J. A. JOHNSTON.

DRAINAGE TRAP.

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1,363,792.

Patented Dec. 28, 1920.

Fig. 1

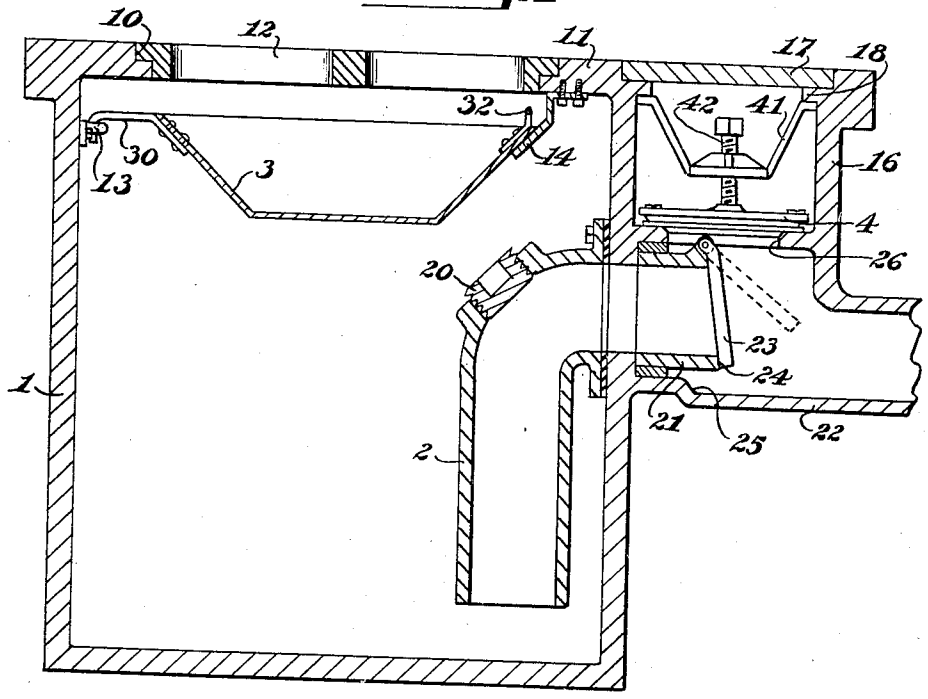
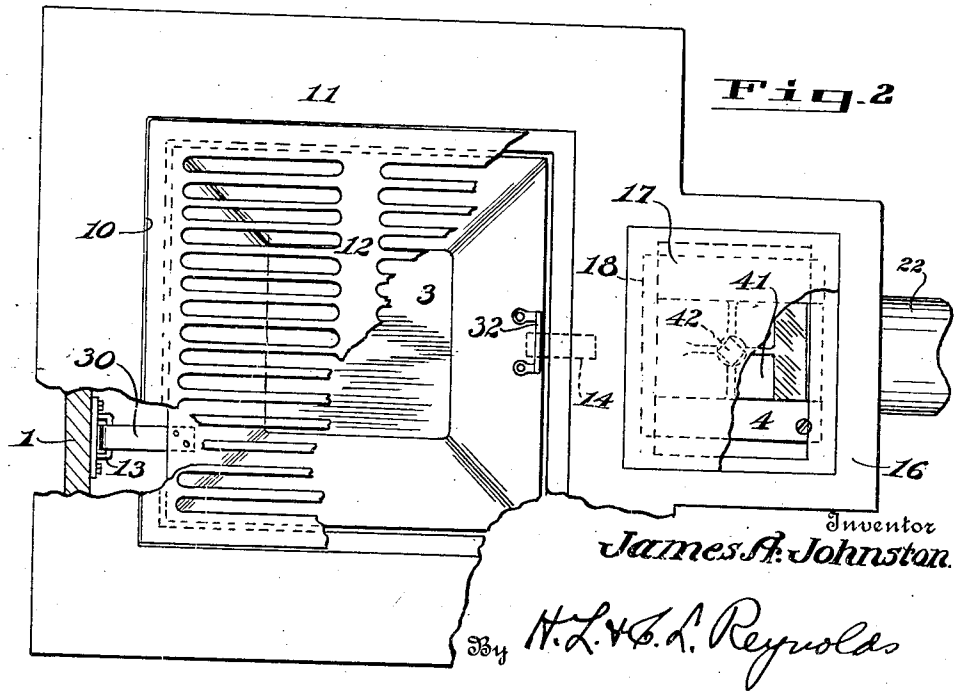


Fig. 2



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JAMES A. JOHNSTON, OF SEATTLE, WASHINGTON, ASSIGNOR OF TWENTY PER CENT. TO THOMAS J. CLAFFEY AND FIVE PER CENT. TO NICHOLAS AMBROSE, BOTH OF CHICAGO, ILLINOIS.

