

L. L. DRIGGS.

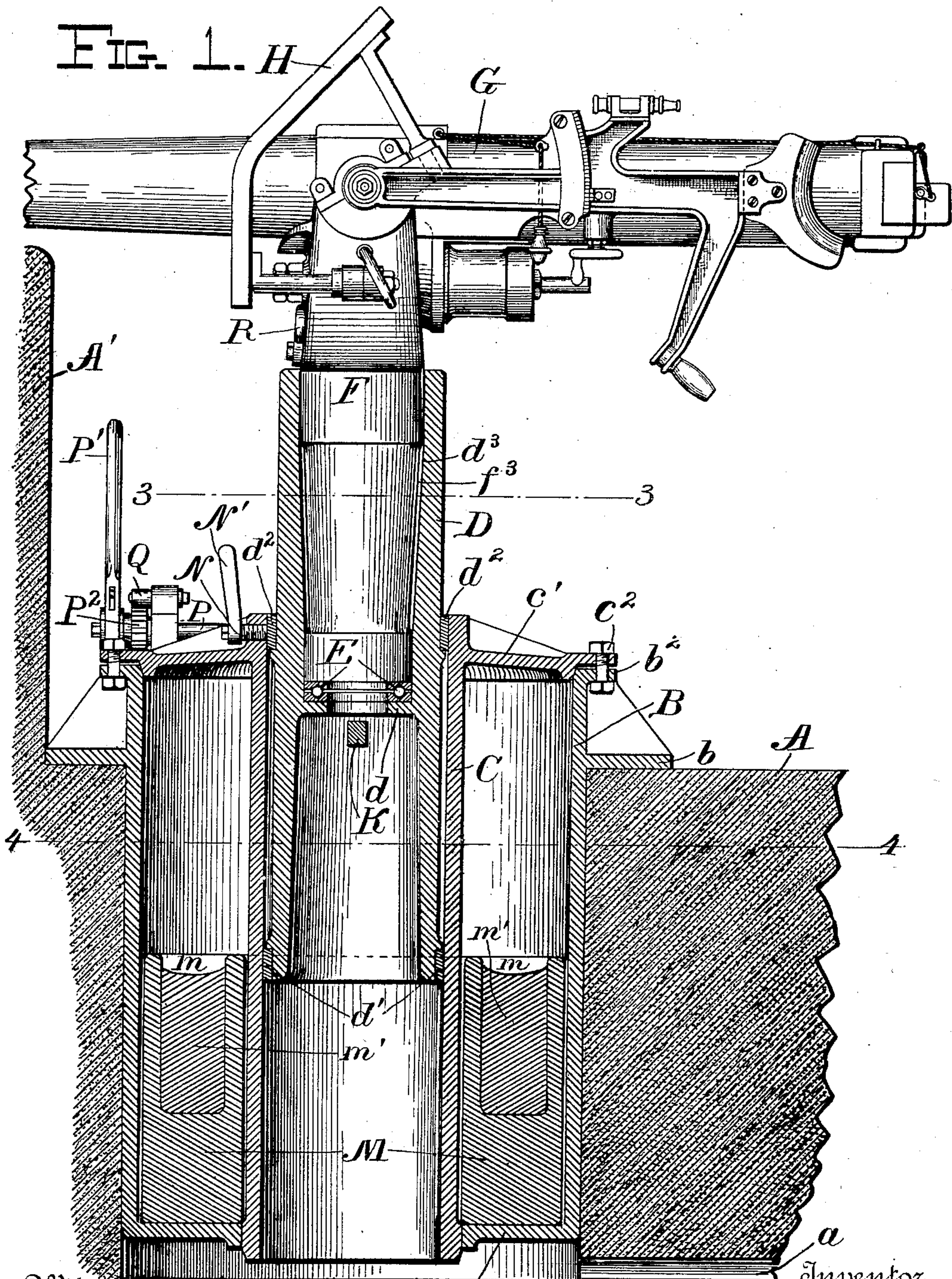
PARAPET MOUNT FOR GUNS.

(Application filed Dec. 9, 1899. Renewed Feb. 12, 1901.)

(No Model.)

5 Sheets—Sheet 1.

FIG. 1.



Witnesses

Percy C. Bowen
John Chalmers Trevelyan

Inventor
Louis L. Driggs,
by *Hilkinson & Fisher*,
Attorneys

L. L. DRIGGS.

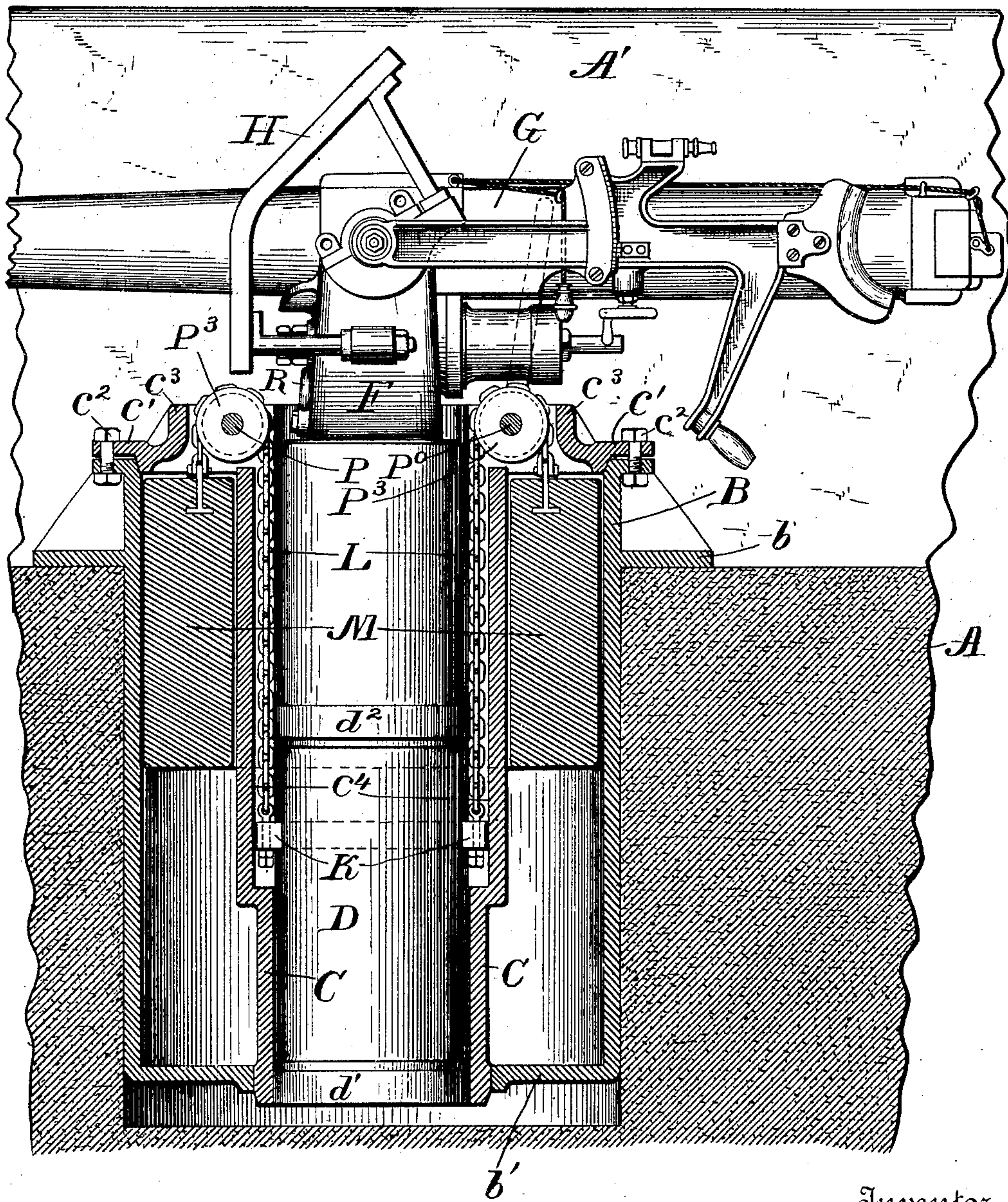
PARAPET MOUNT FOR GUNS.

(Application filed Dec. 9, 1899. Renewed Feb. 12, 1901.)

(No Model.)

5 Sheets—Sheet 2.

FIG. 2.



