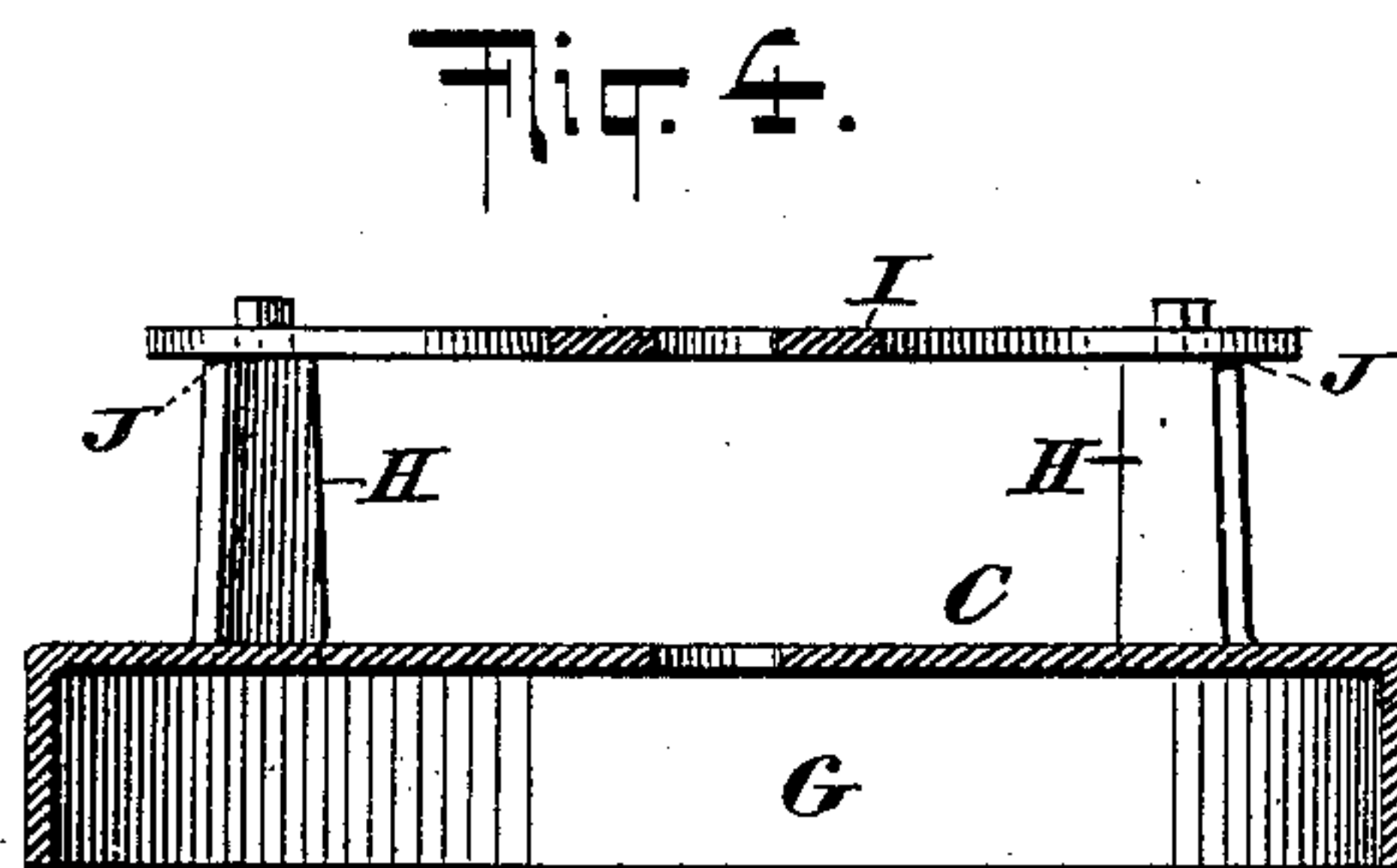
