

No. 709,698.

Patented Sept. 23, 1902.

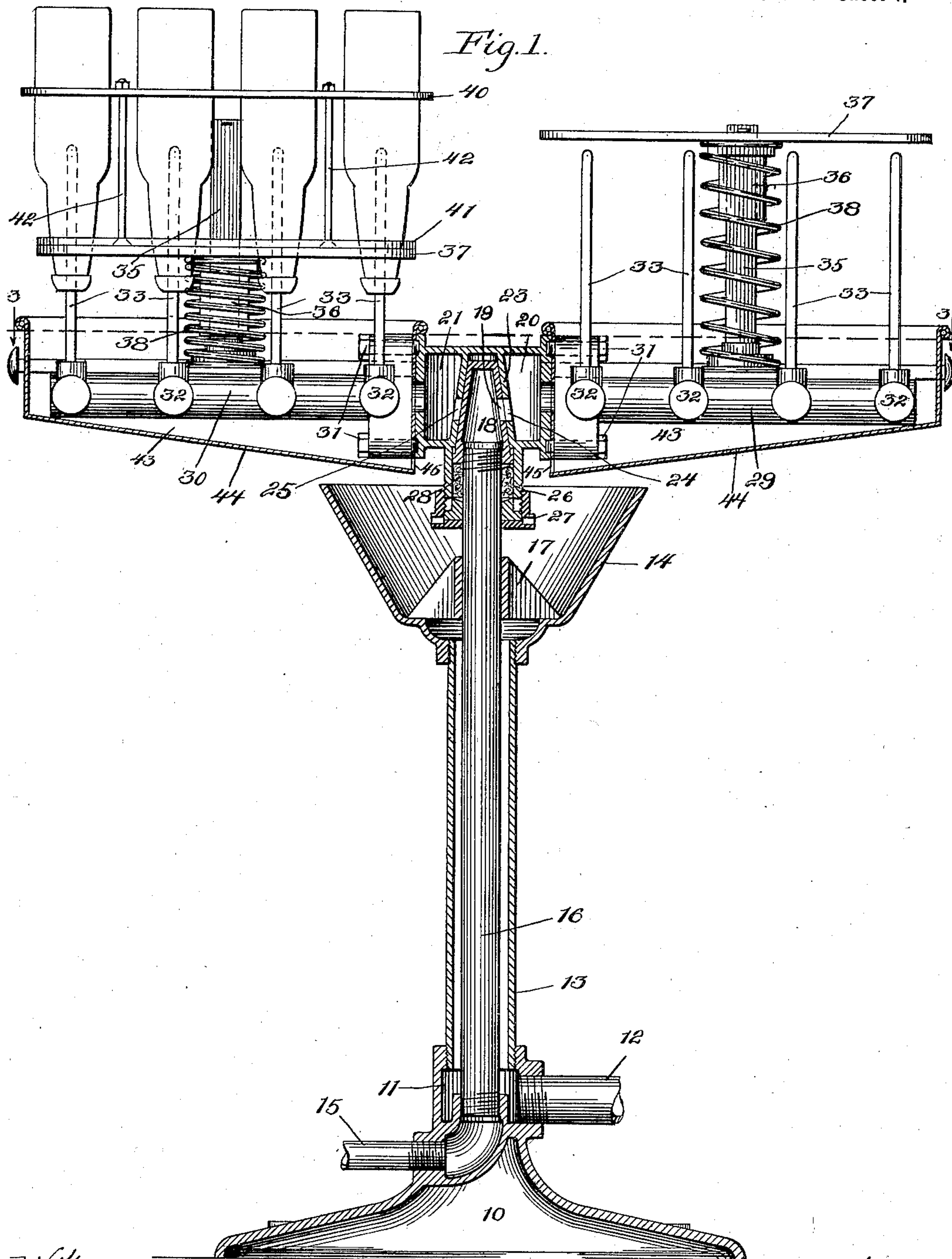
H. W. COLBY & E. O. HEINS DORF.

BOTTLE RINSER.

(Application filed Apr. 12, 1902.)

(No Model.)

3 Sheets—Sheet 1.



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Fig. 2.

