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3,419,288

STABILIZER FOR POLYMER COMPOSITION PIPE

Filed March 27, 1967

Sheet 1 of 2

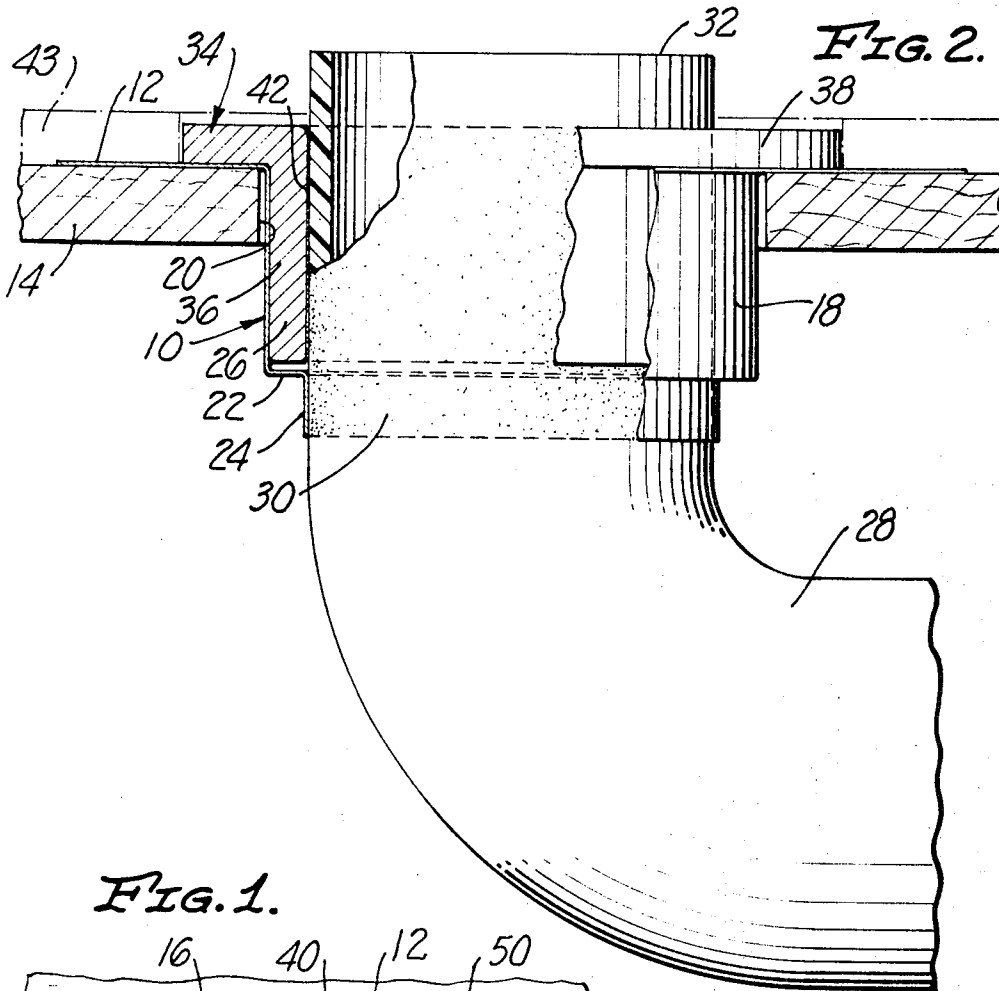
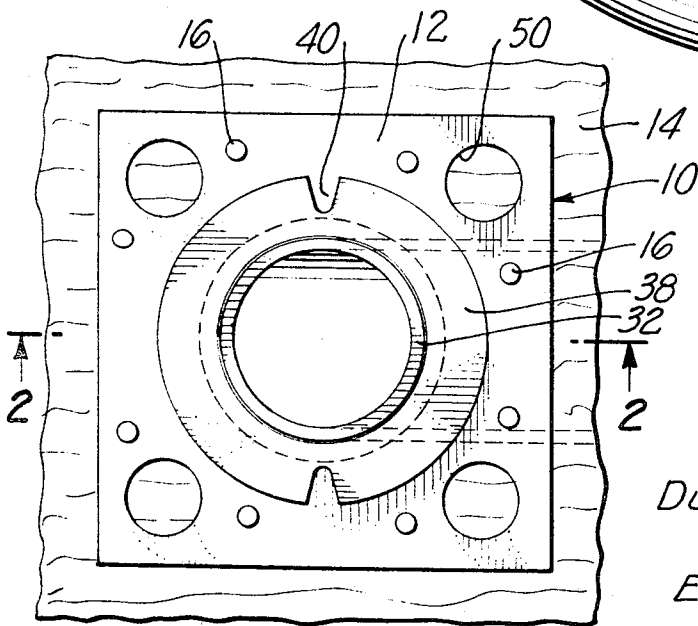


FIG. 1.



