

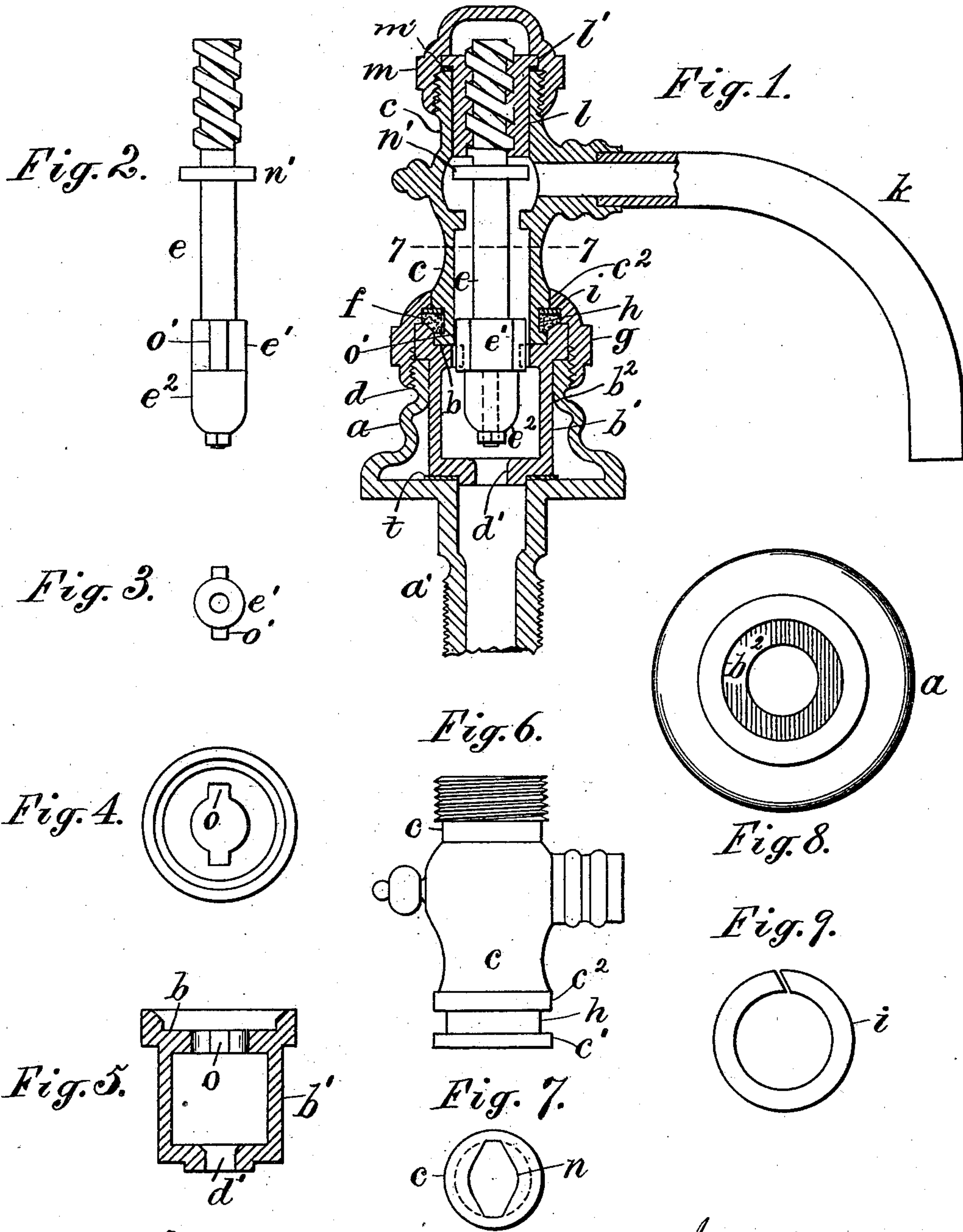
E. G. HEDGES.

COMPRESSION COCK WITH REMOVABLE VALVE

(Application filed Dec. 18, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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No. 671,481.