Witnesses

Rey C. Bowen,
John Chalmer Nelson

Inventor
Louis L. Driggs,
by *Wilkinson & Fisher,*
Attorney S.

L. L. DRIGGS.

PARAPET MOUNT FOR GUNS.

(Application filed Dec. 9, 1899. Renewed Feb. 12, 1901.)

(No Model.)

5 Sheets—Sheet 3.

FIG. 3.

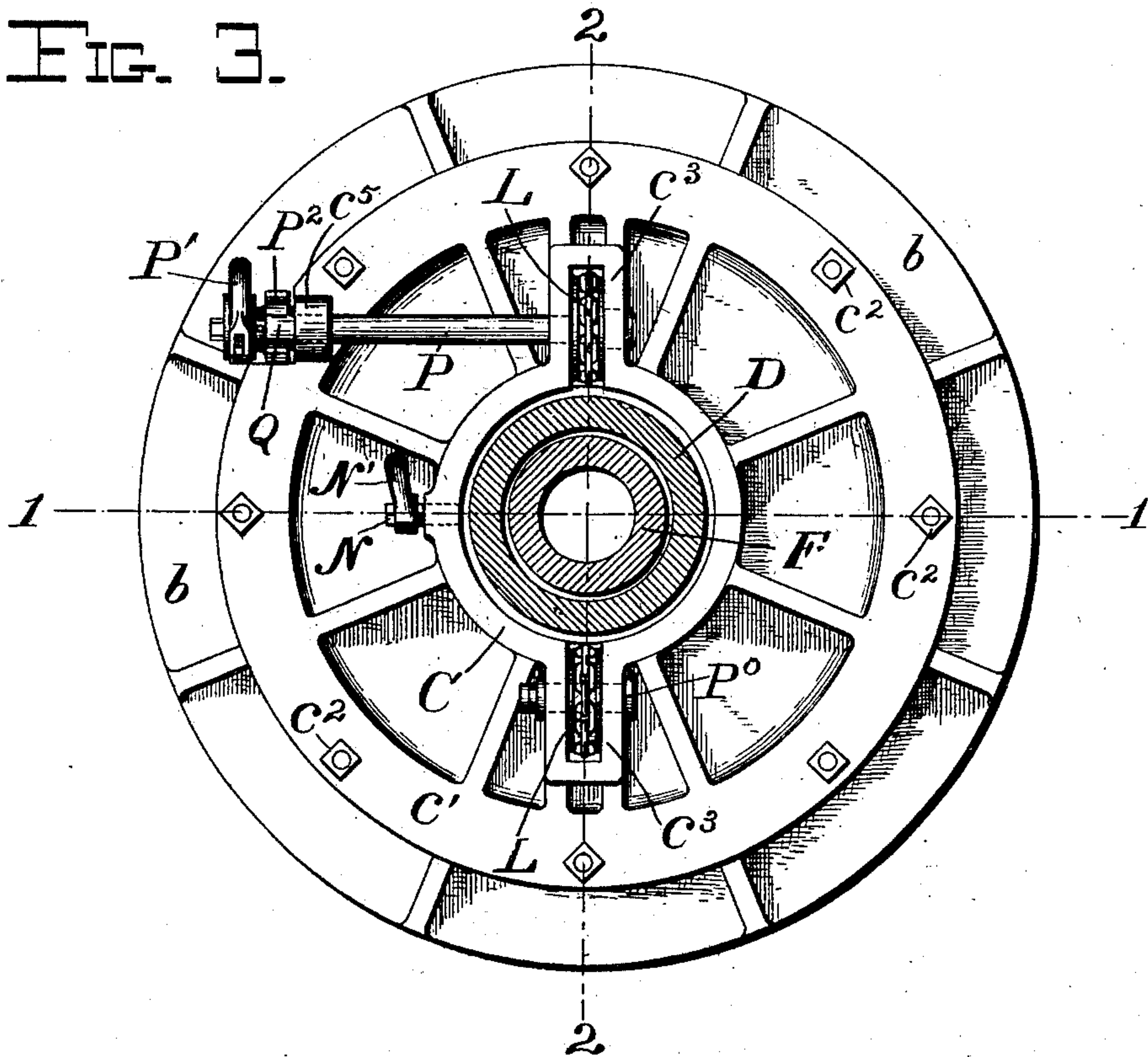
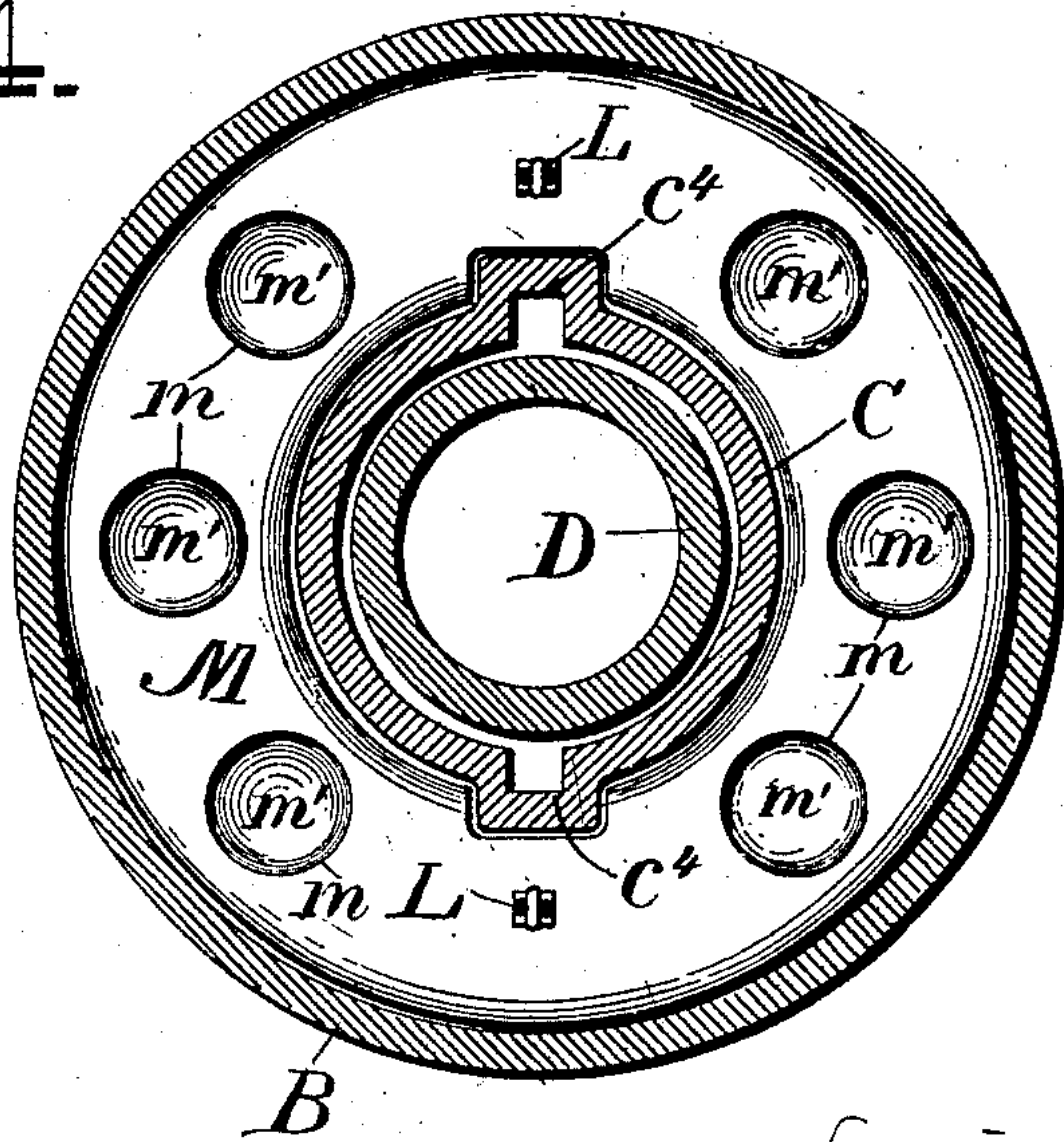


FIG. 4



Witnesses

Pres. C. Bowen.
John Chalmers Wilson

Inventor

by Louis L. Driggs,
J. Wilkinson & Fisher,

Attorneys:

L. L. DRIGGS.

PARAPET MOUNT FOR GUNS.

(No Model.)

(Application filed Dec. 9, 1899. Renewed Feb. 12, 1901.)