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FIG. 3.

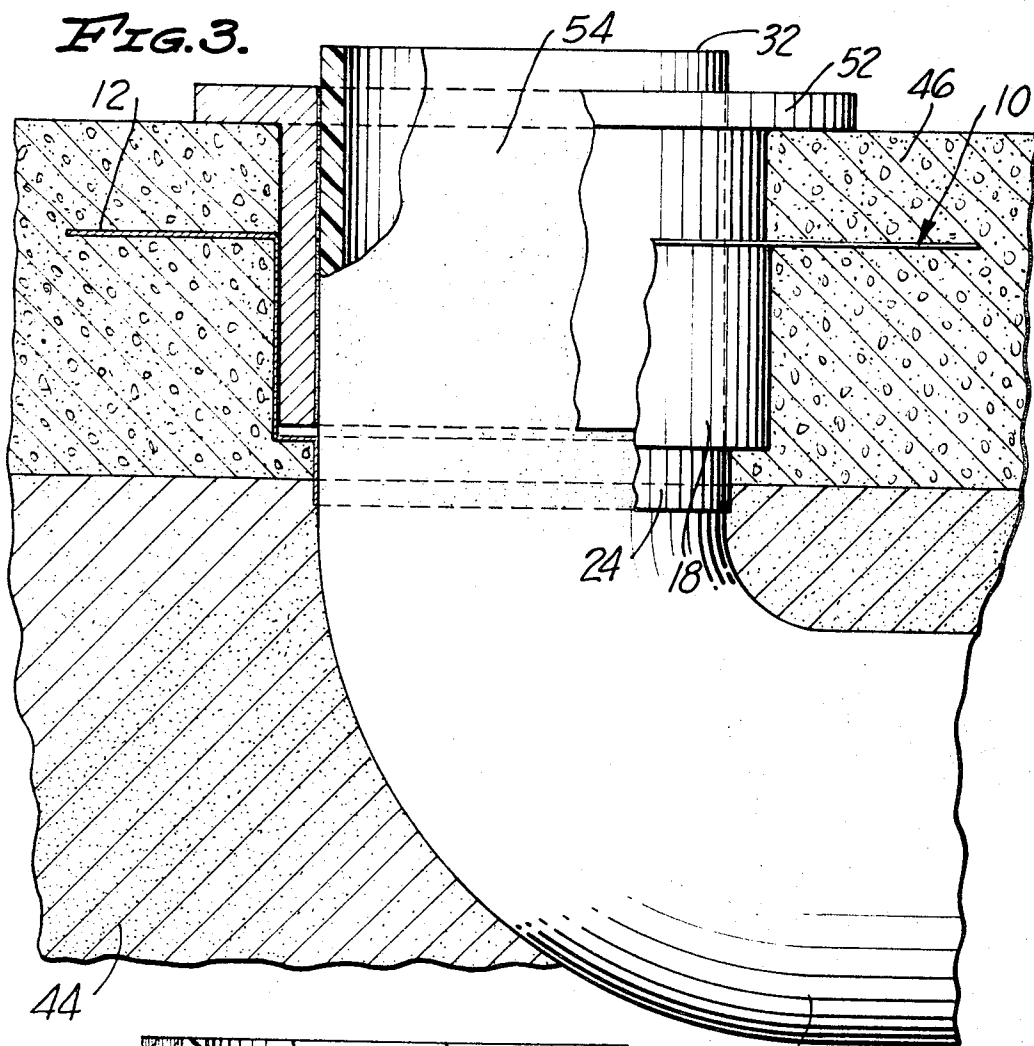
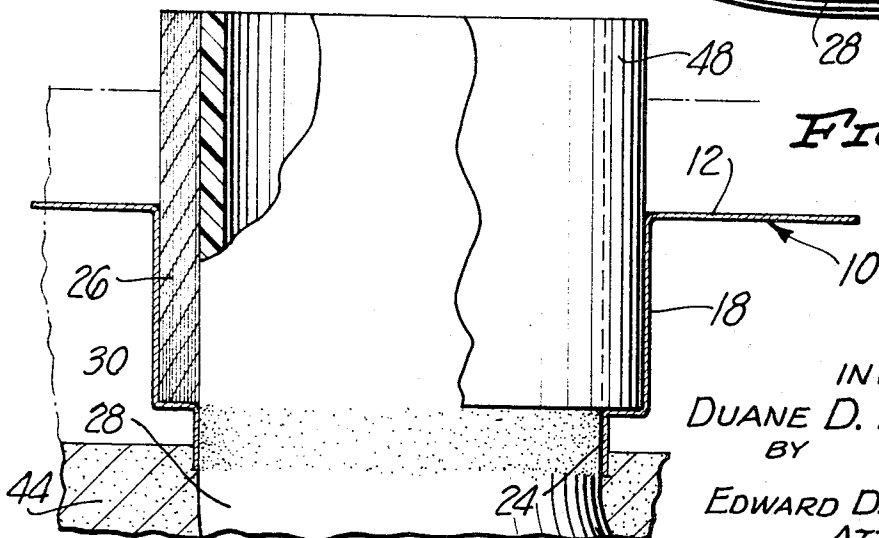