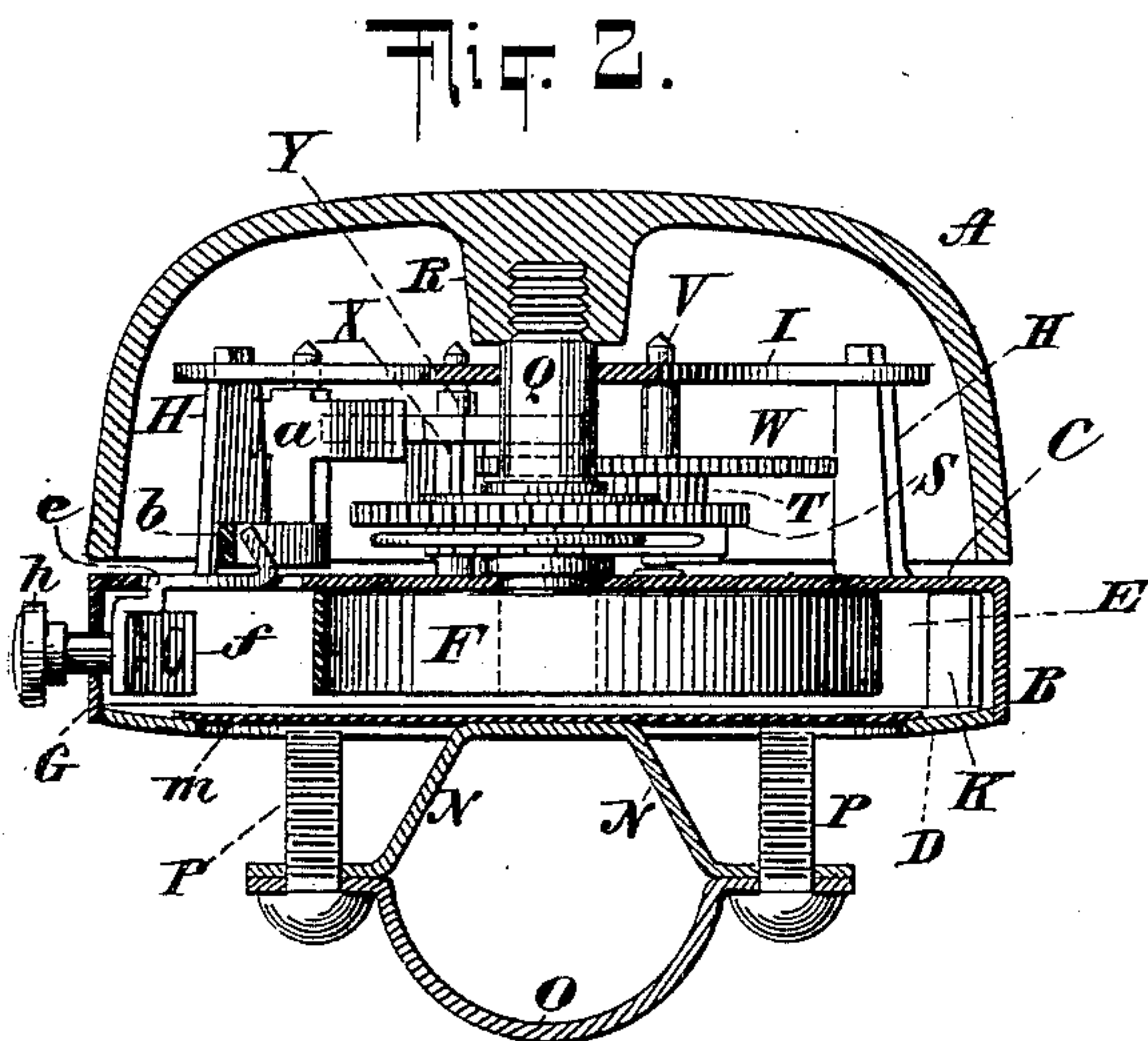