5 Sheets—Sheet 4.

FIG. 5.

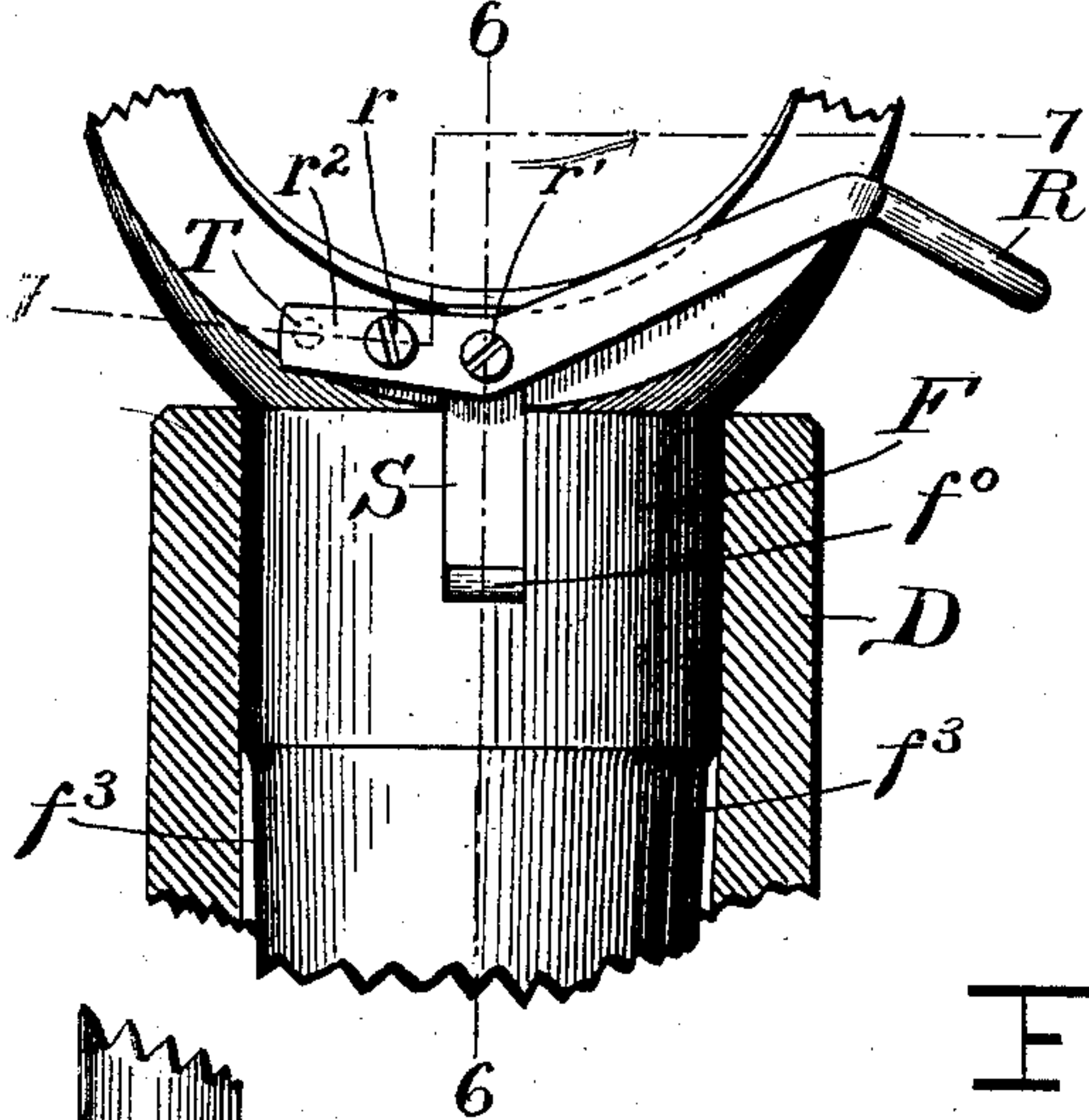


FIG. 6.

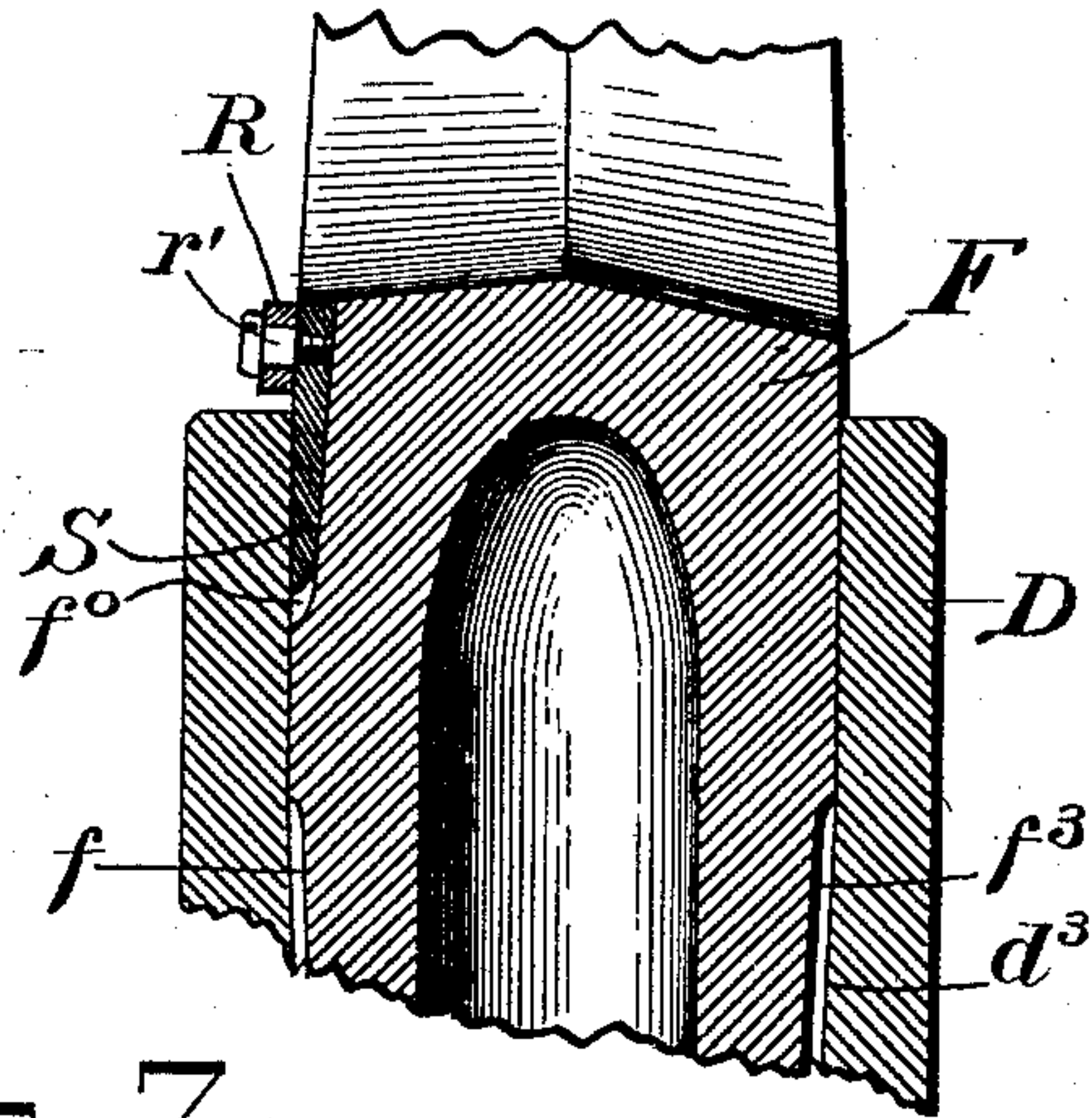


FIG. 7.