FIG. 4.



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STABILIZER FOR POLYMER COMPOSITION PIPE

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1 Claim. (Cl. 285—58)

ABSTRACT OF THE DISCLOSURE

A stabilizer for polymer composition pipe is disclosed. The stabilizer is flanged so that it can be secured on a floor, is recessed to accept a closet flange and is necked down to be secured to the polymer composition soil pipe. With securement of the closet to the closet flange, and securement of the closet flange to the soil pipe and the soil pipe to the stabilizer of this invention, together with the securement of the stabilizer to the floor, a rigid and secure connection is accomplished.

Background

This invention is directed to the securement of closets to the soil pipe which provides drainage to the closet. Furthermore, it is specifically directed to a soil pipe stabilizer which is securable to polymer composition soil pipe and to the floor upon which a closet is to be mounted.

The mounting of closets to a floor and to a soil pipe is a well known art. Cast iron soil pipe is the conventional material and a closet flange is conventionally caulked and leaded to the soil pipe. The closet flange is secured to the floor and the closet is secured to the closet flange. Furthermore, a sealing ring, usually wax, is located between the closet and the closet flange. This method is quite adequate when cast iron soil pipe is used. However, modern polymer composition materials have permitted soil pipes to be manufactured of suitable polymer composition materials. These polymer composition materials do not properly seal and lock with respect to the conventional closet flange and thus securement is unreliable.

Summary

This invention is directed to a pipe stabilizer, which pipe stabilizer is preferably made out of polymer composition material and is particularly suited to stabilize a polymer composition material soil pipe with respect to a floor, a closet flange and a closet. The pipe stabilizer comprises a floor flange which is adapted to be secured to the floor beneath the closet. The stabilizer has a recess into which a conventional closet flange can be inserted. Below the recess, the stabilizer is provided with a tubular collar which is adapted to engage a polymer composition soil pipe. The soil pipe extends up through the tubular collar, where it is adhesively secured and passes through the interior of the recess. Around the soil pipe and within the recess is positioned the conventional closet flange, which in turn is adhesively secured to the soil pipe. The soil pipe extends upwardly for sealing engagement with respect to the closet. Thus, securement between the closet, the soil pipe, the floor and the closet flange is accomplished by the polymer composition pipe stabilizer of this invention. This construction solves the previously existing problem of securement of the closet flange to a polymer composition soil pipe. Previous attempts at such securement have been inadequate to be reliable, with the constant difficulties of leakage.