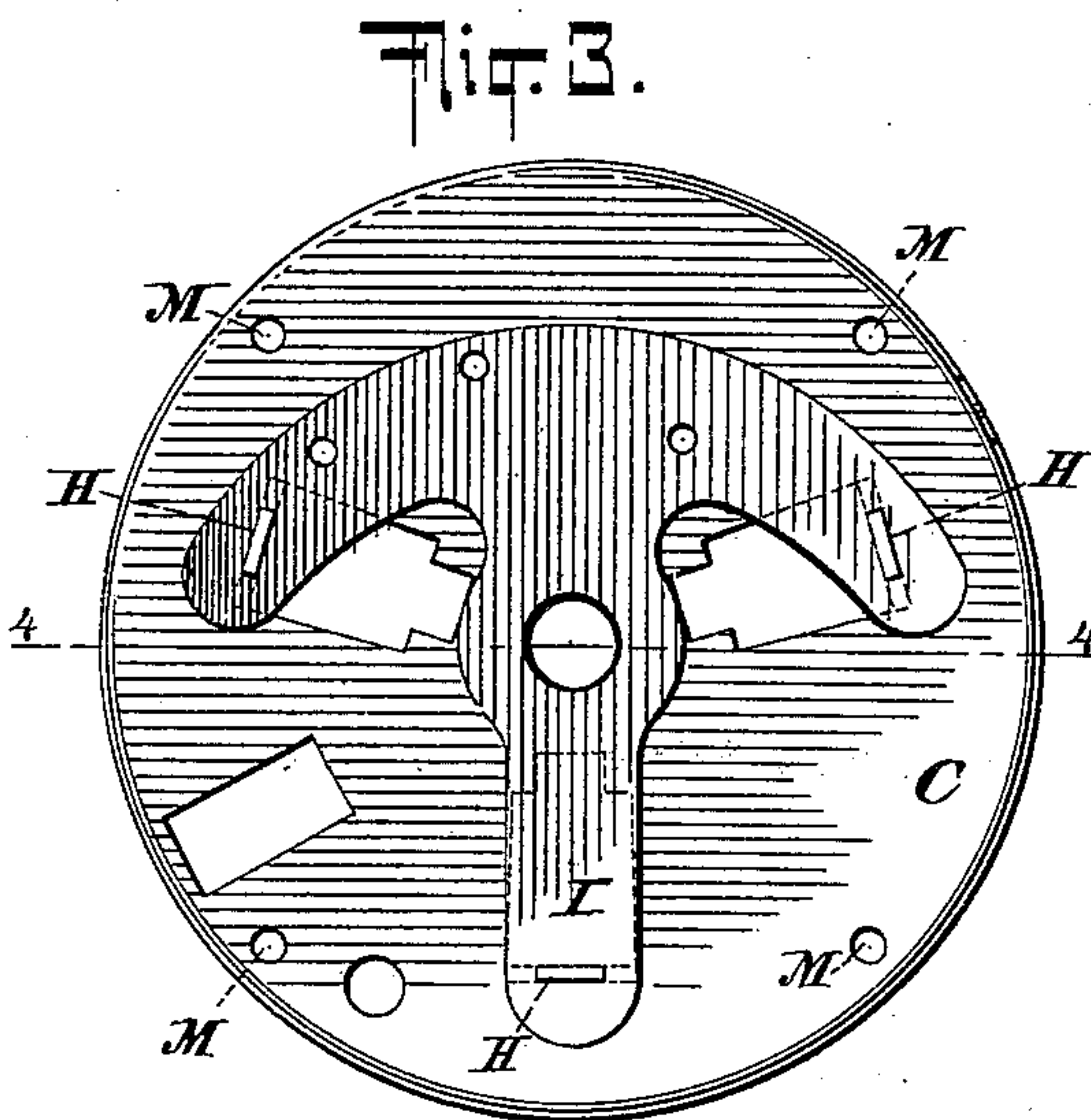
