The particular object of the invention, therefore, is to provide an improved drain pipe flusher.

Other objects of the invention will appear from the following description and accompanying drawings and will be pointed out in the annexed claims.

In the accompanying drawings, there has been disclosed a structure designed to carry out the various objects of the invention, but it is to be understood that the invention is not confined to the exact features shown as various changes may be made within the scope of the claims which follow.

In the accompanying drawings forming part of this specification:

Figure 1 is a sectional elevation showing a conventional kitchen sink with the improved flusher fitted over the drain outlet thereof;

Figure 2 is an enlarged detail sectional view, showing the parts of the flusher in normal positions;

Figure 3 is a similar view, showing the device fitted over a drain outlet and also showing the flared member and cup-shaped element flexed as when the device is held against the surface of the fixture;

Figure 4 is a view similar to Figure 2 with the upper member removed; and

Figure 5 is a sectional plan view on the line 5—5 of Figure 4.

In the selected embodiment of the invention here shown, for purposes of disclosure, there is illustrated in Figure 1, a conventional kitchen sink having the usual bottom 3 provided with a drain outlet 4 connected with the usual drain pipe 5. The usual hot and cold water faucets 6 and 7 are also shown.

The improved flusher featured in this invention comprises an outwardly flared member 8 having a plurality of annular faces 9 and 11, normally lying in different planes, as shown in Figures 3 and 4. This member is provided with a central aperture 12, communicating with a socket 13 adapted to receive one end of a tubular member 14. The opposite end of this member is adapted to be inserted into one end of a flexible connection such as a hose 15, the opposite end of which is adapted for connection with a water faucet, as shown in Figure 1. The central portion of the member 8 is recessed as indicated at 16 to provide communication between the tubular member and the drain outlet 4. The member 8 is constructed of flexible material so that when it is fitted over the drain outlet 4, as shown in Figure 3, the outer annular portion of the member will flex, when the face 9 engages the surface of the fixture so as to cause the inner face 11 also to engage the surface of the fixture, thereby substantially preventing leakage of the water from between the member 8 and

This invention relates to an improved drain pipe flusher adapted to be fitted over the usual drain outlet of a plumbing fixture, and having means for connecting it with a source of water supply under pressure, whereby the water may be forced through the drain outlet to clear the drain pipe of sediment and other refuse which may have accumulated therein.

An object of the invention is to provide a drain pipe flusher comprising an outwardly flared member having a central aperture adapted for connection with one end of a hose, the opposite end of which is adapted for connection with the usual water faucet, said flared member having a plurality of faces lying in different planes and adapted to be fitted against the surface surrounding the drain outlet of a plumbing fixture, to prevent leakage of the water therebetween, and a cup-shaped element being connected with said flared member and encircling the latter and having an annular face axially spaced from the faces of said flared member and also adapted to engage the surface of the fixture, to catch the water escaping from beneath the flared member, said cup-shaped element being of flexible material and having a plurality of water discharge apertures in the upper portion thereof.

A further object of the invention is to provide a drain pipe flusher of flexible material, comprising an outwardly flared member adapted to be fitted over the drain outlet of a plumbing fixture and having means for connecting it with a source of water supply under pressure, said flared member being mounted within a cup-shaped element, also of flexible material and having an annular face axially spaced from the adjacent faces of said flared member to cause the cup-shaped member to engage the fixture and flex when the device is fitted over a drain outlet, and a bell-shaped member co-operating with said cup-shaped element to prevent spraying of the water leaking from between the faces of said flared member and the surface of the fixture.
the surface of the fixture, provided, of course, that the flusher is firmly held against the fixture.

Means are provided for preventing spraying of the water from between the faces 9—11 and the surface of the fixture engaged therewith, which might occur should the drain pipe 5 be substantially closed from the accumulation of sediment and other refuse therein, and when the water is under considerable pressure, in which case it may be difficult to firmly hold the faces 9—11 against the surface of the fixture around the drain outlet 4. To thus prevent accidental spraying of the water, a cup-shaped element 17 is connected with the upper portion of the member 8 and surrounds it as shown in Figure 2, thereby providing an annular chamber 18 between the member 8 and element 17, communicating with the atmosphere through a series of drain apertures 19, provided in the upper wall of the cup-shaped element 17. The element 17 is provided with an annular face 21 adapted to be fitted against the surface of the fixture, as shown in Figure 3. This face is axially spaced from the faces 9—11 of the member 8, so that when the device is fitted over the drain outlet, the element 17 will flex and its face 21 will be firmly held against the fixture, even though the faces 9—11 of the flared member 8 may be slightly moved out of engagement therewith, caused by high water pressure, or if insufficient pressure is applied against the device when in use. By the employment of the cup-shaped element 17, it will be seen that water escaping from between the members 8 and the surface of the fixture around the drain outlet, will discharge into the annular chamber 18 which acts as an expansion chamber, to reduce the velocity of the escaping water, thereby causing the water to discharge from the chamber 18, through the apertures 19, without any noticeable pressure. If the faces 9—11 of the member 8 are firmly held against the surface of the fixture, there will be no leakage of water and consequently, no discharging of water through the apertures 19.

