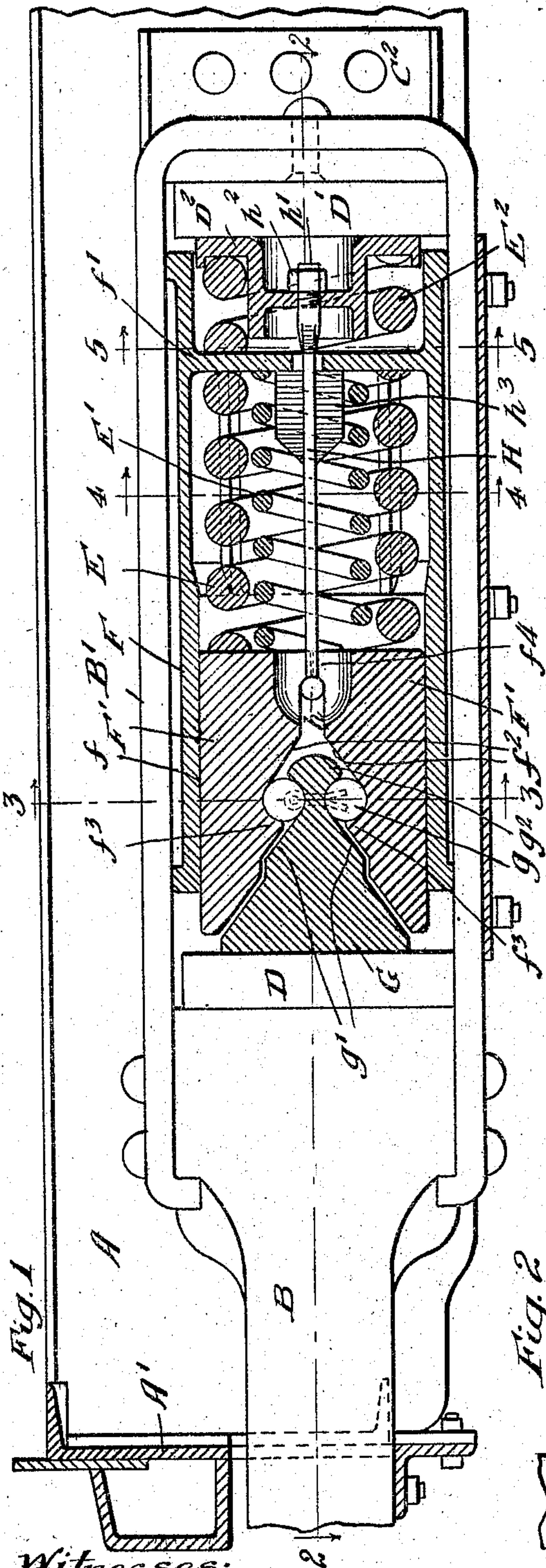


J. F. O'CONNOR.
 FRICTION DRAFT RIGGING.
 APPLICATION FILED OCT. 16, 1908.

911,902.

Patented Feb. 9, 1909.

2 SHEETS—SHEET 1.



Witnesses:

Wm. Geiger
 H. M. Munday

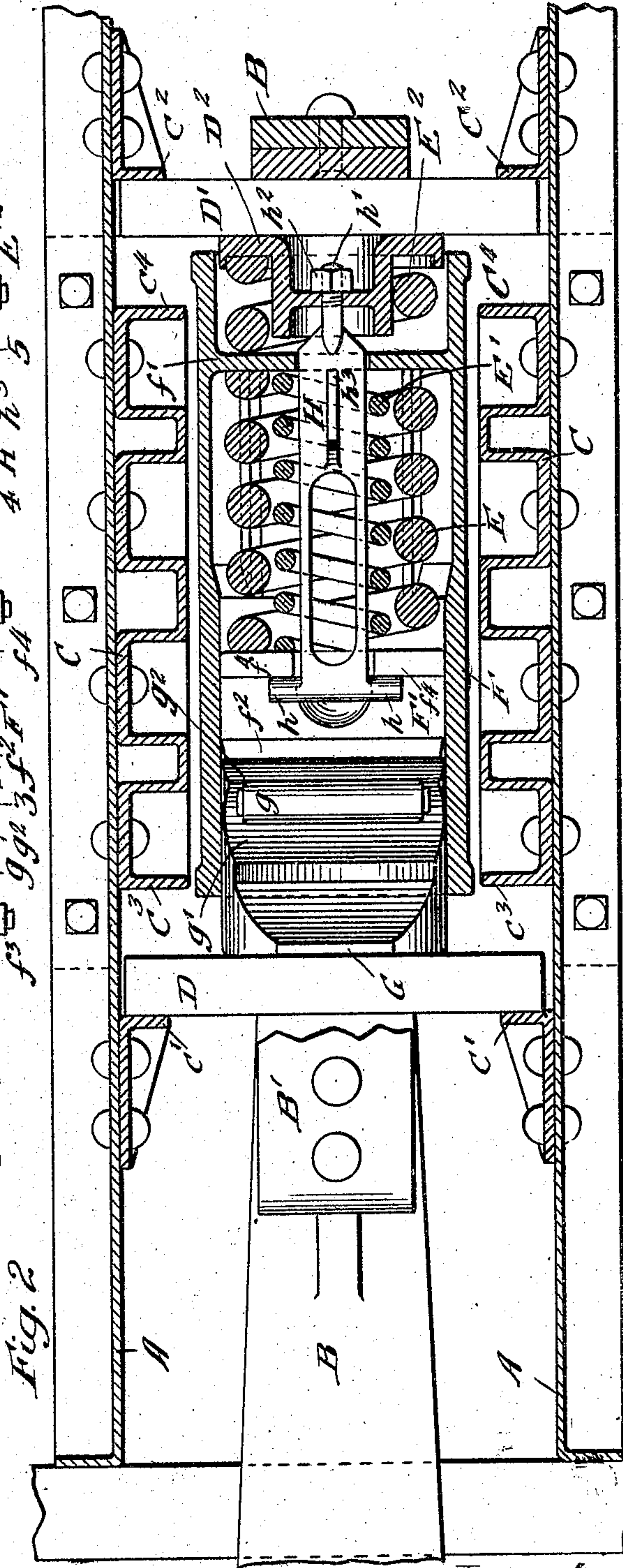


Fig. 2

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