

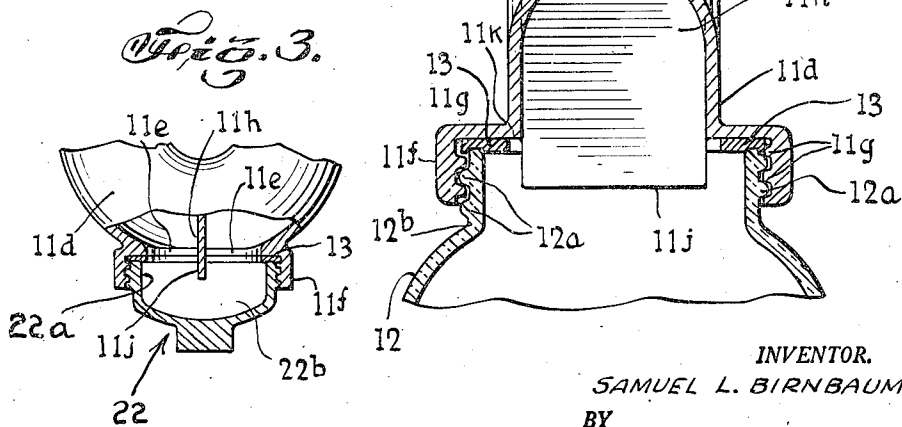
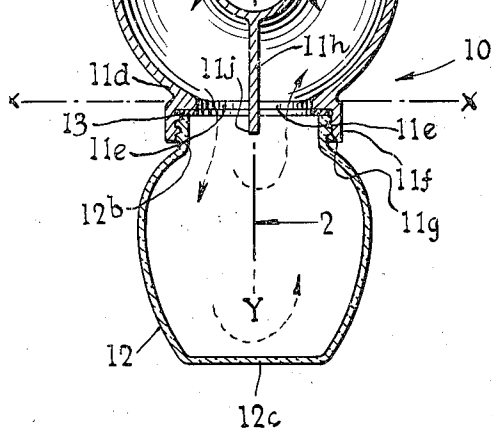
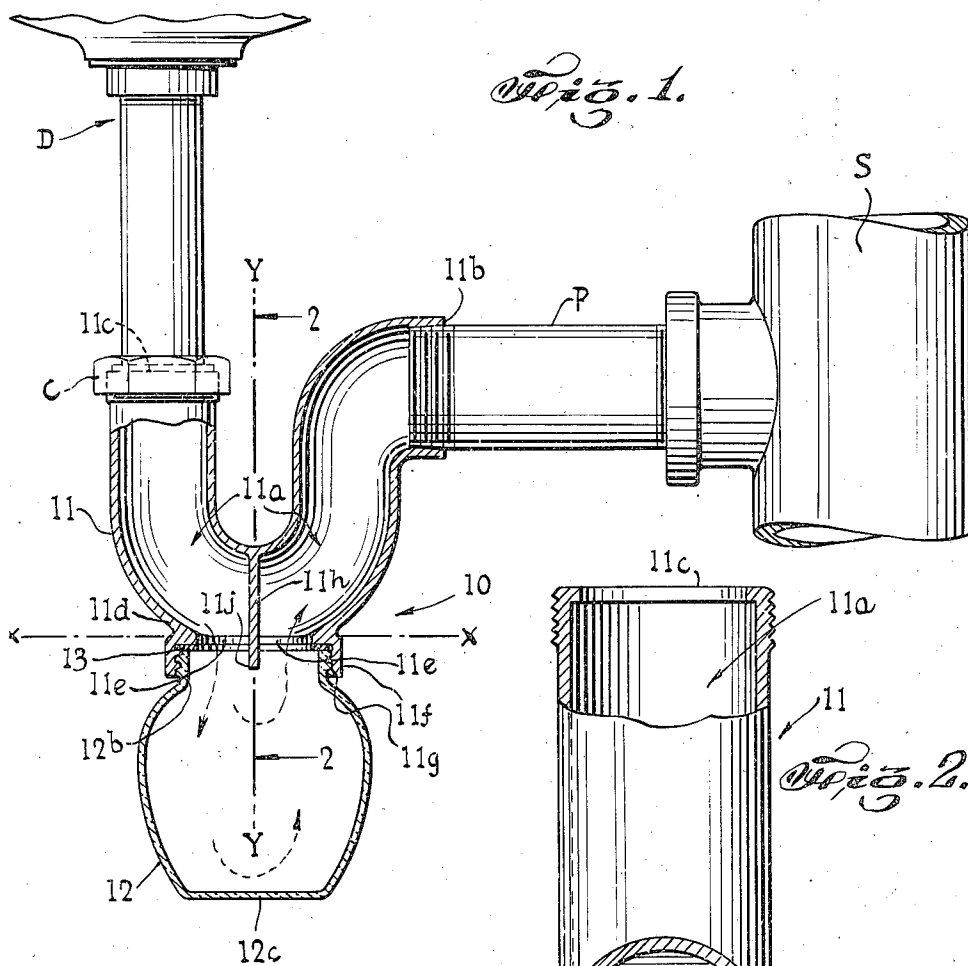
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SANITARY CATCHALL DRAIN TRAP

