

T. E. STANGE.
VALVE.

APPLICATION FILED JUNE 30, 1910.

1,002,938.

Patented Sept. 12, 1911.

2 SHEETS—SHEET 1.

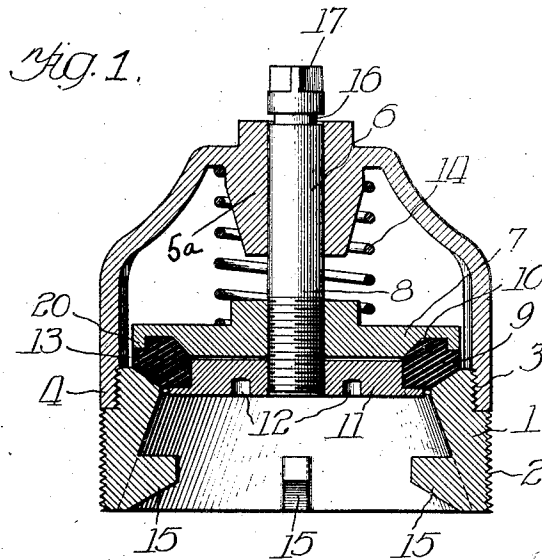


Fig. 2.

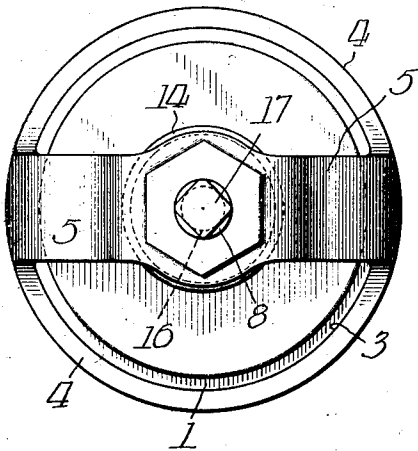
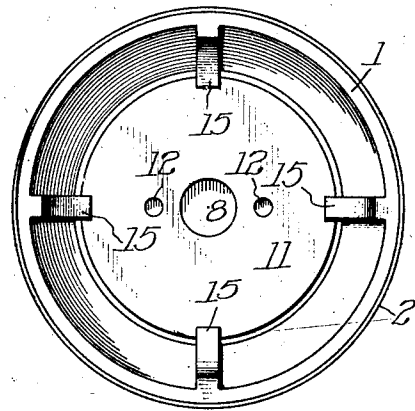


Fig. 3.



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2 SHEETS--SHEET 2.

Fig. 5.

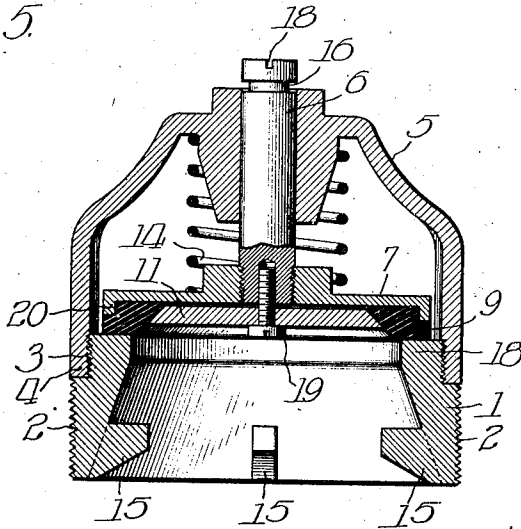


Fig. 7.

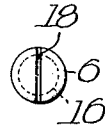


Fig. 6.

