

No. 694,706.

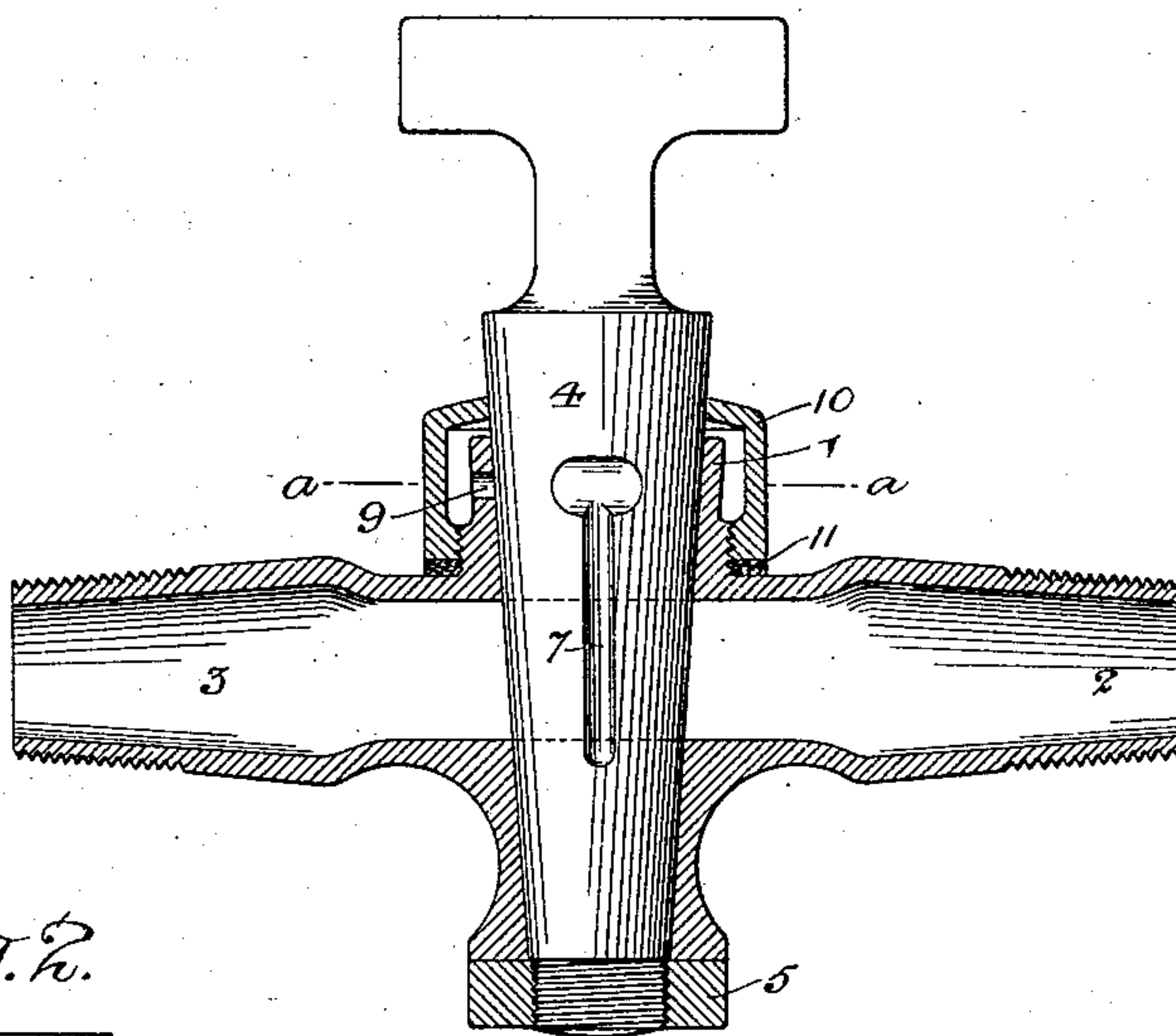
Patented Mar. 4, 1902.

