

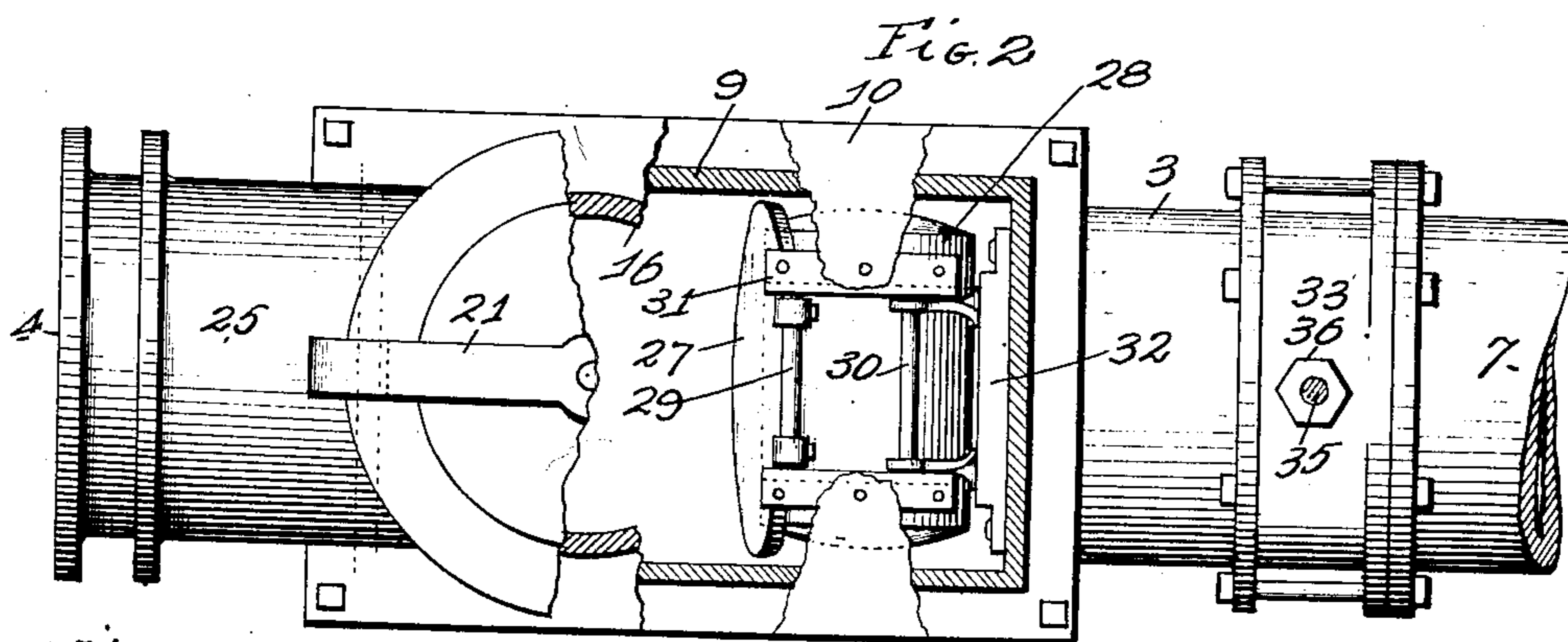
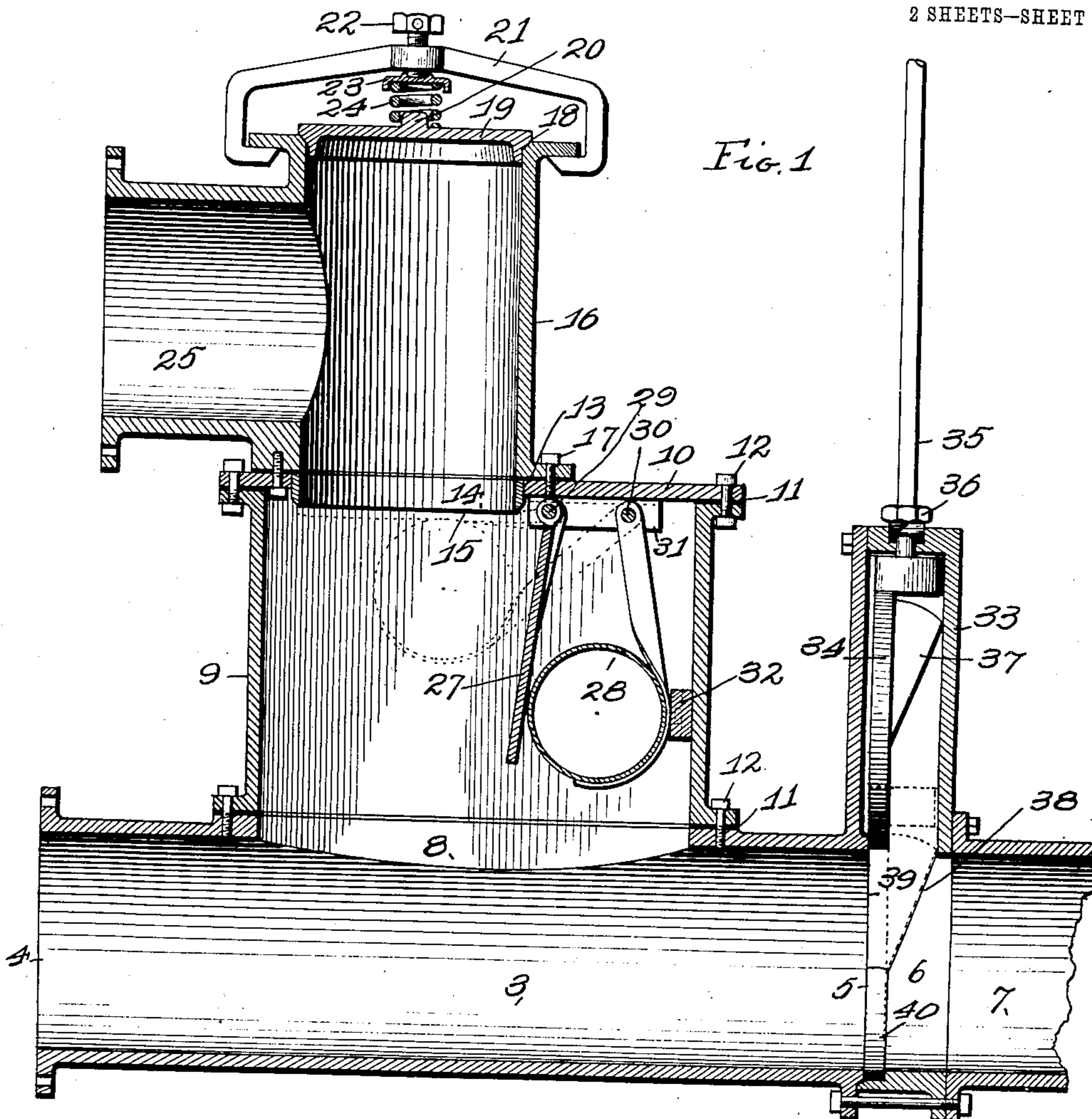
No. 810,390.

