

No. 754,528.

PATENTED MAR. 15, 1904.

H. C. WILLIAMSON & H. PRIES.

DRAFT RIGGING.

APPLICATION FILED NOV. 28, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

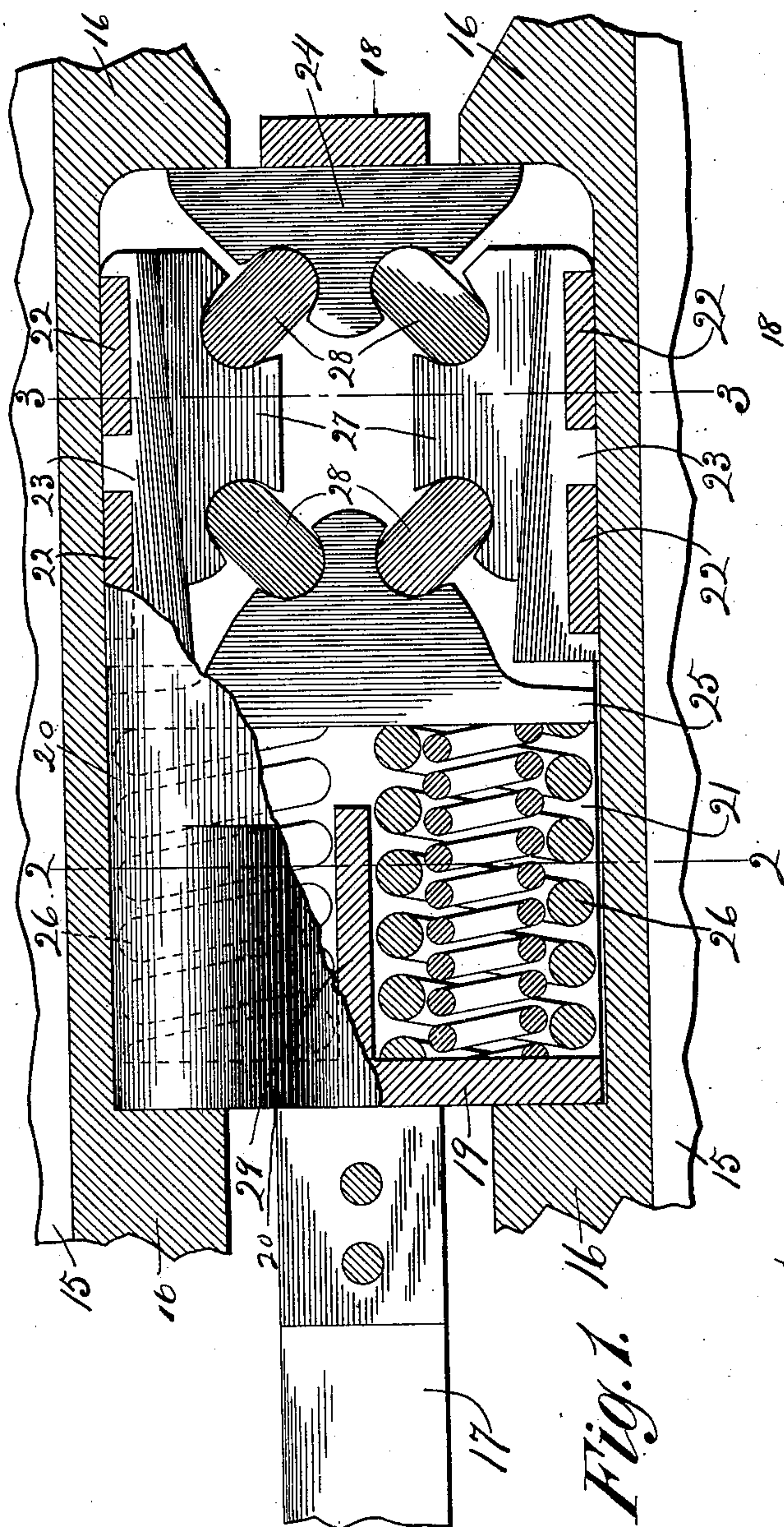


Fig. 1.