Accordingly, it is an object of this invention to provide a polymer composition pipe stabilizer which is capable of providing the necessary securement between a polymer composition soil pipe and the adjacent structure to which it must be secured for proper sealing to a closet. It is another object of this invention to provide a polymer

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composition pipe stabilizer which comprises a floor flange adapted to be secured to a floor, a recess adapted to receive a conventional closet flange and a tubular collar within which a polymer composition soil pipe can be secured. It is another object of this invention to provide an economic pipe stabilizer which properly locates a polymer composition soil pipe during the building process and secures it in place, together with securement of the soil pipe to the floor and the closet when the installation is completed. Other objects and advantages of this invention will become apparent from a study of the following portion of this specification, the claim and the attached drawings.

Description of the drawings

FIG. 1 is a top plan view of the polymer composition pipe stabilizer of this invention shown installed in a wood floor installation.

FIG. 2 is an enlarged section, with parts broken away taken generally along the line 2—2 of FIG. 1.

FIG. 3 is another section, taken similar to the section of FIG. 2, with parts broken away, showing the polymer composition pipe stabilizer of this invention installed in a concrete floor installation.

FIG. 4 is a similar section, with parts broken away showing the polymer composition pipe stabilizer of this invention in position just prior to the pouring of a concrete floor slab.

Description

The pipe stabilizer is indicated at 10 in the drawings. The pipe stabilizer 10 has a floor flange 12. Referring principally to the manner in which the pipe stabilizer 10 is installed with respect to a wood floor construction, as is seen in FIGS. 1 and 2, the floor flange 12 is adapted to lie directly on top of subfloor 14. Floor flange 12 has opening 16 therein through which nails or screws can be installed to retain the pipe stabilizer 10 with respect to the subfloor 14. Extending downward from floor flange 12 is cylindrical tube 18. Tube 18 extends downward through opening 20 in subfloor 14. The bottom of cylindrical tube 18 is defined by bottom wall 22, and tubular collar 24 extends downward from bottom wall 22. Tubular collar 24 is also in the form of a cylindrical tube which is substantially concentric with the cylindrical tube 18. The radial difference between them defines recess 26.

Closet bend 28 has a substantially horizontal run which extends away from the present structure. The closet bend is a portion of the sewer line and is connected to the usual horizontal sewer. The upward extending leg of closet bend 28 passes through tubular collar 24. It is secured thereto by means of a suitable adhesive 30. In accordance with this invention the closet bend 28 is made out of a synthetic polymer composition material. The usual material now being used for sewer lines and closet bends is popularly known as ABS plastic. This material is a copolymer of a plastic, usually polystyrene or styrene-acrylonitrile copolymer, with a rubber, usually a butadiene-acrylonitrile copolymer. The material is a terpolymer made by block or graft techniques. A typical example is a graft copolymer of styrene on nitrile rubber. Typical compositions are in the range 20–30% acrylonitrile, 20–30% butadiene, and 40–60% styrene. Pipe stabilizer 10 is also preferably made out of this material. Thus, adhesive 30 may be any convenient solvent or filler type adhesive. In view of the size tolerances, a filler type of adhesive is preferred, but the material should be compatible so that a strong bond is obtained between tubular collar 24 and closet bend 28.

As is seen, the top of closet bend 28 extends upward above subfloor 14 where it is cut off at top 32 at an appropriate level. In the recess 26 between the upstanding

cylindrical portion of closet bend 28 and the interior of cylindrical tube 28, there is sufficient space to accept the tubular portion of closet flange 34. Closet flange 34 conventionally has this tubular portion 36 and floor flange 38. As is seen in FIG. 1, floor flange 38 has notches 40 therein. These notches are positioned in such a way as to accept bolts by which a closet may be secured to the closet flange. With installation of the closet flange into recess 26, the closet flange is adhesively secured to the upstanding portion of closet bend 28 by means of adhesive 42. In view of the fact that the closet flange is conventionally cast iron, a filler type adhesive is used. Since the closet flange has its flange 38 lying on top of floor flange 12, and the closet bend 28 is secured to tubular collar 24 of pipe stabilizer 10, closet flange 34 is firmly located. Thus, the structure as shown in FIG. 2 is ready to have a closet mounted thereover, and such a closet will be firmly attached with respect to closet bend 28.

Floor 43 is usually laid on top of subfloor 14 after the positioning of closet flange 34. It is laid around the floor flange 38 of the closet flange and on top of flange 12. While this raises the elevation of the closet to a small extent, this is accommodated for by cutting off the closet bend 28 at the right height so that top 32 is positioned in proper sealing relationship with respect to the closet.

