

No. 684,210.

Patented Oct. 8, 1901.

J. P. FARLEY.
STOP AND WASTE COCK.

(Application filed Oct. 4, 1900.)

(No Model.)

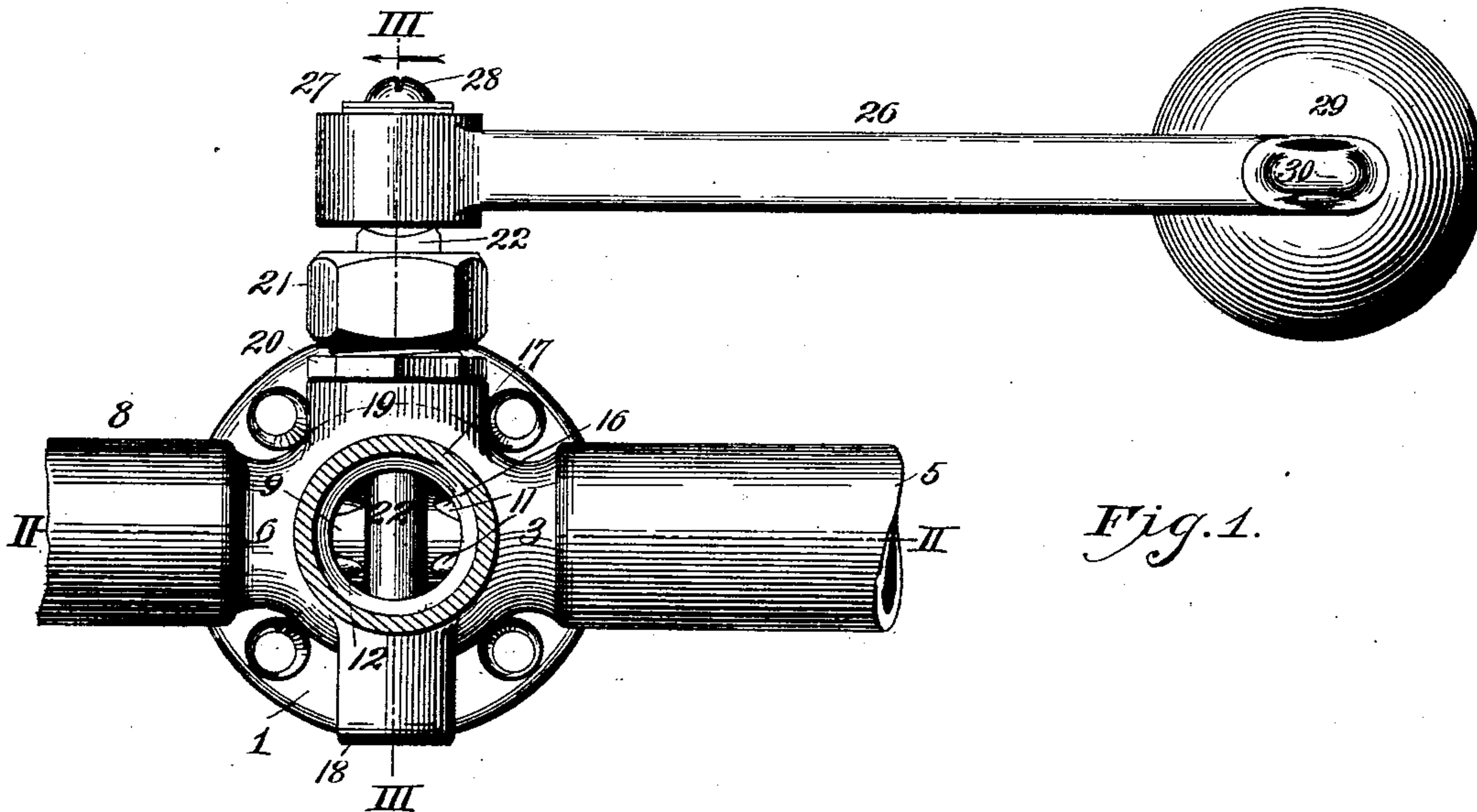


Fig. 1.