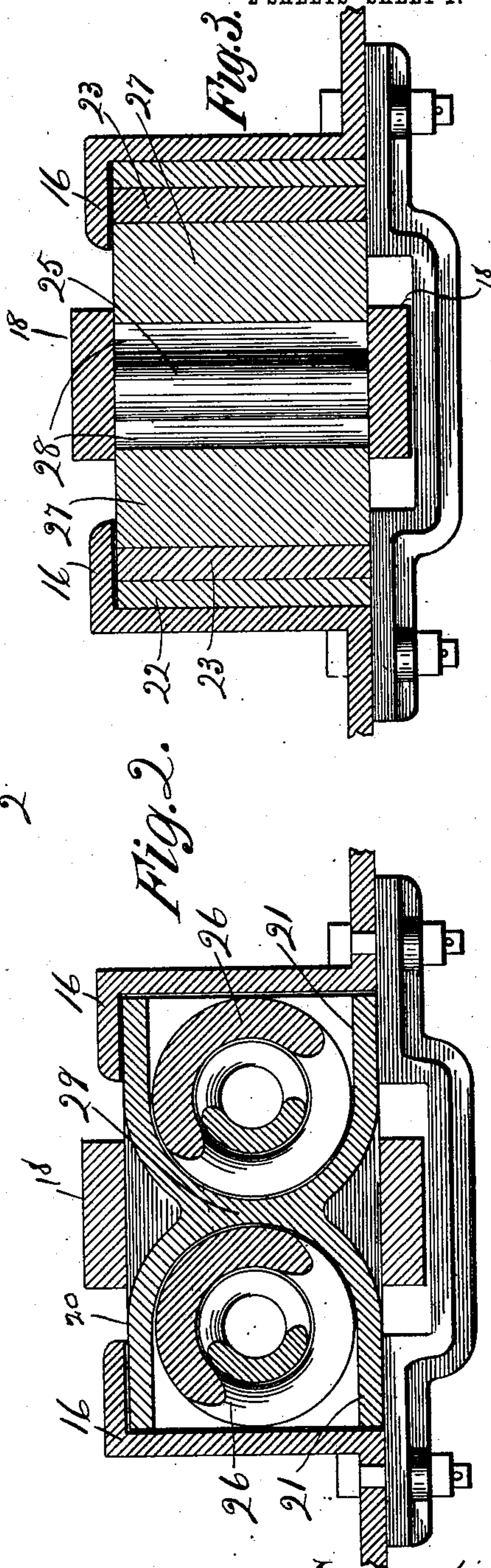


Fig. 2.

Fig. 3.

