

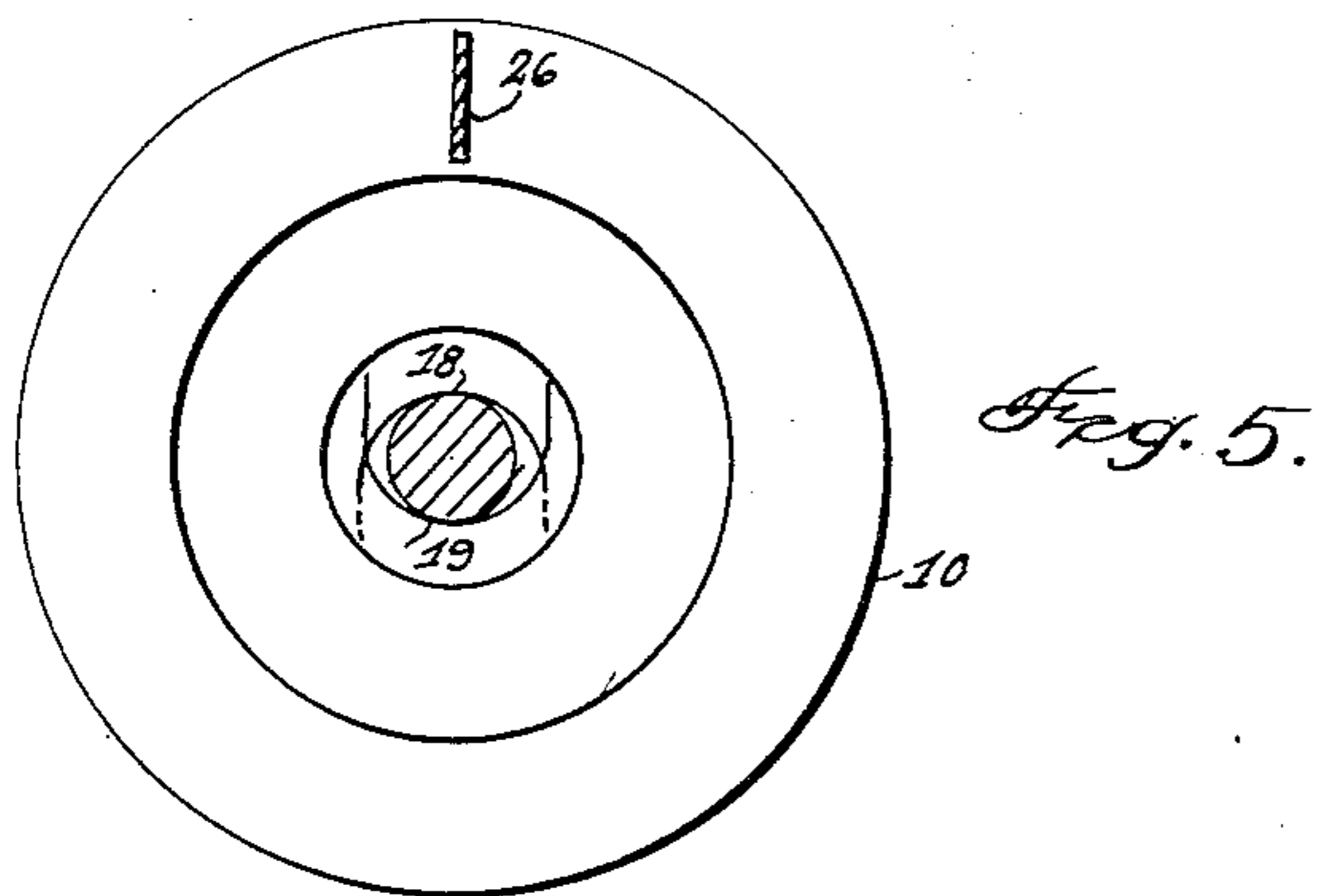