J. WALSH, JR.  
STOP VALVE.

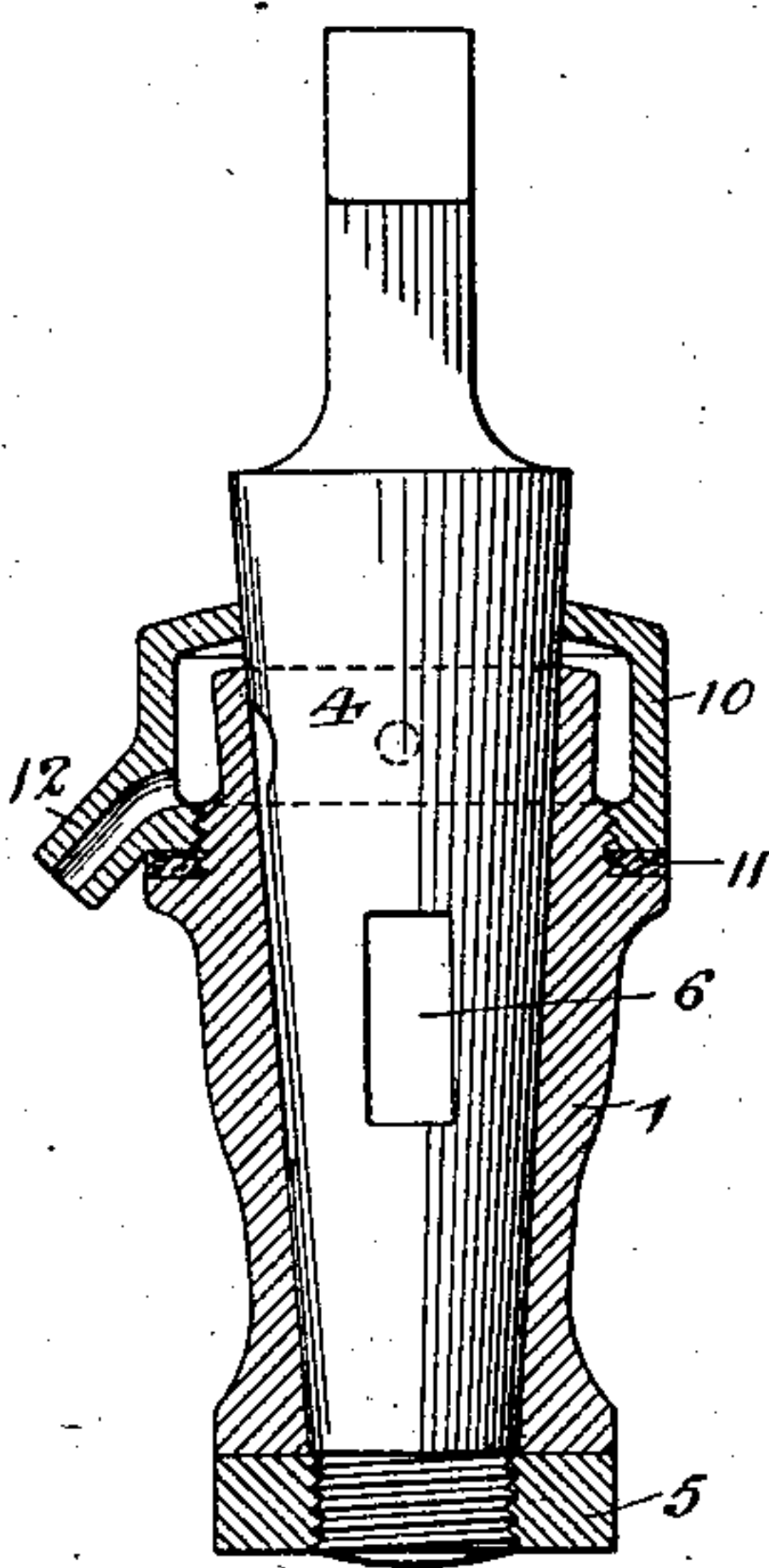
(Application filed Nov. 18, 1901.)

(No Model.)

