

No. 633,510.

Patented Sept. 19, 1899.

A. C. FREED.

SINK TRAP.

(Application filed Mar. 20, 1899.)

(No Model.)

Fig. 1.

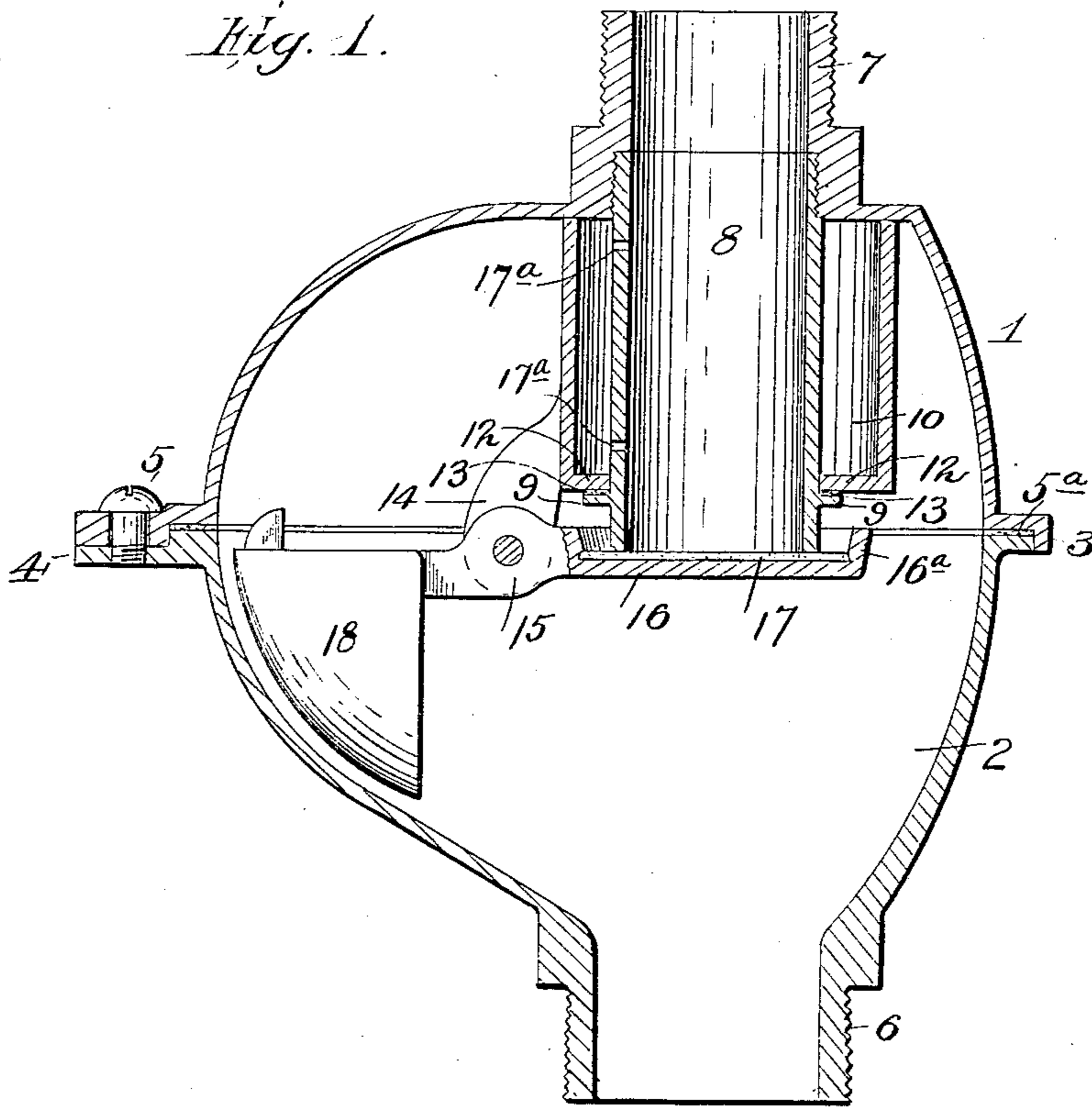
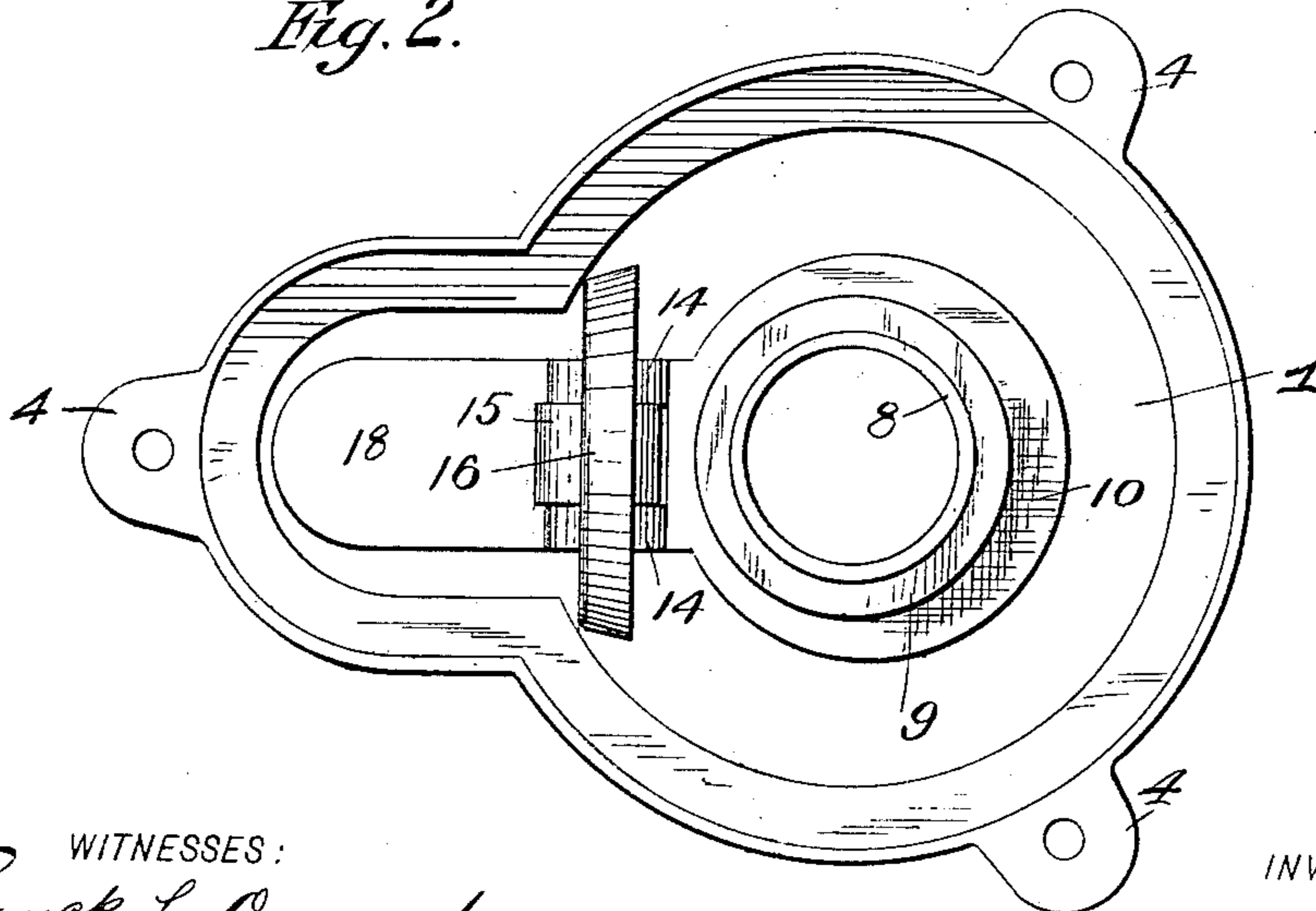