Fig. 3

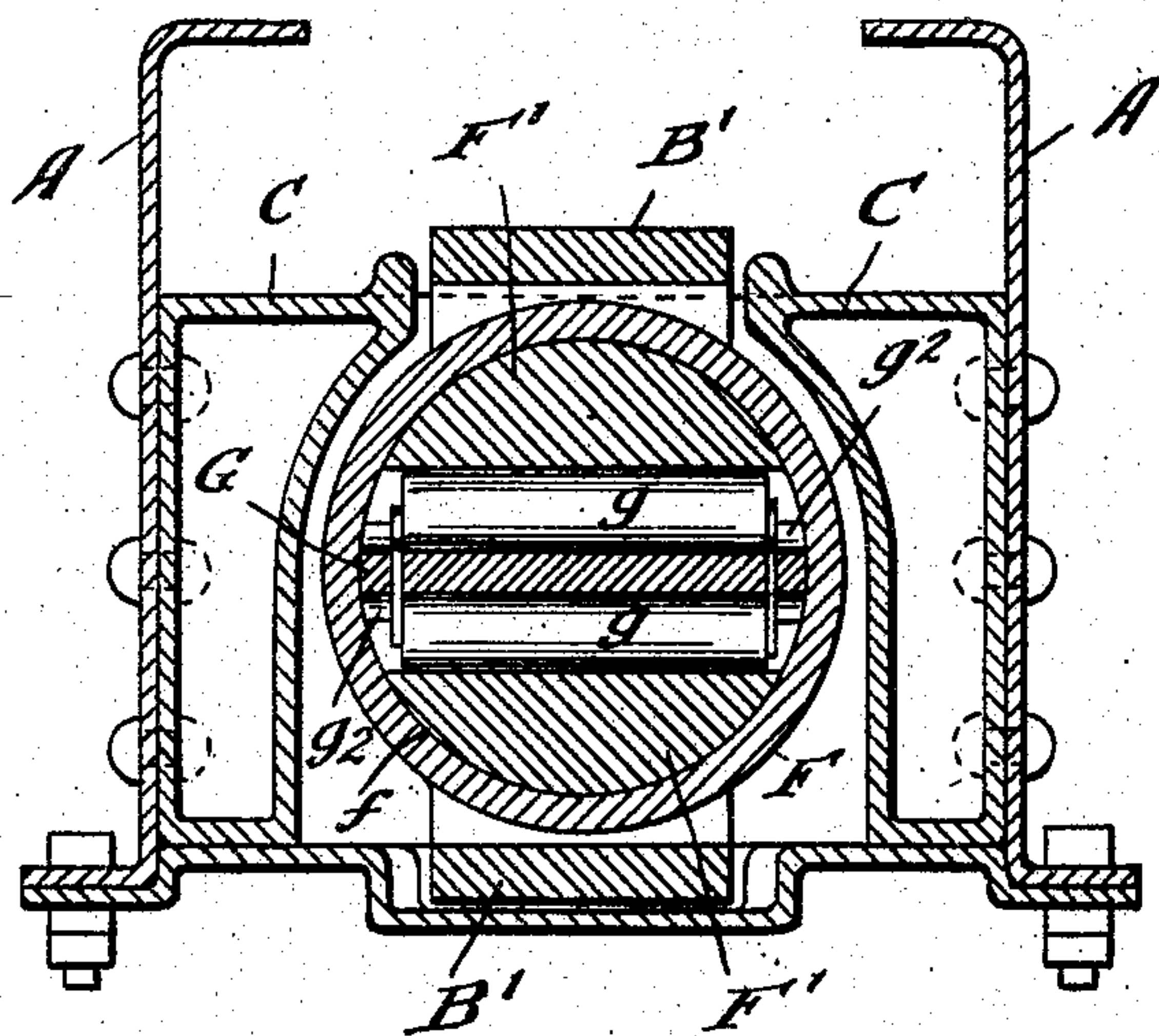


Fig. 4

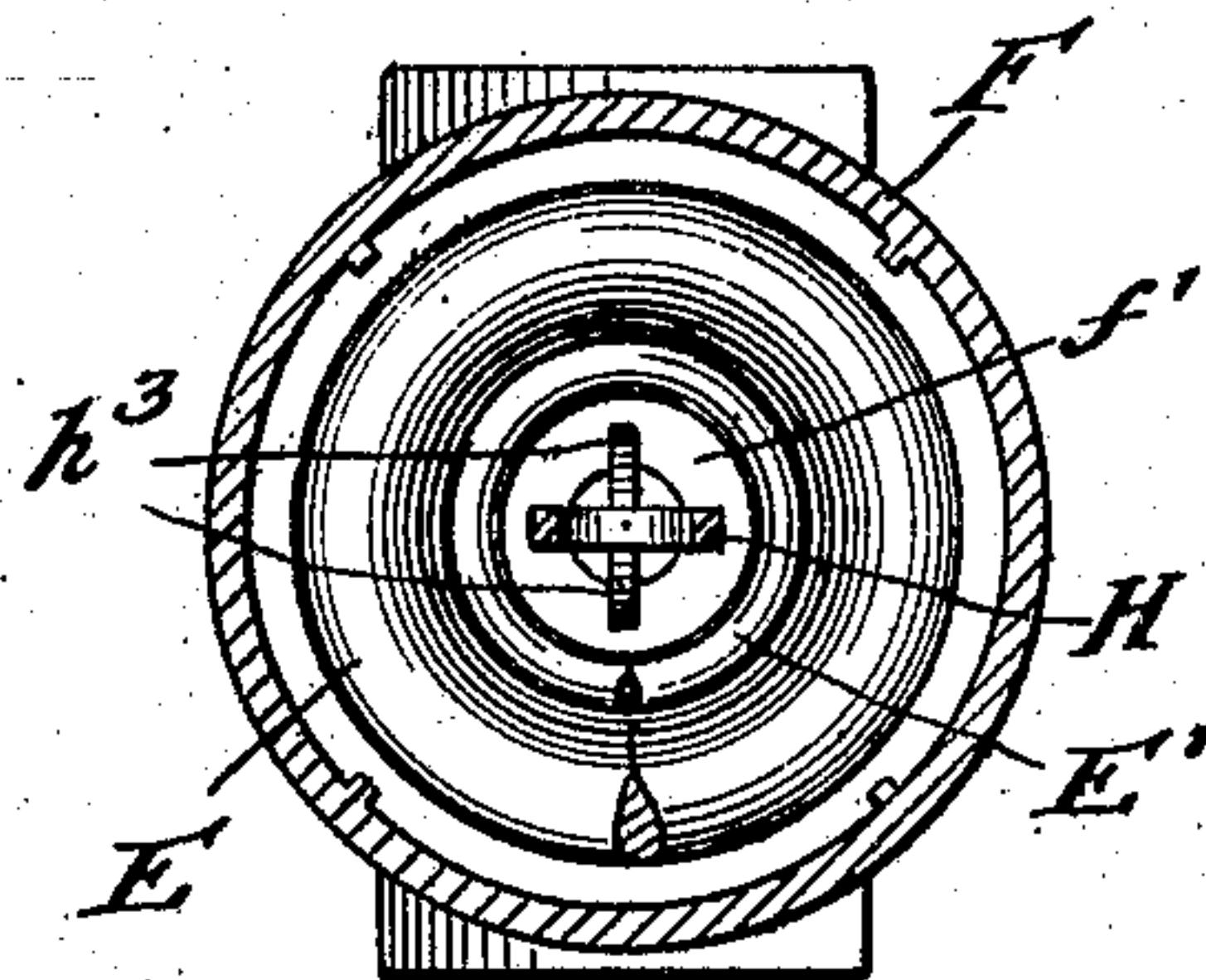