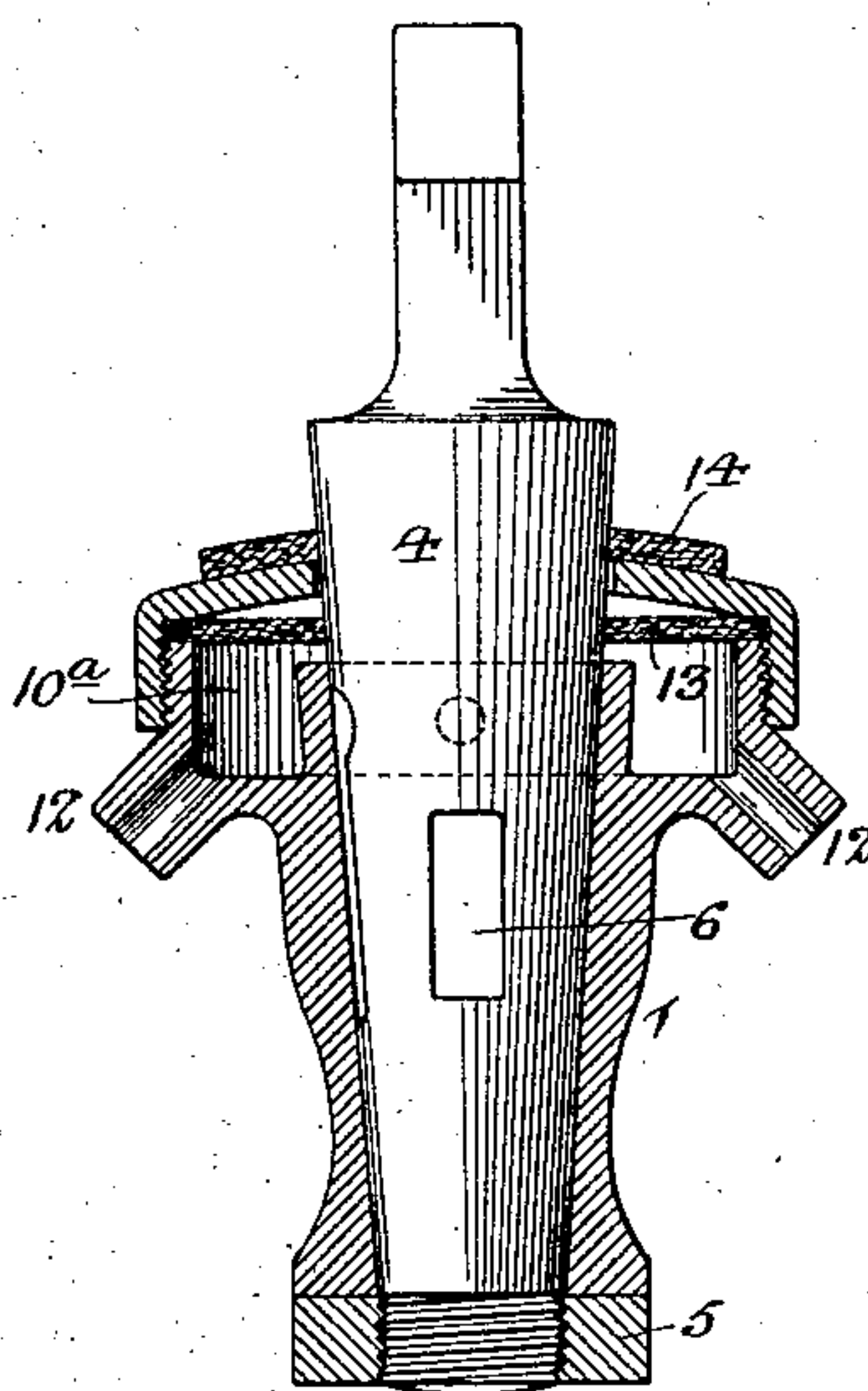
*Fig. 1.*



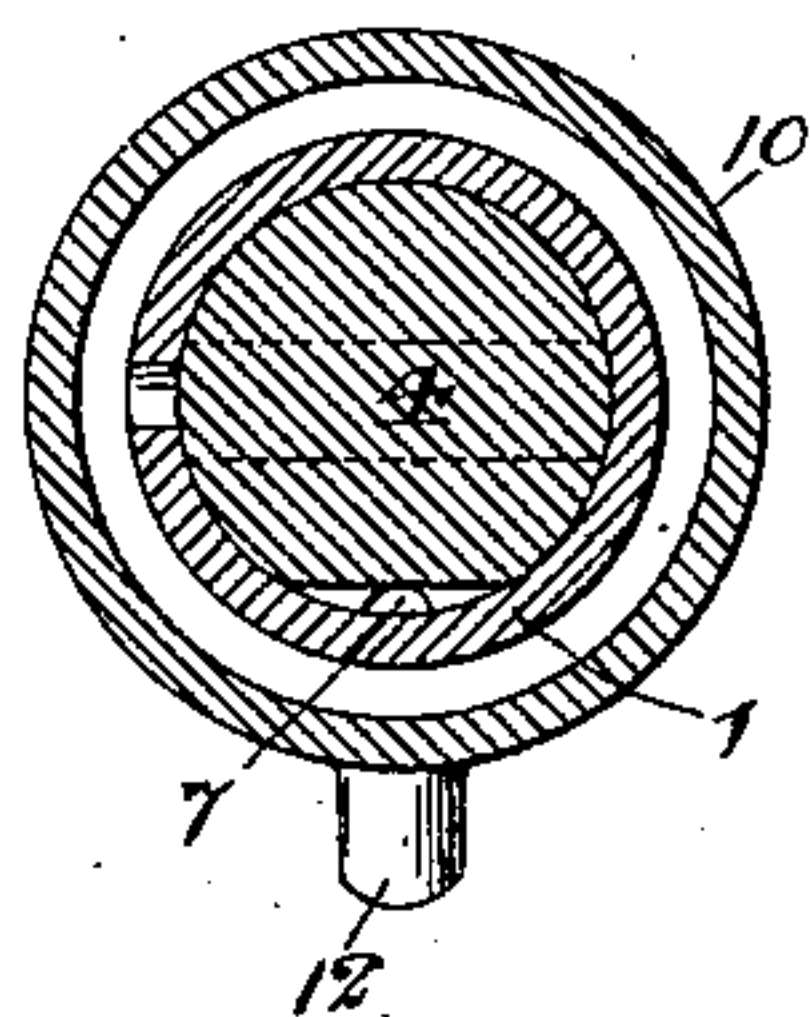
*Fig. 2.*



*Fig. 4.*



*Fig. 3.*



Witnesses:-

*Frank T. Graham*  
*Herman E. Metcalf*

Inventor:-

*James Walsh, Jr.*

by his Attorneys:

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# UNITED STATES PATENT OFFICE.

JAMES WALSH, JR., OF PHILADELPHIA, PENNSYLVANIA.

## STOP-VALVE.

SPECIFICATION forming part of Letters Patent No. 694,706, dated March 4, 1902.

Application filed November 18, 1901. Serial No. 82,738. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES WALSH, Jr., a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain  
5 Improvements in Stop-Valves, of which the following is a specification.

The object of my invention is to so construct a hydrant or other ground-seat valve or a compression or other cock having a turning plug or stem as to prevent the cutting  
10 away of said plug or stem by the dirt, grit, rust, or other abrading agent which usually finds access thereto and has such effect. This object I attain in the manner hereinafter set  
15 forth, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section of an ordinary form of hydrant-cock having my invention applied thereto. Fig. 2 is a transverse section of the same. Fig. 3 is a sectional plan view on the line *a a*, Fig. 1; and Fig. 4 is a view illustrating a certain modification of the invention.

Ordinary hydrant-valves, hopper-cocks, and other forms of cocks and valves are subject to rapid cutting away of the plug or stem, either by means of dirt and grit gaining access thereto outside of the valve-casing, as in the case of a hydrant-valve, or by rust  
25 from the pipe to which the valve is connected, such abrading of the plug permitting leakage which in the case of a buried hydrant-valve in time washes away the surrounding earth and causes undermining of the property in the vicinity and also contamination of the water of the hydrant by leakage of mud and muddy water into the pipe on the delivery side of the valve. In order to overcome this objection, I incase the projecting  
30 portion of the plug of the valve and form between the same and the barrel of said valve a water-tight chamber through which the drainage water is caused to pass before it can escape, thereby keeping said chamber free  
35 from dirt or grit and preventing the cutting away of the plug of the cock, with its attendant disadvantages, as above noted.