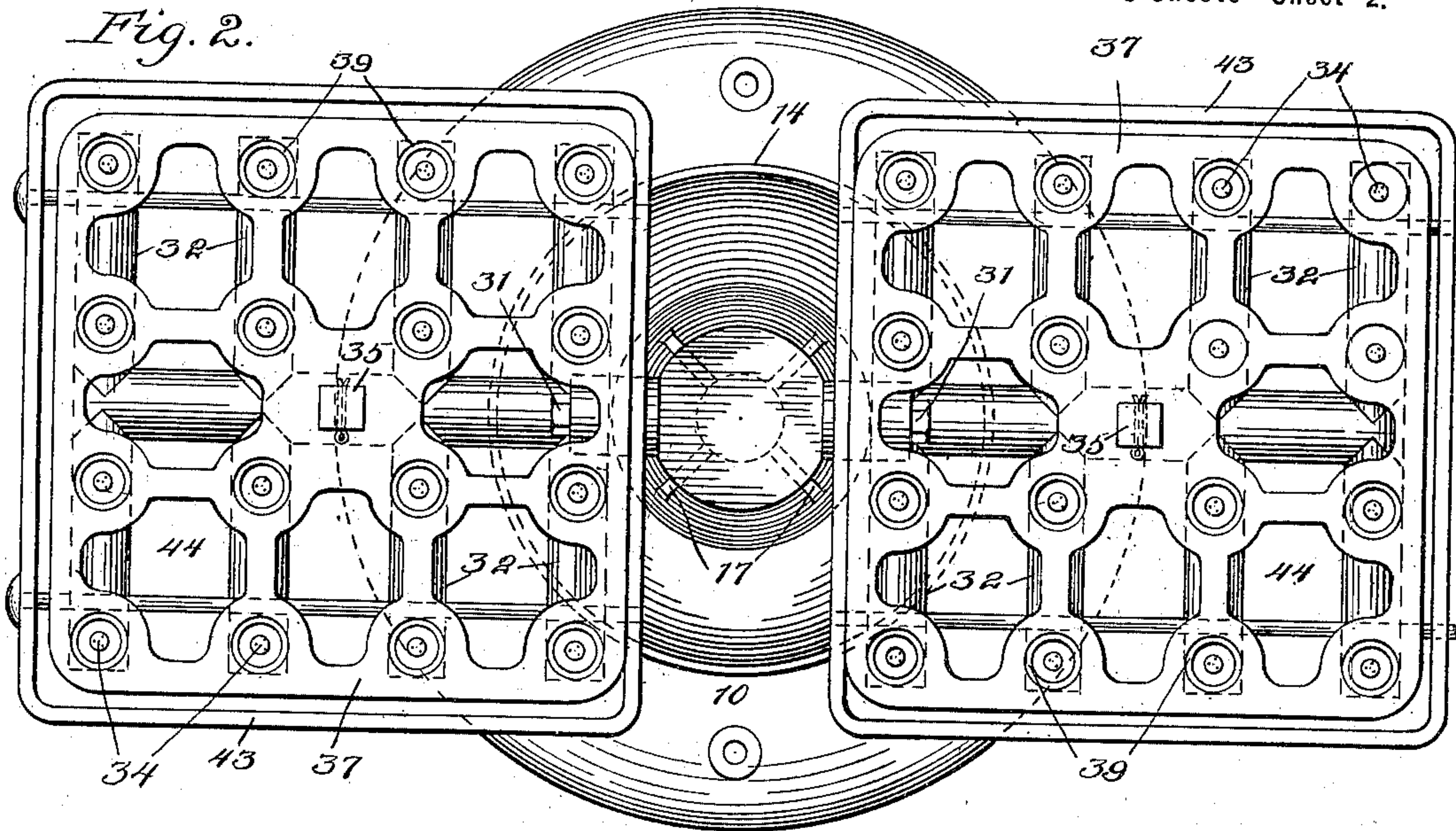
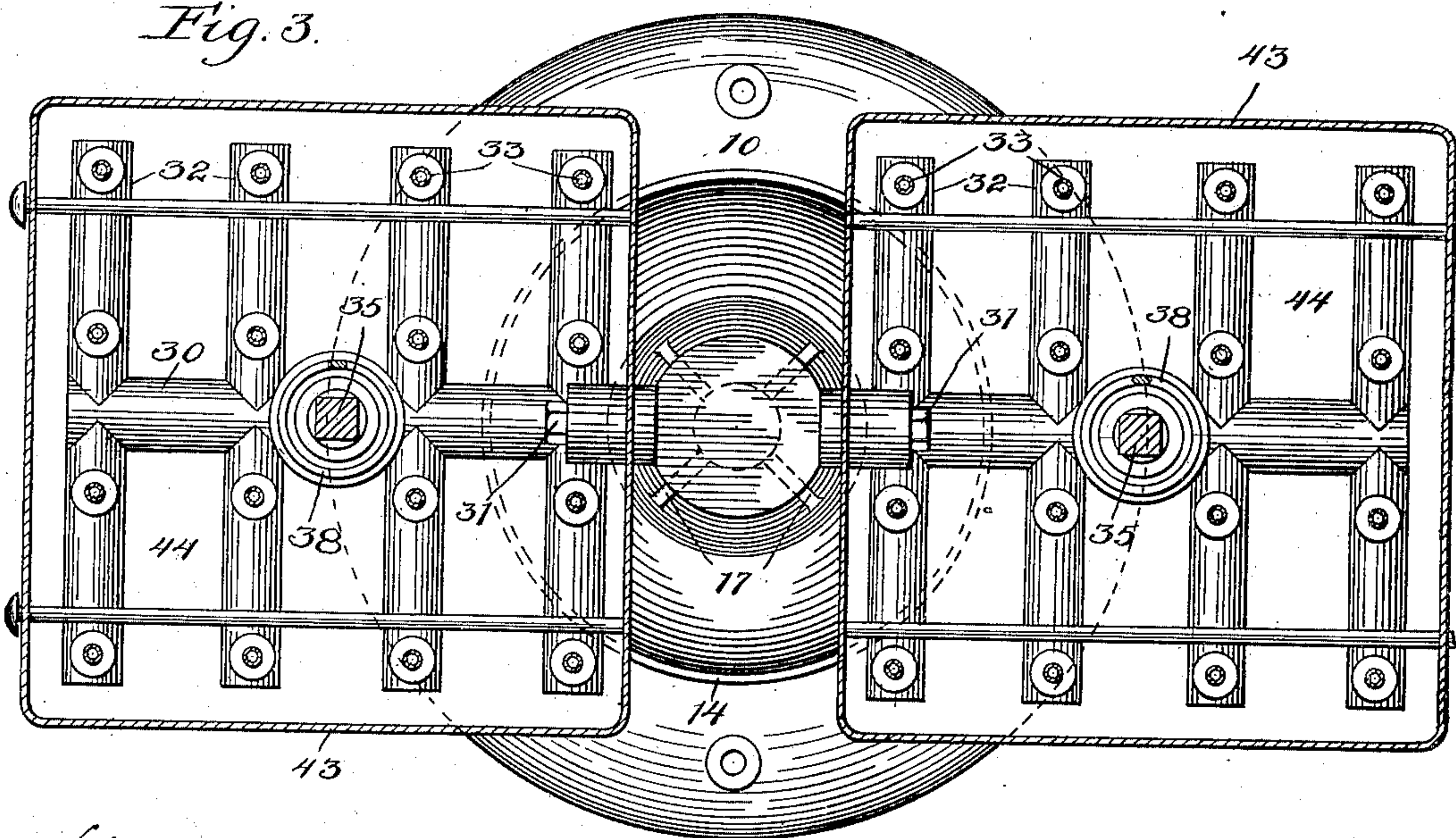