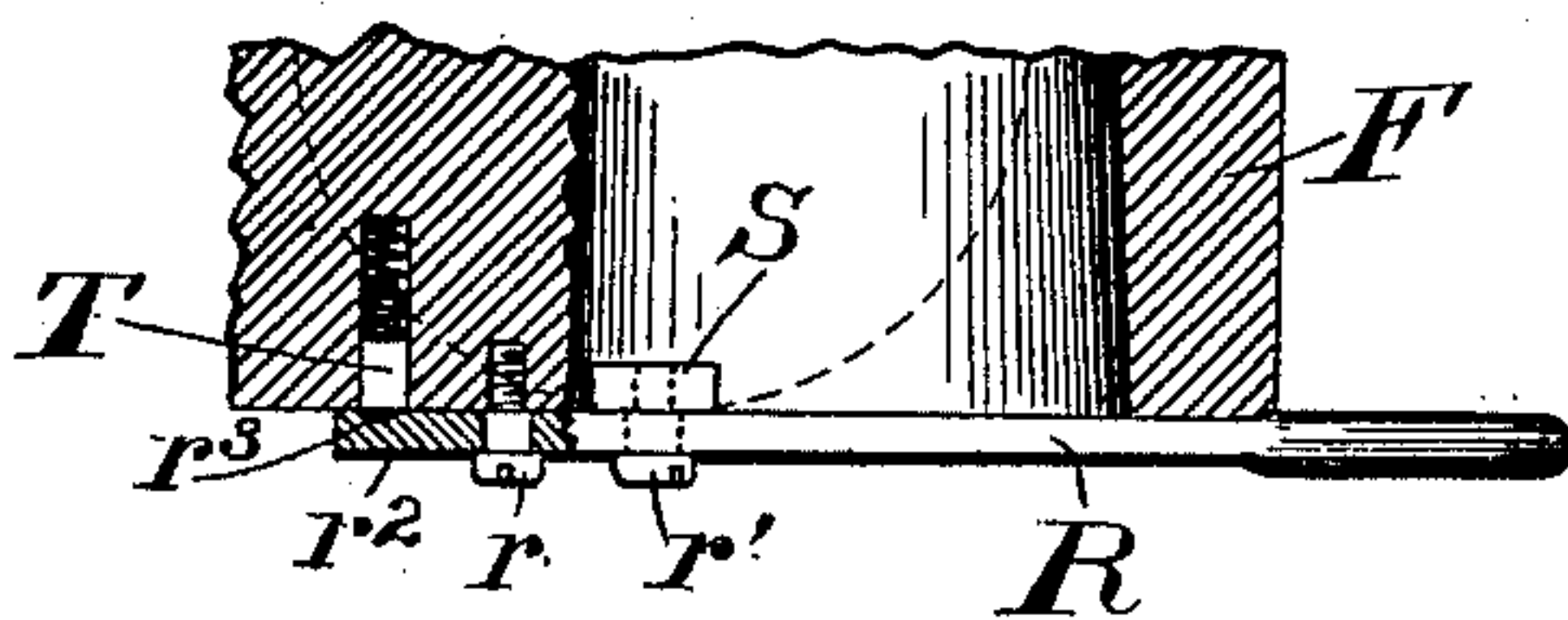


FIG. 8.