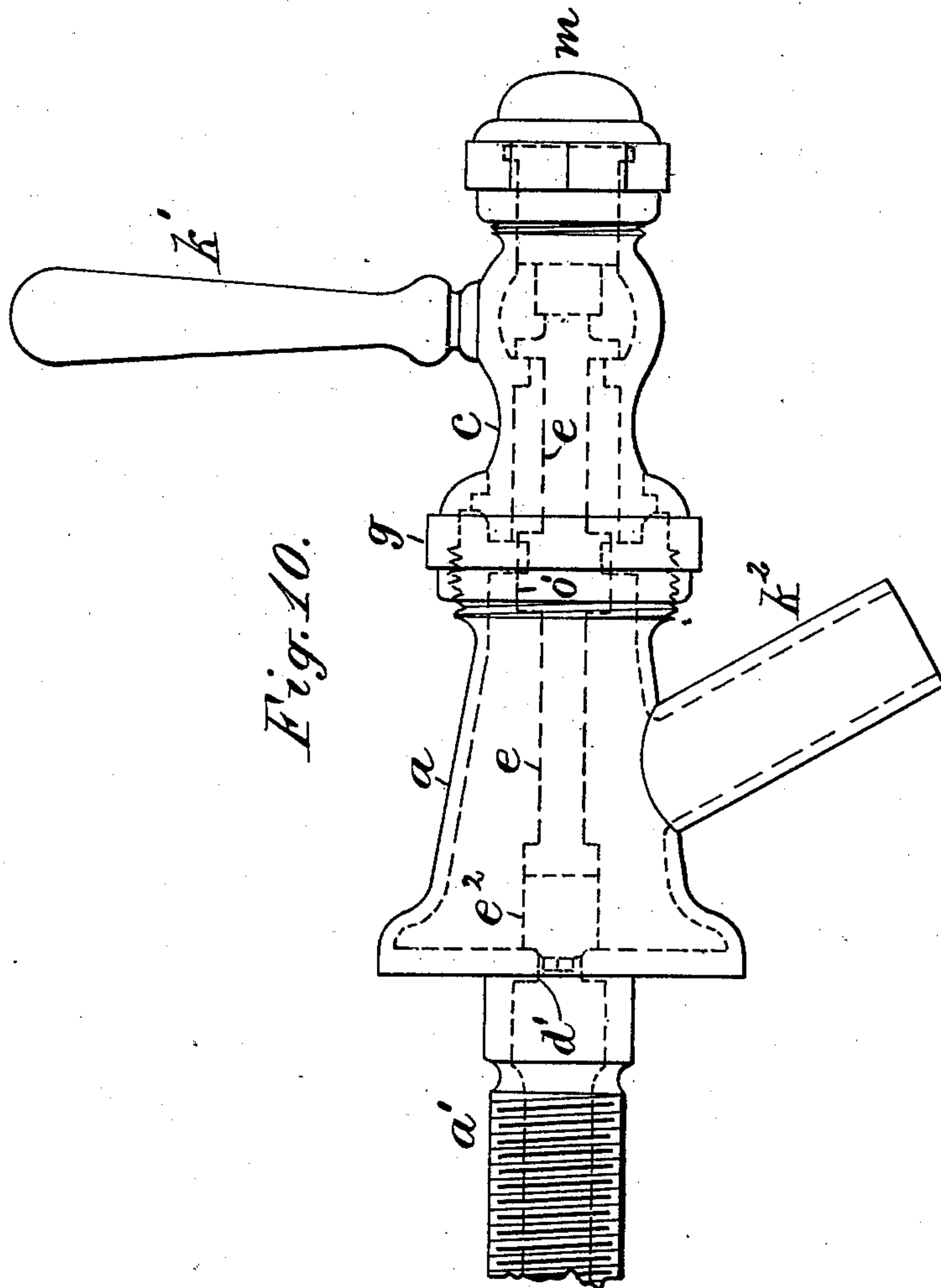
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

EDWARD G. HEDGES, OF NEWARK, NEW JERSEY.

COMPRESSION-COCK WITH REMOVABLE VALVE.

SPECIFICATION forming part of Letters Patent No. 671,481, dated April 9, 1901.

Application filed December 18, 1900. Serial No. 40,299. (No model.)

To all whom it may concern:

Be it known that I, EDWARD G. HEDGES, a citizen of the United States, residing at 269 Belleville avenue, Newark, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Compression-Cocks with Removable Valves, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of the present invention is to furnish a compression-cock in which a rotatable shank may be swiveled upon the standard by a packed joint and the valve removed from its seat for renewal or repairs without breaking such swivel-joint.

The invention also includes means for adjusting the valve to and from its seat to shut off the water in any given position of the nozzle and without separating the shank of the nozzle from the standard.

It also includes a renewable valve-seat and a stop for the valve-stem to prevent excessive pressure upon the seat.

The invention is adapted to compression-cocks having a swing-nozzle or to bibs having a stationary nozzle and having a handle with shank swiveled upon the standard like an ordinary swing-nozzle.