Fig. 3.



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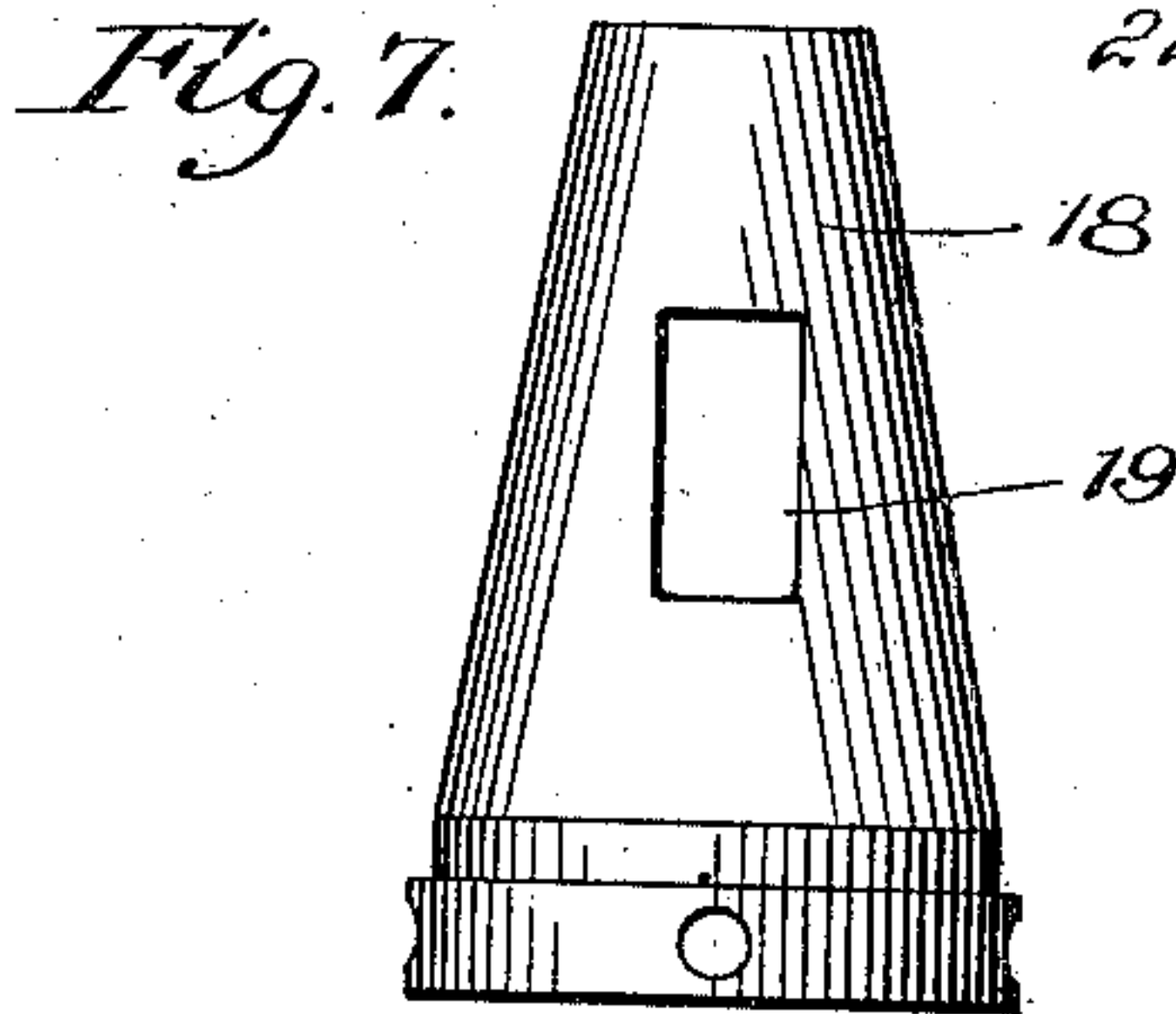
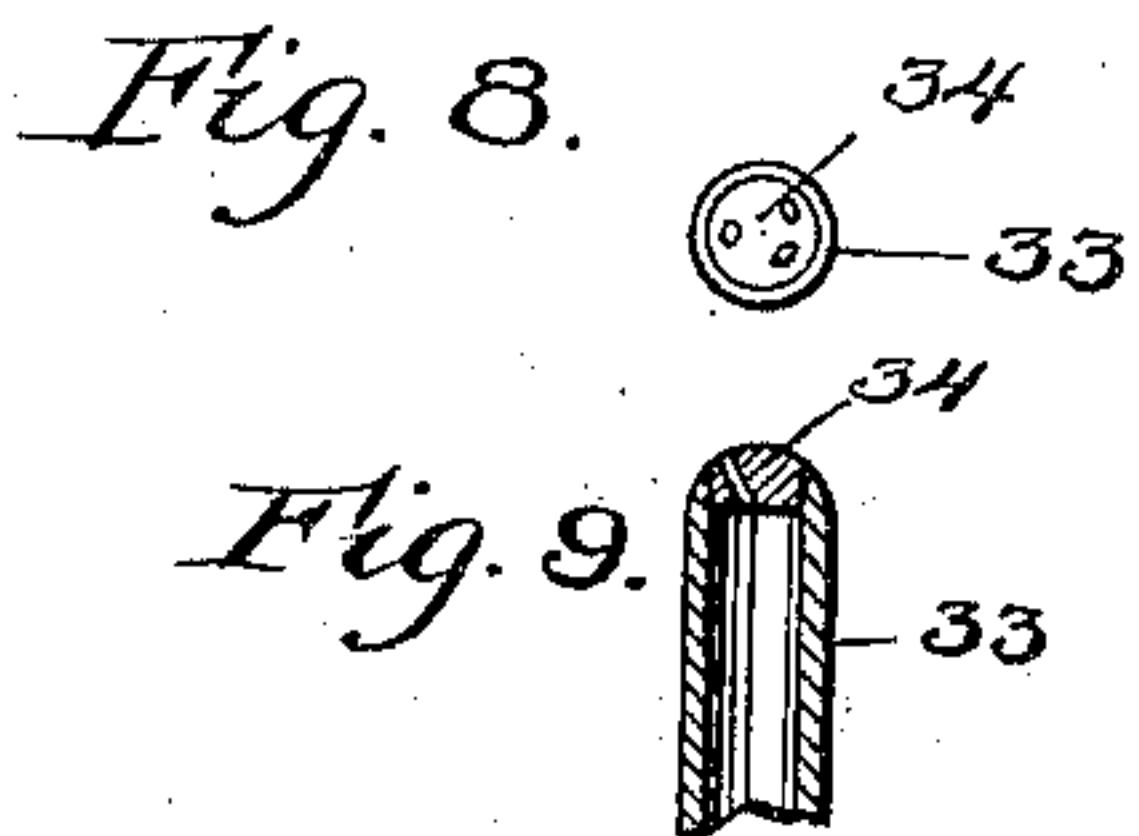