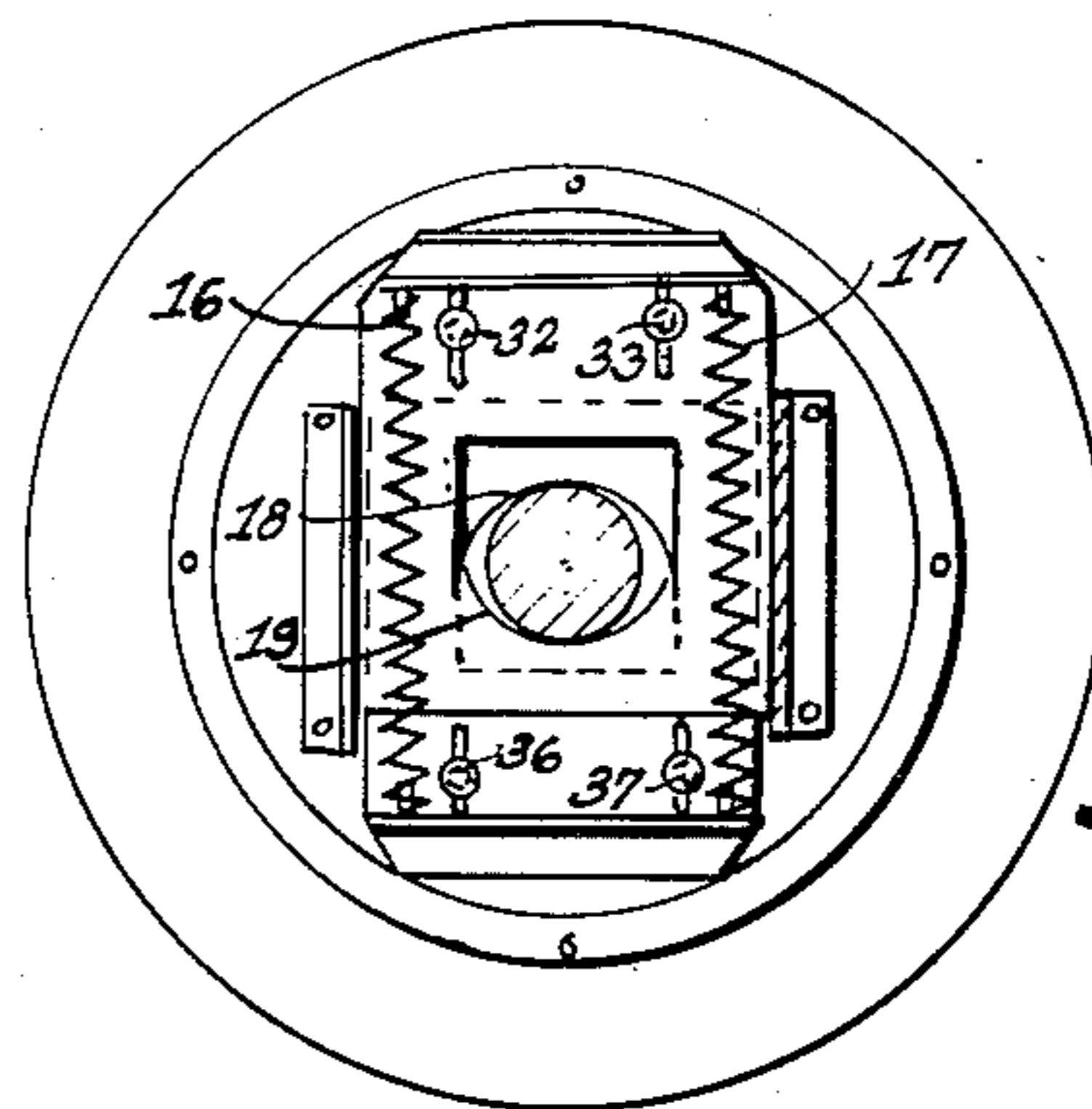
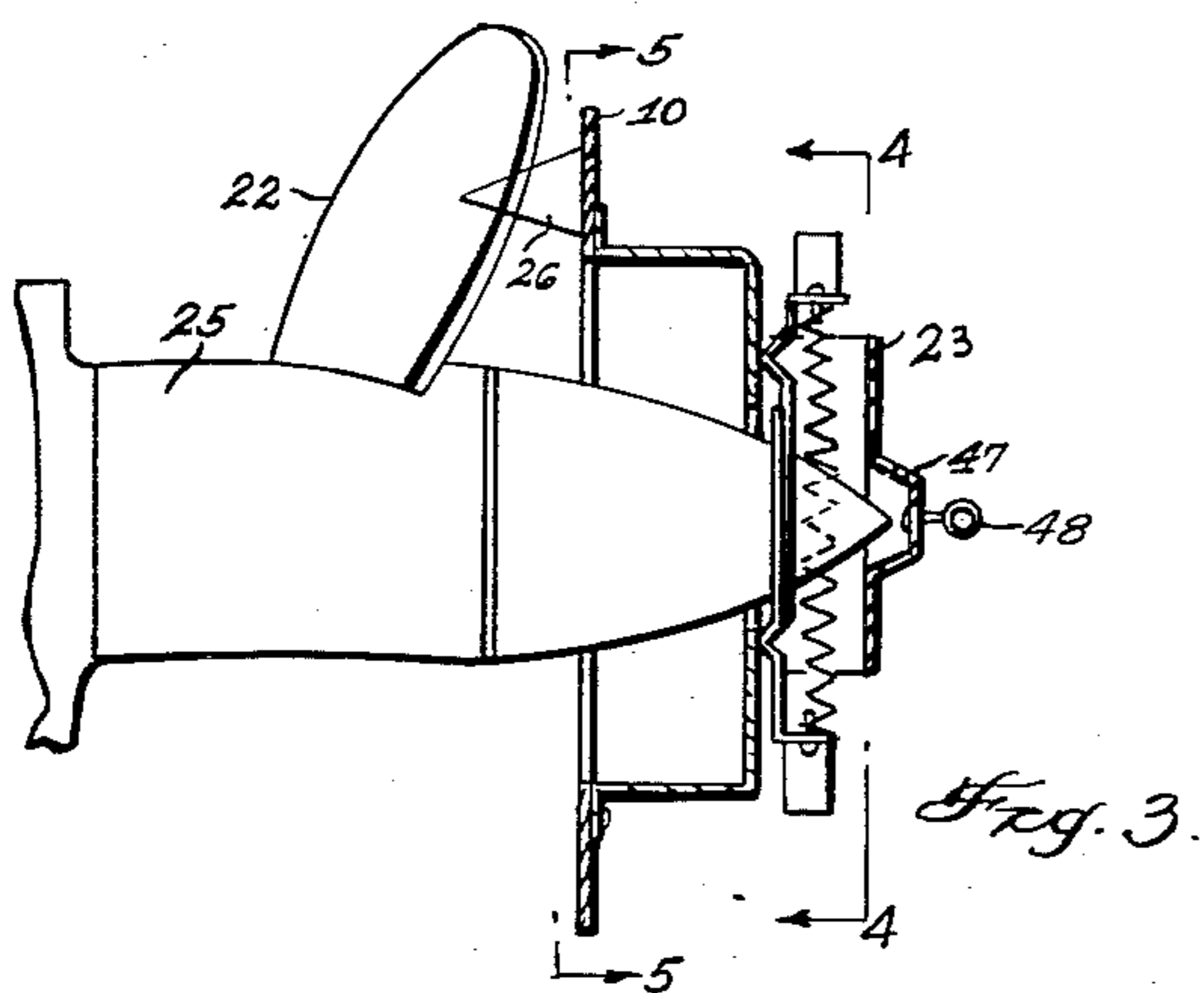