In the drawings, Figure 1 is a vertical section, where hatched, of a compression-cock with swing-nozzle. Fig. 2 shows the valve-stem detached. Fig. 3 is a view at the lower end of the valve-stem. Fig. 4 is a plan, and Fig. 5 is a vertical section, of the cylindrical box b' , containing the removable valve-seat d' . Fig. 6 is an elevation of the shank with the elbow for the attachment of the nozzle. Fig. 7 is a cross-section of the shank on the line 7 7 in Fig. 1 looking toward the stop for the valve-stem. Fig. 8 is a plan of the standard, showing the chamber b^2 for the removable valve-seat. Fig. 9 is a plan of the split collar for the stuffing-box cover, and Fig. 10 is a side elevation of a bib having nozzle upon the standard and handle attached to the swivel-shank.

a is the standard of the cock, provided with the usual stem a' for supporting it and making a water connection.

b designates a flat ground recessed seat,

upon which the base of the shank c is fitted to form a swivel-joint, and d designates a thread upon the periphery of the standard adjacent to this recessed seat to engage a stuffing-box cover g . To support the shank c movably upon the standard, the recessed seat b may be formed in an attachment secured upon the top of the standard, or it may be formed directly in the top of the standard itself. In Fig. 10 this swivel-seat b is shown integral with the standard and the valve seat or passage d' , formed in the base of the standard; but in Figs. 1 and 5 the seat and valve-passage are shown formed in the opposite ends of a cylindrical box b' , which is fitted to a chamber b^2 in the top of the standard, so as to be renewed and removed when the valve-seat becomes worn. The shank c is formed with a collar c' at its base fitted to turn in and upon the recessed seat b and is held thereon by an elastic packing f and a stuffing-box cover g , fitted to the thread d upon the standard.

To facilitate the manufacture of the cover g and its application to the shank above the collar c' , the shank is formed with a similar collar c^2 , separated from the collar c' by a groove h , and the upper part of the collar g is bored to slip over the two collars. A split washer or ring i (shown in Figs. 1 and 8) is made of flexible metal, so that it can be sprung past the collar c' into the groove h when the cover g is slipped upon the shank, and the packing then being wound upon the shank in the groove h the washer i serves when the cover is screwed down to compress the packing and hold the collar c' firmly upon the ground seat b . The swivel-joint of the shank and standard is thus doubly protected by the ground metal surfaces and the packing. The mouth of the recess in which the seat b is formed is flared, as shown in Figs. 1 and 5, to force the packing into the groove h .

The spindle e is formed with a hub or collar e' to hold upon the lower end of the spindle the valve-plug e^2 , which is secured by the usual nut.

The shank is shown in Fig. 1 provided at one side with the nozzle k and in Fig. 10 with the handle or arm k' . The valve-spindle is extended upward through the swivel-joint

into the top of the standard, where it is provided with a screw-thread. The top of the shank is formed with a socket to receive a nut l , fitted to the spindle-thread, and the nut is formed with collar l' to rest upon the top of the shank, where it may be clamped when adjusted by a screw-cap m . A packing m' is inserted under the collar to prevent leakage around the threaded joint of the cap.

Within the body of the shank shoulders n are formed, as shown in Figs. 1 and 7, and a collar n' is formed upon the valve-spindle above such shoulders to contact with the same when the valve is closed and prevent the valve-plug e^2 from pressing unduly upon the seat around the valve-inlet d' .

The hole in the seat b through which the valve-plug e^2 is applied to the inlet d' is formed with notches o in its opposite sides to fit wings o' , projected from the hub e' on the valve-stem. The wings operate to hold the valve-stem from rotation, so that the rotation of the nut upon the stem moves it to and from the valve seat or passage d' . The hole in the seat b , the stops n , and the socket in which the nut l is fitted in the top of the shank are all made of such a size that the valve-plug e^2 and the wings o can be drawn through them when the nut l and cap m are removed, so that the spindle can be taken out of the cock to renew the plug without breaking the swivel-joint between the shank and the standard.

In Fig. 10 the standard is shown with the fixed nozzle k^2 at the side, and the shank is provided with a handle or arm k' to turn it for actuating the valve. The shank is the same in its construction in all respects as is shown in Fig. 1, excepting the substitution of the handle k' for the tubular nozzle k .

The operation of the valve is the same in its movement to and from the inlet-passage d' , and the facility for removing the valve-stem for the renewal of the plug is precisely the same.

