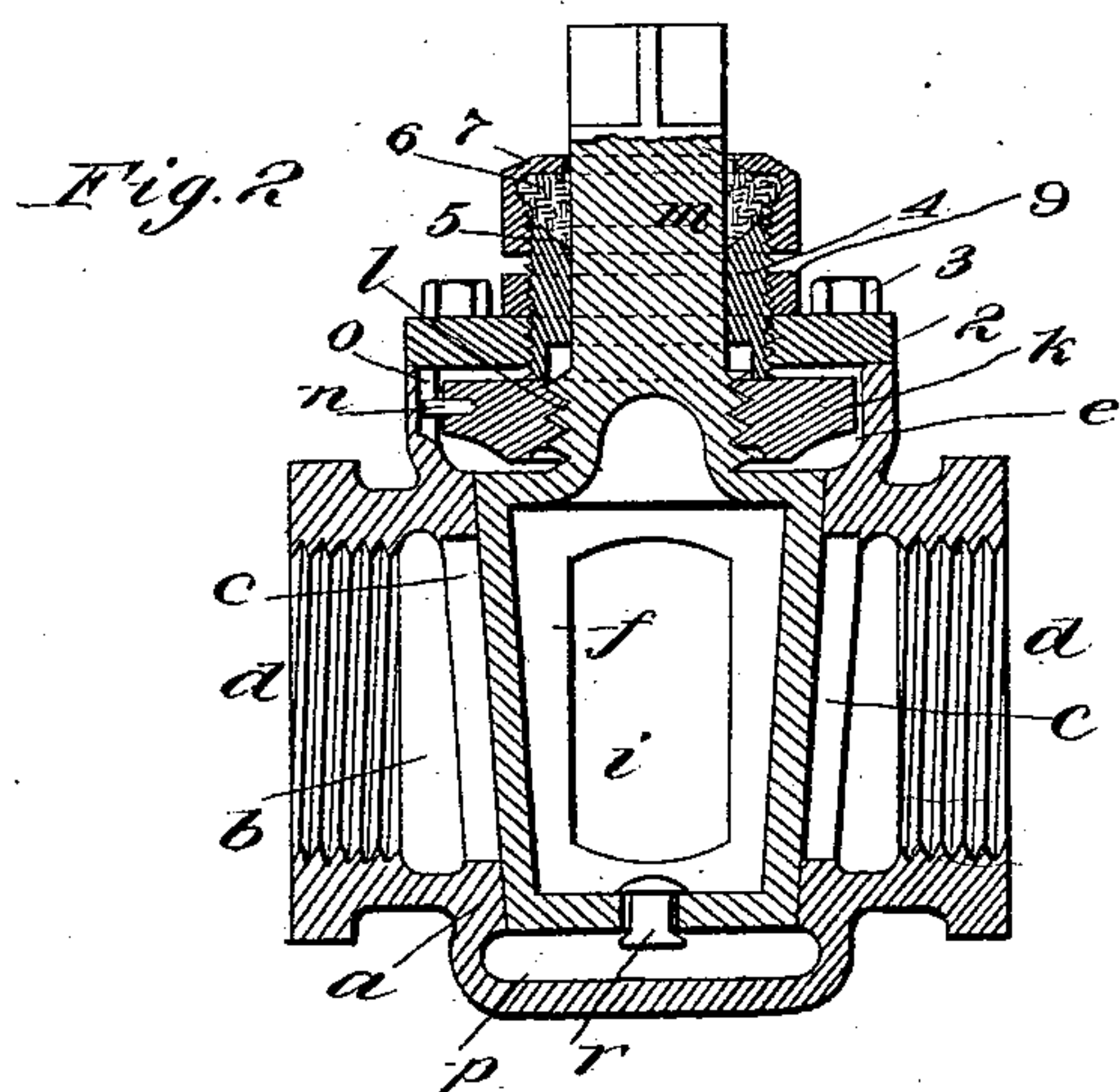
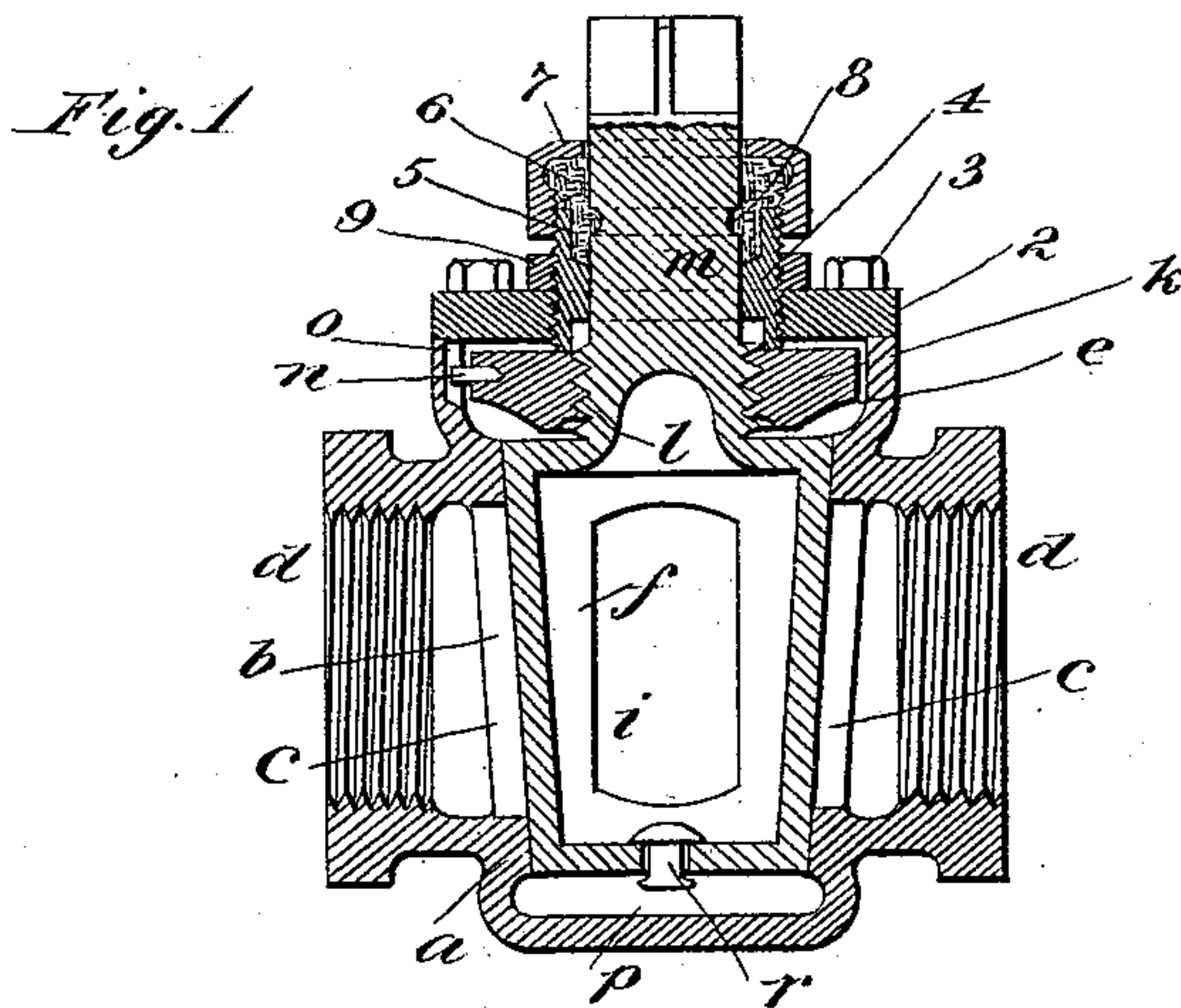