DRAINAGE-TRAP.

1,363,792. Specification of Letters Patent. Patented Dec. 28, 1920.

Application filed November 26, 1919. Serial No. 340,913.

To all whom it may concern:

Be it known that I, JAMES A. JOHNSTON, a citizen of the United States, and resident of the city of Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Drainage-Traps, of which the following is a specification.

My invention relates to drainage traps, particularly such as are used in stables, garages, and similar places where there is considerable refuse matter and dirt floating in or carried by drainage water.

The object of my invention is to produce a drainage trap which will separate the water and the refuse matter or dirt, and which will provide a clear drain to carry off the drainage water.

Another object is to provide a drainage trap which will have a back check valve adjacent the trap, and which will insure drainage of the water without clogging the valve.

My invention comprises the novel parts and combinations of parts which are shown in the accompanying drawings, described in the specification, and defined by the claim terminating the same.

In the accompanying drawings I have shown my invention in the form which is now preferred by me.

Figure 1 is a vertical section through my trap.

Fig. 2 is a plan view of the trap, parts being broken away.

One part of my invention comprises a tank or cistern 1. This cistern has an opening 10 in its top, of less extent than the inside area of the cistern. Preferably a flange 11 projects inwardly at the top of the cistern, about the opening 10. The cistern is also provided with a drain pipe leading from it; herein this is shown as a drain siphon 2. A suitable clean-out plug 20 may be located in the drain siphon 2 within the cistern, if desired.

I may cover the opening 10 with a grating 12, to strain large objects from the sewage. Within the cistern, and spaced from its walls, I provide a sand catch basin 3. This is supported in any suitable way, as by the arms 30 at one side engaging loops 13 and the other side resting upon a supporting arm 14, near the upper part of the cistern thus supporting the basin directly beneath the opening 10. This sand catch basin 3 is larger than the area of the opening 10, or at least, is larger than the effective area of the openings in the grating 12, and of similar shape, preferably. It should be of such shape and size, and so positioned, that all of the sewage passing through the grating 12 enters the sand basin. In this manner it acts as a settling basin, holding the particles of dirt which are transported by the drainage water, and permitting the water to escape over the side. The basin may be lifted out at intervals and the accumulated dirt removed. Handles as 32 facilitate doing this.

Outside of the cistern 1 the drain siphon 2 connects with a short pipe section 21 which projects into a drain pipe 22. At the end of the section 21 I mount a check valve 23, seating at 24 upon the end of the section 21. Immediately below the valve seat 24 I prefer to form the drain pipe 22 with a downward offset, as at 25. This causes the water flowing through the valve to cascade at this point, accelerating its motion and carrying through and clear of the valve any bits of straw or similar floating refuse which may have passed through the grating 12 and the sand basin 3. The valve 23 prevents return of such waste, and it is carried out through the drain pipe 22.

Above the valve 23 I provide an opening 26 in the drain pipe. This opening is covered by a plate 4, which may be secured in place by any suitable means. As I have shown herein, the plate 4 is inclosed in a box 16, which forms part of the casing 1, and which is covered by a plate 17. A spanner yoke 41, engaging flanges 18 at the top of the box 16, has a screw 42 threaded therein and engaging the plate 4 to press the latter upon its seat. By this means the valve is protected, and yet is easily accessible for cleaning or inspection.

By the use of my construction a check valve is employed adjacent the floor drain, instead of at a distance therefrom. This reduces the chances of the valve being clogged up. The dran pipe is kept clear of refuse, as the water flows freely through it, not being checked by a valve farther along the line. There is no stagnant drain pipe full of water, as the position of the valve precludes this. The sewage is first strained, and then the solid matter settles in the sand catch basin. The result is that the water flowing past the valve is nearly free of

refuse, and the valve does not clog up, nor does refuse gather in the bottom of the cistern, where it is difficult to clean it out. The sand basin may be lifted out, cleaned and returned quickly and easily.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is:

A drain catch basin comprising a cistern having a top opening for receiving the drainage, a sand catch basin adapted to be passed through said opening and having retaining fingers projecting from one side and a handle at the opposite side, loops carried by the cistern wall adapted to receive said retaining fingers and a supporting arm extending from the opposite cistern wall and supportingly engaging the adjacent side of the said catch basin.

Signed at Seattle, Washington, this 20th day of November, 1919.

JAMES A. JOHNSTON.