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SANITARY CATCHALL DRAIN TRAP

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1 Claim. (Cl. 182-7)

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This invention relates to plumbing fittings, and more particularly is directed to sanitary catchall drain traps which form seals as is generally required by building codes of sanitary and housing authorities, between sinks, wash basins, tubs, shower baths, lavatories and the like, and sewer disposal means for waste liquids passing through such traps.

Among the objects of the invention is to generally improve plumbing fittings of the character described, which shall comprise few and simple parts that are easy to assemble to form a neat appearing plumbing structure, which shall be readily incorporated into plumbing systems as substitutes of those presently in general use, or incorporated in new installations in complete compliance with the most rigid codes of sanitary and building authorities, which shall be relatively cheap to manufacture, which shall avoid plugging the drainage in by-passing and accumulating foreign material from the waste disposal, which shall permit ready cleaning, which shall facilitate retrieving of articles that accidentally pass down the drain, and which shall be efficient and practical to a high degree in use.

Other objects in this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists of features of construction, combination of elements and arrangement of parts which will be exemplified in the constructions hereinafter described and of which the scope of application will be indicated in the following claim.

In the accompanying drawing in which is shown various possible illustrative embodiments of the invention:

Fig. 1 is a side elevational view in vertical cross-section of a drain trap provided with a transparent by-pass accumulator constructed to embody the invention,

Fig. 2 is a fragmentary cross-sectional view of the improved drain trap taken on line 2-2 in Fig. 1 with the drain pipe and coupling omitted, and

Fig. 3 is a fragmentary cross-sectional view like Fig. 1 but showing a metallic closure means substituted for the transparent by-pass accumulator.

Referring in detail to the drawing, 10 denotes a plumbing fitting in the form of a sanitary catchall drain trap constructed to embody the invention.

Said trap 10 is seen to comprise a metallic hollow body portion 11 having a continuous bore or through passage 11a, which trap 10 when in-

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corporated into a plumbing system in buildings and the like structures, is interposed between an overflow or drain D of a sink, wash basin, tubs, shower bath, lavatories, or the like, and a disposal drainage therefrom to a sewer line S in the well understood manner, as generally required by law under rigidly inspected building and sanitary codes of community governments.

Said trap body 11 may be formed with an outlet end 11b for connecting with a pipe P of the sewer system S, an inlet end 11c normally positioned at substantially the same level as outlet end 11b for connecting with said drain D through a suitable coupling C, and an intermediate portion 11d which is located a distance below the level of said outlet and inlet ends 11b, 11c. Said distance or drop has been standardized for various diameters of pipes being used and consequently the direction or shape of the body portion passage 11a as is well understood. In any event, said distance is such as to provide a water trap of sufficient depth in said intermediate body portion 11d to seal odors and vapors from passing back from the sewer drainable disposal S up to the drain D into the building.

Just short of a plane of the lowest effective level of intermediate body portion 11d, as indicated in Fig. 1 by horizontal plane through X-X, there is provided by-pass or emptying opening 11e, therein which is surrounded by a rim flange 11f, of angle cross-section, the latter preferably being formed integral with body portion 11d. Said rim flange 11f may be constructed to have rigidly coupled thereto or connected therewith an enclosure member 12.

As shown in Figs. 1 and 2, rim flange 11f is provided with internally formed screw thread 11g, which is so constructed and arranged to couple with cooperating screw threads 12a provided on the neck 12b of member 12, the latter being bulbous or bottle shaped.

Member 12, when in effectively coupled suspension, serves as a by-passing accumulator with respect to waste material down-flowing the drain D of trap 10, said member 12 being made of any suitable transparent material, such as clear glass or plastic so that the contents therein are visible. Said member 12 may be provided with a flattened bottom side 12c to provide a supporting, not readily tippable, base 12c when said member 12 is dismounted and rested thereon for servicing said trap 10.