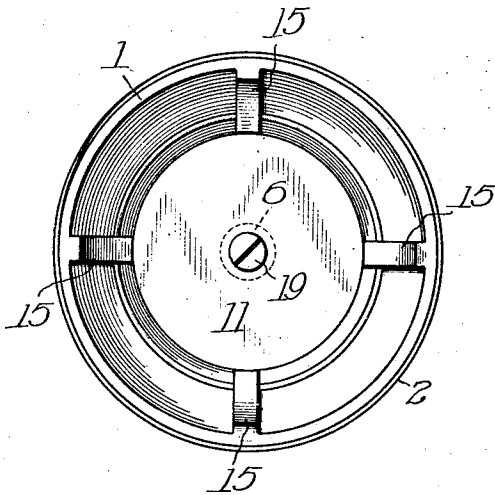
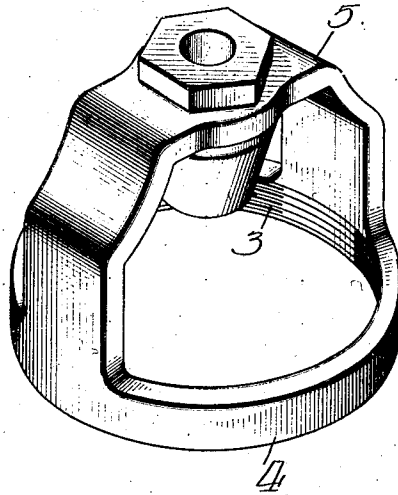


Fig. 4.



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UNITED STATES PATENT OFFICE.

THEODORE E. STANGE, OF CHICAGO, ILLINOIS.

VALVE.

1,002,938.

Specification of Letters Patent. Patented Sept. 12, 1911.

Application filed June 30, 1910. Serial No. 569,820.

To all whom it may concern:

Be it known that I, THEODORE E. STANGE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Valves, of which the following is a description.

My invention belongs to that general class of valve intended for use with pumps and similar devices, and has among its objects the production of a simple, economical, durable and effective device for that purpose.

To this end it consists in the novel construction, arrangement and combination of parts herein shown and described and more particularly pointed out in the claims.

In the drawings wherein like reference characters indicate like or corresponding parts, Figure 1 is a central vertical section of my improved device. Fig. 2 is a top plan of the same. Fig. 3 is a bottom plan of the base ring forming the valve seat. Fig. 4 is a perspective view of the bonnet for the valve. Fig. 5 is a vertical section of a slightly modified form. Fig. 6 is a bottom plan view of the form shown in Fig. 5, and Fig. 7 shows the top of the valve stem in the form shown in Fig. 5.

In the drawings 1 is a suitable base, screw threaded at its lower part at 2 to engage similar threads in the pipe or opening into the pump, and screw threaded at 3 to engage the ring 4 of the bonnet 5.

6 is a valve stem extending through the top of the bonnet and having secured to its inner end the valve plate 7. As shown in Fig. 1, the end of the stem is screw threaded as at 8 and the plate 7 is engaged therewith by a cooperating screw thread formed thereon. If preferred, however, the plate 7 and stem 6 may be formed integral with one another.

9 is a packing or valve ring preferably of rubber or equivalent material for the purpose, which being seated in a recess 10 formed in the plate 7 is retained therein by a follower 11 screwed upon the end of the stem at 8 to firmly retain the ring in position.

12—12 are spanner holes in the plate 11.

As here shown, the working face of the ring 9 is inclined as at 13. I have found in practice that an inclination of from 40 to 50 degrees is satisfactory. The top of the ring 1 is correspondingly inclined to cooperate with the ring 9.

A spring 14 or equivalent member is positioned between the plate 7 and the top of the bonnet 5 serving to resiliently hold the valve down upon its seat.

15—15 are projections or lugs formed on the base 1 by which it may be handled or turned in machining the same.

