

W. M. POWERS.

DRAIN.

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1,051,757.

Patented Jan. 28, 1913.

2 SHEETS—SHEET 2.

Fig. 6.

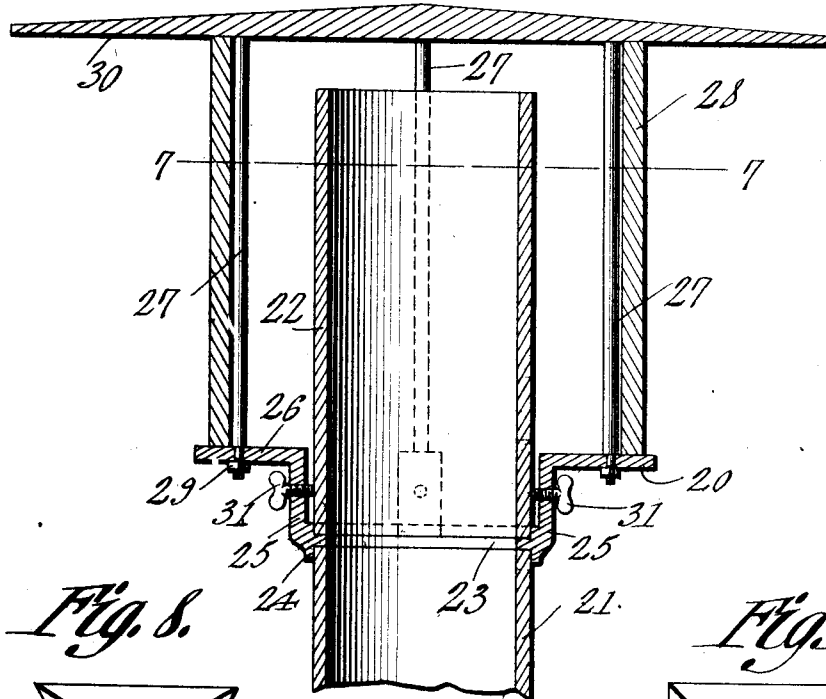


Fig. 8.

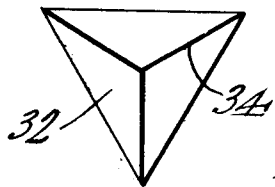


Fig. 10.

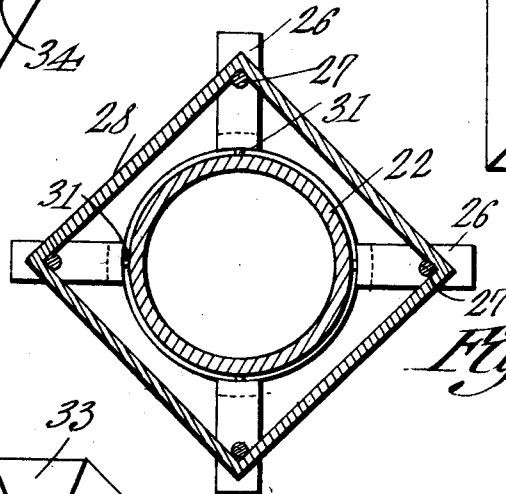
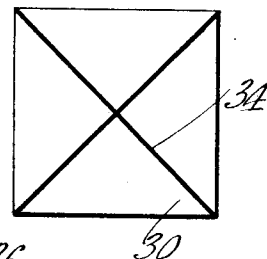
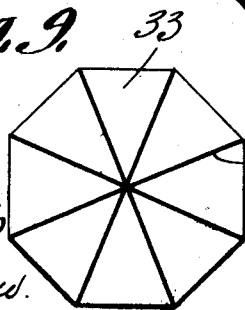


Fig. 9.



Witnesses

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UNITED STATES PATENT OFFICE.

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To all whom it may concern:

Be it known that I, WILLIAM M. POWERS, a citizen of the United States, residing at Charles City, in the county of Floyd and State of Iowa, have invented a new and useful Drain, of which the following is a specification.

The device herein disclosed is a drain structure adapted to be employed for removing surplus water from the surface of the soil and from points adjacent the surface of the soil, the water being conducted downwardly.

The invention aims to provide novel means for supporting the casing portion of the drain and for supporting the closure for the casing.

The invention aims further to improve generally, and to enhance the utility of, devices of that type to which the present invention appertains.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings—Figure 1 shows one form of the invention in vertical longitudinal section; Fig. 2 is a top plan of the structure shown in Fig. 1, the closure being removed; Fig. 3 is a perspective of the connecting element which is employed for uniting constituent portions of the tilting; Fig. 4 is a perspective showing a portion of one of the supporting arms; Fig. 5 is a perspective of the auxiliary frame whereby the closure for the casing is upheld; Fig. 6 is a vertical longitudinal section showing a modified form of the invention; Fig. 7 is a transverse section on line 7-7 of Fig. 6; Figs. 8 and 9 are top plans showing modified forms of the invention; and Fig. 10 is a top plan of the form shown in Fig. 6.