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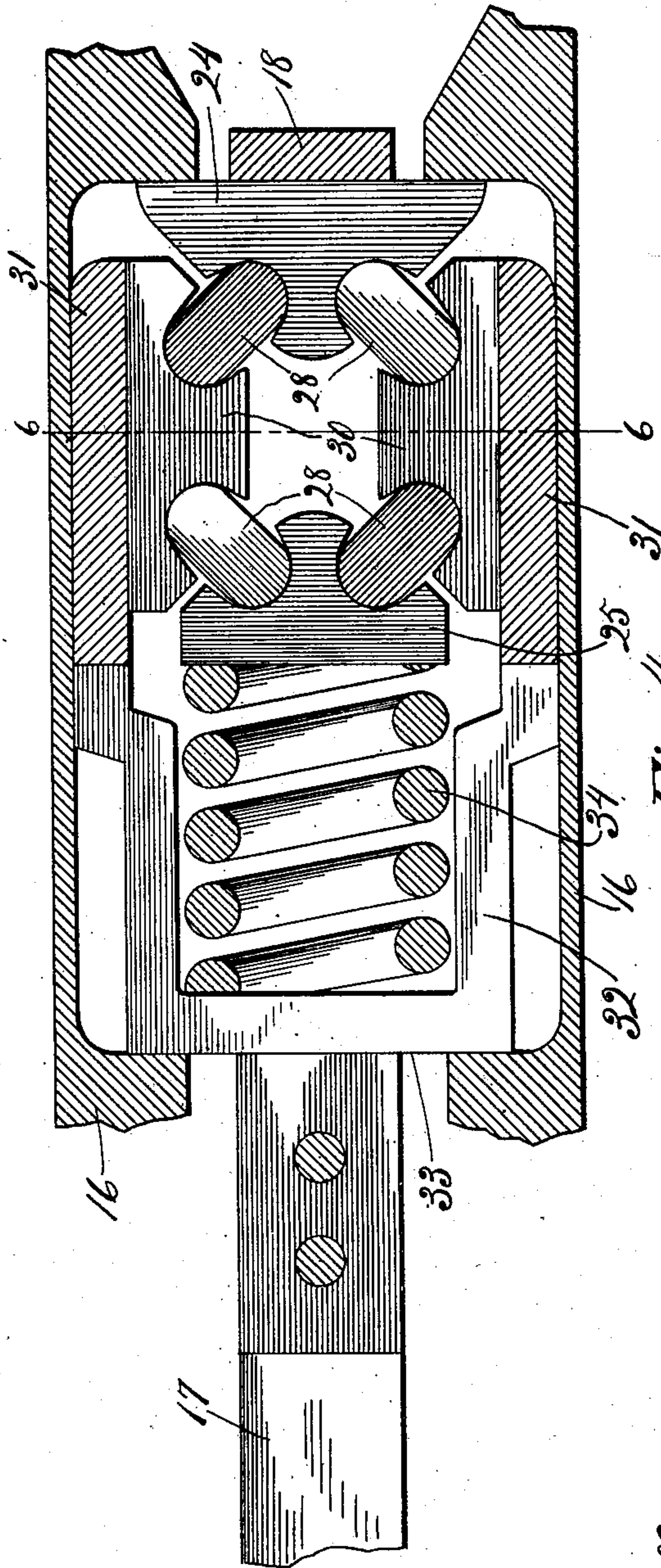


Fig. 4.