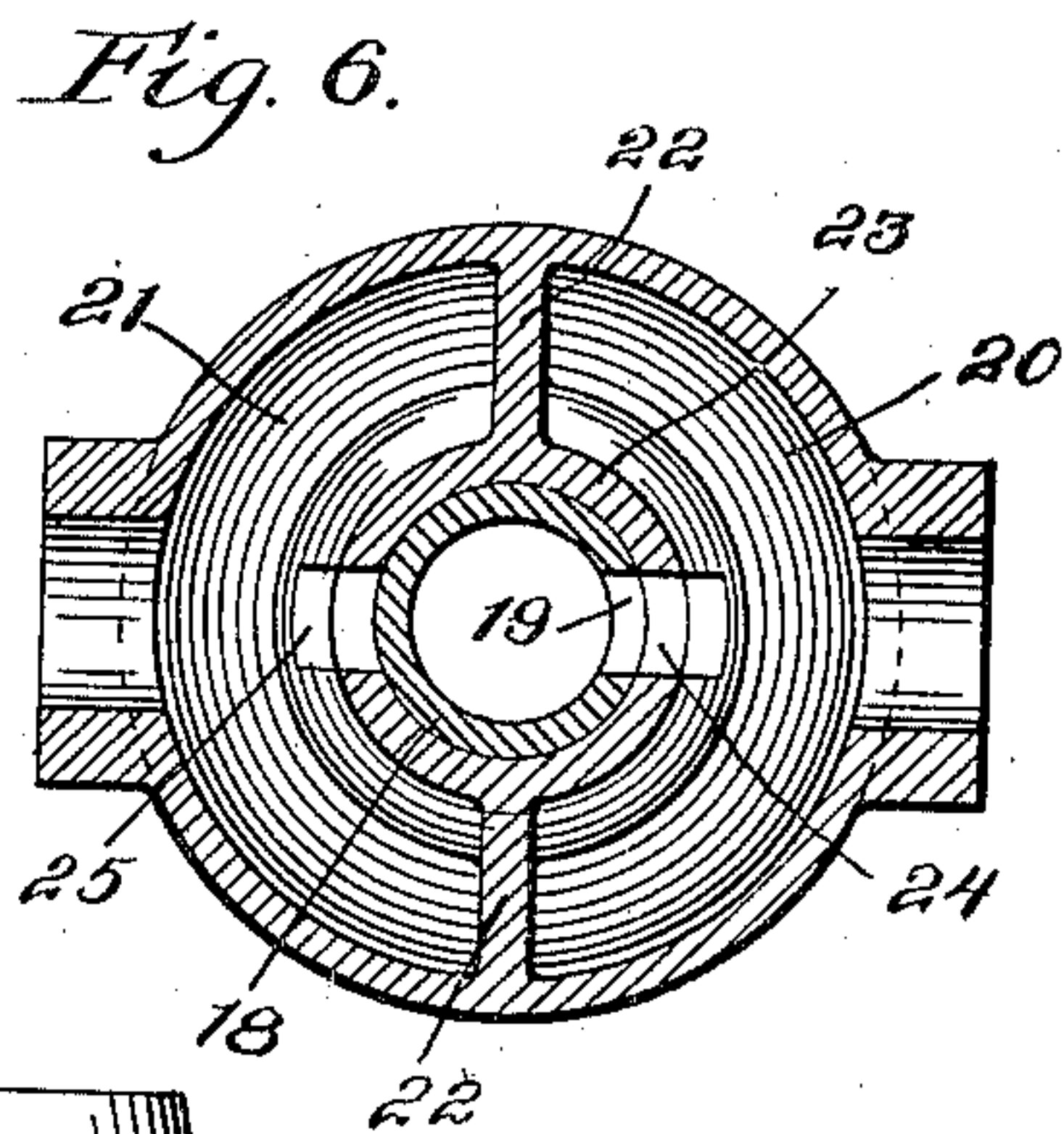
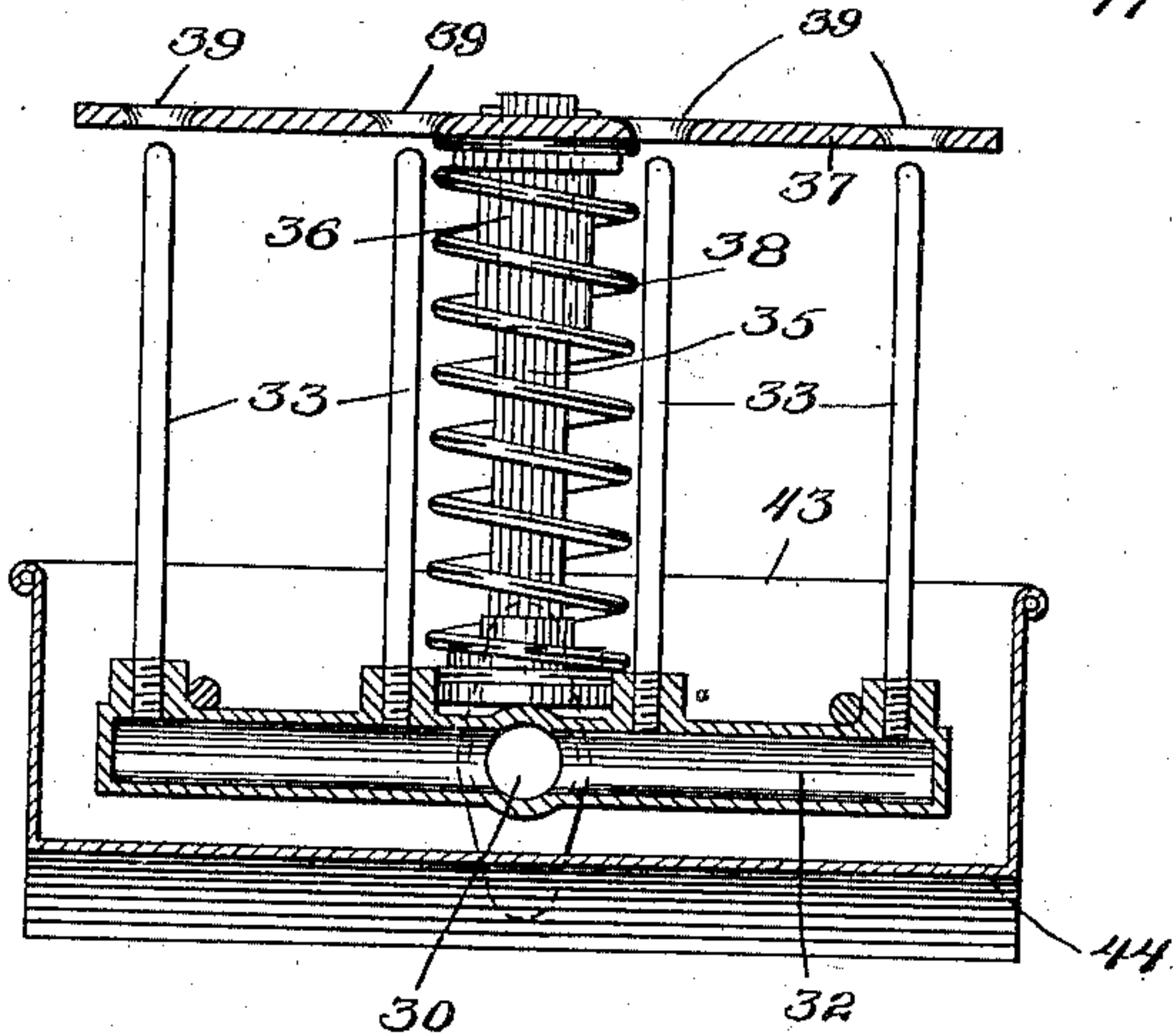
