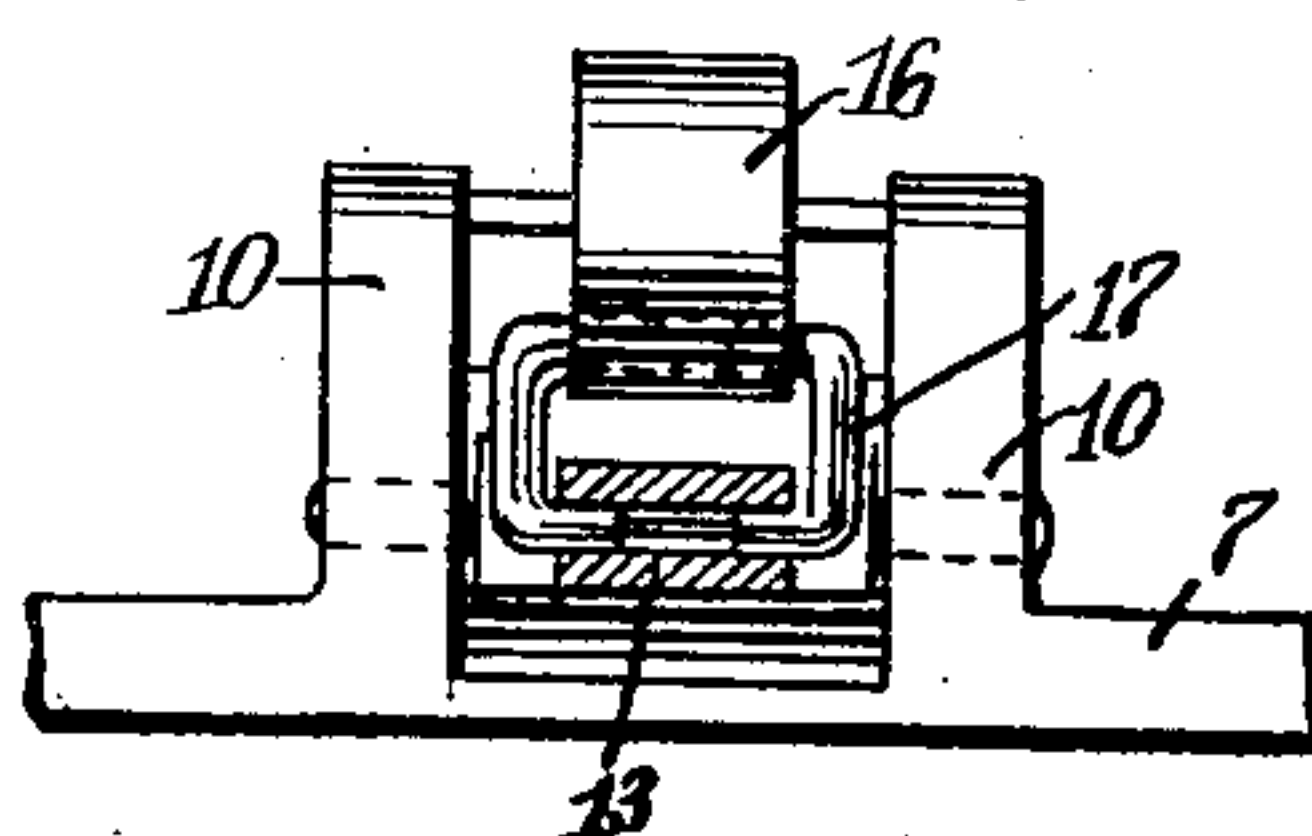
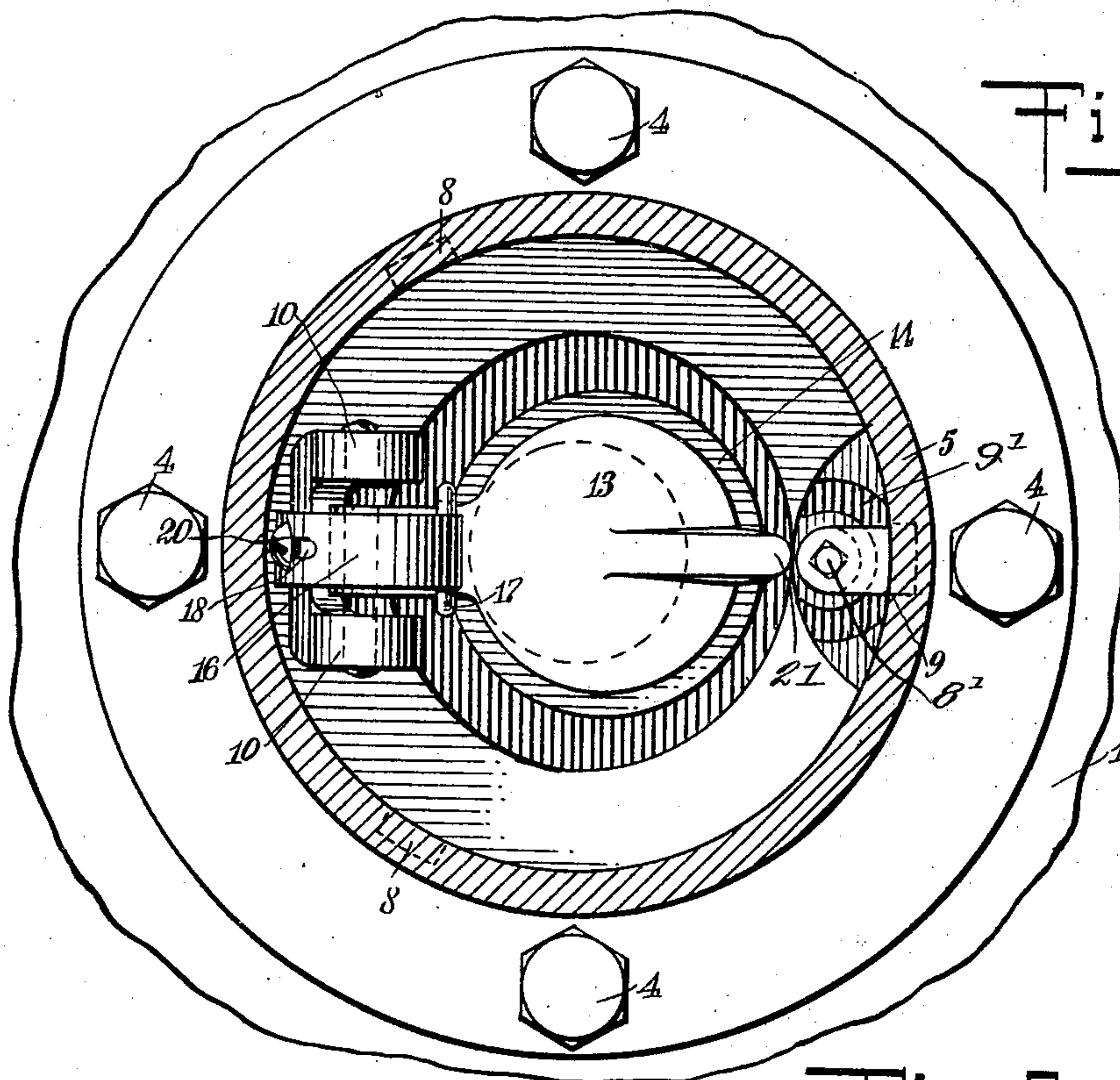
