Aug. 12, 1924. 1,504,233

L. E. GRAHAM

DRAIN PROTECTOR

Filed Nov. 7, 1921

FIG. 1

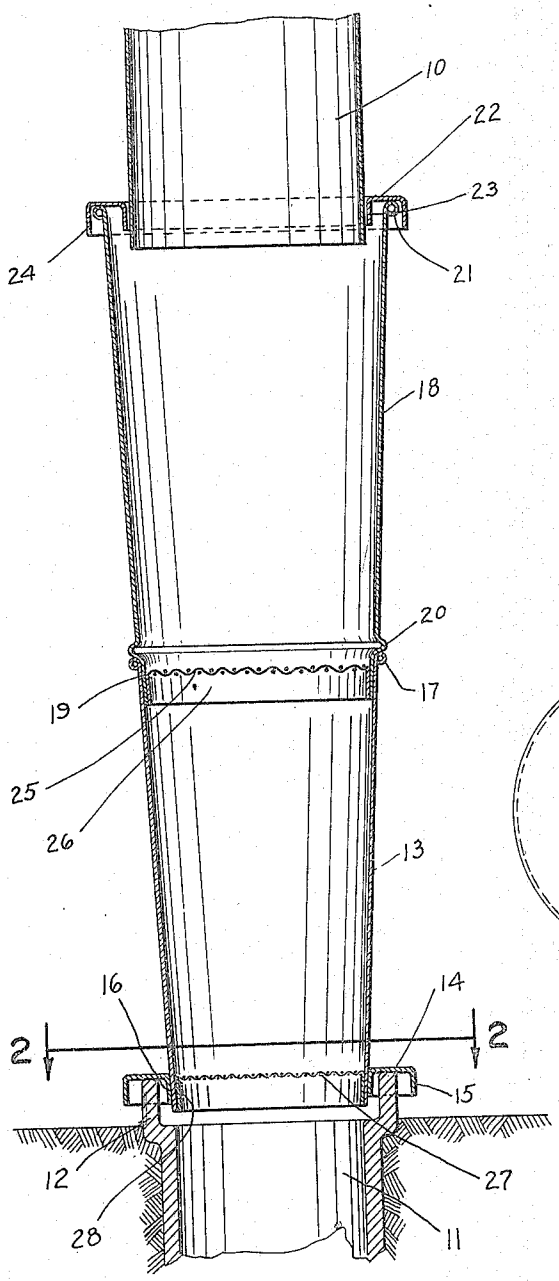
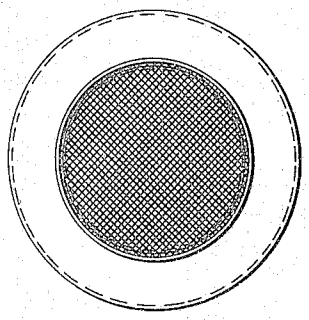


FIG. 2



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UNITED STATES PATENT OFFICE.

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DRAIN PROTECTOR.

Application filed November 7, 1921. Serial No. 513,379.

To all whom it may concern:

Be it known that I, LOU ELLEN GRAHAM, a citizen of the United States, and a resident of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Drain Protector; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

This invention relates to a down spout drain or filter construction and the chief object thereof is to provide a detachable device which is adapted to be interposed between a down spout and the soil pipe, whereby the filter is adapted to retain the trash carried down the spout and permit the filter construction to be removed for cleaning purposes.

The chief feature of the invention consists in the telescopic arrangement of a plurality of tubular sections provided with screens or trash arresters.

Another feature of the invention consists in the means associated with the telescopic tubular sections for closing the connections between the down spout and the soil pipe and said tubular sections.

Another feature of the invention consists in the construction of the parts of the device whereby the telescopic movement in one direction is limited, but movement in the opposite direction is unlimited.

The full nature of this invention will be understood from the accompanying drawings and the following description and claims.

In the drawings Fig. 1 is a central cross sectional view of a down spout, and a drain with which is associated the invention. Fig. 2 is a cross sectional view taken on the line 2—2 of Fig. 1 and in the direction of the arrows.

In the drawings 10 indicates the terminating end of a suitable downspout and 11 indicates the exposed end of the soil pipe conduit, said soil pipe being shown herein provided with the bell 12. The down spout terminates short of the soil pipe and is separated therefrom so as to receive a detachable filter or trash arrester construction.