Fig. 5

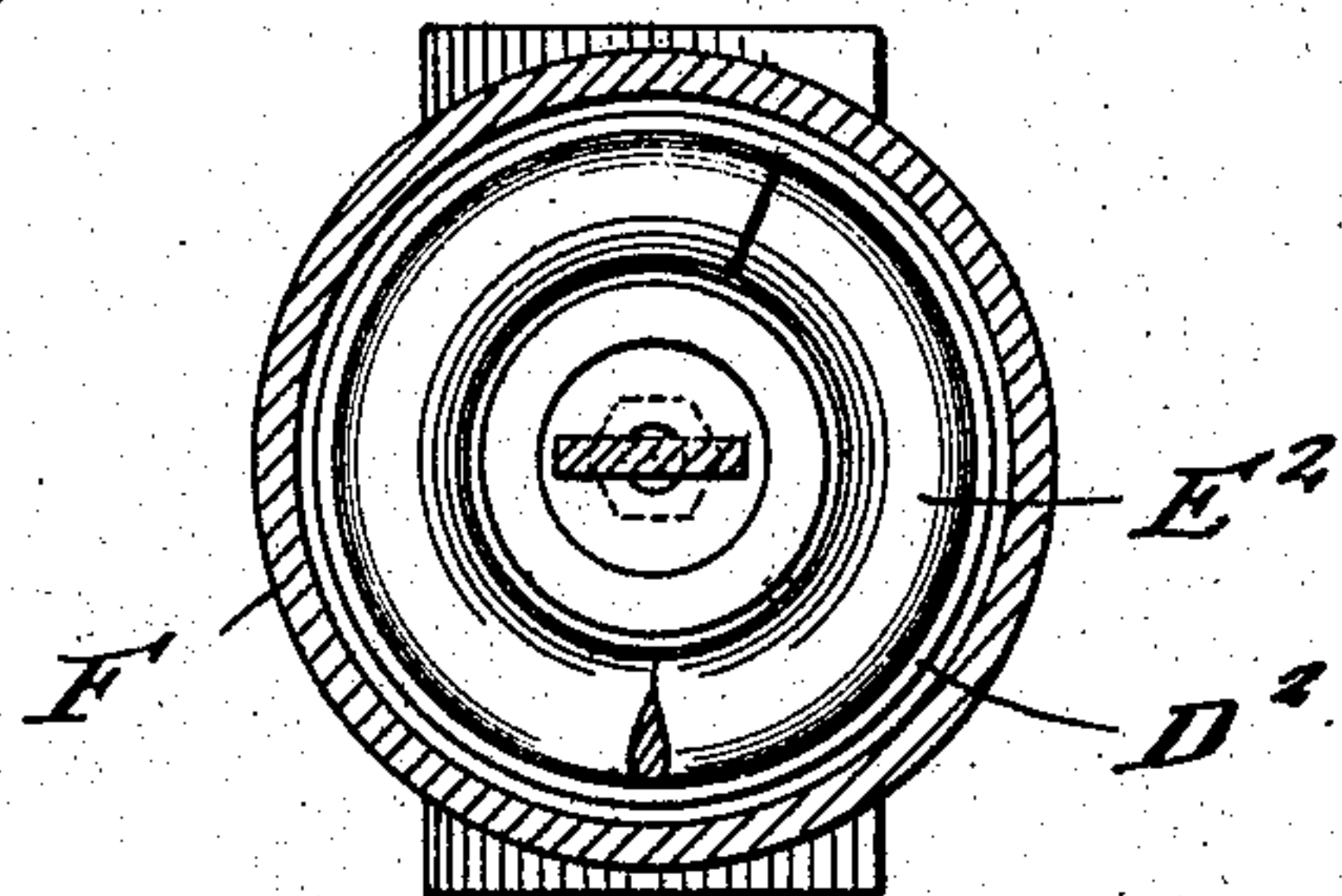
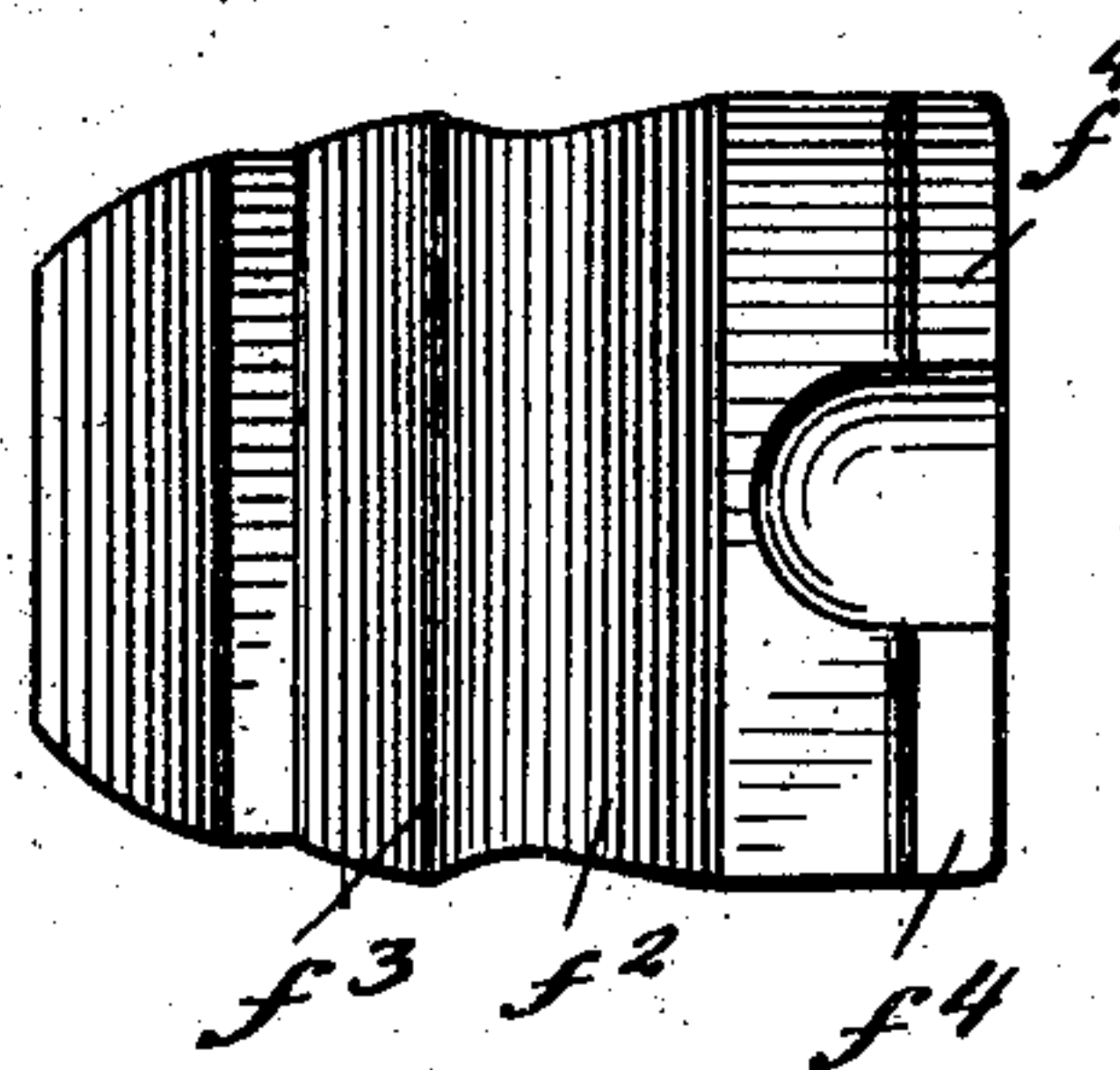


Fig. 6



Witnesses:

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UNITED STATES PATENT OFFICE.