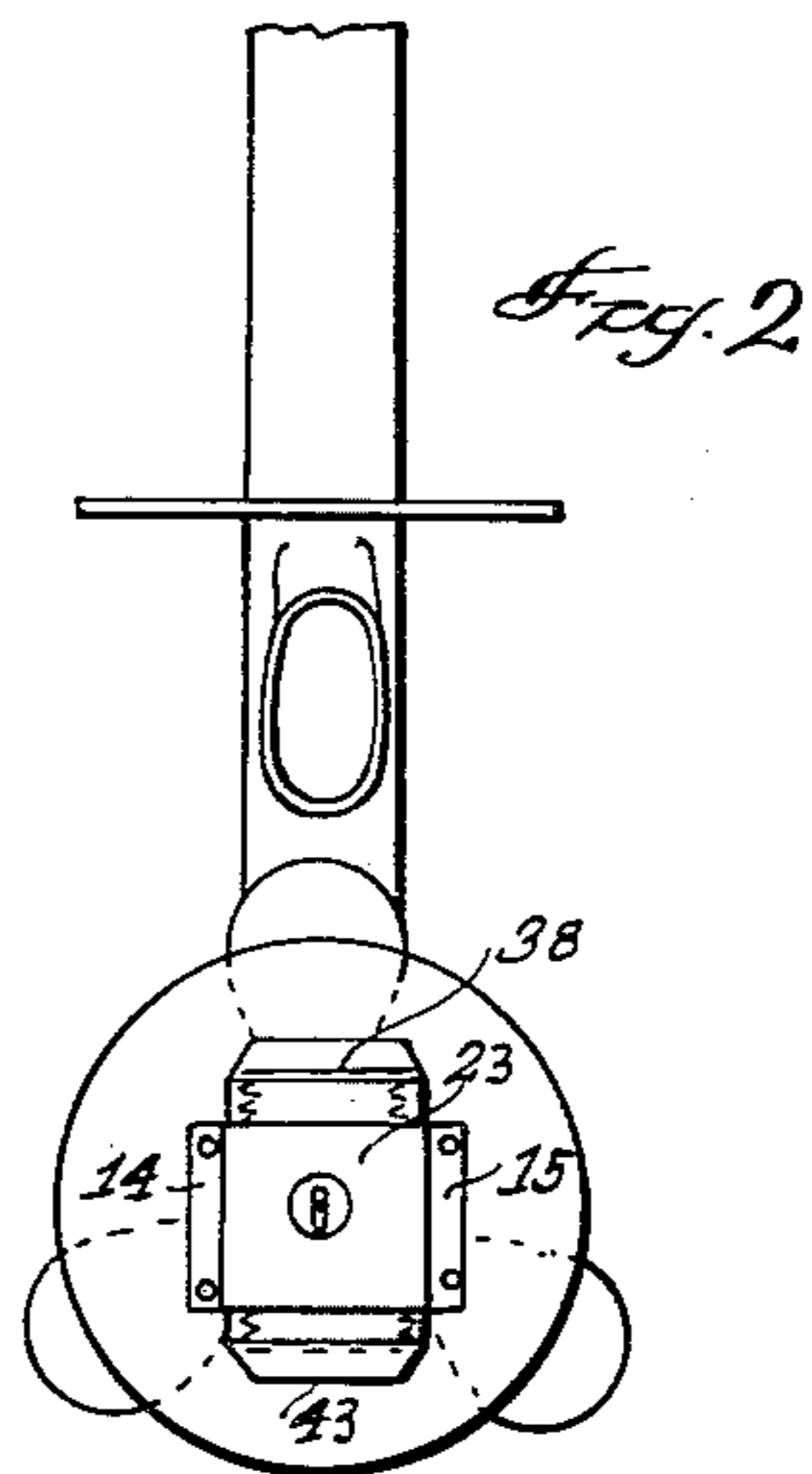