In the drawings, 1 represents the barrel of the cock, and 2 and 3 the projecting branches  
50 of the same, to which the supply and delivery pipes are respectively connected, and 4 the tapering plug, which fits to a correspondingly-

tapering ground seat in the barrel and is confined vertically therein by a nut 5, adapted to the threaded lower end of the plug 4. The  
55 plug has the usual passage 6 for the flow of water or other liquid from the branch 2 of the cock to the branch 3 of the same, and also has in one side the usual drainage-passage 7, which when the plug is turned so as to cut  
60 off the flow through the cock communicates with the delivery-passage 3 and also with a drainage-opening 9, formed in the barrel of the cock, so as to drain the waste water through the latter. This is the usual construction; and  
65 my invention consists in applying to the body or barrel of the cock a water-tight cylinder surrounding the upper portion of the barrel and forming, with the same, a chamber with which the drainage-opening 9 communicates  
70 and which has a suitable outlet for the drainage-water after the latter has cleaned the dirt and grit from the plug of the cock. This cylinder is shown in the drawings at 10 and is screwed upon a threaded portion of the barrel  
75 1 of the cock below the drainage-opening 9, suitable packing 11 being, if necessary, employed to form a tight joint between the lower portion of the cylinder and the body of the  
80 cock. The cylinder extends slightly above the top of the barrel and is there contracted so as to bear upon the upper portion of the plug 4, this bearing being by preference a ground seat formed at the same time as the  
85 seat in the barrel of the cock, so that as the plug 4 is adjusted to compensate for wear it will remain properly seated in the contracted top of the cylinder, as well as in the barrel. The cylinder has at one side an outlet branch  
90 12, which may communicate with a drainage-pipe or may discharge directly into the ditch or other chamber in which the valve is located, the cylinder and barrel being so formed that when the end of the cylinder seats or  
95 shoulders upon the barrel the drainage-opening will be at the right or left, as desired. When the plug 4 is turned, so as to bring the drainage-passage 7 into line with the delivery branch 3 and drainage-opening 9 of the cock, there will be a forcible flow of water into and  
100 through the chamber between the barrel of the cock and the cylinder 10, thereby flushing said chamber and washing therefrom any particles of dirt or grit which might other-



wise find their way between the plug of the valve and its seat, and thus serve to cut or groove the latter so as to cause leakage.

Although I prefer in all cases to apply the  
 5 cylinder to the cock by securing it upon the threaded portion of the barrel, as shown, my invention is not limited to this construction, as the cylinder may, if desired, be cast with the barrel, as shown at 10<sup>a</sup> in Fig. 4, and in-  
 10 stead of providing a ground joint between the contracted upper portion of the cylinder and the plug of the cock I may use one or more washers for this purpose. For instance, there may be a washer 13 inside of the cylinder and,  
 15 if desired, another washer 14 outside of the same, the construction shown in Figs. 1 and 2 being preferred, however, because of its cheapness and because it does not materially increase the bulk of the valve. It is also  
 20 evident that my invention can be used in connection with the valve stem and casing of a compression-cock as well as with the plug and barrel of a plug-cock.

Having thus described my invention, I  
 25 claim and desire to secure by Letters Patent—

1. A cock or valve having a drainage-opening in the upper portion of the barrel and having a cylinder surrounding said upper portion  
 30 of the barrel and forming with the same a chamber which receives the waste water from the drainage-opening, and causes the same to wash the projecting portion of the plug or stem of the cock, substantially as specified.

35 2. The combination of a cock or valve hav-

ing a barrel with drainage-opening therein, with a cylinder surrounding said barrel and having a bearing upon the plug or stem of the cock above the barrel, said cylinder forming, with the barrel of the cock, a chamber through  
 40 which the waste water is caused to flow, substantially as specified.

3. The combination of a cock or valve having a drainage-opening in the upper portion of the barrel and a threaded portion below  
 45 the same, with a cylinder screwed onto said threaded portion of the barrel and forming a chamber surrounding the upper portion of the barrel, through which chamber the waste water is caused to flow, substantially as speci-  
 50 fied.

4. The combination of a cock or valve having a drainage-opening in the upper portion of the barrel and a threaded portion below  
 55 the same, with a cylinder screwed onto said threaded portion of the barrel and having a contracted upper portion bearing upon the stem or plug above the top of the barrel, said cylinder forming a chamber surrounding the  
 60 upper portion of the barrel through which chamber the waste water is caused to flow, substantially as specified.

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

JAMES WALSH, JR.

Witnesses:

WALTER CHISM,  
 JOS. H. KLEIN.