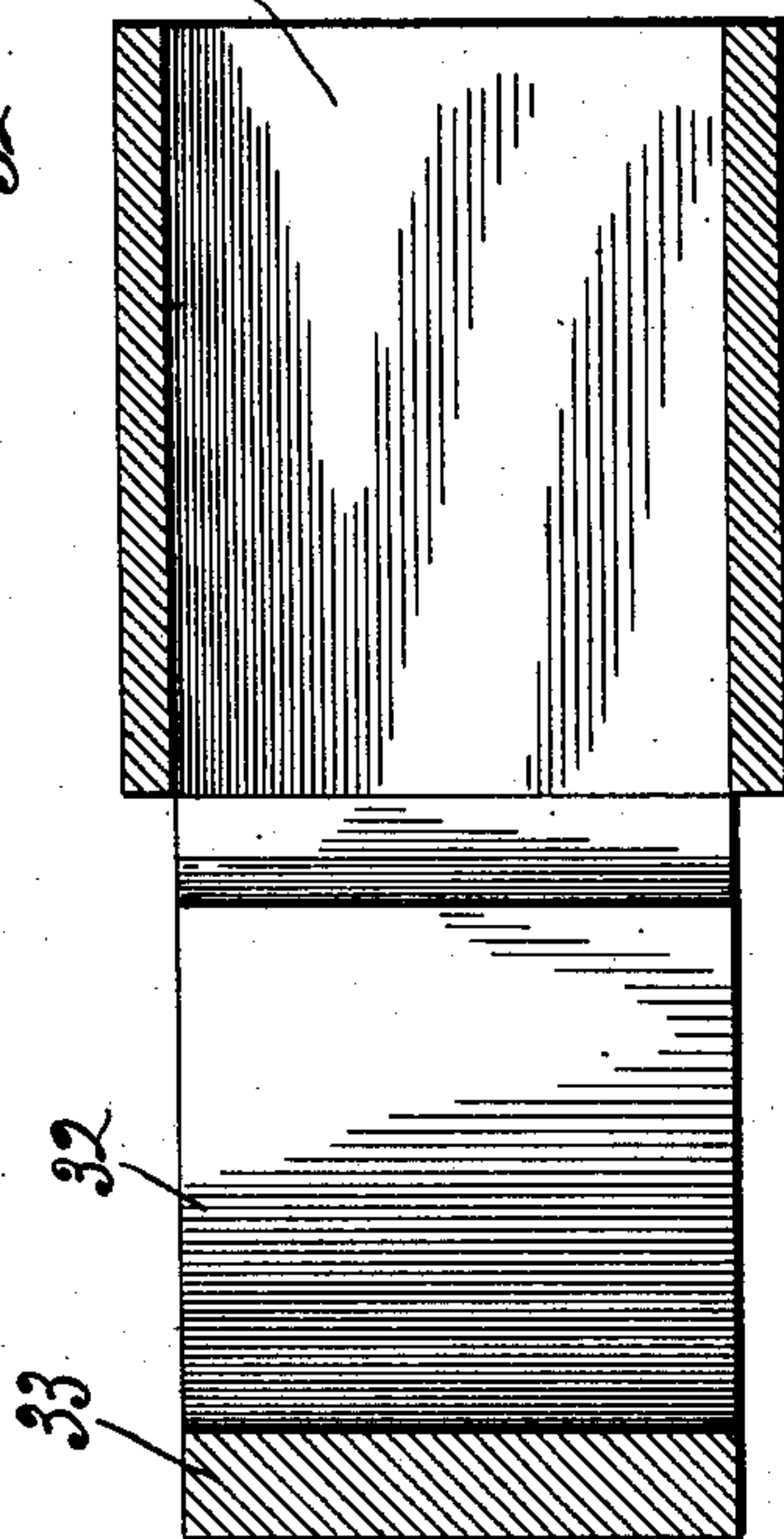


Fig. 5.