The same pipe stabilizer 10 is shown in FIGS. 3 and 4, but this time it is used in an environment wherein a concrete slab floor is employed in the building. Referring first to FIG. 4, closet bend 28 is first located in the sand 44 which forms a supporting base for the concrete slab 46 which is to be later poured thereon. After the closet bend 28 is located and is connected to the sewer pipe, pipe stabilizer 10 is mounted thereon at the proper level and is adhesively secured by adhesive 30. In this case the pipe stabilizer 10 is mostly above the top level of sand 44 and is standing in the air. It is ready for the pouring of concrete therearound. However, in order to protect recess 26 into which a closet flange will later be inserted, and in order to make space for the closet flange, protector tube 46 is installed around the upstanding part of closet bend 28 and into the recess.

Thereupon, concrete floor 46 is poured around protector tube 48 and around floor flange 12 of pipe stabilizer 10. As is seen in FIG. 1, the floor flange has a number of large openings 50, as well as small openings 16 therein. These permit the locking of the concrete through the openings in the floor flange to hold the pipe stabilizer 10 rigidly in place. Hand packing of the concrete may be necessary around and under flange 12 so that the entire pipe stabilizer 10 is surrounded on the outside, and the top of floor flange 12 is covered with concrete.

After the concrete is set, protector tube 48 is removed and closet flange 52 is installed. Again, the closet flange is adhesively secured to the outside of the upstanding portion of closet bend 28, as by adhesive 54. It is seen that the closet bend is secured with respect to the pipe stabilizer, and the pipe stabilizer is fixed in the concrete 46. Additionally, it is seen that the closet flange 52 is secured to the upstanding portion of closet bend 28. Closet bend 28 is cut off at the proper height to form top 32 and again the closet can be secured to the closet flange 52 in a conventional manner for proper and rigid seal with respect to the closet bend. Usually a floor is laid upon the top of concrete 46. This floor is usually laid around the

outer edge of closet flange 52 and thus may cause the closet to be at a slightly higher elevation. However, this is accommodated for by the height of the cut off of top 32 and the usual seal between the closet and the top of the closet bend.

It is seen that the pipe stabilizer of this invention properly secures a polymer composition closet bend in proper and rigid relationship to a closet, and thus it is highly desirable for use in modern polymer composition material sewer pipe installations. This invention having been described in its preferred embodiment, it is clear that it is susceptible to numerous modifications and changes within the ability of those skilled in the art and without the exercise of the inventive faculty. Accordingly, the scope of this invention is defined by the scope of the following claim.

What is claimed is:

1. A polymer composition pipe stabilizer, said stabilizer being made of polymer composition material, the improvement comprising:

- a tubular collar having an interior substantially cylindrical surface, said surface having an axis, a cylindrical tube secured to said cylindrical collar, said tube having an axis lying substantially on the axis of said tubular collar, said tube being of larger interior size than the interior diameter of said cylindrical collar, said tube being connected to said collar by means of a wall positioned substantially perpendicular to said axis, a flange secured to said tube so as to extend outwardly therefrom, said flange lying substantially perpendicular with respect to said axis, said flange having openings therein so that said flange can be secured to a floor, said tube defining a recess interior of said tube and exterior of the cylinder defined by said tubular collar so that polymer composition material cylindrical pipe can be adhesively secured in said tubular collar and extend through the interior of said tube to define a recess therebetween, said recess being of such dimension to accept a closed flange,
- a tubular polymer composition pipe is adhesively secured within said tubular collar, said pipe extending through said tube and extending beyond said tube and beyond said flange,
- a closet flange having a flange portion and a tube portion, said tube portion of said closet flange being positioned between said pipe and said tube and being adhesively secured to said pipe, said flange of said closed flange lying parallel to said floor flange of said pipe stabilizer, said pipe extending out of said floor flange so that a closet can be secured to said closed flange and thereby is secured to said pipe.

References Cited

UNITED STATES PATENTS

2,488,816	11/1949	Heaton	285—56 X
2,837,750	6/1958	Robinson	4—252
3,037,212	6/1962	Kleinhof	285—58 X

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U.S. Cl. X.R.

4—252; 285—159, 193, 238, 414