PATENTED JAN. 23, 1906.

P. J. BODE.  
BACK PRESSURE TRAP FOR SEWER PIPES.

APPLICATION FILED AUG. 15, 1904.

2 SHEETS—SHEET 1.



Witnesses  
Fred Michels  
Harry Brown

Inventor  
Peter J. Bode

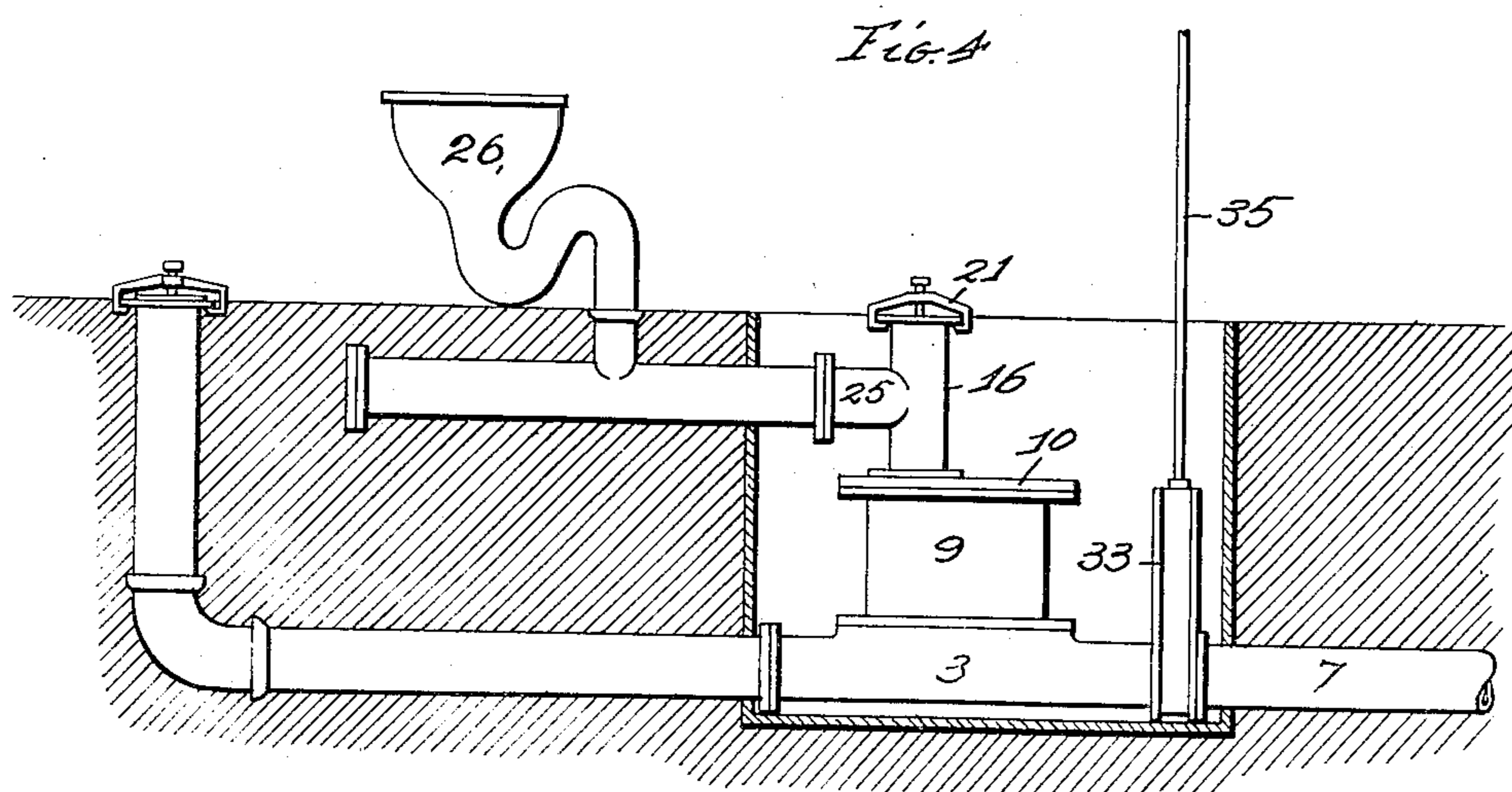
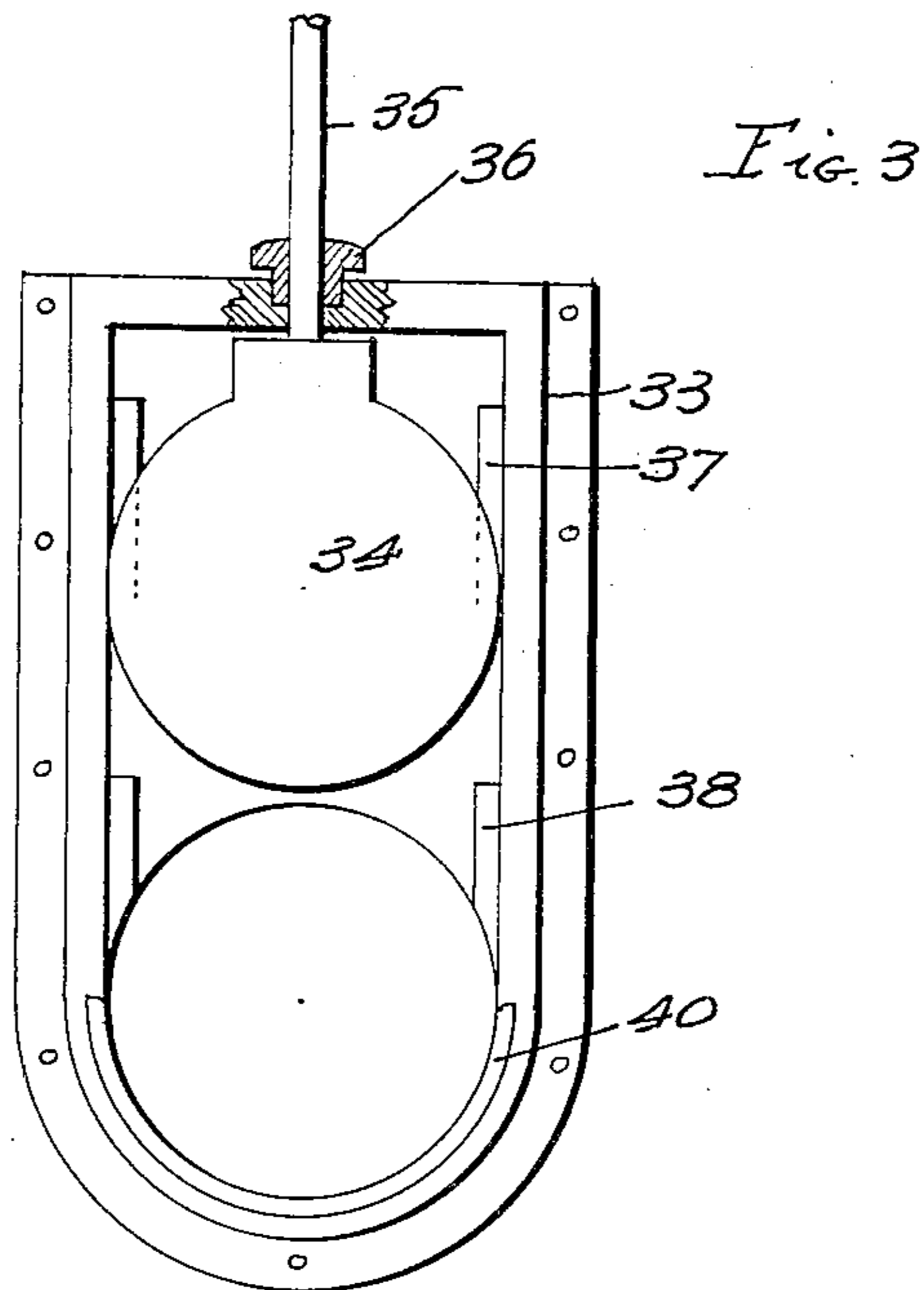
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# UNITED STATES PATENT OFFICE.