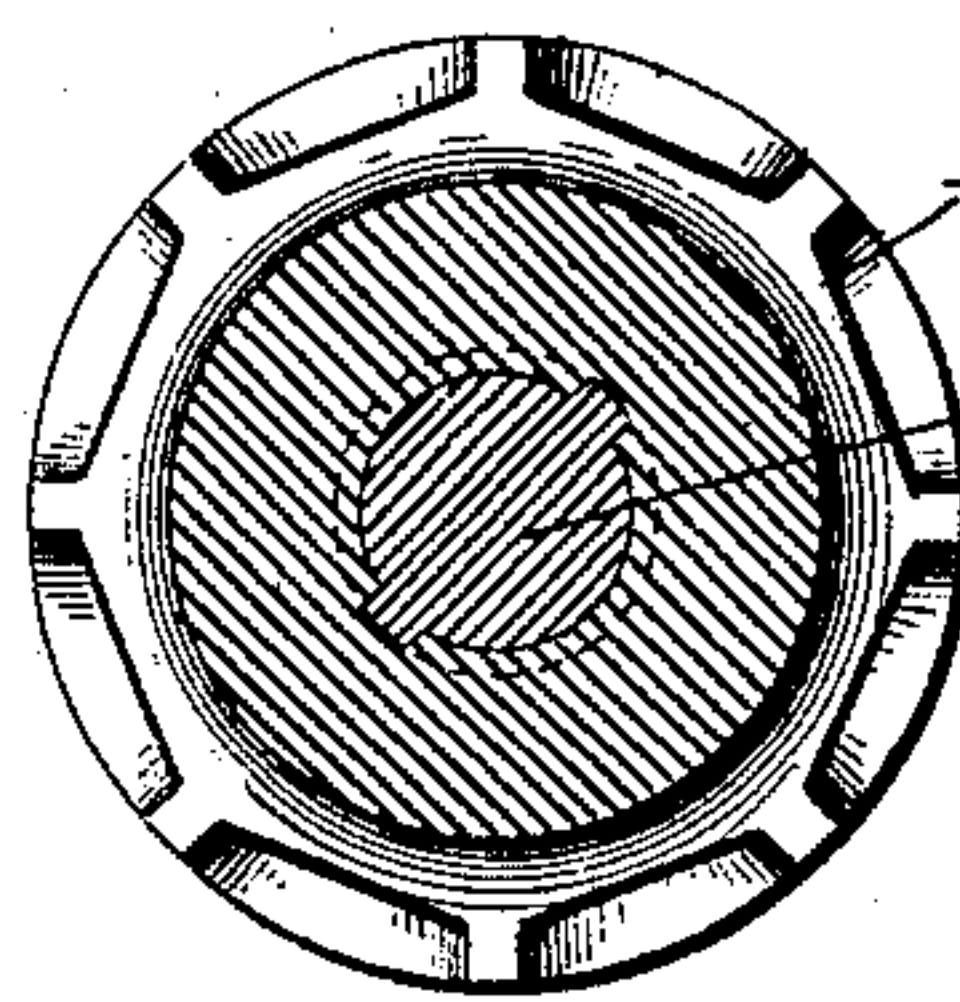
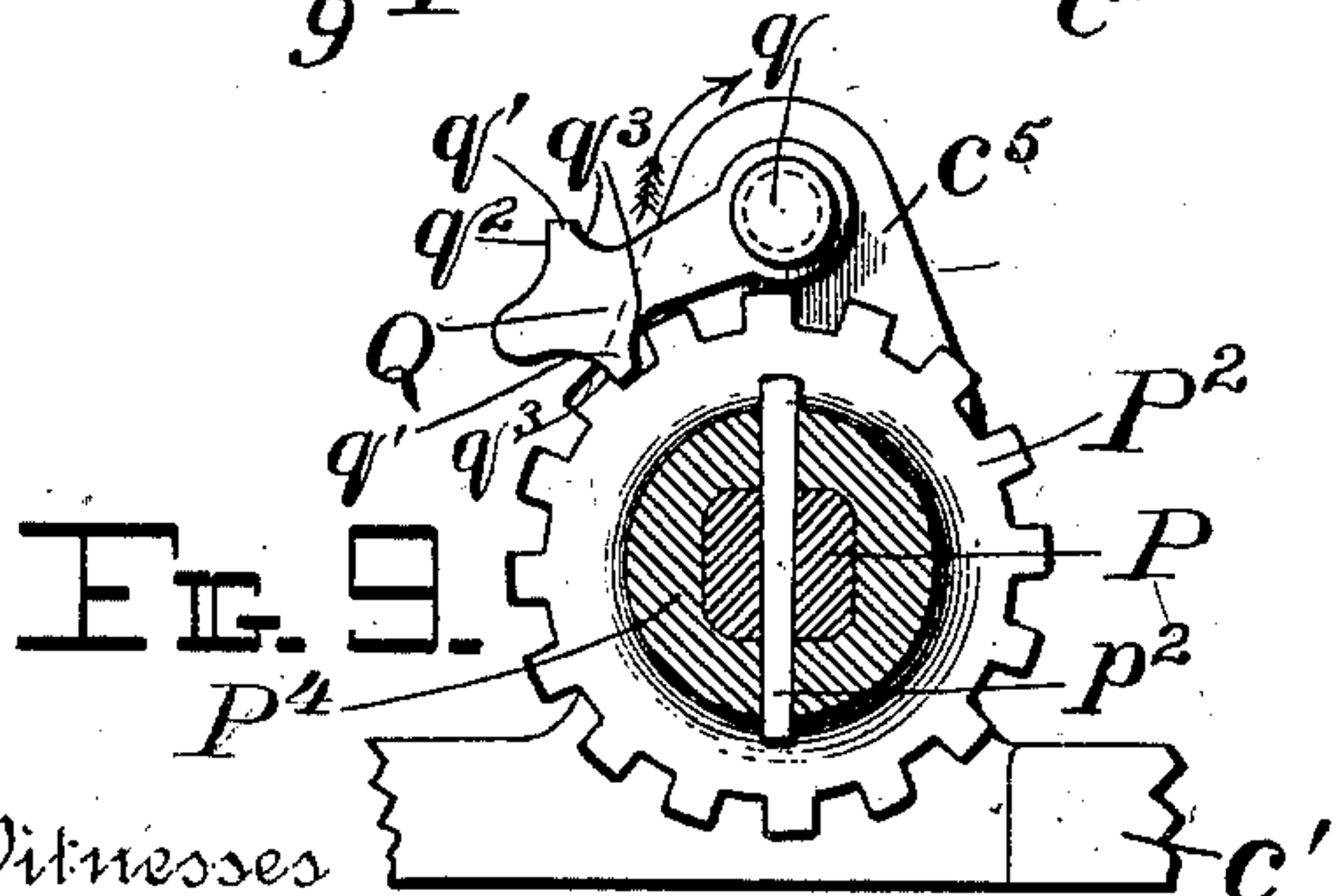
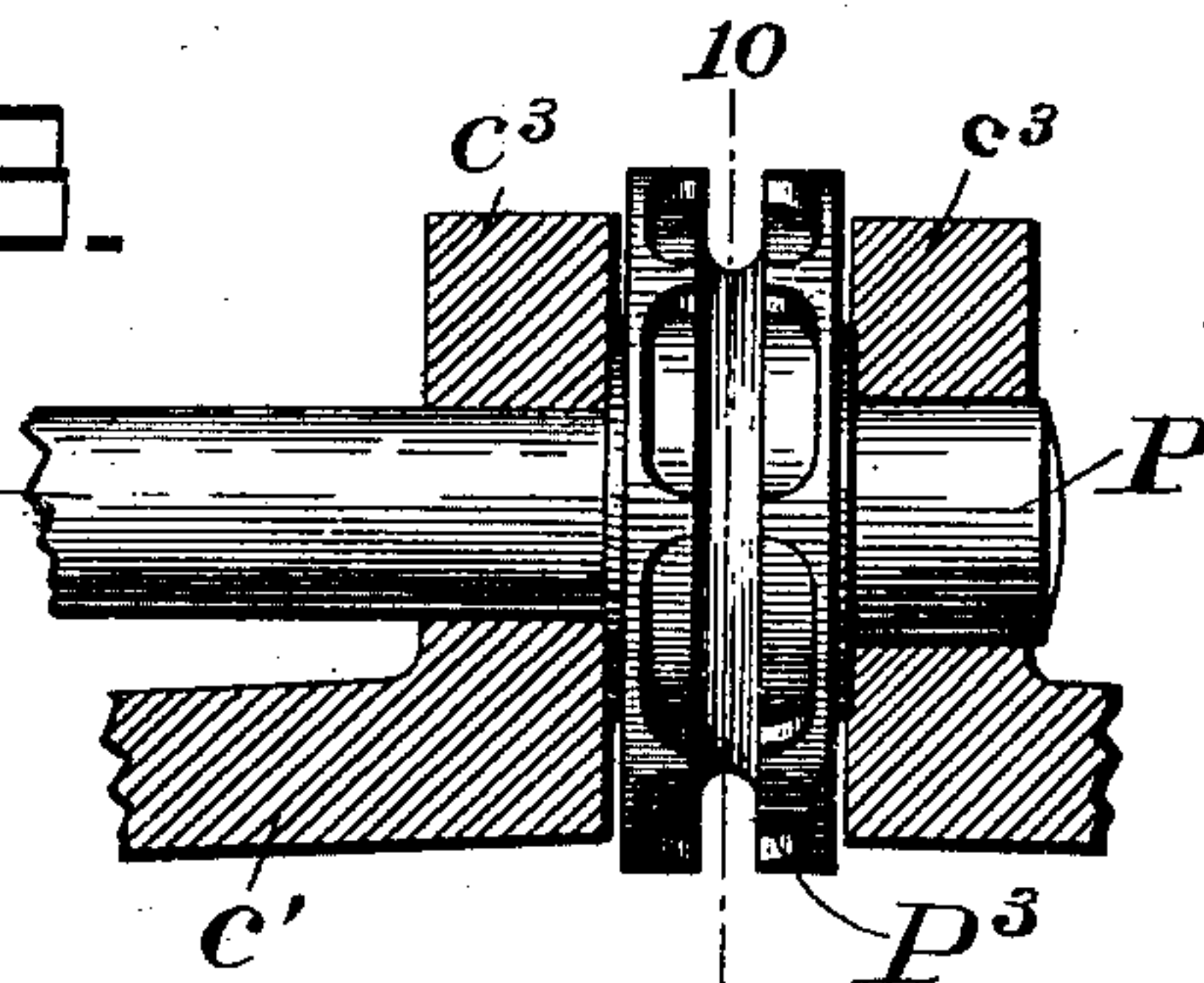
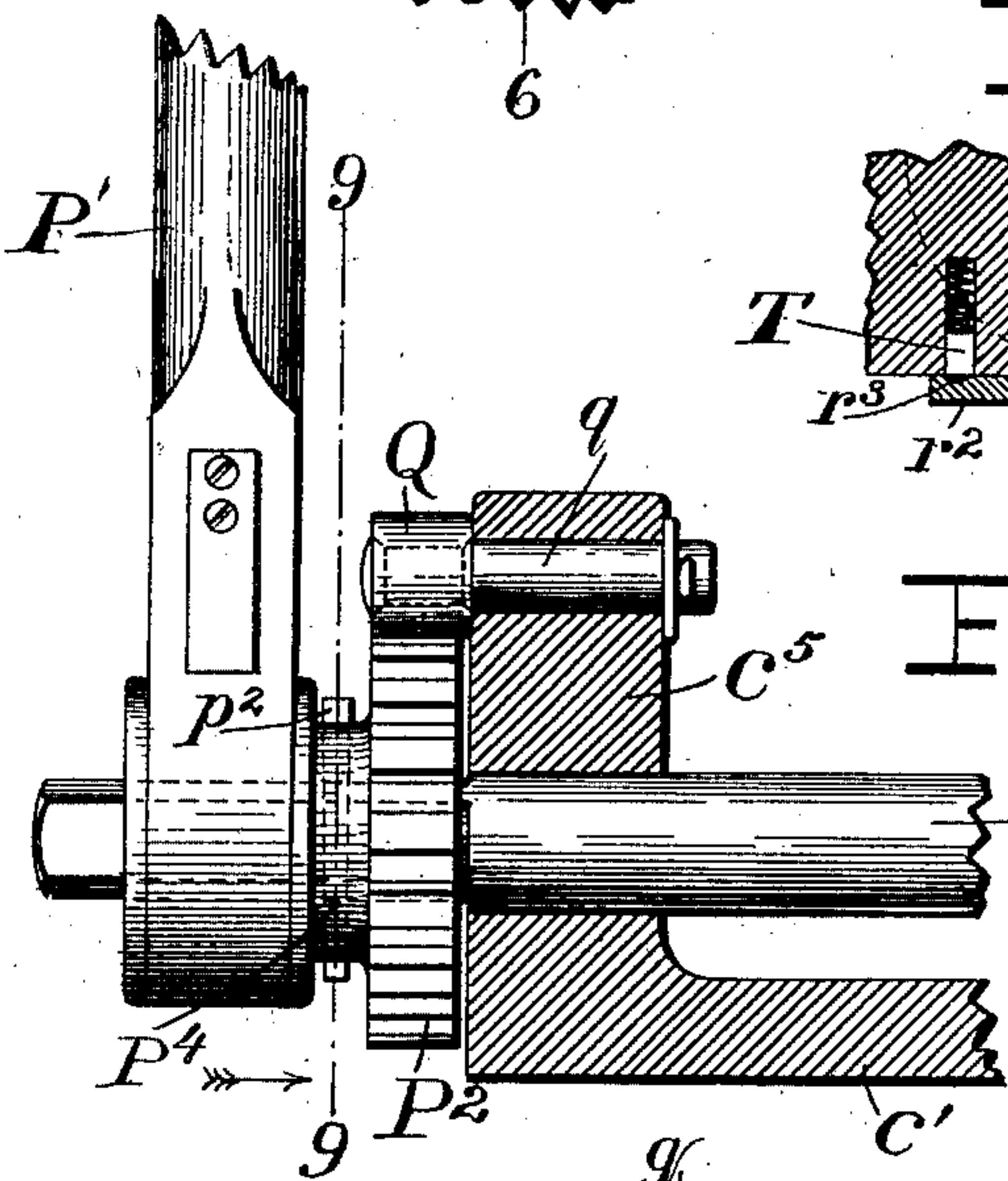


FIG. 10.