Fig. 2.

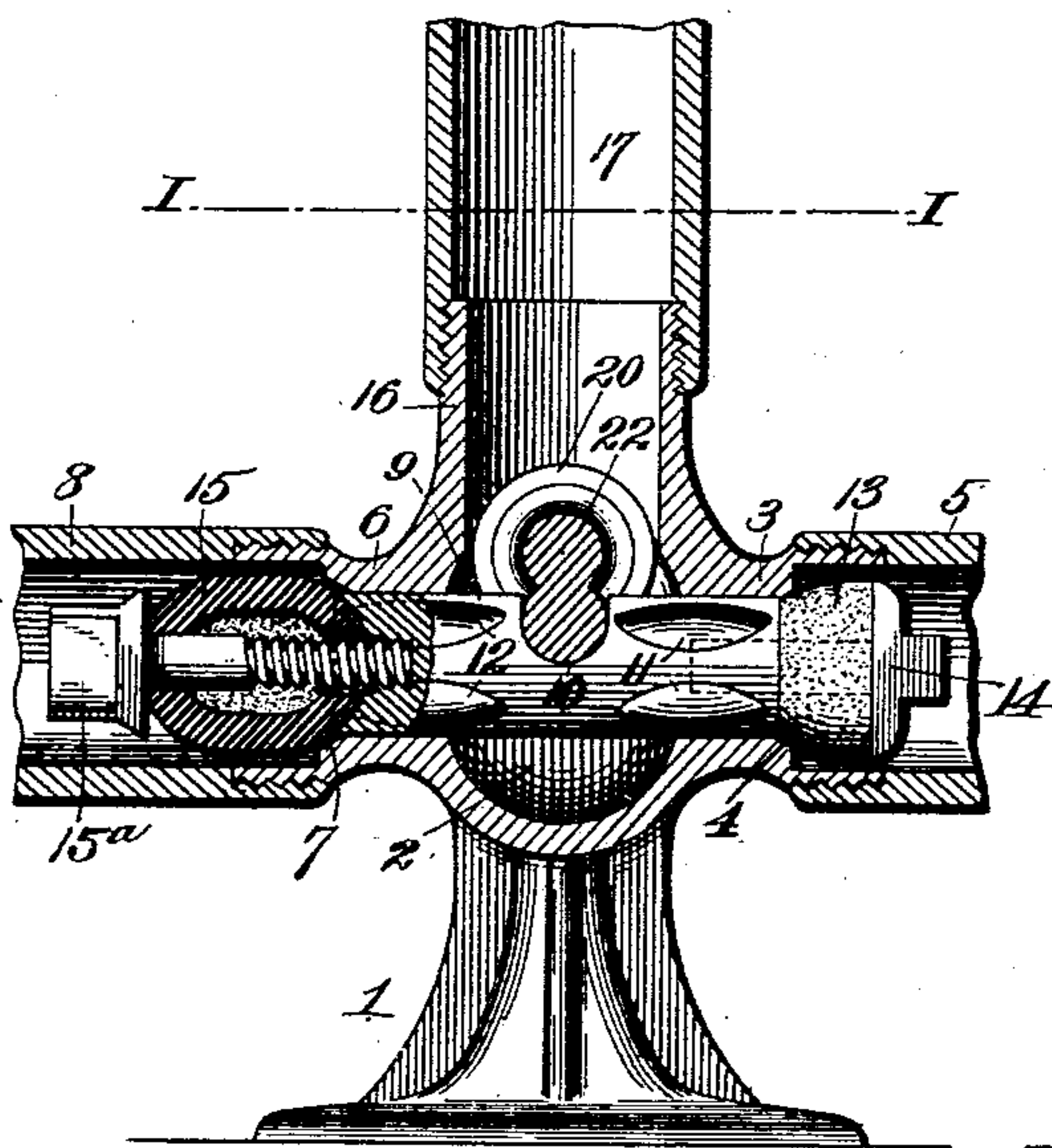