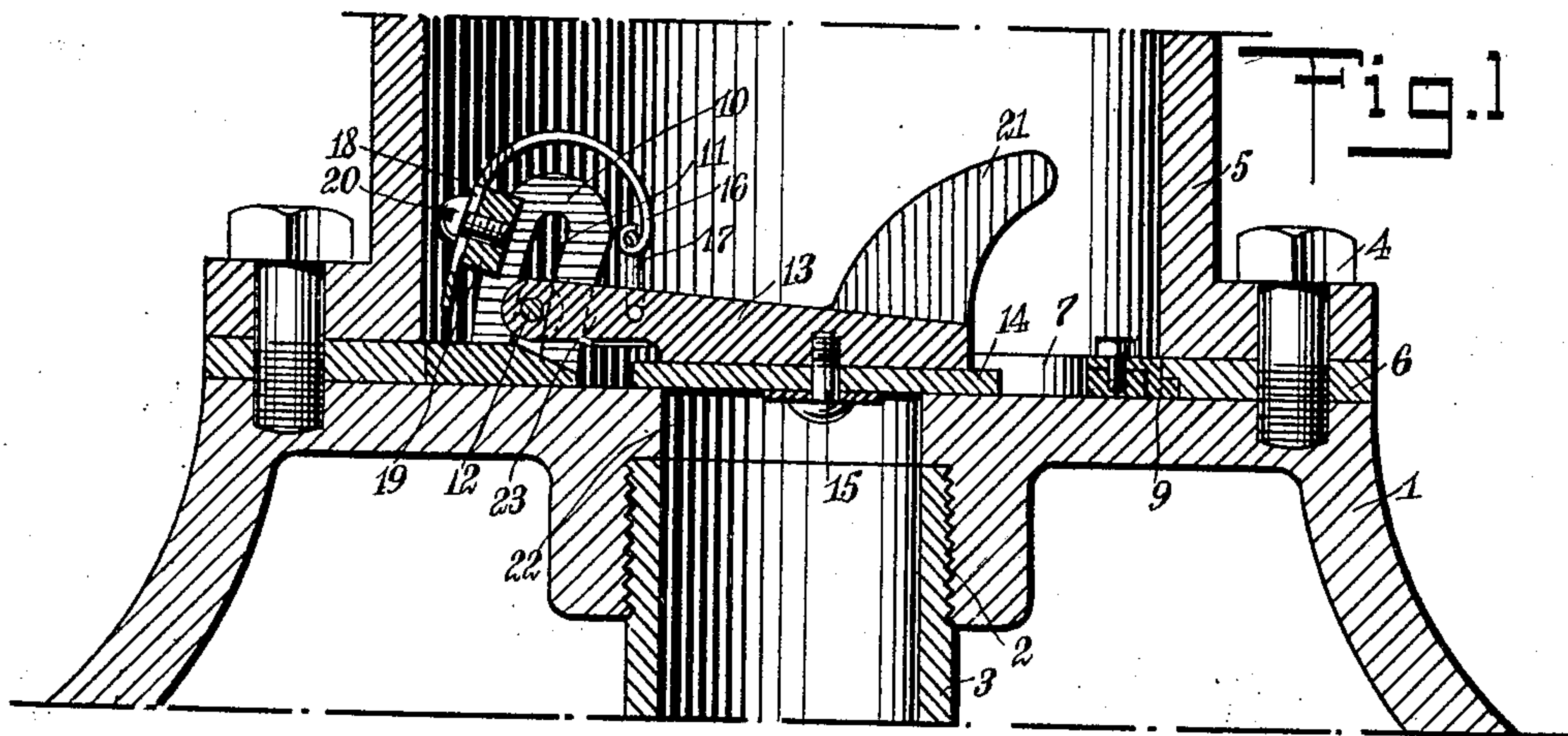