In constructing a drain in accordance with the present invention, an opening 1 is made in the surface of the soil, and in the bottom of the opening 1 are sunk tiles 2 and 3, the tile 3 projecting upwardly above the bottom of the opening 1. In connecting the

adjacent ends of the tiles 2 and 3, a ring 4 is provided, the same being equipped upon its inner and outer circumferences with fingers 5 which extend upwardly and downwardly, the fingers 5 engaging the inner and outer surfaces of the tiles 2 and 3, to hold the tiles in alinement. Disposed upon the upper end of the tile 3 is a ring 6, provided with downwardly extended arms 7, terminating in horizontal extensions 8 having upstanding elements 9 at their ends. The arms 8 preferably, although not necessarily, are of T-shape in cross section, as shown in Fig. 4. Supported by the extensions 8 of the arms 7 is a casing 10 which preferably, although not necessarily, is rectangular in transverse contour. Set screws 11 are threaded into the upstanding elements 9, the set screws 11 engaging the casing 10 to hold the same in place. Superposed upon the casing 10 is a closure 12.

The invention further includes a frame adapted to support the closure 12, the frame being denoted generally by the numeral 14, and being shown in clearest detail in Fig. 5. The frame 14 includes a plurality of arms 15, each arm 15 comprising angularly disposed portions 16 and 17, the portions 16 being disposed in a common plane. The portions 17 of the arms 15 terminate at their lower ends in laterally extended feet 18, having openings 19, adapted to receive securing elements 20 whereby the frame 14 may be secured to the ring 6. The portions 16 of the frame thus cooperate to receive and to support the central portion of the closure 12.

In Figs. 6 and 7, a modified form of the invention is shown. Referring specifically to Fig. 6, superposed tiles 21 and 22 are shown, between which is interposed a ring 23 having a marginal flange 24 which surrounds the outer faces of the adjacent ends of the tiles 21 and 22. Projecting from the ring 24 are arms, each arm comprising a vertically extended portion 25 and a horizontally extended portion 26. Fixed to and upstanding from the horizontally disposed portions 26 of the arms are elements 27 which are adapted to fit within and to prevent lateral movement of the casing 28, the casing 28 resting upon the portions 26 of the arms. If desired, the upstanding elements 27 may be extended through the portions 26 of the arms, and may be terminally

provided with nuts 29 which constitute holding means; although it is within the scope of the invention to fashion the elements 27 integrally with the horizontally extending portions 26 of the arms. The closure 30 is superposed upon the casing 28 and is supported by the upper ends of the elements 27. Set screws 31 may be threaded into the portions 25 of the arms, the set screws 31 engaging the tile 22.

Although the casings 28 and 10 have been described hereinbefore as being of rectangular contour, the casings may be triangular, octagonal, or of any other desired outline, the supporting arms being arranged accordingly. Under the circumstances above pointed out, the triangular casing will be equipped with a triangular closure 32, the octagonal casing being provided with an octagonal closure 33.

Figs. 8 and 9 will serve to illustrate clearly, the fact that any desired contour may be given to the casings 10 and 28. In all forms of the invention, the outer face of the closure may be slanted to shed water at its periphery, as indicated, generally, by the reference character 34.

In practical operation, and referring particularly to Fig. 1, it is to be understood that the water will collect in the opening 1 and pass into the lower end of the casing 10, the water flowing over the ring 6 and passing downwardly through the tiles 2 and 3, a vacuum more or less perfect, being formed in the casing whereby water will be drawn from the soil.

In the form shown in Fig. 6, the water passes between the parts 26 of the arms,

thence into the casing 28 and over the top of the tile 22.

Having thus described the invention, what is claimed is:

1. In a device of the class described, a ring; arms projecting laterally from the ring, the arms being located at a different elevation from that of the ring; and upstanding elements upon the arms.

2. In a device of the class described, a ring; arms projecting laterally from the ring; a casing supported upon the arms; a frame upstanding from the ring; and a closure for the casing, supported by the frame.

3. In a device of the class described, a ring; arms projecting from the ring and downwardly extended, the arms being equipped at their ends with upstanding projections; and clamping means located in the projections.

4. In a device of the class described, a ring; arms secured to the ring and downwardly extended therefrom, the arms being terminally provided with upstanding projections; clamping means in the projections; and a frame supported by the ring.

5. In a device of the class described, a ring; a casing; a closure for the casing; and means supported by the ring for engaging the casing and for engaging the closure.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM M. POWERS.

Witnesses:

B. F. KLEMME,

GEO. E. MAY.