PETER J. BODE, OF ST. LOUIS, MISSOURI.

## BACK-PRESSURE TRAP FOR SEWER-PIPES.

No. 810,390.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed August 15, 1904. Serial No. 220,705.

*To all whom it may concern:*

Be it known that I, PETER J. BODE, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Back-Pressure Traps for Sewer-Pipes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in a back-pressure trap for sewer-pipes; and it consists in the novel arrangement, construction, and combination of parts, as will be fully hereinafter described, and set forth in the claim.

The object of my invention is to construct a trap to be placed in the basement or cellar of a building and located on the drain-line between the water-closets and sewer.

A further object of my invention is the automatic action of the trap, closing when a back pressure occurs and when open providing a clear unobstructed passage for the free discharge of drainage to the sewer.

A further object is the general construction of the trap, having a reach-opening directly above the automatic valve and a gate-valve in the delivery-pipe between the automatic valve and the sewer, the reach-opening covered with a spring-actuated plate adapted to be raised when the pressure is caused in the pipes by gas explosions, thus preventing breakage to the pipes and trap-castings.

The most essential feature of my invention is the automatic closing of the trap by the backwater of a sewer to prevent the flooding of the premises, and the gate-valve, which may be closed when it is necessary to repair the trap and its pipe connections.

Figure 1 is a vertical longitudinal sectional view of my improved trap. Fig. 2 is a top plan view of the same, a part thereof being broken away and in section. Fig. 3 is an end view of the gate-valve looking from the left-hand side of Fig. 1. Fig. 4 is a diagrammatic view showing my device in its relative position to the draining system.

In the construction of the device as shown I provide a pipe 3, its end 4 communicating with a pipe leading to the basement or cellar floor and its end 5 supporting a gate-valve 6, which in turn forms the connection to the pipe 7 communicating with the sewer.