E. D. ORTON.  
PUMP VALVE.  
APPLICATION FILED MAR. 7, 1910.

999,584.

Patented Aug. 1, 1911.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

ERNEST DUTTON ORTON, OF FARMERSVILLE, NEW YORK.

## PUMP-VALVE.

999,584.

Specification of Letters Patent.

Patented Aug. 1, 1911.

Application filed March 7, 1910. Serial No. 547,667.

*To all whom it may concern:*

Be it known that I, ERNEST D. ORTON, a citizen of the United States, and a resident of Farmersville, in the county of Cattaraugus and State of New York, have invented a new and Improved Pump-Valve, of which the following is a full, clear, and exact description.

This invention relates to a new and improved valve for suction pumps.

An object of this invention is to provide a device which will be simple in construction, inexpensive to manufacture, strong, durable, and readily accessible for the purpose of cleaning or repairing.

A further object of this invention is to provide a valve for a pump with means for adjusting the tension of said valve, for elevating water at different heights.

A further object of this invention is to provide a valve with means for lifting the same by direct downward contact, to release the water imprisoned above the valve.

These and further objects, together with the construction and combination of parts, will be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a vertical section; Fig. 2 is a horizontal section; and Fig. 3 is a detail vertical sectional view showing the connection of the spring to the valve proper.

Referring more particularly to the separate parts of the device, 1 indicates the pump casing, to which is secured in any well-known manner, as by means of a screw-thread 2, a suction pipe 3. Superposed above the casing 1, and secured thereto in any well known manner, as by means of bolts 4, there is provided a pump barrel 5, which is preferably spaced apart from the casing 1 by means of a packing ring 6. These parts described indicate any ordinary pump arrangement with which my particular invention may be used.