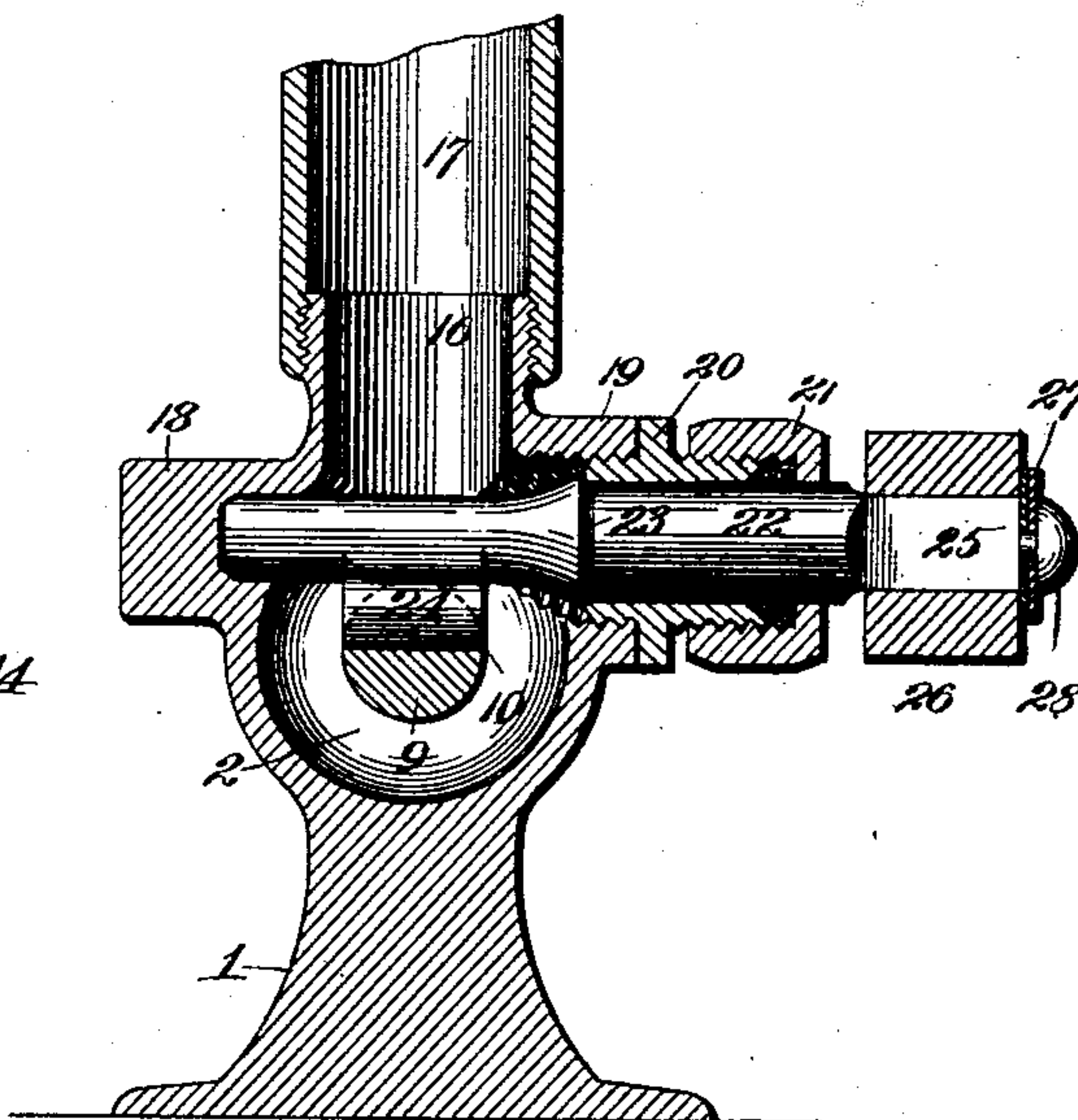


Fig. 3.



