March 15, 1960 C. M. KRUSE 2,928,419

FLOOR DRAIN COVER

Filed Nov. 5, 1956

Fig. 1

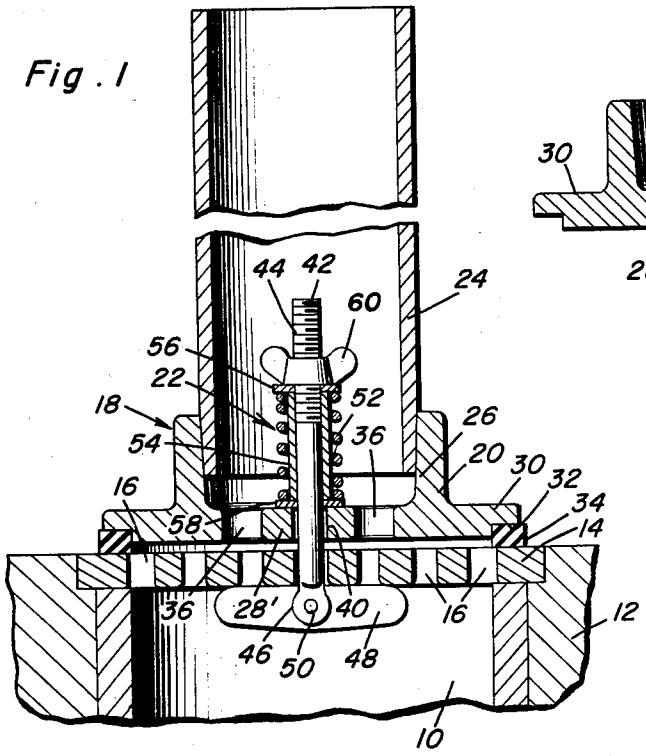


Fig. 3

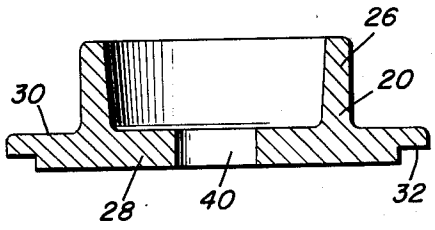


Fig. 4

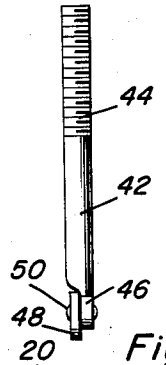


Fig. 2

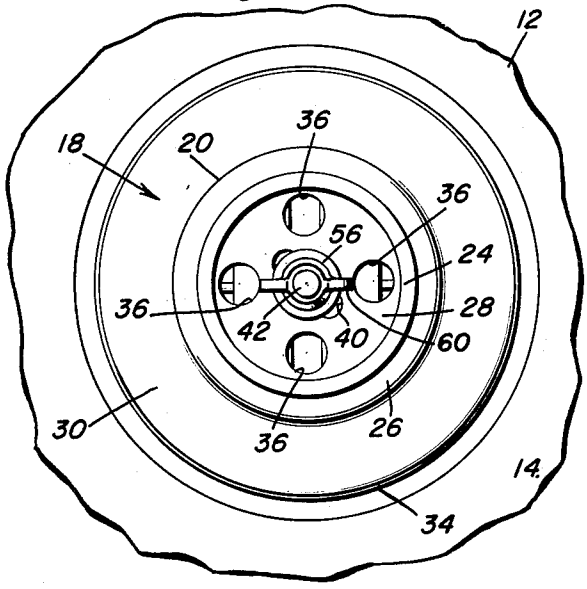
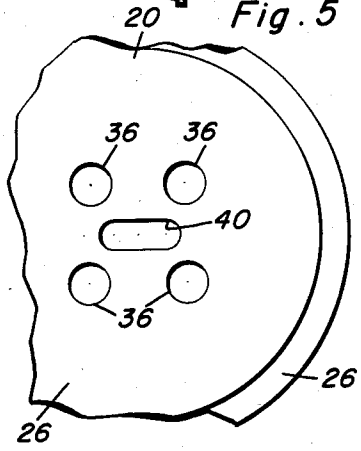


Fig. 5



Carl M. Kruse
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

United States Patent Office 2,928,419 Patented Mar. 15, 1960

2,928,419

FLOOR DRAIN COVER

Carl M. Kruse, Chicago, Ill.

Application November 5, 1956, Serial No. 620,491

2 Claims. (Cl. 137—593)

This invention relates to a device for preventing the overflow of drains during abnormal conditions in the sewerage system.

An object of the invention is to provide a device to prevent the overflow of drains during storms and more particularly to provide a device to prevent the overflow of such drains in a cellar or other low point where an overflow could be damaging to property.

In some localities the lower drains in domestic installations of sewerage systems, often fail to carry away storm water at a sufficiently fast rate and therefore the water in the sewerage system exteriorly of the house, that is in the streets, backs up to the domestic installation, principally to the basement or lower drains. Instead of permitting the water to back up through the drain and flood the basement, the invention provides a device, quickly connectable to the drain without the use of any tools which device functions as a standpipe in which the backed-up water may rise.