Adjustment of the plug to the outlet-seat.—

When the cap m is removed, the nut l can be turned in its socket by applying the fingers to the collar l' , and the valve can thus be moved to its seat when the nozzle k or cap m is turned nearly to the position in which the cock should be closed. The cap m is then screwed upon the shank to press the collar l' lightly, but permitting it to slip when the arm or nozzle is turned to its final position to close the valve. Such final movement of the arm or nozzle turns the nut l by the frictional grip of the cap m and presses the valve upon its seat, bringing the collar n' in contact with the stops n ; but when the longitudinal movement of the valve-stem is arrested by the contact of the collar n' with the stops the nut turns no longer, but the shank turns upon the nut and adjusts it automatically at a suitable point to close the valve in the required position of the nozzle or handle. The cap m , being then screwed firmly upon the

shank, holds the nut from turning and maintains such adjustment as long as required. The valve-plug e^2 , which is commonly made of india-rubber, is fitted to press forcibly upon the inlet d' when the collar n' contacts with the stops n , and when the valve-plug ceases to thus operate it is renewed or a packing inserted between its base and the hub e' , which is readily effected by withdrawing the entire valve-stem from the cock.

It will be observed that the stuffing-box cover g is formed with an interior shoulder to press upon the top of the cylindrical box b' , containing the removable valve-seat, and such shoulder serves to press the box firmly down upon the top of the standard a when the shoulder is screwed down.

A packing t is shown applied between the bottom of the box and the base of the standard to form a water-tight joint, so that when the valve-plug is pressed upon its seat the water is wholly excluded from the stuffing-box.

Having thus set forth the nature of the invention, what is claimed herein is—

1. A compression-cock comprising a standard containing a valve-seat, a rotatable shank having a swivel connection with the top of the standard, a valve-stem extended through such swivel connection into the top of the shank, and having a thread at the top and a plug at the bottom to close the seat, a guide to hold the stem from rotation, and a nut fitted to the thread on the stem and held adjustably in the top of the shank with means for clamping it to the shank when adjusted, whereby the nut and the valve-plug may be adjusted without separating the shank and standard.

2. A compression-cock comprising a standard containing a valve-seat, a rotatable shank having a swivel connection with the top of the standard, a valve-stem extended through such swivel connection into the top of the shank, and having a thread at the top and a plug at the bottom to close the seat, a guide to hold the stem from rotation, a chamber extended through the top of the shank permitting the removal of the valve-stem and plug, and a nut fitted to the thread on the stem and held adjustably in such chamber, and means for clamping the nut when adjusted, whereby the valve-plug may be adjusted, or may be wholly removed for repairs without separating the shank and the standard.

3. A compression-cock comprising a standard with circular recess, a valve-seat fitted removably to such recess, a swing-nozzle with attached shank having a swivel connection with the top of the standard, a cap operating to clamp the valve-seat upon the top of the standard and to hold the shank movably, a valve-stem extended through such swivel connection into the top of the shank, and having a thread at the top and a plug at the bottom to close the seat, a guide to hold the stem from rotation, and a nut fitted to the thread and secured adjustably in the shank, where-

by the valve-seat may be removed for repairs or renewal, and the valve-plug may be adjusted, substantially as herein set forth.

4. A compression-cock comprising a standard 5
ard containing a valve-seat, a swing-nozzle with a shank having a swivel connection with the top of the standard, guides to hold the valve-stem from rotation, shoulders within the shank adapted to permit the removal of 10
the valve-stem and plug, a valve-stem extended through the swivel connection into the top of the standard, and provided with thread at the top and valve-plug at the bottom, and having a collar above the shoulders to limit 15
the movement of the valve-plug toward the seat, and a nut fitted to the thread and secured adjustably in the shank, the shoulders and the socket for the nut being proportioned to permit the removal of the valve-stem and plug 20
without separating the shank and standard.

5. A compression-cock comprising a standard 25
ard containing a valve-seat, and having the flat ground seat b recessed in the top, and the standard provided around such ground seat with the thread d , the nozzle having shank 30
with collar upon the bottom fitted to such recessed and ground seat, a stuffing-box fitted to the shank and thread upon the standard, a non-rotatable valve-stem extended through the joint of the standard and shank into the 35
upper part of the same, and a nut fitted to thread upon the valve-stem and secured ad-

justably in the shank, as and for the purpose set forth.

6. A compression-cock comprising a stand- 35
ard containing the valve-seat d' , and the standard having a flat seat b recessed in its top with thread d around its periphery, a swing-nozzle having shank with the collars c' and c^2 of the same diameter as the recessed 40
seat and having the intermediate groove h , the stuffing-box cover g fitted to pass over the collars and having thread to screw upon the standard, and the split ring i adapted to be 45
inserted in the groove h after the collar is applied, to compress the packing, substantially as herein set forth.

7. A compression-cock having a standard containing a valve-seat and compressible 50
valve-plug, a valve-stem extended upward within the shank and having a thread upon the top, the nut l fitted to such thread and provided with a collar seated on the top of the shank, and the cap m adapted to clamp 55
such collar and secure the nut when adjusted within the shank, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDWARD G. HEDGES.

Witnesses:

J. IRVING CAMPFIELD,
THOMAS S. CRANE.