Witnesses:

H. C. Rodgers.
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UNITED STATES PATENT OFFICE.

JOHN P. FARLEY, OF KANSAS CITY, MISSOURI, ASSIGNOR TO CRAMPTON-FARLEY BRASS CO., OF SAME PLACE.

STOP AND WASTE COCK.

SPECIFICATION forming part of Letters Patent No. 684,210, dated October 8, 1901.

Application filed October 4, 1900. Serial No. 31,969. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. FARLEY, a citizen of the United States, residing at Kansas City, Jackson county, Missouri, have invented a new and useful Stop and Waste Cock, of which the following is a specification.

My invention relates to stop and waste cocks, and more especially to that type closing with the pressure; and my object is to produce a stop and waste cock which economizes in the use of water by positively and reliably preventing the passage of the supply until after the waste-pipe is closed.

A further object is to produce a stop and waste cock of very compact and at the same time simple, strong, durable, and cheap construction.

To these ends the invention consists in certain novel and peculiar features of construction and combinations of parts, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a horizontal section taken on the line I I of Fig. 2. Fig. 2 is a section taken on the line II II of Fig. 1. Fig. 3 is a section taken on the line III III of Fig. 1.

Referring to the drawings in detail, 1 designates the valve stand or casing, adapted to be screwed or otherwise secured in position, and 2 is the chamber thereof.

3 is a hollow boss projecting from the side of the casing and provided with a valve-seat 4, and 5 is a supply-pipe screwed upon said boss and connected to the main. Opposite boss 3 the casing is provided with a similar boss 6, provided with a like valve-seat 7, and connected by the drain-pipe 8 with the soil or sewer pipe. (Not shown.)

9 designates a cylindrical valve-stem bridging chamber 2 and fitting snugly and adapted to reciprocate in the hollow bosses 3 and 6 and provided with a semicircular recess 10 in its upper side and with a plurality of spoon-shaped cavities 11 and 12 at opposite sides of said recess, said cavities being adapted to serve as waterways, as hereinafter appears.

13 designates a ball-valve of the usual hard or vulcanized rubber, adapted to engage valve-seat 4 and secured to the contiguous end of the valve-stem by means of screw-bolt

14. Upon the opposite end of the stem is mounted a compressible valve in order that it may be seated against seat 7, and thereby prevent the passage of water into the escape-pipe before valve 13 is opened and then continue to yield while maintaining its seat until valve 13 is fully opened. This compressible valve comprises the hollow and preferably elongated rubber ball 15, mounted upon a bolt 15^a, screwed into the end of the valve-stem, the end of the ball against the valve-stem surrounding the bolt loosely, while its opposite end fits tightly upon the bolt in order to prevent the water passing into the escape-pipe, which may perhaps enter the ball. This enlarged opening is provided in order that the ball may contract at this point when pressed tightly against the seat, and thereby insure an absolutely water-tight joint, this valve being thus seated of course only when valve 13 is unseated and water is passing from the supply-pipe into the casing-chamber 2 and up through the hollow boss 16 and combined flush and drain pipe 17 to the closet, (not shown,) said pipe of course being screwed or otherwise connected to boss 16. In order to operate said valves, the following construction is provided: Above the plane of the valve-stem and at right angles to bosses 3 and 6 the casing is provided with the opposite bosses 18 and 19, the former being adapted to be used as a journal and abutment, while the latter is of greater diameter and internally threaded to receive the nut 20, carrying the usual stuffing-box 21. This nut forms the companion journal to boss 18 for the shaft 22 and holds said shaft reliably in place by engagement with the annular shoulder 23 thereof, as shown in Fig. 3. The shaft is provided with a cylindrical crank-arm 24, engaging the semicircular recess 10 of valve-stem 9, and upon its outer or squared end 25 carries a second crank arm or lever 26, said lever being secured reliably to the stem by means of washers 27 and screw-bolt 28, extending through the washers into the shaft. The outer end of the lever is normally held depressed by means of the enlargement or weight 29 and is provided with a loop 30, by which it is connected, through the medium of a chain, to the closet-seat in the customary or