Just above the line of the top of the bonnet 5 I prefer to provide means for engaging a suitable tool with the stem 6 so that the valve 9 may be lifted off of its seat for the purpose of cleaning the valve seat or disengaging anything that might become entangled therein. As shown in the drawings, I accomplish this by cutting a slot 16 about the periphery of the stem 6. Equivalent means may be employed for the same purpose. By engaging a suitable tool therewith and using the top of the bonnet as a fulcrum the valve may be readily lifted off of its seat, or after the parts are assembled it may be engaged in this manner in reaching into a recess to position it at the point desired. I also provide means by which the valve may be rotatably turned on its seat with a grinding action for the purpose of cleaning the same or disengaging anything entangled. As shown in Figs. 1 and 2, the top of the valve stem at 17 is square or equivalently formed for the engagement of a wrench. As shown in Figs. 5 and 7, a simple slot 18 is formed at the top of the stem 6 by means of which a tool similar to a screw driver may be engaged therewith and with an ordinary brace the valve may be ground upon its seat as stated.

In the modified form shown in Figs. 5 and 6, the valve 9 is seated upon a square or flat face 18. As here shown, the follower or plate 11 is secured to the stem 6 by means of a screw 19 entering the threaded recess formed longitudinally in the end of the stem. The operation in each case is substantially the same.

It will be seen that the entire device is simple in its construction and readily assembled or disassembled for the purpose of cleaning the same or placing it in position. Any foreign matter such as tar or other sticky substance that might come in contact with the valve is readily disengaged by the means pointed out, or if desired, the entire valve may be disassembled for this purpose. In practice it is found to be very durable and effective in its action. By forming the lugs 15 for the machining

operations and dispensing with the usual cross bars the opening to the valve is unobstructed and offers an unobstructed passage for the fluid passing therethrough. In the preferred construction the plate 7 is provided with a downwardly depending flange 20 forming a recess within which the ring 9 is located. As shown the marginal edge of the plate 7 and the outer surface of the ring 9 are in line or practically flush, giving the whole a neat appearance and serving to effectually retain the ring and prevent its spreading.

It will be noted that in each of the constructions of the drawing the bonnet connects at its upper end with an enlarged downwardly projecting elongated conical shaped bearing 5^a, which constitutes an extended bearing for the valve stem 6, and around which the spring 14 is mounted. The part 5^a in addition to constituting an extended bearing for the stem, by reason of its conical formation will not interfere with the ready movement of the spring.

Having thus pointed out my invention it is obvious that immaterial modifications may be made without departing from the spirit of my invention.

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

1. A device of the kind described, comprising a hollow base ring screw threaded at its periphery to be suitably connected in operative position and having spaced inwardly extending tool engaging projections on its inner surface, and a bonnet screw threaded to engage said base, in combination with a valve provided with a stem extending through the body and constructed at its upper end to engage a tool to rotate the valve, a valve ring positioned within a suitable recess within the valve, a follower adapted to be secured to the valve stem to

maintain the ring in position, and a spring positioned between the bonnet and the valve to maintain the latter in operable position.

2. A device of the kind described, comprising a base adapted to be secured in operative position, and a cooperating bonnet therefor, in combination with a valve positioned within the bonnet, and including a valve plate, a stem passing therethrough and having a bearing at its upper end in the bonnet, a valve ring mounted on the plate, and said valve plate offering no obstruction beyond the periphery of the valve ring, and means for resiliently pressing the valve ring to its seat comprising a retaining plate threaded directly to the lower end of the valve stem and having an annular wall to engage the inner surface of said ring and a projecting peripheral flange to engage the lower surface of said ring.

3. A device of the kind described, comprising a base ring 1, screw threaded at 2, to be suitably connected in operable position, and a bonnet 5 screw threaded to engage the base, in combination with a valve 7 provided with a stem 6 extending through the bonnet and provided with a circumferential groove 16 above the plane of the bonnet and with its free end formed to engage a tool to rotate the valve, a valve ring 9 positioned within a suitable recess in the valve, a follower 11 adapted to be secured to the valve stem to maintain the ring in position, and a spring positioned between the bonnet and the valve to maintain the latter in operable position.

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

THEODORE E. STANGE.

Witnesses:

ROY W. HILL,
CHARLES I. COBB.