A more particular object of the invention is to provide an adaptor for the drain, the adaptor having a flange and socket, the flange being attachable to an ordinary grate of a drain by an extremely simple and effective fastening device without the use of any tools, and the socket being adapted to accommodate a standpipe of any desired length.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Fig. 1 is a vertical sectional view of an ordinary drain having an adaptor thereon which exemplifies the principles of the invention;

Fig. 2 is a top view of the structure in Fig. 1;

Fig. 3 is a sectional view of the adaptor;

Fig. 4 is an elevational view of a part of the means for fastening the adaptor to the drain grate, and;

Fig. 5 is a fragmentary plan view of the adaptor showing the hole pattern therein.

In Fig. 1 there is shown a part of a sewerage system and particularly, a sewer pipe **10** mounted in a basement floor **12**, the schematic representation at **12** indicating not only a basement floor but any other type of floor or surface wherein this part of the sewerage system may be located. The ordinary grate **14** is disposed on the top end of pipe **10** and has a plurality of slots **16** in it. This is standard structure found in ordinary sewerage systems.

The attachment **18** consists of an adaptor **20**, means **22** to fasten the adaptor to the grate **14** and a standpipe **24**. Adaptor **20** is preferably made of a lightweight material, as a suitable plastic, as is standpipe **24**. The adaptor consists of a socket **26** which is made of a short sleeve or collar provided with a bottom wall **28** from which peripheral flange **30** extends. The lower edge of the flange is relieved as at **32** in order to form a seat for the resilient gasket **34**. The gasket is seated between the adaptor and the grate **14**, resting in the relieved part of the adaptor and on the surface of grate **14**, circumscribing all of the openings **16**. The bottom wall **28** of the socket has apertures **36** formed in a circle or in some other pattern and has a central slot **40**.

The means for fastening the attachment quickly in place on the grate **14** consists of a bolt **42** having an upper threaded end **44** and a flat end **46**. The flat end has keeper arm **48** mounted on pivot **50** so that it is capable of swinging through a limited arc. Spring **52** is mounted coaxially on bushing or sleeve **54**, this bushing being on the bolt **42** and having upper and lower washers **56** and **58** in contact therewith. The spring seats against the upper and lower washers, one being on the upper surface of the bottom wall of socket **26** while the other washer has wing nut **60** in contact therewith.

The standpipe **24** is of a dimension to fit snugly in the slightly tapered socket **26** and may be made of any material, for example plastic. It is preferred, although not essential, that the socket be made approximately cylindrical with a slight taper and the standpipe **24** be cylindrical.

The device is assembled by first passing the threaded end **44** of the bolt **42** upwardly through the slot **40** in the bottom **28** of the adapter **20**, whereupon the parts **52**, **54**, **56**, **58** and **60** are assembled on the bolt. The adapter **20** may then be applied to the grate **14** by aligning the arm **48** with the central of the slots **16** in the grate, and pressing the bolt downwardly so that the arm **48** passes through the slot and is disposed below the grate. The bolt is then rotated through a one-quarter turn, so that the arm **48** extends transversely of the drain slots **16** and prevents the bolt from being withdrawn. The spring **52** urges the arm **48** against the underside of the grate and when the nut is tightened, the adapter is firmly affixed to the grate, with the sleeve **54** limiting the extent to which compression of the spring may be effected. Finally, the standpipe **24** is inserted in the socket **26** to complete the installation.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. For use in combination with a floor drain grate having a set of openings, an attachment to prevent overflow from back flow through said grate, said attachment comprising an adapter having a socket provided with a flange, a relieved portion formed at the underside of said flange, a gasket seated in said relieved portion and fitting on the grate, said gasket circumscribing all of the grate openings and holding said adapter spaced slightly from the grate, said socket having a bottom wall formed with apertures, means for attaching the adapter to the grate comprising a bolt passing through one of said grate open-

ings and through one of said socket apertures, a keeper arm on said bolt at the underside of the grate, a threaded element engaging threads on said bolt, a sleeve encircling said bolt between said threaded element and the bottom wall of said socket, washers disposed on said bolt at both ends of said sleeve, a spring disposed on said sleeve and contacting said washers for constantly yieldingly biasing the bolt upwardly and pressing the keeper arm against the underside of the grate whereby upon adjustment of said threaded element on said bolt the pressure exerted by said spring may be varied, and a standpipe mounted in said socket.

2. The combination of a floor drain grate having a set of openings and an attachment to prevent overflow from back flow through said grate, said attachment comprising an adapter positioned over the grate and including an apertured bottom wall and an upper portion provided with a socket, a standpipe mounted in said socket, an annular gasket interposed between the marginal portion of said bottom wall and said grate, a bolt extending upwardly through one of the openings in the grate and through an aperture in said bottom wall into said socket,

a keeper arm provided at the lower end of said bolt at the underside of the grate, a nut provided at the upper end of the bolt, a tubular sleeve of a fixed length positioned on said bolt between said nut and said bottom wall, and a compression spring positioned on said sleeve in cooperating relation with said bottom wall and said nut, whereby said spring urges said keeper arm against the underside of said grate and whereby said sleeve limits the extent to which compression of said spring may be effected.

References Cited in the file of this patent

UNITED STATES PATENTS

570,543	Coles	Nov. 3, 1896
602,332	Jones	Apr. 12, 1898
608,207	Merritt	Aug. 2, 1898
1,052,363	Moore	Feb. 4, 1913
1,625,684	Roddy	Apr. 19, 1927
1,773,640	Prasivka	Aug. 19, 1930
1,885,372	Nuebling	Nov. 1, 1932
2,008,258	Olsen	July 16, 1935
2,202,116	Mosley	May 28, 1940