Fig. 2.



WITNESSES:

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SINK-TRAP.

SPECIFICATION forming part of Letters Patent No. 633,510, dated September 19, 1899.

Application filed March 20, 1899. Serial No. 709,802. (No model.)

To all whom it may concern:

Be it known that I, AARON C. FREED, a citizen of the United States, residing at Royersford, in the county of Montgomery and State of Pennsylvania, have invented new and useful Improvements in Sink-Traps, of which the following is a specification.

My invention relates to sink and sewer traps of that class or description in which the lower end of the inlet to the trap is provided with a counterbalanced pivoted valve, which when the water rises to a predetermined height in the said inlet will be automatically tilted or opened, so as to allow the water to escape into the trap, from whence it will flow out through the outlet-pipe.

The object of the invention is to provide an improved construction of such inlet by which a water seal and tight joint will be formed between the valve and its seat when the valve closes, thereby preventing the escape of gases from the trap.

It is also an object to otherwise improve said traps, whereby I secure important advantages with respect to efficiency in use.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a central longitudinal sectional view of a sink or sewer trap constructed in accordance with my invention. Fig. 2 is a bottom plan view of the upper section of the trap, showing the valve open.

In the said drawings the reference-numerals 1 and 2 designate the upper and lower sections, respectively, of the trap, each consisting of a semispherical cup or casing formed at one side with a recessed enlargement to receive the counterbalance or weight of a valve hereinafter described. At their meeting edges said cups or casings are formed with circular flanges 3, provided with lugs 4, having holes therein to receive the bolts 5, by which the cups or casings are secured to each other. A washer 5^a is interposed between the two cups.