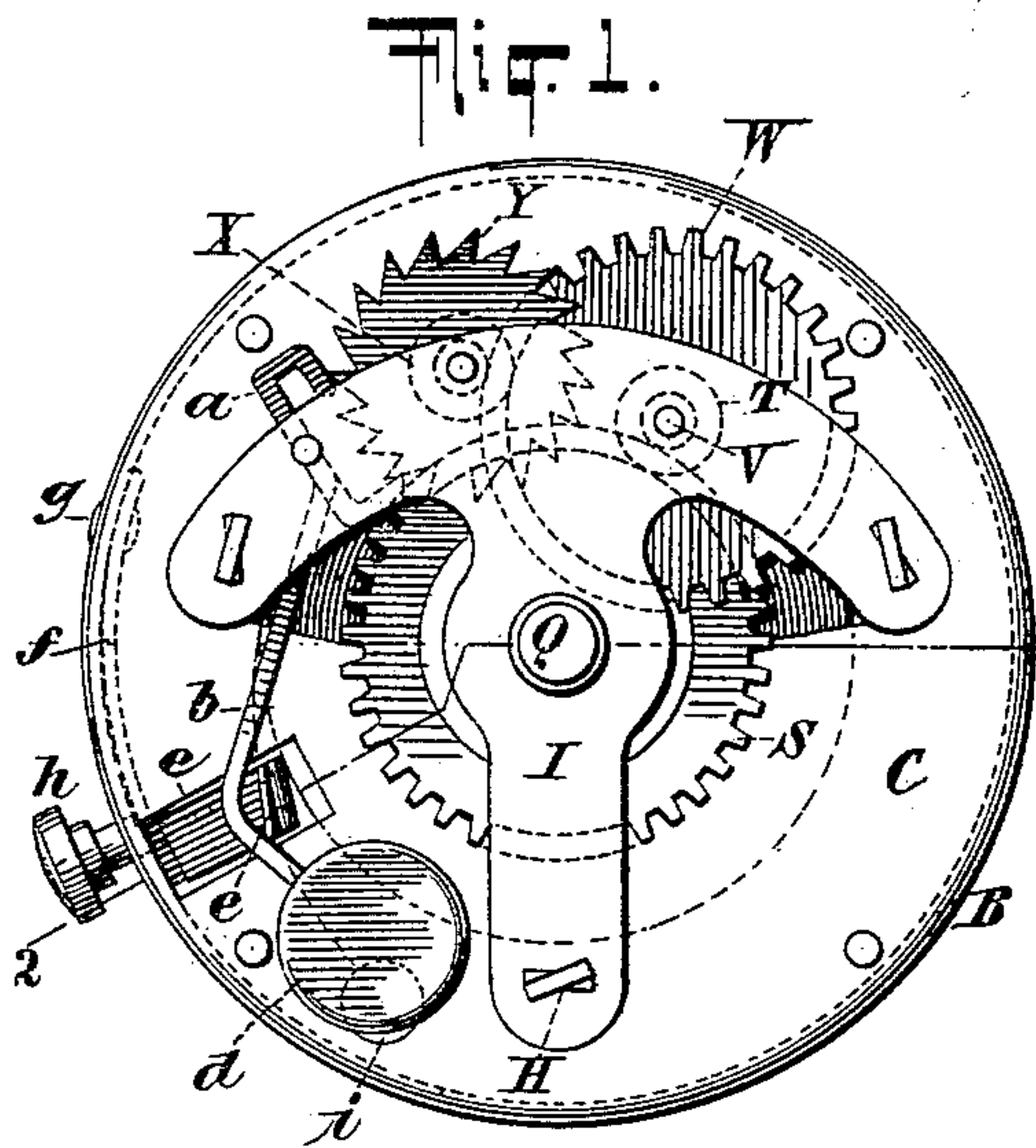
No. 632,819.