The trash arrester construction is herein illustrated as composed of a plurality of telescopic sections which are telescopically arranged with respect to the down spout and the soil pipe to permit the removal of the filter construction for cleaning purposes. 13 indicates a frustoconical tubular member, which is shown in an inverted position, with the base portion projecting upwardly. A collar 14 rests upon the outer end of the bell 12 and an outer flange 15 concentric therewith and an inner flange 16 which is likewise frustoconical in form. Thus, when the collar 14 rests upon the bell 12 and the smaller end of the frustoconical section 13 is inserted in the frustoconical flange 16, telescopic inward movement of said section is limited by the wedging action therebetween. The opposite end of the section 13 is suitably curled to form a beaded edge or rest 17.

There is also provided another frustoconical tubular section 18 having a telescoping end 19 receivable by the enlarged end of the section 13. Telescopic movement of the section 18 with respect to the section 17 is prevented by suitable projecting means 20 which herein is illustrated as an annular flanged portion formed integral with the section 18 and adjacent the telescoping portion 19. The flange 20 rests upon the beaded edge 17 of the section 13 and prevents further inward movement of the section 18 upon the section 13 and thereby prevents the wedging action between said sections with the resultant possibility of a rusted connection being formed therebetween. The enlarged end of the section 18 is likewise provided with a beaded portion 21 similar to the beaded portion 17 and if desired additional sections similar to the section 18 may be positioned upon said section. Slidably supported upon the down spout 10 is an adapter closure member or collar 22 having an inner flange portion 23 and an outer flange portion 24. The adapter closure member 22 rests upon the beaded edge 21 of the section 18 and prevents the escapement of the section 18 from the down spout, and likewise closes the enlarged end or inlet of the filter construction.

Herein the means provided for filtering or arresting the trash is illustrated as a screen 25 suitably supported by a tubular frustoconical rim 26 which has a wedging engagement with the smaller end of the frustoconical tubular section 18. Similarly the section 13 is provided with a screen 27 similarly secured to said section by the wedging engagement of the frustoconical rim 28 with the smaller end of said section

13. It is to be here noted that the mesh of the screen 25 is considerably coarser than the mesh of the screen 27 so that a plural stage filter construction is secured. This permits the larger mesh screen to arrest the larger particles of dirt and trash and the smaller screen to arrest the smaller particles. It is to be noted that while the screens 25 and 27 are illustrated as of mesh or woven construction, the same may be formed from a sheet with a plurality of openings therein and the aforesaid construction is considered to be the full equivalent of the screening construction herein illustrated. Likewise other screen equivalents may be substituted for that herein illustrated without departing from the invention.

In operation the collar 22 is slid upwardly upon the down spout 10 and the tubular section 18 is slidable in the same direction to partially telescope the down spout 10 until the end 19 of said section 18 is freed from the section 13 and is positioned a sufficient distance from said section 13 to permit the section 13 to be removed either with or without the collar 14 from the soil pipe 11. After the removal of the section 13 with or without the collar 14 from said soil pipe, the tubular section 18 is lowered and removed from said soil pipe. Thereupon the tubular sections may be inverted and the trash taken therefrom or washed from the screens by reversing the flow of fluid through the screens. The sections, when cleaned, are assembled by positioning the section 18 upon the down spout 10 in telescopic arrangement therewith and after the section 13 is positioned in and upon the collar 14 or the collar and said section is positioned upon the soil pipe 11, the tubular member 18 is returned and seated in the opposite end of the section 13. The collar 22 is then slid downward until it closes the opening of the section 18.

While the invention is herein illustrated as applied to a downspout construction, the same may be applied otherwise such as for sewers, manholes, catch basins and the like constructions without departing from the invention.

The invention claimed is:

1. A removable drain protector filtering construction including tubular means having an enlarged inlet for the telescopic reception of a down spout, an outlet for telescopic engagement with a soil pipe, screening means within the tubular means, and a collar wedgingly supported on said tubular means and seatable on the soil pipe to close the latter and restrict the telescopic movement of the tubular means into the soil pipe.

2. A removable drain protector adapted to be interposed between a down spout and a soil pipe including a plurality of telescopic tubular sections, means on one tubular section for limiting the telescoping movement between two of said sections, screening means in each of said tubular sections, and a collar wedgingly supported on said tubular means and seatable on the soil pipe to close the latter and restrict the telescopic movement of the tubular means into the soil pipe.

In witness whereof, I have hereunto affixed my signature.

LOU ELLEN GRAHAM.