7 represents a rim, which is provided with a pair of fixed lugs 8, secured to the rim 7 in any well known manner, as by being formed integral therewith, and an adjustable lug 9, which is pivotally secured to the rim 7, so that it can be swung from a non-projecting position to a projecting position.

These lugs 8 and 9 are for the purpose of locking the rim 7 within the pump barrel 5.

It will be noted that the lug 9 is somewhat Z-shaped, and is adapted to be rotated about its pivot 8' from a projecting or locking position, as indicated in Figs. 1 and 2, where it engages in a groove in the packing ring 6, to an unlocked position, where it is retired in the circular groove 9' on the rim 7. When the lug 9 is in the latter position, the rim 7 can be readily tilted and removed from the barrel.

Secured to the rim 7 in any well known manner, there is provided one or more lugs 10, in which are formed slots 11. Pivotal and slidingly mounted in the slots 11, there is provided a pin 12, which secures a valve proper 13 to the lugs 10 in a slidingly pivoted manner. The valve 13 is provided with a washer 14 of any suitable yielding material, such as leather, which is removably secured to the valve in any well known manner, as by means of a screw 15. In order to place a weight counterbalancing tension on the valve 13, there is provided a spring 16, which is connected to the valve 13 by means of a link 17, which engages the valve at one end, and is suspended from a coiled portion of the spring, at its other end. The spring 16 is provided with a slot 18 at its opposite end whereby it is adjustably connected to a member 19 secured to the lugs 10 by any suitable means, such as a set-screw 20.

In order to put varying tensions on the valve 13, it is merely necessary to adjust the slotted end of the spring 16 with respect to its support, and secure it in its adjusted position by means of the screw 20. In order to abnormally lift the valve by the lowering of the plunger thereon, there is provided a trip 21, which is secured on the valve 13 in any well known manner, as by being formed integral therewith, and which is preferably located on the opposite side of the valve to its pivotal connection with the rim 7. It is to be noted that the valve 13 seats down in the central opening inclosed by the rim 7, and is adapted to co-operate with an opening 22 in the casing 1, which is co-extensive with the suction pipe 3. It is further to be noted that the pin 12 which pivotally connects the valve 13 to the rim 7, is located in an extension or arm 23 on the valve 13, which arm is undercut so as to form a considerable arch between the casing 1, the rim 7, and the bottom of the



arm, so that it will allow considerable space, thereby preventing any accumulating sand from interfering with the action of the valve.

5 The operation of the device will be readily understood when taken in connection with the above description.

In the ordinary operation of the valve, it springs upwardly by the suction of the  
10 plunger, on its up-stroke, about its pivotal pin 12, and automatically closes on the down-stroke of the plunger. By adjusting the slotted end of the spring 16 and locking it in its adjusted position, the tension on  
15 the valve 13 may be varied, to make it more or less responsive, according to the height of the pump above the well. If it is desired to let the water out of the pump barrel, it is merely necessary to lower the plunger until  
20 it comes in contact with the trip 21, when a still further downward pressure will raise the pivoted end of the valve in the slots 11, permitting the water to run out into the well. This valve may be adjusted to any  
25 pump already in use by cutting out the old valve and lowering into its place this improved valve, which is readily secured in position by means of the lugs 8 and 9.

30 While I have shown one embodiment of my invention, I do not wish to be limited to the specific details thereof, but desire to be protected in various changes, modifications and alterations which I may make within the scope of the appended claims.

Having thus described my invention, I 35 claim as new and desire to secure by Letters Patent:—

1. In a device of the class described, the combination with a support, of a valve pivotally connected to said support, a spring 40 connected to said valve, said spring having a slot therein, and a set screw engaging said slot, adapted to adjustably secure said spring to said support.

2. In a device of the class described, the 45 combination with a rim, of a lug on said rim, said lug having a slot therein, a pin engaging said slot, a valve connected to said pin, whereby said valve is slidingly pivoted to said rim, and a trip on said 50 valve located on the opposite side of said valve from said pin.

3. In a device of the class described, the combination with a rim, of a pair of lugs 55 connected to said rim, said lugs each having a slot therein, a pin slidingly pivoted in said slots, a valve connected to said pin, a trip on said valve, a spring pivotally connected to said valve at one end, and means 60 for adjustably connecting said spring to said lugs at its other end.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ERNEST DUTTON ORTON.

Witnesses:

R. W. LAW,

THOS. J. LAIRD.