Patented Sept. 12, 1899.

T. MILLER.
BICYCLE BELL.

(Application filed Apr. 11, 1898.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

TOBIAS MILLER, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO LOUIS P. WHITEMAN, OF SAME PLACE.

BICYCLE-BELL.

SPECIFICATION forming part of Letters Patent No. 632,819, dated September 12, 1899.

Application filed April 11, 1898. Serial No. 677,119. (No model.)

To all whom it may concern:

Be it known that I, TOBIAS MILLER, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Alarm-Bells for Bicycles and other Purposes, of which the following is a specification.

The invention relates to improvements in alarm-bells and is intended more particularly for application to bicycles, although I do not wish to limit the invention exclusively for use on bicycles, since it is equally applicable for other purposes.

The invention consists in the novel features and combinations hereinafter described, and particularly pointed out in the claims.

The object of the invention is to produce a bell of improved construction and one which is capable of convenient use.

The invention will be more fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a top view of the base and interior mechanism of the bell, the gong being omitted. Fig. 2 is a vertical section of same on the dotted line 2 2 of Fig. 1, the gong being in position. Fig. 3 is a top view of the base and supporting-frame for the interior mechanism of the bell, said mechanism being omitted. Fig. 4 is a vertical transverse section of same on the dotted line 4 4 of Fig. 3. Fig. 5 is a detached elevation of the blank from which the bottom plate of the bell is formed; and Fig. 6 is a transverse section of same on the dotted line 6 6 of Fig. 5, the dotted lines in Fig. 6 denoting the form given to the lips cut from the blank shown in Fig. 5 when said lips are fashioned to constitute a part of the clamping means by which the bell is secured to the bicycle or other support.

In the drawings, A denotes the gong or bell proper and B the base therefor, and which has a circumference coextensive with the circumference of the gong or bell proper, A. The base B is composed of the cup-shaped portion C and the bottom plate D, which engage one another, as illustrated in Fig. 2, to constitute the base B and form the inner chamber E, within which the coiled spring F is secured.

The upper cup-shaped portion of the base B is stamped from sheet metal and is in the form of a plate, having the circumferential depending flange G and the upright posts H, the latter being formed from the metal of the plate and turned upward, as shown in Figs. 3 and 4, to receive the top plate I, which is fashioned into three arms, apertured at their ends to pass upon the reduced upper ends of the post H. The top plate I rests upon shoulders J, formed on the posts H, and after the said top plate has been applied upon said posts H it is there secured by simply twisting to a slight extent the upper edges of said posts, which extend above the upper surface of said top plate, as illustrated in Fig. 1. The posts H are of tapered outline, being wider at their lower ends, and hence said posts are of great strength and, with the cup-shaped portion C of the base B and the top plate I, constitute an interior frame of great strength and durability and capable of supporting the interior mechanism of the bell.

The bottom plate D is in the form of a disk, as illustrated in Fig. 5, and has the upwardly-extending integral lugs K, which extend upward within the depending flange G, above referred to, and contact with the lower surface of the cup-shaped plate C, as illustrated in Fig. 2. The lugs K on the bottom plate D strengthen the plate and prevent the latter from being driven unduly upward against the spring F. The bottom plate D and cup-shaped plate C are secured together by screws or rivets passing through the apertures L in said bottom plate and apertures M in the cup-shaped plate C. The bottom plate D is formed from a blank of sheet metal, and from this blank will be stamped the lips N, which will be bent downward and then outward into the form indicated by dotted lines in Fig. 6 and full lines in Fig. 2 to constitute the upper part of the clamp by which the bell may be applied to the bicycle or other support, this clamp being completed by the application to the ends of the lips N of the bowed plate O and adjusting-screws P, as shown in Fig. 2.

At the center of the base B is mounted the vertical post Q, having the threaded upper end to receive the bell or gong A, whose inner hub R contains a threaded socket for the up-