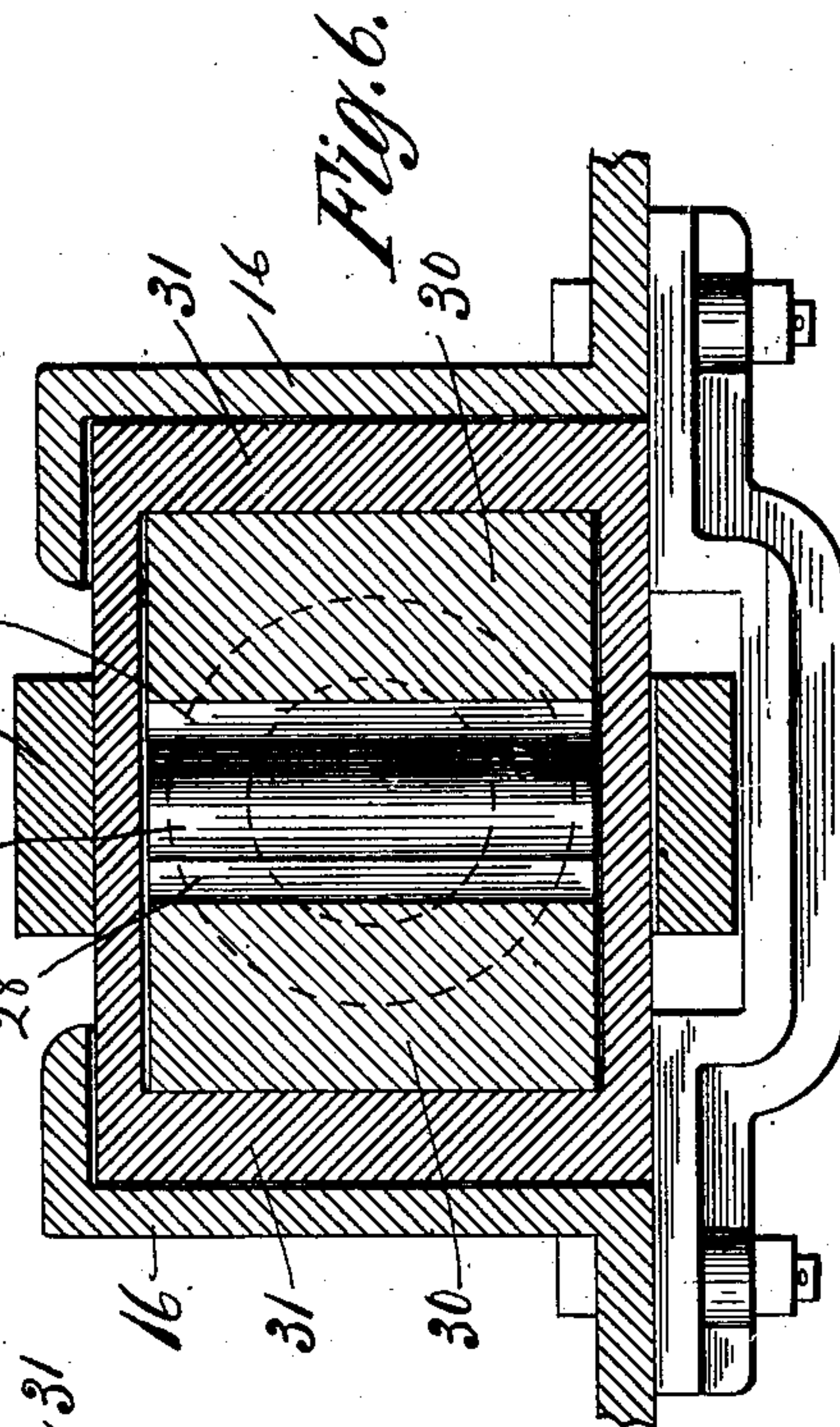


Fig. 6.

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# UNITED STATES PATENT OFFICE.

HENRY C. WILLIAMSON AND HERMAN PRIES, OF MICHIGAN CITY,  
INDIANA.

## DRAFT-RIGGING.

SPECIFICATION forming part of Letters Patent No. 754,528, dated March 15, 1904.

Application filed November 28, 1903. Serial No. 183,018. (No model.)

*To all whom it may concern:*

Be it known that we, HENRY C. WILLIAMSON and HERMAN PRIES, citizens of the United States, and residents of Michigan City, county of Laporte, and State of Indiana, have invented certain new and useful Improvements in Draft-Rigging, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to that type of draft-rigging in which the cushioning-springs are supplemented by friction devices and provision is made for augmenting the friction as the pressure, either draft or buffing, increases, and more particularly to the type shown and broadly claimed in a copending application by ourselves, and consisting, broadly, in a housing for the cushioning mechanism, friction-plates slidably engaging the housing, followers movable actually or relatively by the draw-bar, and toggle blocks or members interposed between the followers and friction members in such manner that the pressure applied tends by a toggle action to force the friction members together.

This invention constitutes a different species from that forming part of the generic application referred to, the contacting friction-faces being flat and either parallel or inclined.

More particularly, the invention consists of the mechanism hereinafter described and which is illustrated in the accompanying drawings, in which—

Figure 1 is a detail plan view, partly in elevation and partly in section, of one form of the device. Fig. 2 is a transverse section on the line 2 2 of Fig. 1. Fig. 3 is a transverse section on the line 3 3 of Fig. 1. Fig. 4 is a plan view, partly in elevation and partly in section, of a modified form of the device. Fig. 5 is a vertical central section of the housing shown in Fig. 4, and Fig. 6 is a transverse section on the line 6 6 of Fig. 4.

Referring to the form illustrated in Figs. 1, 2, and 3, there is shown at 15 portions of the draft-sills of a railway-car, at 16 the cheek-plates, secured to such sills and provided with forward and rearward shoulders

for the engagement of suitable followers, at 17 a draw-bar, and at 18 a tail strap or loop secured to the draw-bar and encircling the followers and cushioning mechanism. The forward follower is shown at 19 as being the end of a box form of housing having a top wall 20 and a bottom wall 21 for inclosing the cushioning mechanism and preferably being open at the sides, except near its rearward end, where it is provided with side members 22 22 for receiving and holding a pair of friction-shoes 23 23. The rearward follower 24, adapted to engage the rearward shoulders of the cheek-plates 16, is seated against the end of the loop 18. An intermediate follower 25 is provided, and cushioning-springs 26 26, as shown, arranged in two sets, are interposed between the forward follower 19 and this intermediate follower. A pair of friction-plates 27 are in sliding engagement with the inner faces of the shoes 23, and toggle-blocks 28 are interposed between each of the followers 24 25 and each of the plates 27, the toggle-blocks having rounded ends and suitable recesses being formed in the followers and plates to receive them, the parts being so disposed that the blocks are normally oblique to the direction of draft. Two sets of cushioning-springs being employed, a vertical partition 29 is located between them, extending backwardly from the follower 19.