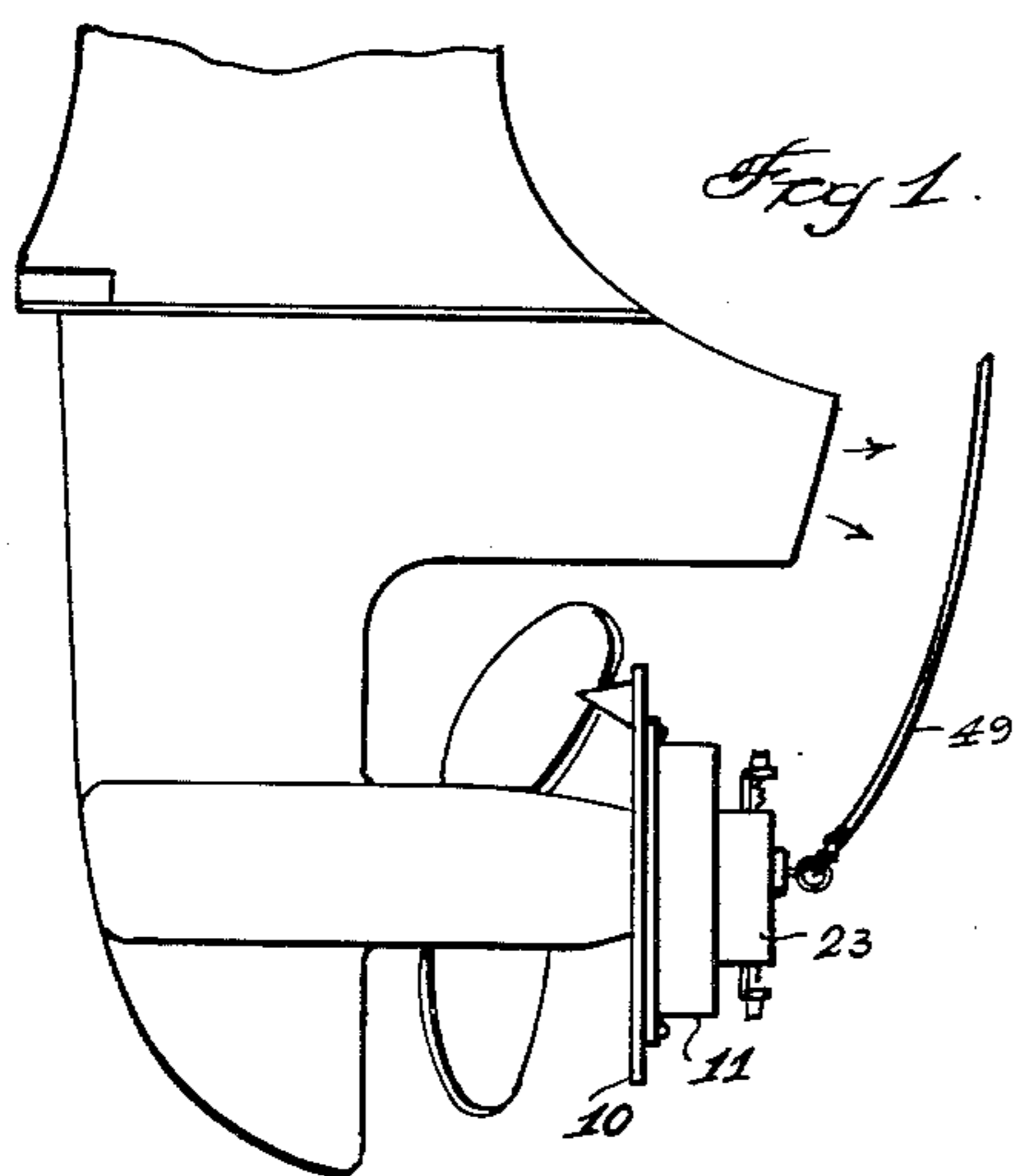
Sept. 20, 1960