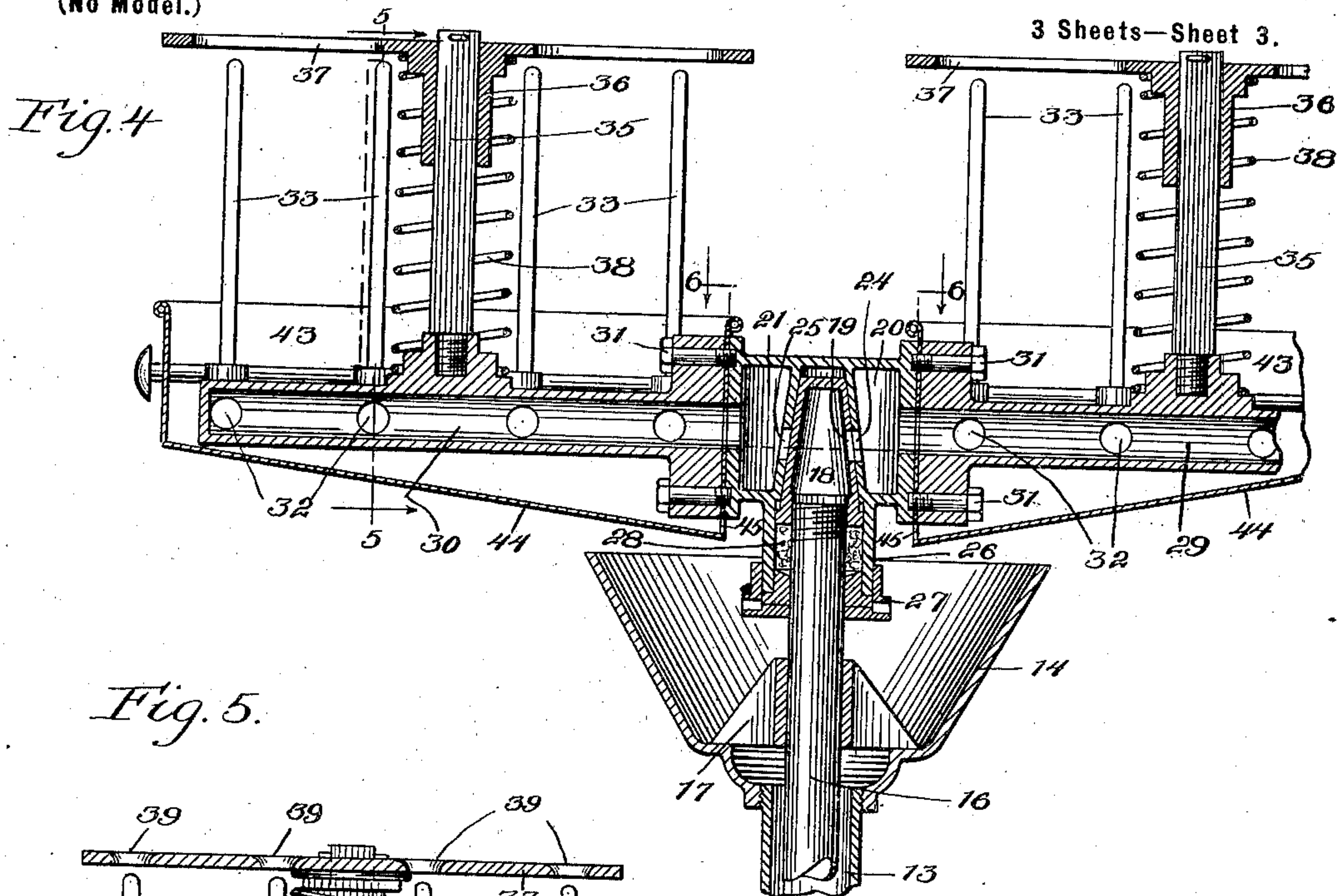
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