In the form of construction now under consideration the contacting faces of the plates 27 and shoes 23 are flat, the former being inclined toward each other and the latter being inclined complementary to them. Upon the application of draft to the draw-bar 17 the follower 24 is carried forwardly, and with it the friction-plates 27 and the follower 25. This advance movement is resisted by the springs 26 and by the friction between the plates 27 and shoes 23, and this friction is augmented, first, by the turning of the toggle-blocks toward a position perpendicular to the line of draft, thereby forcing the two friction-plates apart and against the shoes, and, secondarily, by the inclination of the shoes and plates. The forward movement of the plates, bringing them into more contract-



ed space between the two shoes, necessarily turns the forward pair of toggle-blocks in the opposite direction, or toward a position parallel with the line of draft, thus giving the follower 25 a more rapid movement than that of the follower 24 and still further compressing the springs 26. Pressure being applied to the forward follower 19 by a buffing action or an intrust of the draw-bar 17, the follower and the housing of which it constitutes a part are forced backwardly, the pressure being communicated through the springs 26 to the intermediate follower 25 and resisted by the friction between the plates 27 and shoes 23. It will be seen that the relative direction of movement of the shoes 23 and plates 27 is the same whether the power be applied as a draft upon or intrust of the draw-bar.

In the construction illustrated in Figs. 4, 5, and 6 there are present the cheek-plates 16, draw-bar 17, and tail-strap 18, as before, the rear follower 24, intermediate follower 25, and toggle-blocks 28 being exactly or substantially of the same form. In lieu of the friction-plates 27 having inclined faces, there are shown friction-plates 30 having parallel frictional faces, and these faces engage and slide upon correspondingly-formed side walls 31 of the housing 32, the end 33 of which constitutes the forward follower. In this instance there is shown but a single cushioning-spring 34 interposed between the intermediate follower 25 and the forward follower 33. In this form of construction the action is the same as that previously described except that the augmentation of frictional contact is dependent solely upon the turning of the toggle-blocks 28 toward a position perpendicular to the line of draft.

We claim as our invention—

1. In a draft-rigging, in combination, oppositely-disposed longitudinally-movable friction-plates having flat faces; a second set of friction-plates in sliding engagement with the first-mentioned set of plates; followers at opposite ends of the plates; and toggle members interposed between the followers and the members of one set of plates.

2. In a draft-rigging, in combination, oppo-

sitely-disposed longitudinally-movable friction-plates having flat faces inclined toward each other; a second set of friction-plates in sliding engagement with the first-mentioned set of plates; followers at opposite ends of the plates; and toggle members interposed between the followers and the members of one set of plates.

3. In a draft-rigging, in combination, a pair of friction-plates having flat faces, one thereof being slidable upon the other, a follower, and a toggle member interposed between the follower and one of the plates and being normally oblique to the direction of movement.

4. In a draft-rigging, in combination, a movable housing having a shoulder-engaging end and flat opposing friction-faces, a pair of friction-plates in sliding engagement with said friction-faces, followers at opposite ends of the plates, a spring reacting between the inner end of housing and adjacent follower, and toggle members interposed between each of the followers and each of the plates.

5. In a draft-rigging, in combination, a movable housing having a shoulder-engaging end and flat outwardly-inclined friction-faces, a pair of friction-plates slidably engaging said faces, followers at opposite ends of the plates, a spring interposed between the inner end of housing and adjacent follower, and toggle members interposed between each of the followers and each of the plates.

6. In a draft-rigging, in combination, a movable housing having a shoulder-engaging end, oppositely-disposed removable friction-shoes within the housing having flat inclined faces, friction-plates having complementary inclined faces in sliding engagement with the shoes, followers at opposite ends of the plates, a spring between the inner end of the housing and adjacent follower, and toggle-blocks between each of the followers and each of the plates.

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