It may also be desirable to use an auxiliary bell-shaped member 22 to further safeguard against the spraying of water from the device, in the event that the faces 9 and 11 are not firmly held against the surface of the fixture. This member 22 is shown fitted onto the tube 14 between the upper portion of the cup-shaped element 17 and the lower portion of the hose 15. The lower marginal edge 23 of the bell-shaped member 22 is spaced from the outer surface of the element 17, so that water leaking into the chamber 18 and discharging therefrom through the apertures 19, will be diverted directly over the outer surface of the element 17, as indicated by the arrows in Figure 3.

In some instances, the use of the bell-shaped member 22 may be dispensed with and the device used as shown in Figure 4. However, when the device is used with the usual city water pressure and, particularly, if the drain pipe is substantially clogged or congested, then it is desirable to use the upper bell-shaped member 22 in order to prevent spraying of water leaking from between the member 8 and the adjacent surface of the fixture.

The novel drain pipe flusher featured in this invention is of comparatively simple construction and may be molded of a suitable material such as rubber. If desired, the cup-shaped element 17 may be integrally formed with the flared member 8, as shown in the drawings, and the bell-shaped member 22 may be independently formed so that it may be dispensed with, if desired. This member is also preferably of flexible material. In the drawings, I have shown the hose 15 connected with the member 8, 17, and 22 by means of the tubular member 14. It is to be understood, however, that the hose connection 15 may be connected with the device by any suitable means desired without departing from the scope of the invention.

I claim as my invention:

1. In a device of the class described, the combination of a conduit having one end adapted for connection with a water faucet, a flared member secured to the other end of said conduit and adapted to be fitted over the drain outlet of a plumbing fixture, said member being of flexible material and having a plurality of faces adapted to engage the surface of the fixture around said outlet to prevent leakage, said faces lying in different planes.

2. In a device of the class described, the combination of a conduit having one end adapted for connection with a source of water supply under pressure, an outwardly flared member secured to the other end of said conduit and adapted to be fitted over the drain outlet of a plumbing fixture, said member being of flexible material and having a plurality of faces adapted to engage the surface of the fixture around said outlet to prevent leakage, said faces lying in different planes.

3. A device of the class described, comprising an outwardly flared member having an annular face and a central aperture adapted for connection with a flexible conduit, and a cup-shaped element mounted over said flared member and having a face axially spaced from the end of said flared member whereby, when the device is fitted over the drain outlet of a plumbing fixture, the cup-shaped element will engage the fixture and flex before said flared member engages the fixture.

4. A device of the class described, comprising an outwardly flared member having an annular face and a central aperture adapted for connection with a flexible conduit, and a cup-shaped element mounted over said flared member and having a face adapted to be fitted over the drain outlet of a plumbing fixture, said face being axially spaced from the face of said flared member whereby, when the device is fitted over the drain outlet of a plumbing fixture, the face of said cup-shaped element will engage the fixture and flex before said flared member engages the fixture.
4. A device of the class described, comprising an outwardly flared member having a central aperture adapted for connection with a water conduit, said member having faces adapted to be fitted around the drain outlet of a plumbing fixture, a cup-shaped element surrounding said flared member and also having a face adapted to engage the fixture around said flared member, to prevent leakage and spraying of water, and said cup-shaped element having a plurality of apertures in the upper portion thereof for the escape of water entering said cup-shaped element from beneath said flared member.

5. A device of the class described, comprising an outwardly flared member having a central aperture therein adapted for connection with a water conduit, said member being of flexible material and having a plurality of faces lying in different planes and adapted to be fitted against the surface surrounding the drain outlet of a plumbing fixture, a cup-shaped element surrounding said flared member and having a face also adapted to engage the plumbing fixture and axially spaced from the faces on said flared member, apertures in the upper portion of said cup-shaped element, and an auxiliary member fitted over said cup-shaped element in spaced relation, to prevent spraying of water discharging from said apertures as a result of leakage between said flared member and the surface of said fixture.

6. In a device of the class described, the combination of an outwardly flared member adapted to be fitted over the drain outlet of a plumbing fixture, means for connecting said flared member to a source of fluid pressure, and a relatively larger member positioned over said flared member and also adapted to engage said fixture, and cooperating with said flared member to prevent spraying of the fluid.

In witness whereof, I have hereunto set my hand this 5th day of June, 1928.

ERLAND Y. KOLSTAD.