Formed at the lower end of the lower section or cup 2 is a screw-threaded boss 6, with which the outlet-pipe (not shown) is adapted to be connected. The upper end of the upper cup or casing 1 is formed with a corresponding but smaller boss 7, also screw-

threaded, with which the inlet-pipe (not shown) is to be connected. The lower end of the boss 7 is screw-threaded to receive the upper end of a short pipe 8, which extends downwardly to about the center of the trap and is formed near its lower end with a peripheral flange 9 to hold in place a water receptacle or reservoir 10. This receptacle or reservoir consists of a straight cylinder, open at the upper end, and is formed at the lower end with an inwardly-extending flange 12, which is supported by the flange 9 of the pipe 8. A washer 13 is interposed between said flanges for the purpose of making a tight joint. The reservoir 10, while cylindrical in shape, is eccentric to the pipe, so that there will be a larger space therebetween at a point opposite the fulcrum of the valve. Formed integral with the lower end of said receptacle or reservoir are two lugs 14, with which is pivotally connected a lug 15, formed with a valve 16. This valve is cylindrical in shape and is provided at the edge with an upwardly-extending flange 16^a, forming a dish or cup shaped receptacle which is of a larger diameter than the pipe 8, so that when the valve is closed there will be a space between said flange and pipe. Located in said valve is a sheet-lead or other soft disk 17, which forms a seat for the lower end of this pipe 8. The space between the flange of the valve and the pipe is to receive water to make a water seal. It will thus be seen that there will be a water seal and a soft-metal seat between the valve and pipe 8. The said pipe 8 is formed with a series of upper and lower holes 17^a, communicating with the receptacle or reservoir, so as to allow water to enter and escape from the latter. The numeral 18 designates a counterbalance-weight secured to the lug of the valve and works in the recessed extensions of the cups or casings.

The operation is as follows: The two cups are secured to each other with the recessed extensions coinciding with each other, the pipe 8 being secured to the lower end of boss 7 and the flanges 9 and 12 clamping the receptacle or reservoir to the upper cup or casing. When the water in the pipe 8 and inlet-pipe is not sufficient to overbalance the weight of the valve, the latter will be closed. As the water rises in said pipes a portion thereof will enter the receptacle or reservoir through

the holes in the pipe 8, filling the same. When the water in the pipes is sufficient to overcome the weight of the counterbalance of the valve, the latter will be opened, when the water will rush out of the said pipes into the lower cup, from whence it will escape through the lower boss and outlet-pipe. This boss and outlet-pipe are larger in diameter than the inlet-pipe, so as to allow the water to rush or escape rapidly from the trap. As soon as the water escapes from the pipe 8 the valve will close. The water in the receptacle or reservoir will now escape therefrom through the lower series of holes into pipe 8, from whence it will escape into the valve, which by reason of its upwardly-extending flange forms a dish-shaped receptacle. The water in the valve now forms a seal and the soft-metal seat forms a tight joint, preventing the escape of gases from the trap.

From the above it will be seen that I provide a very efficient trap, peculiarly applicable to sinks, in which there is no danger of freezing and choking up and by which there is no liability of sewer-gases escaping into the inlet-pipe, as the water from the receptacle or reservoir commences to flow into the valve as soon as the latter is closed, escaping between the lower end of the pipe 8 and the valve.

Having thus fully described my invention, what I claim is—

1. In a sink or sewer trap, the combination with the connected semispherical sections each formed with a screw-threaded boss, of the downwardly-extending pipe secured to

the upper section formed with upper and lower holes, the receptacle or reservoir surrounding said pipe and the counterbalanced pivoted valve, substantially as described. 40

2. In a sink or sewer trap, the combination with the two connected semispherical sections, each formed with a recessed extension and with a screw-threaded boss, of the downwardly-extending pipe secured to the upper boss formed with a series of upper and lower holes, and the receptacle or reservoir surrounding said pipe, and the dish-shaped valve pivotally connected with said receptacle and provided with a soft-metal seat, substantially as described. 45 50

3. In a sink or sewer trap, the combination with the two connected semispherical sections formed with recessed extensions and with screw-threaded bosses, of the downwardly-extending pipe secured to the upper boss and formed with upper and lower holes and provided with a peripheral flange near the lower end, the receptacle or reservoir surrounding said pipe provided with an inwardly-extending flange at the lower end, and the counterbalanced dish-shaped valve pivotally connected with said receptacle, or reservoir, substantially as described. 55 60

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses. 65

AARON C. FREED.

Witnesses:

MAURICE A. FREED,
H. A. TYSON.