(No Model.)

H. E. KEYES.  
VALVE.

No. 543,694.

Patented July 30, 1895.



Witnesses.

J. F. Coleman  
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Inventor  
Harry E. Keyes.  
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att'y.



# UNITED STATES PATENT OFFICE.

HARRY E. KEYES, OF HOMESTEAD, PENNSYLVANIA, ASSIGNOR TO THE HOMESTEAD MANUFACTURING COMPANY, LIMITED, OF SAME PLACE.

## VALVE.

SPECIFICATION forming part of Letters Patent No. 543,694, dated July 30, 1895.

Application filed February 18, 1895. Serial No. 538,859. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY E. KEYES, a citizen of the United States, residing at Homestead, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Valves, of which the following is a full, clear, and exact description.

The object of this invention is to provide means for insuring the retention of the valve-plug upon its seat and the regulation of the opening and closing of the valve by limiting the rotation or throw of the plug.

In prior applications of mine for Letters Patent for valves, Serial No. 524,536, filed September 29, 1894, and for straightway valves, Serial No. 530,138, filed November 27, 1894, I have set forth certain forms of traveling nuts applied to the plug for accomplishing a similar purpose to that sought to be accomplished by the present invention.

The present invention is the carrying forward of the principle of the inventions of the applications just named; and the invention herein consists in an adjustable sleeve, in the nature of a stuffing-box, co-operating with the plug indirectly through the traveling nut.

Having thus stated the principle of my invention, I will proceed now to describe the best mode in which I have contemplated applying that principle, and then will particularly point out and distinctly claim the part, improvement, or combination which I claim as my invention.