per end of said post Q and when screwed downward upon said post seats itself upon a shoulder formed at the base of the threaded portion of said post. The post Q is connected
 5 at its lower end with the inner end of the helical spring F, provided within the chamber E of the base B, and said post Q has rigidly secured upon it the spur gear-wheel S, which meshes with the pinion-wheel T, secured upon
 10 the post V, upon which is secured the gear-wheel W, which meshes with the pinion-wheel X, carried by the post of the escapement-wheel Y, and thus the force of the spring F is communicated through the post Q and train
 15 of gearing to the escapement-wheel Y. The post Q and the post V and the post for the escapement-wheel Y extend upward through apertures formed in the top plate I to receive them. The escapement-wheel Y is engaged
 20 by the escapement-plate *a*, which is formed from sheet metal in one integral piece and is pivotally mounted between the cup-shaped plate C and top plate I and is formed with the arm *b*, carrying at its end the hammer *d*,
 25 which during the use of the bell strikes the gong A. When the hammer *d* is released and subjected to the force of the spring F through the train of gearing above described, it has a continuous vibratory motion. The restraint
 30 of the hammer *d* is effected by the dog *e*, which is in the form of a plate having its inner end turned upward at the inner side of the arm *b*, carrying the hammer *d*, and which dog is held in a normal outward position, restrain-
 35 ing the hammer *d*, by means of a spring *f*, which is secured at one end to said dog and at its other end is attached by means of the rivet *g* to the inner side of the depending flange G of the cup-shaped plate C, as illus-
 40 trated in Figs. 1 and 2. The spring *f* forces the dog *e* outward, and thereby acts to restrain the hammer *d*. The release of the hammer *d* is effected by simply pressing upon the but-
 45 ton *h*, connected with said dog *e* and having its shank within an aperture in the depend-
 50 ing flange G of the top plate C, as illustrated in Fig. 2. When the button *h* is pressed inward, the inner upturned edge of the dog *e* is pressed inward to a sufficient extent to en-
 55 tirely free the arm *b* of the hammer *d*, and hence during all of the time that the button *h* is held at its inward position the hammer *d* will have a continuous vibratory motion against the gong or bell proper A. As soon
 60 as the pressure is relieved from the button *h* the spring *f* will at once move the dog *e* out-
 ward and cause its inner upturned edge to again contact with the bell-hammer arm *b* and restrain the latter and said hammer
 65 against further movement.

The spring F is, as above described, secured at its inner end to the post Q, while its outer end is fastened to a suitable post *i*, extend-
 65 ing intermediate the bottom plate D and cup-shaped plate C.

The winding of the spring F is accomplished by grasping the base B in one hand and turn-

ing the gong or bell proper A toward the right. During the unwinding of the spring F, due to the sounding of the alarm, the gong
 70 A will have a gradual revolving motion toward the left.

In the use of the alarm-bell made the sub-
 75 ject hereof the said bell will be applied to the bicycle or other support by means of the clamp connected with the bottom plate D, and the alarm may be sounded at any time
 80 by the pressure of the thumb or finger upon the button *h*, the alarm sounding continuously during all of the time the pressure is
 85 retained upon the button *h* and ceasing immediately upon the release of the pressure from said button.

The openings formed in the bottom plate D by the bending downward of the lips N
 85 are closed by an inner plate *m*, which prevents the entrance of dust to the spring F.

One of the more important features of the construction claimed is the arrangement of
 90 the dog *e* with relation to the spring *f*, bar *b*, and push-button *h*, since with this construction and arrangement the bell rings continu-
 95 ously only while such pressure is applied on the button *h* to move the dog *e* entirely in-
 ward clear of the bar *b*, and the ringing au-
 100 tomatically ceases the moment the pressure is relieved from the button *h*, the spring *f* then acting to engage the dog *e* with the bar
 105 *b* and restrain the latter. The dog *e* does not become locked in its inward position, and
 110 said dog will not be pushed unduly inward, (which might break the spring *f*,) since the
 115 button *h* would alone stop the dog *e*. Thus even under the application of undue pressure
 120 on the button *h* no undesirable result would occur, since a stop prevents the undue inward
 125 thrust of the dog *e*.

I am quite well aware that bicycle-bells
 130 have been provided with pivoted levers and arms which when moved in certain directions
 135 become locked, so as to permit the bell to ring continuously while both hands of the
 140 rider are free. My bell is a distinct advance over all such bells, and besides operates on
 145 a different principle from them and is constructed differently from them. The bell of
 150 my invention only rings when direct inward pressure is maintained on the push-button *h*
 155 and automatically stops ringing when such pressure is relieved.

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

1. The bell comprising the gong or bell proper, and the base therefor, said base being
 160 composed of the bottom plate D having lugs K and the cup-shaped portion C having the
 165 depending flange G and integral upwardly-extending posts H upon whose upper ends are
 170 formed the shoulders J, combined with the top plate I whose arms are apertured to pass
 175 downward upon said posts and seat themselves on said shoulders the spring within
 180 said base, the train of gearing under the force of said spring and whose shafts are journaled

in said cup-shaped portion C and said top plate I, the escapement-wheel actuated by said spring and gearing, the escapement-bar *b* carrying the hammer *d*, and means for controlling said hammer; substantially as set forth.