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FRICITION DRAFT-RIGGING.

No. 911,902.

Specification of Letters Patent.

Patented Feb. 9, 1909.

Application filed October 15, 1908. Serial No. 457,808.

To all whom it may concern:

Be it known that I, JOHN F. O'CONNOR, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Friction Draft-Rigging, of which the following is a specification.

My invention relates to improvements in friction draft rigging.

10 My invention consists in connection with the draw-bar, followers and coöperating spring and friction shell and friction block or shoe cushioning devices within the friction shell, the friction shell being provided
15 with a transverse partition or web against which one end of the spring bears, same being in combination with a preliminary compression spring bearing at one end against said transverse partition of the friction
20 shell, and a supplemental follower for said preliminary compression spring, and a connecting device or rod extending through said partition and connecting the blocks or shoes with said preliminary compression fol-
25 lower for holding all the parts assembled, including the wedge and anti-friction rollers, and serving also to maintain the main spring as well as the preliminary compression
30 spring under an initial tension or load, and thus to automatically take up wear of the friction devices and cause all the parts to always be in snug contact ready for efficient cushioning action.

The invention further consists in the novel
35 construction of parts and devices and in the novel combinations of parts and devices herein shown and described.

In the accompanying drawing forming a part of this specification, Figure 1 is a side
40 elevation partly in central vertical longitudinal section, of a friction draft rigging embodying my invention. Fig. 2 is a plan view partly in horizontal section on line 2—2 of Fig. 1. Fig. 3 is a vertical cross
45 section on line 3—3 of Fig. 1; Figs. 4 and 5 are detail vertical sections through the friction shell on lines 4—4 and 5—5 of Fig. 1, respectively, and Fig. 6 is a detail plan view of one of the friction blocks or shoes.

50 In the drawing, A represents the center

sills or draft members of the car to which the draft rigging is applied, A¹ the front sill, B the draw-bar, B¹ the draw-bar yoke, C the side plates or stop castings having front, rear and intermediate stops, C¹, C², 55 C³, C⁴ for the followers D D¹ to abut against.

E E¹ are the main draft rigging springs, E² the preliminary compression spring, F the longitudinally movable friction shell or case, having an internal friction face *f* and 60 provided with an integral transverse partition or web *f*¹ against which one end of the main springs E E¹ abut, and against which one end of the preliminary compression spring E² also abuts. The main springs E 65 E¹ abut at their other end against the friction blocks or shoes F¹, the springs E E¹ being thus interposed between the friction shoes and friction shell. The preliminary compression spring E² abuts at its rear end 70 against the preliminary compression follower D² which is interposed between the rear follower D¹ and the preliminary compression spring E².

G is the wedge and *g g* the anti-friction 75 rollers interposed between the inclined faces *g*¹ of the wedge and the inclined faces *f*² of the friction shoes or blocks F¹. The wedge G also has stop shoulders *g*² coöperating with similar stop shoulders *f*³ on the 80 friction shoes to hold the anti-friction rollers in place. The friction shoes or blocks F¹ are provided with shoulders *f*⁴ to engage the lugs *h* of the connecting device or rod H which extends longitudinally through the 85 main springs E E¹ and through the transverse partition web *f*¹ of the friction shell F and engages the preliminary compression follower D² to which it is connected by a threaded stem *h*¹ and adjusting nut *h*². The 90 connecting device or rod H is further provided with an integral stop shoulder or web *h*³ adapted to engage the transverse partition *f*¹ of the friction shell so that this one connecting device or rod H will serve to 95 hold both the preliminary compression spring E² and the main springs E E¹ under an initial tension or load as well as to hold all the parts, friction shell, friction blocks, wedge, anti-friction rollers, main springs, 100

preliminary compression spring and preliminary compression follower in proper assembled position and coöperative relation with each other.