H. J. SMITH
QUICK CHANGE TROLLER

2,953,112

Filed Aug. 14, 1959

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

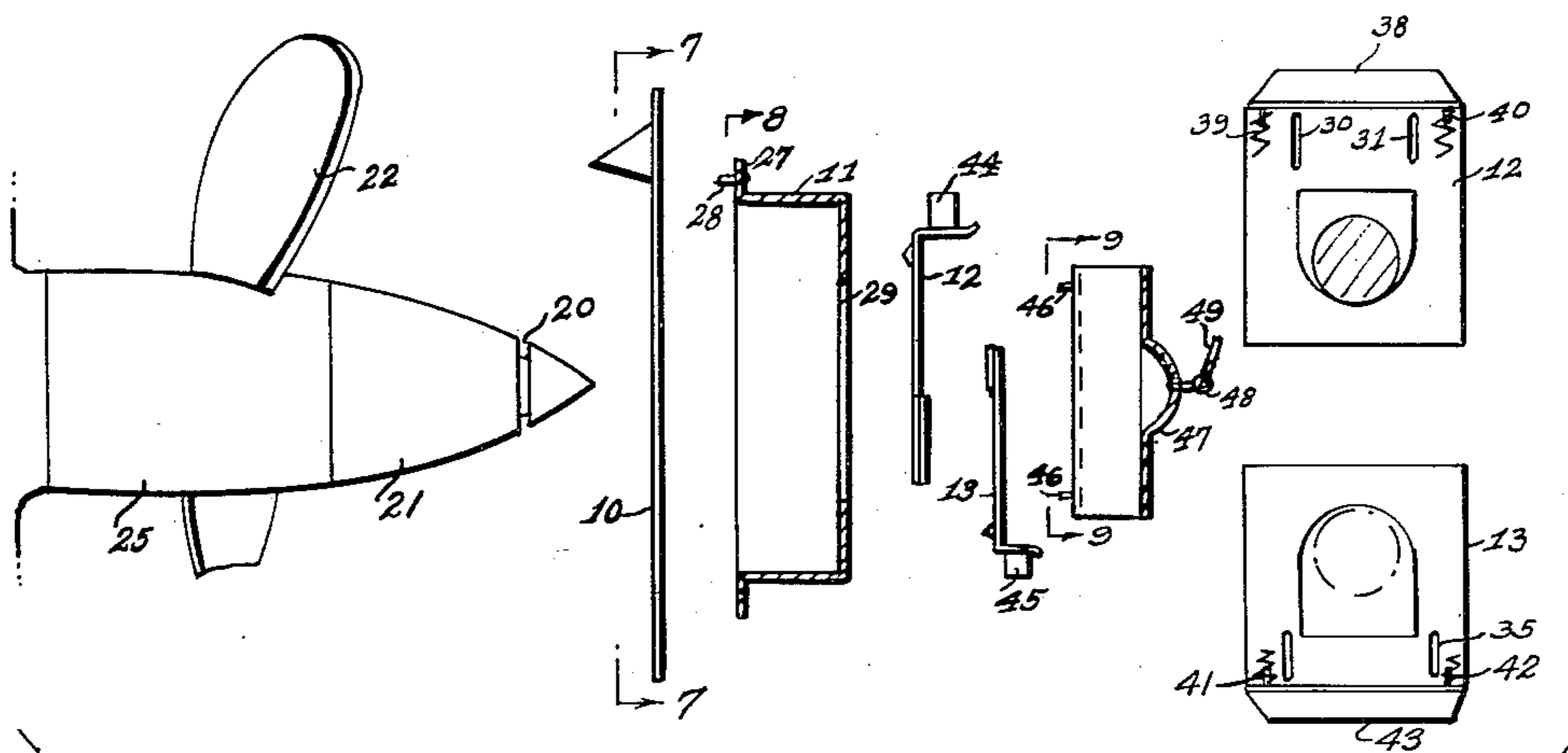


Fig. 6.