Witnesses

Percy C. Bowser
John Chalmers Hiley

Inventor

Louis L. Driggs,
by Wilkinson & Fisher,
Attorneys

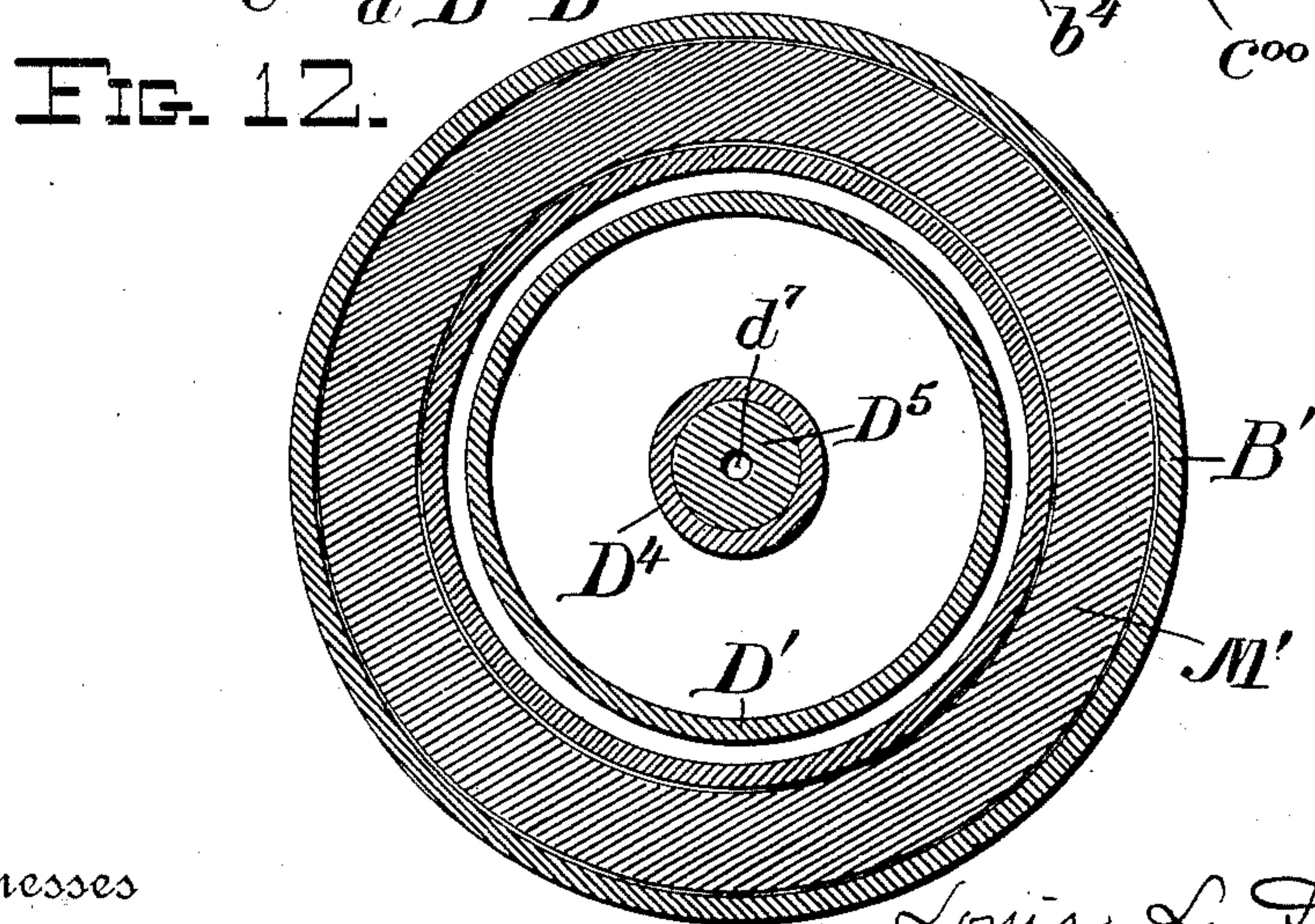
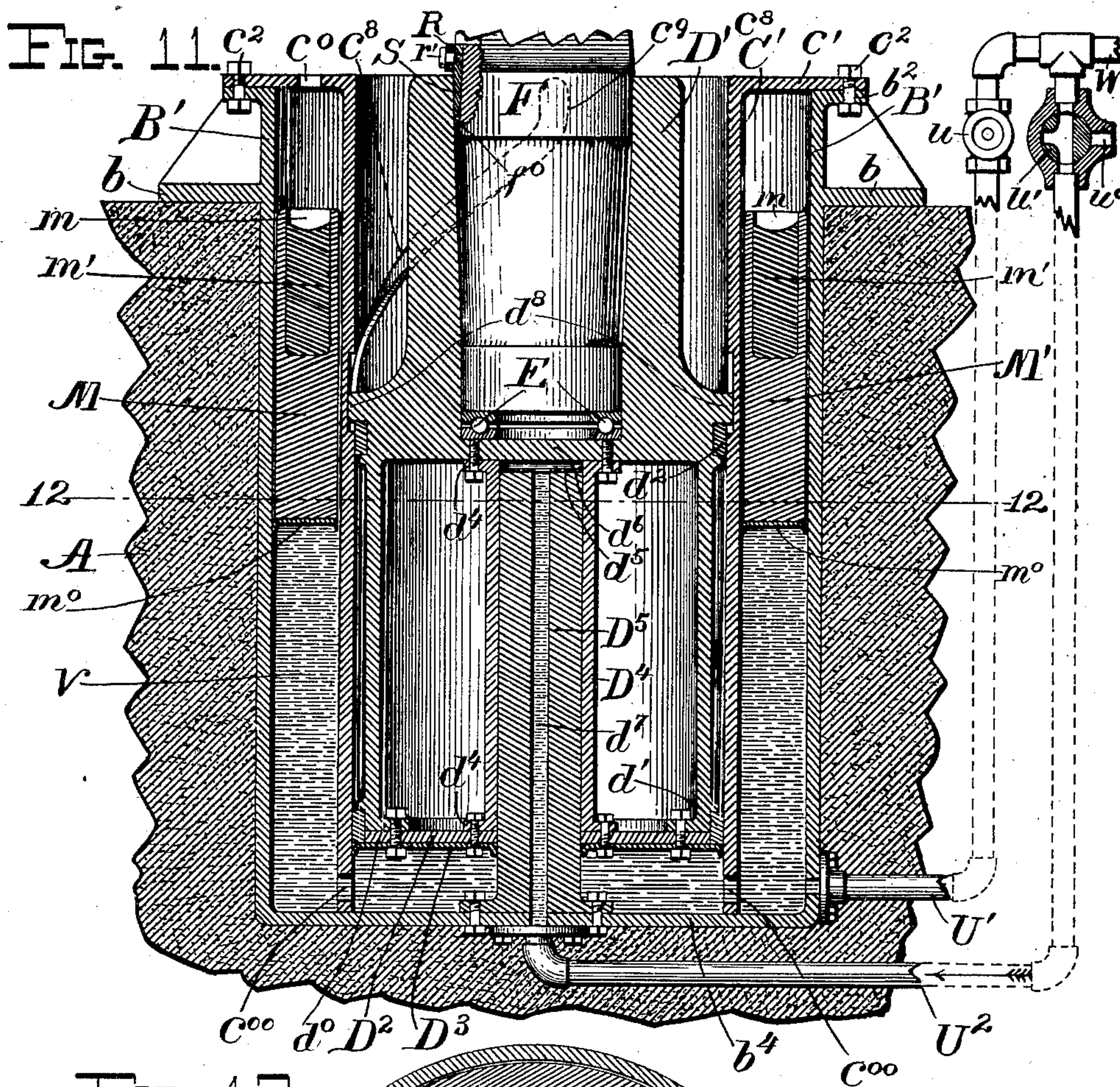
L. L. DRIGGS.

PARAPET MOUNT FOR GUNS.

(Application filed Dec. 9, 1899. Renewed Feb. 12, 1901.)