- 5 In practice, the main draft rigging springs E E^1 are preferably put under an initial compression of about three-eighths of an inch, and the preliminary compression spring under an initial compression of about
10 one eighth of an inch when the several parts are assembled for use. The preliminary compression spring E^2 is short and adapted to permit about one half inch preliminary cushion movement of the draw-bar before
15 the friction cushioning devices F F^1 are brought into action or forced to frictionally slide in respect to each other.

As in my invention neither the main draft rigging springs E E^1 nor the preliminary
20 compression spring E^2 act or bear directly against the wedge, and as the wedge has anti-friction rollers on both sides of it, it is thus left free to release or retract after each
25 cushioning movement or compression of the springs, thus insuring a free, easy and perfect release and completely overcoming any tendency of the friction devices to stick or fail in releasing.

The initial tension or compression under
30 which the connecting bar or device holds the springs causes the cushioning mechanism of the draft rigging to remain always of the same proper standard length, notwithstanding the wear that may take place between
35 the friction elements of the cushioning mechanism. The initial tension under which the springs are held should be, as before stated, approximately one half inch so as to give the draft rigging provision for taking
40 up a large amount of wear between the friction shoes and friction shell, without affecting the normal action of the draft rigging. This initial tension under which the acting device holds the springs also keeps
45 all the parts in snug and proper engagement with each other.

I claim:—

1. In a friction draft rigging, the combination with a draw-bar yoke and followers
50 and front, rear and intermediate stops for the followers to abut against, of a longitudinally movable friction shell, friction shoes within the shell, a spring interposed between the friction shell and friction shoes,
55 a wedge, anti-friction rollers between the friction shoes and wedge, a preliminary compression spring, a preliminary compression follower, said friction shell having a transverse partition between and against which
60 said preliminary compression spring and said main spring abut a connection extending between the friction shoes and preliminary compression follower to hold the springs under an initial tension or load and

all the parts in assembled position, substantially as specified. 65

2. In a friction draft rigging, the combination with a draw-bar yoke and followers, and front, rear and intermediate stops for the followers to abut against, of a longitudinally movable friction shell, friction shoes within the shell, a spring interposed between the friction shell and friction shoes, a wedge, a preliminary compression spring, a preliminary compression follower, said
75 friction shell having a transverse partition between and against which said preliminary compression spring and said main spring abut and a connection extending between the friction shoes and preliminary compression
80 follower to hold the springs under an initial tension or load and all the parts in assembled position, said connection having lugs and said friction shoes having shoulders to engage the lugs of said connection, substantially as specified. 85

3. In a friction draft rigging, the combination with a draw-bar yoke and followers, and front, rear and intermediate stops for the followers to abut against, of a longitudinally movable friction shell, friction shoes within the shell, a spring interposed between the friction shell and friction shoes, a wedge, a preliminary compression spring, a preliminary compression follower, said
95 friction shell having a transverse partition between and against which said preliminary compression spring and said main spring abut, and a connection extending between the friction shoes and preliminary compression
100 follower to hold the springs under an initial tension or load and all the parts in assembled position, said connection having lugs and said friction shoes having shoulders to engage the lugs of said connection, and said
105 connection having stop shoulders engaging said transverse partition of the friction shell, substantially as specified.

4. In a friction draft rigging, the combination with a friction shell, of friction shoes
110 within the shell, a spring between the friction shoes and friction shell, a preliminary compression follower and a preliminary compression spring between said follower and the friction shell, and a connection between
115 the friction shoes and preliminary compression follower, substantially as specified.

5. In a friction draft rigging, the combination with a friction shell, of friction shoes within the shell, a spring between the friction shoes and friction shell, a preliminary
120 compression follower and a preliminary compression spring between said follower and the friction shell, and a connection between the friction shoes and preliminary
125 compression follower, said connection having lugs engaging the friction shoes, substantially as specified.

6. In a friction draft rigging, the combination with a friction shell, of friction shoes within the shell, a spring between the friction shoes and friction shell, a preliminary compression follower and a preliminary compression spring between said follower and the friction shell, and a connection between the friction shoes and preliminary

compression follower, said connection having stop shoulders engaging the friction 10 shell, substantially as specified.

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Witnesses:

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