An opening 8 is formed in the top of the pipe 3, over which is mounted a casing 9, suitably flanged at the top and bottom, and is covered with a plate 10, the contacting sur-

faces being suitably packed with packing material 11 and held together by bolts or studs 12, forming leak-proof joints. The plate 10 is also provided with an opening 13, in which is swaged a tube 14, composed of non-corrodible material, its lower end 15 being sharp and acting as the valve-seat. The purpose of the sharp surface is to cut and dislodge from the valve such material as paper, straw, or the like and allow the valve to perfectly close. Upon the plate 10 and in alignment with the opening of the tube 14 is mounted a T 16, being securely retained in position upon the plate by the screws or bolts 17.

The upper end of the T 16 acts as the reach-opening and is provided with a beveled face 18, in which is seated the plate 19. A boss 20 is formed on the plate 19 and a yoke 21 contacting with the flange of the T 16. The said yoke is provided with a screw 22, carrying a cap 23. Between said cap 23 and plate 19 around the boss 20 is a coil-spring 24, the tendency of which is to normally hold the plate in closed position.

To the member 25 of the T 16 is connected the water-closets 26. In the casing 9 is located the automatic valve 27 and valve-operating float 28. The said valve and float are held in a suspended position within the casing by pins 29 and 30, supported by angles 31, secured to the under side of the plate 10, the pins 29 and 30 acting as hinges for the free movement of the said parts.

The float 28 is of an elongated design, as shown in Fig. 2, the purpose of which is to economize space and yet obtain the proper rising properties. A block 32 is placed upon the wall of the casing 9 to the rear of the said float to prevent said float from back movement.

It will be observed that the space in the casing before the valve and the passage in the pipe 3 below the valve are free and unobstructed. Therefore the automatic action of the valve is always intact.

The gate-valve 6 consists of the outer casing 33, in which operates the gate 34, connected to the operating-rod 35, passing through a stuffing-box 36. This gate 34 is provided with two wedge-shaped lugs 37, located on the rear side thereof, and are adapted to come in contact with inclined surfaces 38, formed in the casing, to wedge the said gate against the surface 39 of the end 5 when said gate is closed. A strip of rubber 40 or

other soft material is located in the casing extending about half-way around. This is to receive the end of the gate and cause a tight joint. It is also for the purpose should any  
 5 small article, such as gravel, lodge upon the seat the rubber would give under the strain of the gate and also avoid a cavity for substances to lodge in. The rubber liner 40 is also a valve-seat for one-half of the circum-  
 10 ference of the edge of the valve.

The operation of my invention is as follows: Should at any time the water from the sewer back up into the pipe 3 and rise in the trap, the float will rise, pressing upwardly upon  
 15 the valve 27, bringing it in contact with the seat, and thereby automatically closing the trap, preventing the water and sewage from entering the closet and overflowing the basement. If at any time a back pressure should  
 20 occur by the rising of the river or a sewer of too small a capacity and the trap should have been removed for repairs, the attendant of the premises closes the gate-valve, thus doubly securing against overflow.

25 If it is desired to wash the basement-floor, the attendant removes the cover from the inlet 41, which is arranged flush with the floor, allowing the water to pass to the sewer. Again, should the premises be destroyed by  
 30 fire and the cellar be flooded by water from the fire-hose the debris may be removed at

the point where the trap is located, the cover of the reach-hole removed, and the gate-valve raised, thus allowing the water to pass to the sewer, thereby draining the flooded cellar. 35

The device is simple in construction and has utility, novelty, and practicability.

Having fully described my invention, what I claim is—

A device of the class described comprising 40 a rectangular casing, a pipe having a rectangular flange supporting said casing, a cover provided with an opening located upon said rectangular casing, a valve-seat located within said opening, a T-casing located upon said 45 cover and in alinement with the valve-seat, a pair of angles suspended to the under side of said cover immediately to the rear of the valve-seat, a valve hingedly suspended from said angles, an elongated float, a pair of arms 50 supporting said float and hingedly suspended to the angles, said float arranged to come in contact with the under side of the valve to automatically close said valve by the flow of water from the sewer, substantially as specified. 55

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

PETER J. BODE.

Witnesses:

FRED. MICHELS,  
 HARRY BROWN.