(No. Model.)

5 Sheets—Sheet 5.



Witnesses

Percy C. Borren.
 John Chalmers Holmes.

Inventor
Louis L. Driggs,
by Wilkinson & Fisher,
Attorneys

UNITED STATES PATENT OFFICE.

LOUIS L. DRIGGS, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO WILLIAM H. DRIGGS, OF WASHINGTON, DISTRICT OF COLUMBIA.

PARAPET-MOUNT FOR GUNS.

SPECIFICATION forming part of Letters Patent No. 679,112, dated July 23, 1901.

Application filed December 9, 1899. Renewed February 12, 1901. Serial No. 47,047. (No model.)

To all whom it may concern:

Be it known that I, LOUIS L. DRIGGS, a citizen of the United States, residing at New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Parapet-Mounts for Guns; 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 relates to improvements in gun-mounts, and it more particularly relates to parapet-mounts for guns in masked batteries, in which the gun is raised or lowered by hydraulic pressure or mechanical means and in which the gun is swung approximately parallel to the inner wall of the parapet in raising or lowering the same and is rotated about its pivot to train on the target while it is in the raised position. In this way the gun may be placed close to the parapet, and thus better protection against plunging fire is secured. Moreover, a more compact combination of battery and earthworks or masonry is secured.

My invention will be understood by reference to the accompanying drawings, in which the same parts are indicated by the same letters throughout the several views.

Figure 1 represents a side elevation of the gun in the raised or firing position, but with the lower part of the gun-mount in vertical section in the same vertical plane that includes the axis of the bore, the said section being along the line 1 1 of Fig. 3. Fig. 2 represents a similar view of the gun in the lowered position, the section being in a plane at right angles to the plane of Fig. 1, the said section being along the line 2 2 of Fig. 3. Fig. 3 represents a section through the gun-mount along the line 3 3 of Fig. 1 and looking down. Fig. 4 represents a section along the line 4 4 of Fig. 1 and looking down. Fig. 5 is a detail view showing a portion of the yoke of the gun-mount and a section of the sleeve inclosing the same and illustrates the means of locking the said yoke against turning in the said sleeve. Fig. 6 represents a section through the parts shown in Fig. 5 and along the line 6 6 of the said figure, but look-

ing to the left. Fig. 7 represents a section along the broken line 7 7 of Fig. 5 and looking down. Fig. 8 is a detail view showing the ratchet-and-pawl arrangement for raising the gun by hand, parts being broken away. Fig. 9 represents a section along the line 9 9 of Fig. 8 and looking to the right. Fig. 10 represents a section along the line 10 10 of Fig. 8. Fig. 11 represents a section similar to that shown in Fig. 2, except that the gun is raised and lowered by a hydraulic system; and Fig. 12 represents a section along the line 12 12 of Fig. 11 and looking down.

In Figs. 1 to 10, inclusive, mechanical means for operating the gun-mount are shown, while Figs. 11 and 12 relate to a hydraulic system for operating the mount. The details of the gun and of its mounting on the yoke are the same in both instances and need no further description herein, and the upper part of the mount is the same as that of the specific gun shown and described in the patent application of William H. Driggs, entitled "Improvements in gun-mounts," filed October 28, 1898, and serially numbered 694,815, and will not be further described herein.

Referring now particularly to the mount illustrated in Figs. 1 to 10 of the drawings, A represents the firing-platform, made of masonry and protected by the parapet A'. B represents a cylindrical casting, preferably made of iron, having the annular ribbed flange *b*, resting on the gun-platform, the perforated bottom *b'*, and the upper flange *b*², to which the web *c'* of the inner cylinder C is secured by means of bolts *c*². This web *c'* is also provided with stiffening-ribs, as shown. The inner cylinder C fits snugly in the perforated bottom *b'* of the outer cylinder B, and the said cylinder C is bored out to receive the bearing-rings *d'* and *d*², mounted on the sleeve D, to which the yoke F is journaled. This yoke F rests on ball-bearings E, supported by the rib *d*, projecting inwardly from the sleeve D, and the heel of the said yoke fits snugly in the conical chamber *d*³ above the rib *d* in the sleeve D. The whole of the yoke is cut away, as at *f*³, to diminish the surface in frictional contact and thus to facilitate the rotation of the yoke F in the sleeve D. This yoke F carries the rocking

slide G and the gun-shield H, and the other parts of the gun-mount carried by the said yoke are the same as those described in the application of William H. Driggs referred to.

5 The sleeve D is perforated to receive the bar K, to which the lifting-chains L are secured, and these chains L and the ends of the bar K are free to travel vertically in the guide-way c^4 , excepting at either side of the inner

10 cylinder C and shown most clearly in Figs. 2 and 4. Thus the ends of the bar K serve to hold the sleeve D against rotation around its vertical axis, while the bearing-ring d^2 is in contact with the inner surface of the cylinder C throughout almost its entire circumference. Thus the chains are out of the way, the bar steadies the sleeve D against rotation, and snug bearing-surfaces are secured. The chains L pass over the pulleys P^3 , keyed on

20 the shaft P and on the pin P^0 , respectively. (See Fig. 3.) The outer ends of these chains are secured to the annular weight M. This weight is preferably made of cast-iron and provided with pockets m , filled with lead m' ,

25 so as to get increased weight with the same size of ring. The pulleys P^3 are keyed between the ribs c^3 , projecting upward from the web c' of the inner cylinder C. The shaft P is journaled near its outer end in the arm c^5 ,

30 fast to and integral with the web c' , and the shaft has rigidly mounted thereon the ratchet-wheel P^2 , provided with rectangular teeth to engage the outer surfaces q^2 of the arm q' of the pawl Q, which pawl is pivoted on the pin

35 q . The inner surfaces q^3 of these arms q' are arranged to slide over the teeth of the ratchet-wheel P^2 , so that the pawl holds only when the pressure is brought on the same toward the pivot q , as shown in Fig. 9. By this arrangement the pawl may be made to hold the

40 gun when in the raised or firing position or when in the lowered position, as may be desired, by simply swinging the pawl from the left to right, or vice versa, as indicated by the

45 arrow in Fig. 9. The shaft P is rotated by means of the hand-lever P' , provided with a ratchet-and-pawl arrangement (not shown, but well known in the art) which engages the collar P^1 , rigidly attached to the shaft P, as

50 by means of the pin p^2 . The pulleys P^3 are chain-pulleys and are arranged to prevent any appreciable slip of the chain thereon. The weight M is made slightly lighter than the total weight of the sleeve D, the yoke

55 F, and the gun and other parts carried by said yoke, so that there will be a tendency of the gun to run down to the lowest position when released. The gun is moved up into the firing position by means of the hand-

60 lever P' and is clamped up in this position by means of a suitable brake, such as the screw N, operated by the hand-lever N' , which screw bites against the band d^2 on the sleeve when in the elevated position, as

65 shown in Fig. 1. By this arrangement of weights, in combination with the other parts

before mentioned, an exceedingly compact and strong form of gun-mount is obtained.

The ball-bearings E enable the gun to be swung by hand in the sleeve D, and thus to be trained on the target. In order to clamp the gun at the desired point of train, I provide the sliding wedge or chock S, pivoted on the pin i , fast to the hand-lever R, which lever is pivoted on the pin r' , fast to the yoke F, and is preferably provided with a short arm r^2 , having a recess r^3 , into which the spring-plunger T (see Fig. 7) is pressed when the chock is raised. Thus this plunger T holds the short arm down and the chock up when it is desired to train the gun; but when the chock is moved down to the lowered position the weight of the lever R and the friction of the parts will hold the chock in the locked position. This recess r^3 and spring-plunger T should so engage that a quick motion of the hand-lever R will wedge back the plunger and allow the chock to descend, thus locking the yoke in the sleeve D. Thus it will be seen that the gun may be readily trained on the target and quickly clamped in that position when it is desired to fire the same.

