CELLAR-DRAIN, GAS-TRAP, AND BACKWATER-TRAP COMBINED.


Application filed October 7, 1904. Serial No. 297,552.

To all whom it may concern:

Be it known that I, FRANK SHAY, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in a Cellar-Drain, Gas-Trap, and Backwater-Trap Combined; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

15 This invention relates to drains, particularly cellar-drains, and partakes somewhat of the nature of my prior invention, patented October 18, 1904, No. 772,583, and showing a backwater-trap arranged in a ferrule adapted to be placed in a drain-pipe terminating in a U-shaped end, which of itself forms a trap for preventing the escape of gases and the like from the drain. In practice, however, it sometimes occurs that cellar-drains are not always provided with this U-shaped end, nor can easily be so provided, and it is necessary in these cases in applying the backwater-trap to provide some sort of trap means for preventing the escape of sewer-gas.

20 The objects of the present improvements, therefore, are to provide a device which shall not only serve as a cellar-drain, clean-out ferrule, and backwater-trap, but which shall also and in addition thereto serve as a gas-trap and prevent the escape of sewer-gas; to secure for this purpose an inexpensive construction which can be easily manufactured; to also secure an improved construction of the backwater-trap means, and to obtain other advantages and results, some of which will be hereinafter referred to in connection with the description of the working parts.

The invention consists in the improved cellar-drain, gas-trap, and backwater-trap combined and in the arrangements and combinations of parts of the same, all substantially the same as will be hereinafter set forth, and finally embraced in the claim.

Referring to the accompanying drawings, in which like numerals of reference indicate corresponding parts in each of the figures, Figure 1 is a central vertical section of my improved device, and Fig. 2 is a plan of a certain cap therein.

In said drawings, 1 indicates the body portion of my improved device, which is preferably cast and comprises a central cylindrical portion or ferrule 2, which at its lower end is adapted to be inserted in the hub of a drain-pipe and packed in any suitable manner. Intermediate of its ends said cylindrical portion 2 has an exterior integral flange or bell-shaped portion 4, which incloses the end 5 of the cylindrical portion opposite that end 3 which is to be set in the drain-pipe. Said bell-shaped portion 4 extends beyond the said inclosed end 5 of the cylindrical portion 2 and at its edges provides a seat 6 for a perforated strainer-plate 7, which strainer-plate, together with the end edges of the bell portion, is adapted to lie flush with the floor or other surface of the cellar, so that water may drain therefrom into the sewer. From the under or inner side of said strainer-plate 7 is suspended, as by a rivet 8, an inverted-cup-shaped casting 9, which extends down over the end 5 of the cylindrical portion 2 and has its walls lying midway between the walls of the cylindrical portion 2 and those of the bell-shaped part 4, said cup-shaped part 9 terminating at its lower end short of the point from which the bell-shaped part 4 branches from the cylindrical portion 2. Water passing through the strainer-plate 7 therefore flows downward between the walls of the bell 95 shaped part 4 and cup-like part 9 and then upward between the walls of said cup-like part 9 and the cylindrical portion 2, from whence it can pass into the said cylindrical portion or ferrule 2, and so to the sewer or drain-pipe. Obviously the space between the cylindrical portion 2 and bell-shaped part 4 will stand full of water, submerging the lower part of the cup-shaped portion 9 and forming an effeetual trap to prevent the escape of gas from the drain up through the strainer-plate 7.

The top of the end 5 of the cylindrical portion or ferrule 2 provides a seat 10, which is adapted to receive a gasket, of rubber or the like, and above the same receive a cap 12.
Said cap comprises an annular flange 13, adapted to rest upon the said seat 10 or gasket thereon and having in its outer edges holes 14 to receive bolts 15, passed therethrough into perforated ears 16 on the cylindrical portion 2 to clamp the said parts together. From the inner edges of said annular portion 18 of the cap 12 a flange 17 depends into the cylindrical portion 2 and provides at its lower end edges, as at 18, a seat for a ball float-valve 19. Said ball 19, which is made of hard rubber or in any manner common to the art, is supported beneath the valve-seat 18 by wire loops 20, each of substantially a U shape and being arranged in planes at right angles to each other, with their closed ends beneath the ball. The upper ends of said loops 20 are passed through perforated ears 21 upon the outer walls of the flange 17 of the cap 12 and loosely bent or closed together, so as to prevent their escape, while permitting a swinging thereof. It will be thus understood that when water backs up in the drain the ball 19 will rise against the valve-seat 18 and stop escape. Furthermore, when it is desired to clean out the drain the strainer-plate 7 is first removed and then the cap 12 taken out, bringing the ball 19 with it, so that free access is permitted through the cylindrical portion or ferrule 2 to the drainpipe. Obviously to remove the ball 19 the loops 20 can be swung out of the way.

By my improved construction I thus provide in a cellar-drain and gas-trap backwater-trap means located at the top of the flow-passage 2 of said drain and trap, convenient of access, and which means do not impede the free escape of anything which has entered the drain nor obstruct the use of said passage 2 as a clean-out when desired.

Having thus described the invention, what I claim as new is—

The herein-described combination cellar-drain, gas-trap, backwater-trap and clean-out, comprising a straight tubular central part presenting an unobstructed opening at its lower end and having the edges of its upper end radially extended and providing a cap-seat and having an exterior integral flange branching from itself intermediate of its ends and forming a bell-shaped portion inclosing the said upper end, a strainer-plate seated in the end of said bell-shaped portion and having at its innerside an inverted-cap-shaped portion inclosing the adjacent end of the said central tubular part and lying within the said exterior bell-shaped flange, a cap for the upper end of the central tubular part having an annular flange fitting the said seat thereof and adapted to be bolted thereto, said cap being centrally open and having a downward tubular projection 60 from the inner edges of said flange adapted to lie within the central tubular part of the entire device and form a downwardly-facing valve-seat, a float-valve adapted to fit said seat, and retaining means for said valve.

In testimony that I claim the foregoing I have hereunto set my hand this 5th day of October, 1904.

FRANK SHAY.

Witnesses:
CHARLES H. PELL,
RUSSEL M. EVERETT.