any preferred manner, or the lever may be connected to be operated entirely by hand. When connected to the seat and the latter is depressed, the weighted end of the lever is raised. This action causes the crank-shaft 24 to slide the valve-stem to the right, as shown in the drawings, and initially seat valve 15 to cut off the escape of water through the escape-pipe and at practically the same instant to intensify the pressure on said seat by the valve and withdraw valve 13 from its seat, so as to admit water from the main to the flush-pipe for the usual purpose. The water will continue to flow as long as the lever is elevated, and the instant the upholding force is removed it drops and reseats the valve, this action being accelerated and made more positive and reliable because assisted by the pressure of the water in the main. As the valve 13 is reliably seated, valve 15 is unseated to permit the water in the flush-pipe to drain off through the escape-pipe, and thereby eliminate chance of the water freezing in the pipes, this stop and waste and the lower portion of the combined drain and flush pipe being of course located, as usual, at a suitable depth under ground. As the valve-stem fits so snugly in the casing that it cannot vibrate, it is necessary of course to make provision for the passage of water to and from the casing by providing the usual spoon-shaped cavities or waterways 11 and 12, the former serving to admit water to the casing and the latter to convey it away.

In practice of course the compressible valve 15 will be so situated relative to its seat when valve 13 is seated that it will effect a reliable water-tight engagement with its seat synchronously with the unseating of valve 13, and consequently will not change its relation to its seat until valve 13 is completely closed. The space between valve 15 and its seat is exaggerated in Fig. 2 intentionally, as, in fact, valve 15 will always be so close to the seat that the joint will appear tight, though not sufficiently tight to prevent the water draining off from the casing when the lever is depressed.

When it is necessary to replace the hollow compressible valve, it can be done by simply uncoupling pipe 8 and removing bolt 16 without even cutting off the water. If it be desired to replace valve 13, it will be necessary to cut the supply of water off from the stop and waste, uncouple pipe 5, and remove bolt 14. It will therefore be seen that repairs can be easily and quickly made.

From the above description it will be apparent that I have produced a stop and waste

cock embodying the features of advantage enumerated as desirable in the statement of invention, and that while I have illustrated and described the preferred embodiment of the same it is susceptible of minor changes as regards its form, proportion, detail construction, and arrangement of the parts without departing from the spirit and scope or sacrificing any of the advantages.

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

1. A stop and waste cock, comprising a casing connected to the main, the waste and the flush and drain pipes, and provided with valve-seats at its points of connection with the main and waste pipe connections, a reciprocatory valve-stem provided with a valve closing with the pressure against the seat contiguous to the main and with a compressible valve at its opposite end, comprising a headed bolt screwed to the stem and a hollow ball of resilient material, having a large hole through which loosely extends the bolt where the latter enters the valve-stem, and a small hole tightly engaging the bolt near its head to prevent the escape of water entering the ball through said large hole, substantially as and for the purpose described.

2. A stop and waste cock, comprising a casing connected to the main, the waste, and the flush and drain pipes and provided with valve-seats at its points of connection with the main and waste pipe connections, with opposite bosses 18 and 19 at right angles to said main and waste pipe connections, a reciprocatory valve-stem, provided with a recess 10, waterways 11, and with a valve 13, closing with the pressure against the seat contiguous to the main and with a valve 15 to close the seat contiguous to the waste-pipe connections, a shaft projecting into the casing at right angles to said stem, and provided with an outwardly-disposed shoulder 23 and a crank-arm 24, the latter engaging recess 10 of the stem, the inner or front end of the shaft being journaled in the boss 18, a nut 20 screwed into the boss 19 and forming a journal for said shaft and bearing against the shoulder 23 to hold the shaft in position, a stuffing-box upon said shaft and nut, and a weighted lever secured upon the end of the shaft, all arranged substantially as and for the purpose described.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN P. FARLEY.

Witnesses:

F. C. RIPLEY,
G. Y. THORPE.