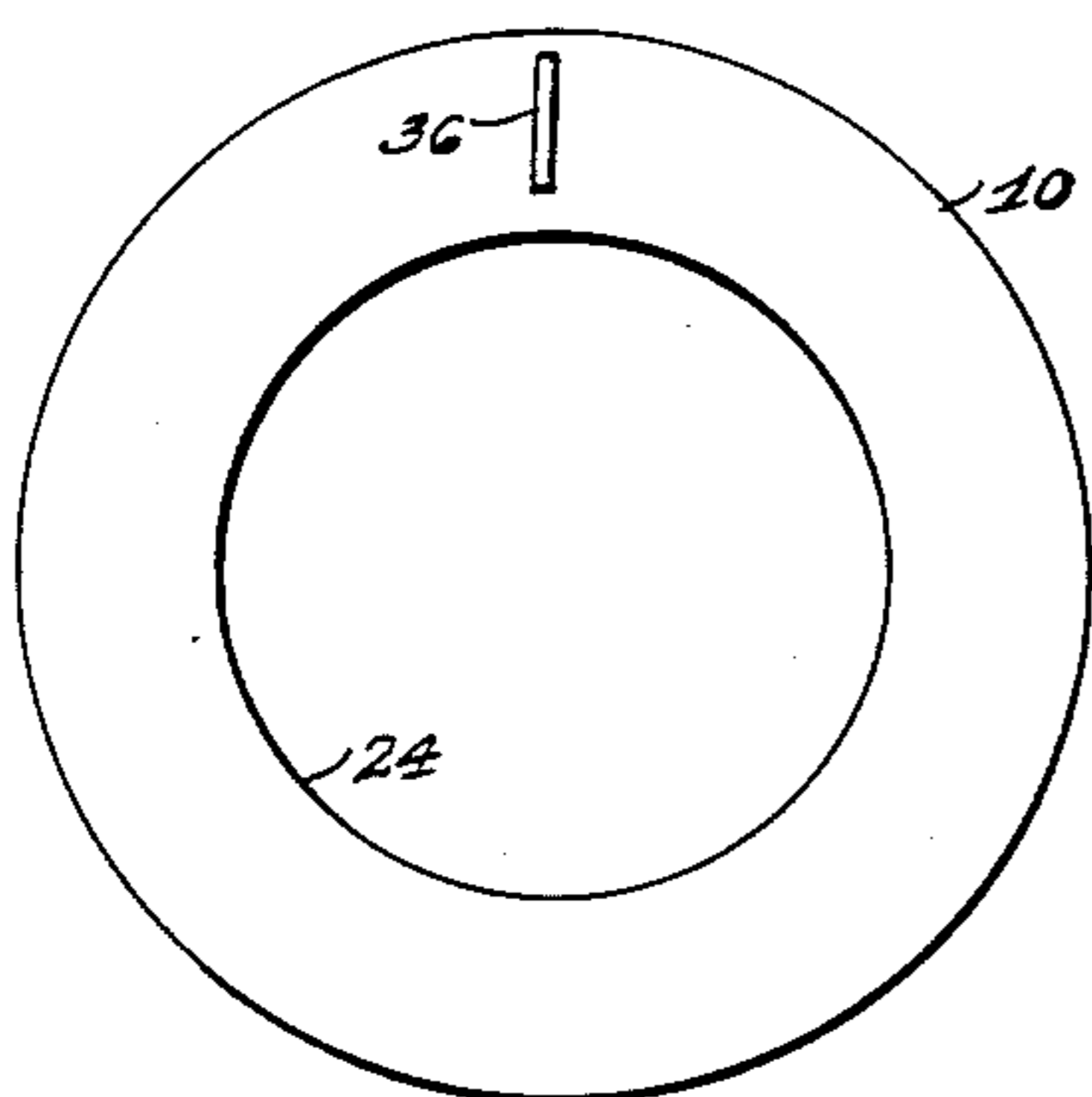


Fig. 7.

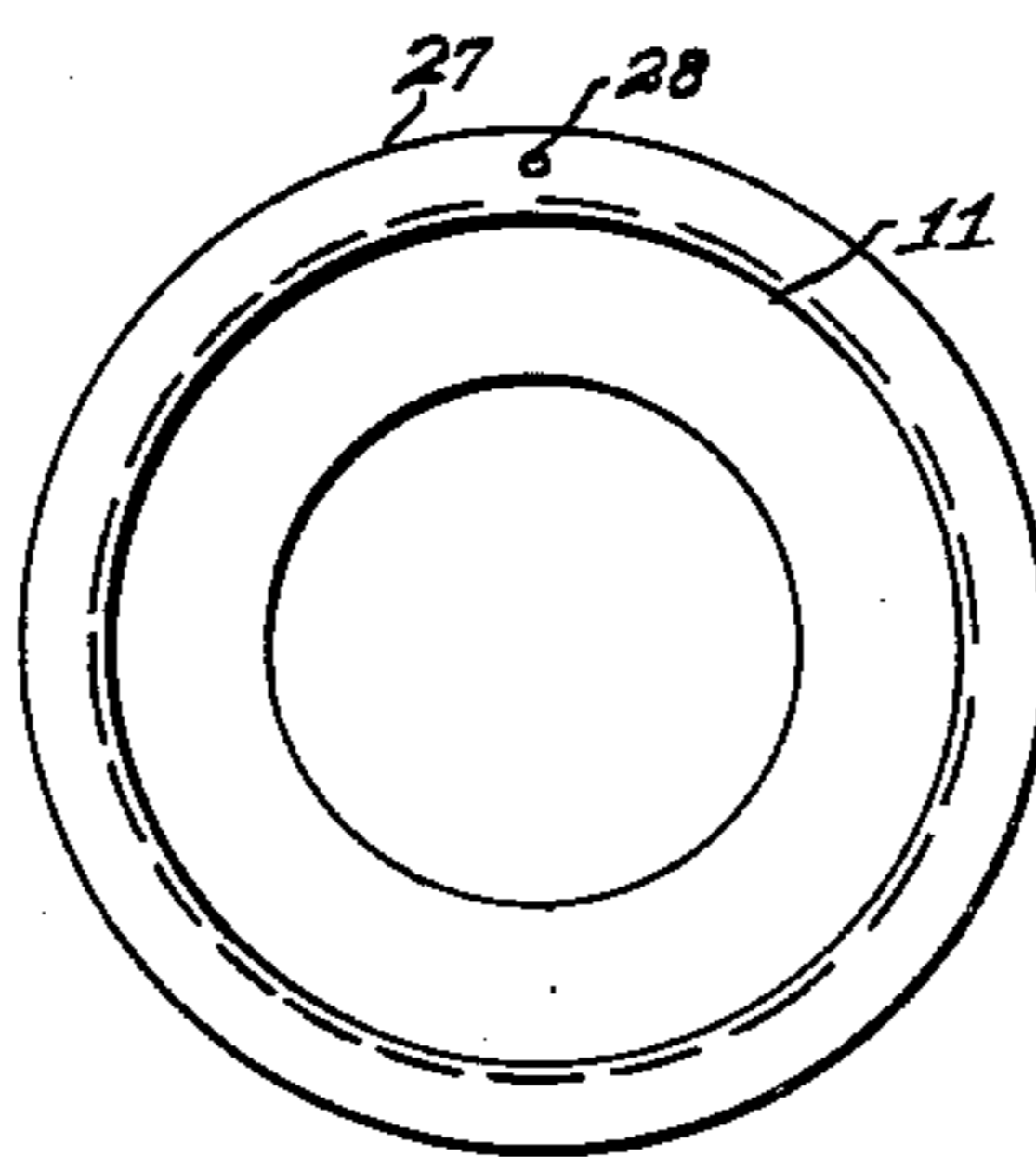


Fig. 8.