HARRY W. COLBY AND ERNST O. HEINS DORF, OF CHICAGO, ILLINOIS.

BOTTLE-RINSER.

SPECIFICATION forming part of Letters Patent No. 709,698, dated September 23, 1902.

Application filed April 12, 1902. Serial No. 102,523. (No model.)

To all whom it may concern:

Be it known that we, HARRY W. COLBY and ERNST O. HEINS DORF, citizens of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Bottle-Rinsers, of which the following is a specification.

This invention relates to an improvement in bottle-rinsers designed to be used in conjunction with a bottle-washer, in which a number of bottles are first placed in a carrier and then simultaneously washed; and the object of the invention is a rinsing-machine whereby the carrier and the bottles contained therein may be thoroughly rinsed simultaneously and rapidly without leakage of the water upon the floor or the workmen and without having to handle the bottles separately between the operation of washing and rinsing and which shall be capable of operating in a simple manner and shall be durable in construction; and the invention consists in the novel devices, parts, and combination of parts and devices hereinafter described, and shown in the drawings.

In the accompanying drawings, Figure 1 is a side elevation of the improved bottle-rinser shown partly in section. Fig. 2 is a top or plan view of the same. Fig. 3 is a horizontal section of the same, taken on the line 3 3 of Fig. 1. Fig. 4 is a view similar to Fig. 1 with additional parts shown in section. Fig. 5 is a section taken on the line 5 5 of Fig. 4. Fig. 6 is a horizontal section on the line 6 6 of Fig. 4, but upon a larger scale than said figure. Fig. 7 is a side elevation of the conical valve-plug shown detached and upon a larger scale than in the other figures. Fig. 8 is a top or plan view, and Fig. 9 is a sectional view of the upper end of one of the rinsing-tubes.

Like characters of reference indicate like parts wherever used in the several figures.

In the said drawings, 10 is the foot or base piece upon which the mechanism is supported and which may consist of a circular casting of the form indicated. In the upper part of this casting is a chamber 11, into which is tapped a waste-pipe 12, leading laterally away to the waste. Above this and leading into said chamber is the vertical waste-pipe 13, which is tapped into and supports the bowl 14, at the upper end thereof, for collecting

the waste water. Tapped into the base 10 is also the lateral water-supply pipe 15, connected with the vertical water-pipe 16, also tapped into said base-pipe concentric with the pipe 13 and extending up through the bowl 14, which latter contains a supporting-spider 17 to center and support said vertical pipe 16. On the upper end of the pipe 16 is secured the tapered valve-plug 18, provided with a single lateral port 19. This tapered plug 18 may preferably be secured to the pipe 16 by a screw-thread connecting the two. Resting on the tapered plug and supported thereby is the double valve-chamber 20 21, the two parts of the chamber being separated by a vertical partition 22 and separated from the valve-plug by a conical valve-seat 23, containing two ports 24 25, one for each of the chambers 20 21. It will be noted that the tapered plug and tapered valve-seat, which may be ground together, have the upper end of the tapered portions the smallest, so that whatever weight is placed on the valve-seat will tend to make the valve tighter, and thus prevent leakage, nor will the inrush of water act to any considerable degree to counteract such tightening effect, because the water can only come in contact with the valve-seat through the lateral valve-port from the center of the valve-plug itself and can exert very slight, if any, lifting-pressure. This arrangement of the tapered valve plug and seat, tapering upward to a smaller diameter, is a highly-important matter to prevent leakage, because, as will be noted, the entire weight of the remainder of the machine yet to be described is supported from the valve-chambers 20 21, as well as the weight of the bottle being rinsed. To still further prevent leakage and waste at the valve due to water-pressure or wear of the valve, a stuffing-box 26 is provided between the valve-seat 23 and the pipe 16. This stuffing-box not only confines the water from flowing out, but also in case of leakage into it whatever pressure is exerted by leakage tends to force the plug and valve-seat into closer contact, binding the two together more firmly. This stuffing-box 26 has a screw-threaded cap 27, which serves not only to compress the packing, but also to diminish by such compression the area of the gland 28, which contains the packing, and

thus to tighten the valve-seat upon its plug to any degree desired.

Secured to the valve-chambers 20 21, respectively, are the laterally-projecting pipes 29 30. A convenient means of securing said pipes is by bolts 31, as shown. The outer ends of these laterally-extending pipes 29 and 30 are sealed or closed; but each of the pipes 29 and 30 is provided with a series of laterally-extending pipes 32, leading to both sides and forming a gridiron-like structure, there being in the present case shown four series of such grid-pipes. Tapped into the upper surface of these grid-pipes 32, there being in the present instance four for each grid-pipe, are the vertical rinsing-tubes 33, the upper end of these rinsing-tubes being closed by a plug 34, (see Fig. 8,) in which plug it will be seen three inclined holes are pierced for the escape of the water.

Supported on each of the pipes 29 30 is an upright post 35, preferably made square in cross-section. On the post and fitted to slide thereon is a sleeve 36, to which is rigidly connected the platform 37 for supporting and centering the bottles to be rinsed. A yielding spring 38, extending from the platform to its supporting-base, holds said platform elevated in the absence of the load of bottles. The platform 37 (see Figs. 2 and 5) is perforated with a series of holes 39, one actually above each rinsing-tube. These holes are large enough so that the neck of the bottle to be washed may pass for some little distance through them, as indicated in Fig. 1.