2. The bell comprising the gong or bell proper, and the base therefor, said base being composed of the bottom plate D having the upwardly-turned integral lugs K and downwardly and outwardly turned integral lips N, and the cup-shaped portion C having the integral depending flange G and integral upwardly-extending posts H, combined with the bowed plate O and screws P applied to said lips N, the top plate I applied upon said posts H, the spring within said base, the train of gearing under the force of said spring and whose shafts are journaled in said cup-shaped portion C and said top plate I, the escapement-wheel actuated by said spring and gearing, the escapement-bar *b* carrying the hammer *d*, and means for controlling said hammer; substantially as set forth.

3. The bell comprising the gong or bell proper, and the base therefor, said base being composed of the bottom plate D having the upwardly-turned integral lugs K and downwardly and outwardly turned integral lips N, and the cup-shaped portion C having the integral depending flange G and integral upwardly-extending posts H, upon whose upper ends are formed the shoulders J, combined with the bowed plate O and screws P applied to said lips N, the top plate I whose arms are apertured to pass downward upon said posts and seat themselves on said shoulders, the spring within said base, the train of gearing under the force of said spring and whose shafts are journaled in said cup-shaped portion C and said top plate I, the escapement-wheel actuated by said spring and gearing, the escapement-bar *b* carrying the hammer *d*, and means for controlling said hammer; substantially as set forth.

4. The bell comprising the gong or bell proper, the base therefor, the coiled spring F, the train of gearing actuated by said spring, the escapement-wheel actuated by said gearing, and the escapement-bar *b* carrying the hammer, combined with the bar *e* arranged transversely to the axis of the said gong and having at its inner end the lip to engage one side of said bar *b* to hold said bar stationary, the spring *f* operatively connected with said bar *e* to normally keep said lip against one side of said bar *b*, and the button or head *h* arranged close to said base and having its stem extending inward transversely to the axis of said gong and connected with said bar *e*, said head *h* being exposed at the side of said base and adapted to be pushed inward toward said side to overcome the force of said spring and move said lip from the side of said

bar *b* and allow the bell to ring continuously while and only while the pressure of the hand remains on said button *h*; substantially as and for the purposes set forth.

5. The bicycle-bell comprising the gong or bell proper, the hollow base therefor, and means connected with said base for fastening said base onto the bicycle, combined with the coiled spring F inclosed within said base, the train of gearing actuated by said spring, the escapement-wheel actuated by said gearing, the escapement-bar *b* carrying the hammer, the spring *f* within said hollow base, the lip connected with said spring *f* and extending upward through a slot formed in the top plate of said hollow base and adapted to have a movement therein transversely to the vertical axis of the bell and to engage one side of said bar *b* to hold said bar stationary, and the button or head *h* arranged close to said base and having its stem extending inward transversely to the vertical axis of said bell and operatively connected with said spring *f* and said lip, said head *h* being exposed at the side of said base and adapted to be pushed inward toward said side to overcome the force of said spring *f* and move said lip from the side of said bar *b* and allow the bell to ring continuously while and only while the pressure of the hand remains on said button *h*; substantially as shown and for the purposes set forth.

6. The bicycle-bell comprising the gong or bell proper, the hollow base therefor, the coiled spring F inclosed within said hollow base, the train of gearing actuated by said spring, and the escapement-bar *b* carrying the hammer, combined with the spring *f*, the lip connected with said spring *f* and extending upward to engage one side of said bar to hold said bar stationary and being adapted to have a movement toward and from said bar in a line transversely to the vertical axis of the bell, and the push button or head *h* arranged close to said base and having its stem extending inward transversely to the vertical axis of said bell and operatively connected with said spring *f* and said lip, said head *h* being exposed at the side of said base and adapted to be pushed inward transversely toward said side to overcome the force of said spring *f* and move said lip from the side of said bar *b* and allow the bell to ring continuously while and only while the pressure of the hand remains on said button *h*; substantially as and for the purposes set forth.

Signed at New York, in the county of New York and State of New York, this 8th day of April, A. D. 1898.

TOBIAS MILLER.

Witnesses:

CHAS. C. GILL,
E. JOS. BELKNAP.