In the form of device shown in Figs. 11 and 12 the outer cylinder B' is provided with a closed bottom b^4 , perforated only to receive fluid through the pipe U^2 . The inner cylinder c' is perforated, as at c^{00} , to allow the passage of fluid therethrough as the weight rises and falls, and the bottom of the annular weight M' is provided with a suitable packing, such as an annular inverted copper trough m^0 , which packing rests on the fluid V. The sleeve D' is provided with bearing-rings d' and d^2 , as before; but the bottom of this sleeve is closed with a head D^2 , fast to the flange d^0 , to which head is secured the packing-ring D^3 , which is preferably in the form of an annular inverted copper trough. Above this head and secured thereto, as by the flange and bolt d^4 , is a small cylinder D^4 , which may be either closed at the top or may be bolted to the sleeve D' below the balls E, as shown in Fig. 11, in which case the wall d^6 of the sleeve D' forms the closed head of the cylinder D^4 . The piston D^5 , which projects into this cylinder, is rigidly attached to the head b^4 of the outer cylinder B, and above this piston D^5 a suitable packing-ring d^5 is provided. This piston D^5 and packing-ring d^5 are perforated, as at d^7 , to admit the passage therethrough of fluid from the pipe U^2 . The annular area of the head D^2 exposed to the pressure of the fluid V is made slightly greater than the annular area of the weight M' exposed to the pressure of the same fluid, so that if the gun be free to descend the fluid will be forced outward through the opening c^{00} into the annular space between the cylinders C' and B' until the gun has reached the lowest position, the weights necessarily rising as the gun descends, or vice versa. Fluid under pressure

is supplied to the annular space beneath the weight, and also beneath the sleeve-head D^2 , through the pipe U' , and is controlled by means of the valve u from the fluid-pressure main W , leading to any suitable source (not shown) of fluid-pressure. The web c' is perforated, as at c^0 , above the weight M' , to permit the escape of imprisoned air above the weights and also to permit of any fluid being pumped out that may leak past the weight and accumulate above the same. Any deficiency of fluid in the apparatus may be any time supplied by partly opening the valve u , which valve would normally be closed. In order to raise the gun from the lowered to the raised position, the pipe U^2 is provided. This also connects with the fluid-pressure main W , but opens into the bore d^7 of the piston D^5 . If fluid under pressure be admitted through this pipe U^2 , it will press on the closed head of the cylinder D^4 and will cause the said cylinder to rise, and hence it will only be necessary to have the fluid-pressure upward on the said head slightly in excess of the pressure downward due to the preponderance of the gun. The pressure in the pipe U^2 is controlled by means of the three-way valve u' , and if this valve be turned in the position shown in Fig. 11 the sleeve D , carrying the gun, will be pressed upward, while if the said sleeve be rotated through ninety degrees the supply of fluid from the main W will be cut off and the fluid from the cylinder D^4 will be forced out through the opening w^0 due to the preponderance of the gun, and thus the gun will descend due to its own weight. Thus it will be seen that by simply turning the three-way valve u' the gun may be raised or lowered at will. The sleeve D' may be guided in its ascent and descent by lugs d^8 , projecting into guideways c^8 in the inner cylinder C' . By making these guideways c^8 spiral in form, preferably with an increasing pitch terminating in a vertical portion c^9 about ninety degrees from the lower portion of the groove, the gun will be automatically rotated through ninety degrees each time it is raised or lowered, and thus may be automatically made to swing with the muzzle over the parapet in the raised position or with the bore parallel to the inner wall of the parapet in the lowered position. By having the upper part c^9 of the groove c^8 vertical, as shown, the sleeve D' is held against turning in the inner cylinder C' when the gun is in the raised position, and all train must be given by rotating the yoke F on the ball-bearings E . If desired, the yoke F may be held in the sleeve D' by the chock S , operated by the hand-lever R , already described with reference to the other figures.

The other details of the invention shown in Figs. 11 and 12 are substantially the same as those shown in the other figures. In either case the advantages of simplicity of construction, compactness, strength, and ease of manipulation are essentially the same. These

and other advantages of the herein-described construction will readily suggest themselves to any one skilled in the art.

It will be obvious that many changes may be made in the herein-described construction without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a disappearing gun-mount, the combination with an outer cylinder, an inner cylinder, an annular weight mounted between said cylinders, a sleeve inclosed within said inner cylinder and means for holding the same against rotation therein, means for causing said weight to tend to lift said sleeve, a yoke revolubly mounted in said sleeve, and a gun mounted in said yoke, substantially as described.

2. In a disappearing gun-mount, the combination with an outer cylinder, an inner cylinder, an annular weight mounted between said cylinders, a sleeve inclosed within said inner cylinder and means for holding the same against rotation therein, means for causing said weight to tend to lift said sleeve, a yoke revolubly mounted in said sleeve, a rocking slide trunnioned in said yoke, and a gun mounted in said rocking slide, substantially as described.

3. In a disappearing gun-mount, the combination with an outer cylinder, an inner cylinder, an annular weight mounted between said cylinders, a sleeve inclosed within said inner cylinder and means for holding the same against rotation therein, means for causing said weight to tend to lift said sleeve, a yoke revolubly mounted in said sleeve, a gun mounted on said yoke, and means for holding said yoke against rotation in said sleeve when desired, substantially as described.

4. In a disappearing gun-mount, the combination with an outer cylinder, an inner cylinder, an annular counterpoise-weight mounted between said cylinders, a gun-support mounted within said inner cylinder and partly counterbalanced by said weight, and means for moving said gun-support vertically, substantially as described.

5. In a disappearing gun-mount, the combination with an outer cylinder, an inner cylinder, an annular counterpoise-weight mounted between said cylinders, a gun-support mounted within said inner cylinder and partly counterbalanced by said weight, means for moving said gun-support vertically, means for holding said gun-support in the raised position, and means for training the gun on said support; substantially as described.

6. In a disappearing gun-mount, the combination with an outer cylinder, an inner cylinder, an annular counterpoise-weight mounted between said cylinders, a vertically-movable sleeve inclosed within said inner cylinder and means for holding the same against rotation therein, means for causing said

weight to tend to lift said sleeve, a yoke rev-
olubly mounted in said sleeve, antifric-
tion-bearings for said yoke, and a gun mounted
in said yoke, substantially as described.

5 7. In a disappearing gun-mount, the com-
bination with an outer cylinder, an inner cyl-
inder, an annular counterpoise-weight mount-
ed between said cylinders, a vertically-mov-
able sleeve inclosed within said inner cylin-
10 der and means for holding the same against
rotation therein, means for causing said
weight to tend to lift said sleeve, means for
clamping said sleeve at the desired elevation,
a yoke revolubly mounted in said sleeve, and
15 a gun mounted in said yoke, substantially as
described.

8. In a disappearing gun-mount, the com-
bination with an outer cylinder, an inner cyl-
inder, an annular counterpoise-weight mount-
20 ed between said cylinders, a vertically-mov-
able sleeve inclosed within said inner cylin-
der and means for holding the same against
rotation therein, means for causing said
weight to tend to lift said sleeve, means for
25 clamping said sleeve at the desired elevation,
a yoke revolubly mounted in said sleeve,
means for clamping said yoke in the desired
train, a rockingslide trunnioned in said yoke,
and a gun mounted in said rocking slide, sub-
30 stantially as described.

9. In a disappearing gun-mount, the com-
bination with an outer cylinder, an inner cyl-
inder, an annular counterpoise-weight mount-
ed between said cylinders, a vertically-mov-
35 able sleeve inclosed within said inner cylin-
der and means for holding the same against
rotation therein, means for causing said
weight to tend to lift said sleeve, and means

for mounting a gun on said sleeve, substan-
tially as described. 40

10. In a gun-mount of the character de-
scribed, the combination with a sleeve, a
yoke mounted in said sleeve, a sliding chock
engaging between said sleeve and said yoke,
a hand-lever for operating said chock, and a 45
spring-plunger normally holding said chock
in the disengaged position, substantially as
described.

11. In a gun-mount of the character de-
scribed, the combination with a cylinder hav- 50
ing cam-grooves on the inner surface thereof,
of a counterpoise weight or weights exterior
to said cylinder, a sleeve mounted in said cyl-
inder and having lugs projecting into said
cam-grooves, and supports for the gun mount- 55
ed on said sleeve, substantially as described.

12. In a disappearing gun-mount, the com-
bination with means for raising and lowering
the gun, of automatic means operated by the
raising and lowering mechanism for swinging 60
the gun laterally through an angle in one di-
rection as it is raised and in the opposite di-
rection as it is lowered, substantially as de-
scribed.

13. In a disappearing gun-mount, the com- 65
bination with means for raising and lowering
the gun, of coöperating cams and cam-grooves
for automatically swinging the gun through
an angle laterally as it is raised or lowered,
substantially as described. 70

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

LOUIS L. DRIGGS.

Witnesses:

ALBERT W. HOWE,
L. J. ELIOT.