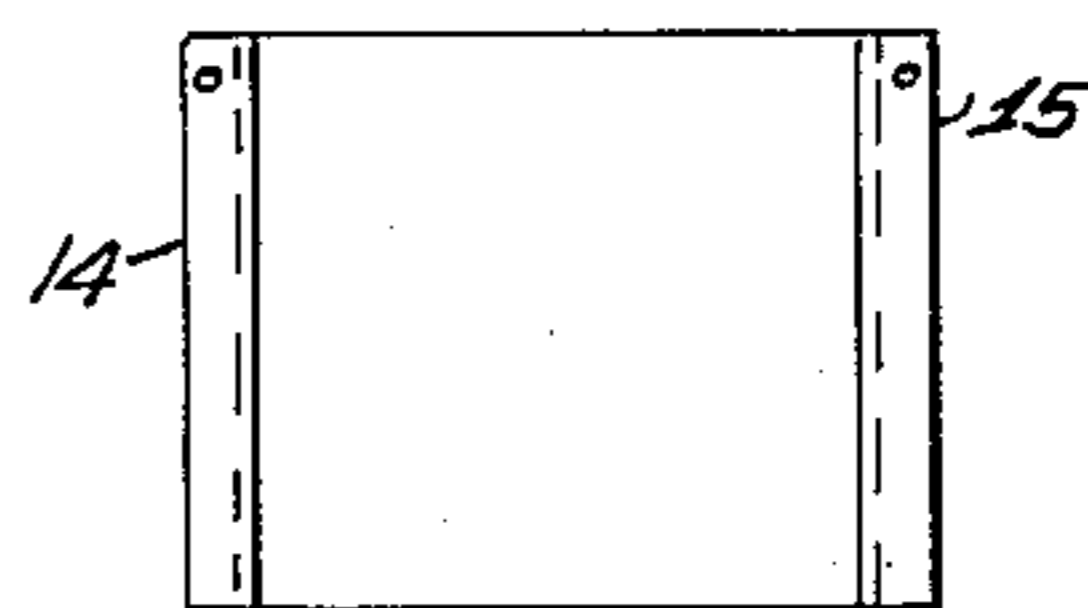


Fig. 9.

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2,953,112

QUICK CHANGE TROLLER

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4 Claims. (Cl. 115—18)

This invention relates to the use of power boats for trolling, and in particular includes an attachment mounted on the nut of a propeller shaft that obstructs the slipstream through the propeller so that the thrust of the propeller blades against the water is only at the tips of the blades and wherein cavitation is created on the trailing side of the attachment with the result that the motor runs easy and does not load up.

The purpose of this invention is to provide an attachment for the hub of a propeller of a motor boat for obstructing the passage of water through the propeller blades and thereby reducing the efficiency of the propeller in which the attachment may readily be clamped into operative position and also readily released for removal.

The attachment of this invention is an improvement over the device of my prior Patent No. 2,820,428 in that the new attachment is of relatively simple construction, less expensive to manufacture, and operates with greater efficiency.

Various types of obstructions have been provided for reducing the efficiency of propellers of motor boats whereby such boats are suitable for trolling. However, such devices require changes in the mounting elements of the propeller shaft and this requires removing the boat from the water to machine parts of the mounting elements. With this thought in mind this invention contemplates a relatively simple attachment, which, with an annular groove machined in the nut on the end of a propeller shaft may be clamped into operative position against the trailing side of a propeller and which may readily be removed without tools or the like.

The object of this invention is, therefore, to provide means for installing a speed retarding unit on a nut of a propeller shaft with a plate of the unit against the trailing side of the propeller without the use of tools or other mechanical attaching elements.

Another object of the invention is to provide a speed retarding disc for use on a propeller in which the efficiency of the propeller is in proportion to the size of the disc.

A further object of the invention is to provide a speed reducing unit for propellers of power boats in which the unit is of a simple and economical construction.

With these and other objects and advantages in view the invention embodies a propeller shaft nut having an annular groove in the outer surface, a disc, a pair of oppositely disposed plates slidably mounted on the disc and positioned to extend into the groove of the hub of the propeller shaft, springs on the plates for urging arcuate inner edges of the plates into the annular groove of the propeller shaft nut, a housing providing a spacer positioned between the sliding plate and disc, and a cover for the frame mounted on the housing.

Other features and advantages of the invention will appear from the following description taken in connection with the drawing, wherein:

Figure 1 is a side elevational view of a power boat

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propeller mounting showing an obstructing attachment on the nut of the propeller shaft.

Figure 2 is an end elevational view of the attachment shown in Figure 1.

5 Figure 3 is a longitudinal section through the speed retarding attachment with the parts shown on an enlarged scale and showing a finger extended between blades of a propeller on a nut of a shaft on which the attachment is positioned.

10 Figure 4 is a cross-section through the attachment with the parts as shown in Figure 3 showing, in particular, the spring actuated sliding plates which extend into an annular groove in the nut of the propeller shaft.

Figure 5 is an elevational view taken on line 5—5 of Figure 3 showing a disc designed to be positioned against the trailing side of a propeller and also showing a finger which is extended between blades of the propeller.

Figure 6 is an exploded view showing the relative forms and positions of the elements of the quick change troller attachment.

20 Figure 7 is a view taken on line 7—7 of Figure 6 showing the disc positioned against the trailing side of a propeller.