Bottle-carriers for use with the machine are provided in any number desired, and these carriers should be made preferably of such form and shape that they may be used also with the bottle-washing machine. For a better comprehension it may be stated here that the kind of bottle-washing machine which this present invention was intended to be used in connection with is preferably one in which a series of upright brushes supplied with water are caused to revolve in the interior of the bottle to loosen and remove as far as possible the dirt contained in the bottle. In such washing-machines as combine the feature of washing and rinsing bottles by means of a tube upon which is mounted a brush or bristles the rinsing of the bottles while in the process of being washed is not thorough, as the bristles, rubber, or other material used for frictional contact with the bottles for the purpose of loosening the dirt will not permit the spraying of the water and ejecting it with sufficient force within the bottle on account of the interference of the bristles or rubber, which may be attached to the end of the tube, so that the result is the water which is necessarily admitted into the bottle through the bristles while being washed will gradually fall within the bottle as the bristles are withdrawn therefrom, leaving particles of loosened dirt, bristles, or other material adhering to the sides of the bottle, so that it

has been found necessary to insure the perfect keeping qualities of the beer or other liquid to be contained in the bottle that there should be a subsequent thorough rinsing, which it is the purpose of the present machine to accomplish. The requirements of a bottle-carrier to adapt the same to both the bottle-washing machine and the present bottle-rinsing machine are simply that it shall be capable of holding the bottles in a correct spacing in relation to each other and in an inverted position, with the mouth downward. In the bottle-carrier illustrated and which is adapted for use in both machines the carrier consists of two platforms, an upper one 40 and a lower one 41, the two being spaced apart less than the height of the bottle and being tied together by a vertical rod 42. Both of these platforms are perforated with a series of holes, one to suit the neck of the bottle and the other to suit the body of the bottle and corresponding with the position of the holes 39 in the machine-platform 37, above described. The object of having the bottle-carrier adapted to use in the two machines is of course so that the bottles may be taken from the washing-machine directly to the rinsing-machine without the labor of taking them out of the washing-machine carrier and putting them into another one.

On each side of the machine and surrounding each of the grids of pipes is a pan 43, supported from said grid structure and having an inclined bottom 44 and a drainage-opening 45, which drains into the bowl 14.

The operation of the machine is as follows: The upper portion of the machine, which is supported and turned upon the conical valve-plug as a pivot, may be supposed to be turned in such position that the valve-port in said conical plug is closed, when there will be no flow of water to either side. In this position a carrier of the kind indicated and which may, as in the instance illustrated, contain sixteen bottles or less is placed upon the platform 37, each bottle being centered over a rinsing-tube, which will enter the mouth of the bottle in position for delivering the water therein. The machine is then turned so that the port 19 will be opened, whereupon the water will flow into the chamber 20, thence into the pipe 29 and the pipes 32, connected therewith, and up through the rinsing-pipes 33 into the bottles, and the water will flow from the bottles down into the pan 43 and out through the drainage-opening 45 into the bowl 14, thence through pipe 13 through the drainage-outlet 12, the incoming water meanwhile flowing in through pipe 15 to the vertical pipe 16 and up to the conical plug and out at its port 19 to the bottles. After this flow has continued momentarily or long enough to thoroughly rinse the bottles, or longer, if it is desired to cool the bottles as well as to rinse them, the machine is given a quarter-turn to close the valve-port, and a second carrier containing bottles is put on the other

side, which is now presented for its load, and this second carrier is in turn brought into position by a quarter-turn, so that its bottles receive the flow of water, and so to a third load, when the first load will be rinsed and drained and can be removed from the machine. The operation is indefinitely repeated in this manner so long as there are bottles to be rinsed.

10 The construction is such, as will be noted, that there is no leakage of water in the workroom to create dampness and discomfort to the workmen and no leakage or waste of water, so that relatively little water is re-
15 quired to do the work.

We claim—

1. In a bottle-rinsing machine, the combination of two series of vertical rinsing-tubes mounted to rotate upon a water communication having a central valve-seat, said valve-
20 seat being mounted in turn upon a valve-plug, the latter being carried by a vertical water-supply pipe, and a stuffing-box connecting the valve-seat and the vertical supply-pipe,
25 substantially as specified.

2. In a bottle-rinsing machine, the combi-

nation of two series of vertical rinsing-tubes mounted to rotate upon a water communication having a central valve-seat, said valve-seat being mounted in turn upon a valve-
30 plug, the latter being carried by a vertical water-supply pipe, a stuffing-box connecting the valve-seat and the vertical supply-pipe, a drainage-pan rotating with the rinsing-tubes and a stationary bowl beneath to re-
35 ceive said drainage, substantially as specified.

3. In a bottle-rinsing machine, the combination of two series of vertical rinsing-tubes mounted to rotate on a water communication,
40 each series being provided with a platform for centering and supporting a multiplicity of bottles, and each platform being mounted upon a spring depressed by the weight of the bottles, and a bottle-carrier for spacing the
45 multiplicity of bottles, substantially as specified.

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Witnesses:

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