In the accompanying drawings, illustrating my invention, in both the figures of which like parts are similarly designated, Figure 1 is a longitudinal section illustrating one form of the invention. Fig. 2 is a similar view illustrating another form.

In the drawings I have shown a straightway valve of essentially the construction set forth in my application, Serial No. 530,138, heretofore referred to, and for convenience the corresponding parts are herein designated as in that application, namely:

*a* is the valve casing or shell; *b*, the tapering-plug seat having the straightway ports *c* in alignment with the inlet and outlet nipples *d*, and also having the top opening *e* for the insertion and removal of the tapering plug

*f*. In the form of valve shown, instead of closing this opening by means of a screw-cap, I employ a flat cap 2, which is secured to the shell or casing by means of bolts 3. The plug *f* is made hollow and with the straightway ports *i* to register with the ports *c*.

*k* is the traveling nut applied to a screw-threaded portion *l* of the stem *m* of the plug and held from turning therewith as the plug is rotated to open and close the valve by means of the pin *n*, fast in the nut and engaging a groove *o* in the flange surrounding the top opening *e*. Obviously, as the plug is rotated to open the valve the nut will be caused to move toward the top of the plug proper and allow the plug to be rotated freely and thereafter acting as a sort of jam-nut or check-nut to prevent it from turning unduly, and as the plug is rotated to close the valve the said nut will travel upwardly and abut against the cap 2 and stay the further rotation of the plug and drive it home tightly to its seat.

*p* is the leakage-pocket in the bottom of the shell, and *r* is the check-valve in the bottom of the plug, by which communication is controlled between the interior of the plug and leakage-pocket, as in the last-named application hereinabove referred to.

It sometimes occurs that in the defective fitting of the nut there is slack motion in the plug, which permits the plug to be turned too far in opening or closing, and thus the purposes of the invention are largely defeated. In order to overcome this defect, I employ in the cap 2 the sleeve, gland, or stuffing-box 4, externally screw-threaded and tapped in the cap 2, so as to be adjustable longitudinally therein, the inner end of the said stuffing-box forming an abutment against which the traveling nut comes in its upward movement and whereby its upward movement is limited. Obviously, the upward limit of movement of the traveling nut is controlled perfectly by the adjustment of this stuffing-box 4. This stuffing-box may have its upper end recessed internally, as at 5, Fig. 1, to receive packing 6, and this packing may be held in place by means of a screw-cap 7, applied to the stuffing-box. In order further to insure a tight joint at this point, a circumferential groove 8



may be made in the stem of the plug, into which the packing is forced. Instead of thus recessing the stuffing-box and grooving the stem, the upper end of the said stuffing-box  
5 may be beveled inwardly and packing applied, as in Fig. 2.

In order positively to hold the stuffing-box in any adjustment it may be given, I use a check-nut 9, applied externally thereto and  
10 bearing upon the cap 2.

It is obvious that the sleeve, gland, or stuffing-box 4 may be adjusted relatively to the head of the plug to compensate for wear as well as to compensate for inequalities in the  
15 manufactured parts, and by reason of this fact the parts of the valve may be made by casting in quantities to standard sizes and be assembled and accurately fitted with little if any machining.

As is apparent from the foregoing, the main feature of this invention is the sleeve or stuffing-box applied indirectly through a traveling nut to a plug to limit the throw of the plug and insure its seating, but it is to be ob-  
20 served that in no case is such sleeve or stuffing-box so connected with the plug as to move with it. On the contrary, said sleeve or stuffing-box is wholly disconnected from and independently movable with relation to the said  
25 plug.  
30

Obviously, I do not limit my invention to either of the forms of plug-valves hereinabove referred to or to any form of plug-valve.

What I claim is—

1. In a valve, the combination of a turning 35 plug, a traveling-nut applied thereto to limit its extent of rotation, and a sleeve, gland or stuffing box arranged in the cap next to the traveling nut adjustable wholly independently thereof and serving as an abutment to  
40 limit the movement of said nut and plug, substantially as and for the purpose described.

2. In a valve, the combination of a turning plug, a traveling nut applied thereto to limit its extent of rotation, a sleeve, gland or stuff- 45 ing box arranged in the cap next to the traveling nut and adjustable wholly independently thereof and serving as an abutment to limit the movement of said nut and plug, and a check nut applied to said sleeve, gland or stuff- 50 ing box to fit such adjustment, substantially as described.

In testimony whereof I have hereunto set my hand this 15th day of February, A. D. 1895.

HARRY E. KEYES.

Witnesses:

FRED. SCHUEHMAN,  
WM. H. FINCKEL.