Figure 8 is a cross-section taken on line 8—8 of Figure 6 showing the inner portion of a spacing housing on which the disc is carried.

Figure 9 is a cross-section taken on line 9—9 of Figure 6 showing spaced rails by which the sliding plates are mounted on the housing of the attachment.

30 Referring now to the drawings, wherein like reference characters denote corresponding parts the improved obstruction for retarding efficiency of a propeller of this invention includes a disc 10 positioned against the trailing side of a propeller, a spacing housing 11, sliding plates 12 and 13, rails 14 and 15 providing guides for receiving edges of the plates 12 and 13, springs 16 and 17 for urging arcuate inner edges 18 and 19 of the plates into an annular groove 20 of a nut 21 of a shaft of a propeller 22, and a cap 23 providing a cover for the springs.

40 The disc 10, which is provided with a center opening 24 for receiving the nut 21 or hub 25 of a propeller, such as the propeller 22, is provided with a finger 26 that extends between the blades of a propeller 22 with the parts assembled as illustrated in Figure 3.

45 The housing 11 is provided with an annular flange 27 through which bolts 28 extend for securing the housing to the disc 10. The housing 11 is provided with a center opening 29 for receiving the nut 21 and the guides 14 and 15 are positioned at the sides of the opening whereby with the sliding plates 12 and 13 retained in position by the guides the arcuate surfaces 18 and 19 thereof are in registering relation with the center opening 29.

55 The upper plate 12 is provided with spaced parallel slots 30 and 31 by which the plate is slidably mounted by pins 32 and 33, respectively on the spacing housing 11 and the lower plate 13 is provided with similar slots 34 and 35 by which this plate is mounted on the spacing housing by pins 36 and 37. The upper edge of the plate 12 is provided with an angle bar 38 from which eye bolts 39 and 40 extend and the upper ends of the springs 16 and 17 are secured in the eye bolts. Similar eye bolts 41 and 42 extend from an angle bar 43 on the outer end of the sliding plate 13 and the opposite ends of the springs are retained in the eye bolts 41 and 42. With the sliding plates assembled, as illustrated and described in Figures 3 and 4 the arcuate inner edges 18 and 19 are urged into the annular groove 20 of the nut 21 by the springs 16 and 17. To release the attachment the plates 12 and 13 are actuated against the action of springs by the tabs 44 and 45.

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The cap or spring cover 23 is secured to the housing 11 by bolts 46 and, as shown in Figure 3, the outer end of the housing 23 is provided with a recess 47 to receive the point of the nut 21. The cover 23 is also provided with an eye 48 to which a chain 49 is connecting for anchoring the attachment to the engine housing or boat to prevent accidental displacement thereof.

With the parts assembled as described a nut 25 of a propeller shaft of a power boat, such as an outboard motor, is machined to provide an annular groove 20 and with the parts assembled the attachment is placed over the nut 21 until the arcuate surfaces 18 and 19 snap into the groove 20 and lock the attachment in position.

With the attachment in position the disc 10 engages the rear side of the propeller obstructing free passage of the water through the propeller blades whereby only the tips of the blades operate to drive the boat forwardly. By this means the speed of a boat is reduced so that it is suitable for trolling.

It will be understood that modifications, within the scope of the appended claims, may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

1. A propeller efficiency retarder comprising a nut having an annular groove therein, said nut being mounted on the trailing end of a shaft of a propeller for securing the propeller on the shaft, a disc positioned on a nut and substantially engaging the trailing side of the propeller, plates having arcuate surfaces therein slidably mounted on the disc, resilient means for urging the plates into the annular groove of the nut of the propeller shaft, and means for rotating the disc by blades of the propeller.

2. A trolling attachment for a motor boat propeller comprising a nut for securing a propeller on a shaft, said nut having an annular groove therein, a disc positioned on the nut and substantially engaging the trailing

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side of the propeller, the diameter of the disc being less than that of blades of the propeller, sliding plates mounted on the disc, resilient means for urging inner edges of the plates into the grooves of the nut, and means for rotating the disc by blades of the propeller.

3. In a motor boat speed retarder, the combination which comprises a propeller mounting including a shaft with a nut on the extended end and mounting means for attaching the parts to a transom of a boat, said nut having an annular groove in the peripheral surface, a disc positioned to follow a propeller on the shaft, a spacing housing mounted on and extended from the disc, plates slidably mounted on the housing, springs attached to opposite ends of the plates for urging inner edges of the plates into the grooves of the nut, and a cover for the springs mounted on and extended from the housing.

4. In a motor boat speed retarder, the combination which comprises an engine housing, means for mounting the engine housing on the transom of a boat, a propeller shaft rotatably mounted in the engine housing and operatively connected to the engine, a propeller on the shaft, a nut having an annular groove therein threaded on the shaft for retaining the propeller in position thereon, a disc on the nut and positioned to follow the propeller, a spacing housing carried by and extended from the disc, said disc having a finger extended into the path of blades of the propeller for rotating the disc with the propeller, oppositely disposed plates slidably mounted on the housing, springs connected to opposite ends of the plates for urging inner edges of the plates into the annular groove of the nut, and a cover enclosing the frame and sliding plates.

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