Between the neck 12b of member 12 and an inner horizontal surface 11h of rim flange 11f there may be provided a suitable leakproof joint,

as for example, an interposed washer, packing or gasket 13 clamped into effective position on tightly screwing neck thread 12a into flange thread 11g as is clear from Figs. 1 and 2.

Midway between said outlet end 11b and inlet end 11c within said passage 11a, and preferably forming an integral part of intermediate portion 11d, there may be provided an impervious deflector or baffle 11h. The latter extends down across said through-passage 11a bisecting 11e and terminates in a horizontally extending edge 11j a short distance below the level of plane X—X so that a downflowing stream with waste material through said passage 11a from drain D is deflected by baffle 11h and is caused to pass beyond and under edge 11j into member 12 when passing from the inlet 11c to outlet 11b as is clear from Figs. 1 and 2. Baffle 11h thus is seen to form a partition lying in vertical plane, indicated by line Y—Y in Fig. 1, in the path of flow of said waste material within said intermediate body portion 11d.

In practicing the invention, trap 10 is constructed and assembled as described above and shown in the drawings, either in a new plumbing installation, or as a substitution of a conventional type of drain trap.

Flowing waste material passes in a stream as seen from Fig. 1 from the overflow or drain D as a downflow into body passage 11a and is deflected against one side of baffle 11h, through one of the bisected portions of said opening 11e (as indicated by the arrow) into member 12 which fills and upturns said stream within member 12 instead of within body portion 11d to pass through the other bisected portion of opening 11e on the other side of baffle 11h (also as indicated by the arrow) with minimum restriction and hence as an upflow passes to sewer S. This change of direction of the stream flow being abrupt and wholly within member 12 will cause all material or sediment of specific gravity greater than that of the flowing carrier medium to separate out and settle in member 12. Should any article accidentally pass down the drain D, it can be readily retrieved in member 12 since it would be trapped in member 12 against passing to the sewer line S.

If desired, instead of using bulbous transparent member 12, a metallic plug cap 22 as shown in Fig. 3, may be substituted where the separable material in the stream flow is normally scant.

Said cap 22 is provided with a threaded peripheral rim portion 22a which corresponds to neck threads 12a of member 12 for screwing into said flange threads 11g against gasket 13, and is formed with a dished portion 22b extending a substantial distance below said horizontally extending baffle edge 11j to provide an accumulator means operating in the manner like member 12 described above and shown in Figs. 1 and 2.

It is thus seen that trap 10 as shown in the drawing and described above may have said entire body portion 11 with flange 11f and baffle 11h made of a single casting which when installed normally is positioned as shown to provide a substantial U-shaped conduit between drain D and pipe P leading to the sewer S. The downflow of the waste stream from drain D enters inlet end 11c into the bore 11a partway down through in-

intermediate portion 11d, that is, into one side of said U-shaped conduit along baffle 11h and through one portion of said bisected opening 11e into enclosure member 12, or if cap 22 is used into dished portion 22b, where the abrupt change of direction of the stream flow across edge 11j takes place.

Said stream flow, with the sediment separated out, then passes through the other portion of said bisected opening 11e as an upflow partway through intermediate portion 11d, that is, into the other side of said U-shaped conduit along baffle 11h and through outlet end 11b through pipe P to the sewer S. The effective bisected areas of opening 11e are relatively large and offer practically no restriction to the direct stream flow.

It will thus be seen that there are provided devices whereby the several objects of this invention are achieved and which are well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

A sanitary catchall drain trap comprising a U-shaped hollow body having a continuous bore therethrough formed with inlet and outlet ends normally positioned at substantially the same level, an intermediate portion of said body being located at a distance below said level, said body intermediate portion having a by-pass opening in a region of the lowest level thereof, a rim coupling flange integrally formed with said body intermediate portion to extend about said opening for connecting with a removable enclosure member, and an impervious baffle integrally formed with said body intermediate portion to extend as a partition within said bore midway between the inlet and outlet ends, said baffle bisecting the by-pass opening and terminating beyond said region but at a spaced distance from the enclosing member, being so constructed and arranged that a stream of waste material passing through said trap has its direction of flow abruptly changed wholly within said enclosure member at spaced distance down from said by-pass opening for causing all material of specific gravity greater than that of the flowing carrier medium of said stream to separate out and settle in said member.

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