

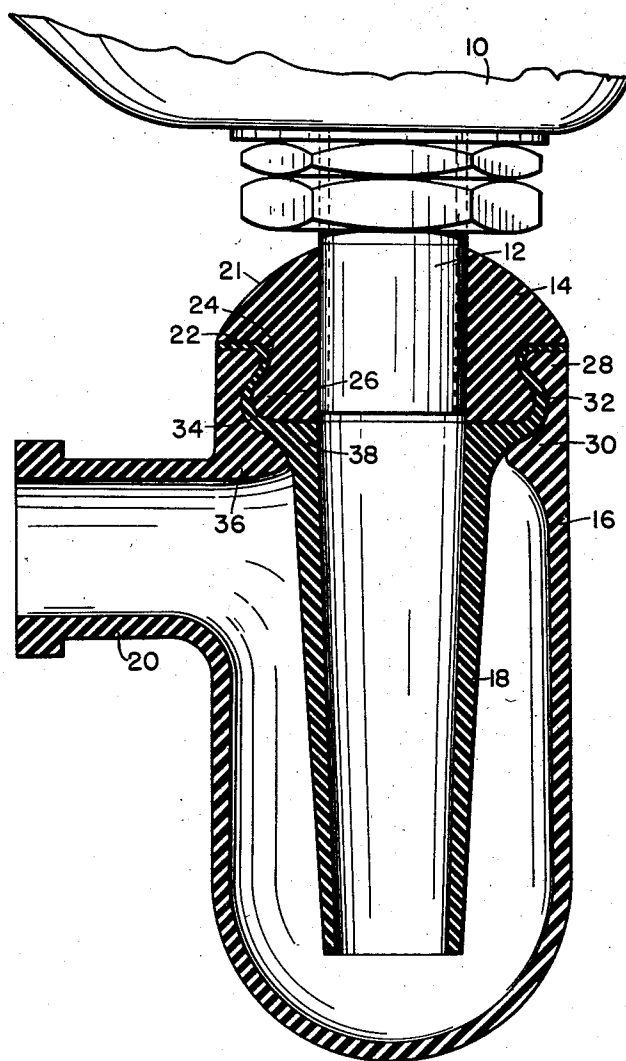
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TRAP FOR LAVATORIES, SINKS, AND THE LIKE

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TRAP FOR LAVATORIES, SINKS, AND THE LIKE

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This invention relates to a trap for lavatories, sinks, and the like, and more particularly to a trap including a trap housing and a submerging tube, and to be used together with devices which include a basin and a drain pipe.

There are traps known in which not only the trap housing but also the submerging tube are made of rubber. In these known constructions, the upper end portion of the submerging tube is tightly forced around the drain pipe. Such constructions have the disadvantage that the submerging tube of rubber bites firmly at its upper extremity into the drain pipe so that it cannot be removed without damage. It should, however, be possible to remove the drain pipe without difficulty since, particularly in the case of wash basins used in hospitals, the drain pipes must be boiled from time to time to ensure thorough cleansing.

Lavatory basins are also known where the lower portion serving to carry off the waste is provided externally with a broad annular channel within which a bulbous portion of the trap secures a tight seal by tension. Below this is a similar narrower channel to secure the submerging tube.

These known constructions possess the disadvantage that construction of two channels on the body of the basin adds not inconsiderably to the costs of manufacture and results in a portion projecting unduly beyond the lower surface of the basin, which projecting portion is easily damaged in transport. There is the further possibility that if for example the trap housing were compressed, the submerging tube would become loose from the channel to which it is attached, which is usually of the particularly smooth material of the basin, thus rendering the seal ineffective.

According to the invention the afore-mentioned disadvantages are avoided by providing a retaining sleeve of elastic material, for example, rubber, adapted to be forced around the drain pipe of the basin, and on which sleeve are mounted under tension not only the trap housing made of elastic material, but also the submerging tube which similarly consists of elastic material. In such a construction there are no disadvantages resulting from the retaining sleeve biting into the drain pipe, since it will not in any way prevent the removal of the submerging tube. Any possibility that the submerging tube might slip off if the trap housing were compressed is precluded since the friction between the submerging tube and the retaining tube, both of which are made of rubber, is considerably greater than that between rubber and a smooth basin material.

Contrary to the referred to prior constructions in which the submerging tube of rubber is force-fitted on to the drain pipe of the lavatory basin by its upper extremity, the construction according to the invention offers the further advantage that the diameter of the submerging tube is in no way restricted to the external diameter of the drain pipe. The internal diameter of the retaining sleeve provided according to the invention may be more easily adapted to the external diameter of the

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drain pipe, so that the submerging tube which is independent in respect of its dimensions and may consequently be manufactured as a separate unit may be held under tension upon the outer periphery of the retaining sleeve.

In the drawing a single embodiment of the invention is shown in a sectional elevation by way of example.

To the lower portion of a lavatory basin is secured a drain pipe 12. A sleeve 14 fits around the lower end portion of the drain pipe to provide both a reliable air and watertight seal. The sleeve 14 is made of elastic material which is relatively hard, for instance, a relatively hard kind of rubber. It has to offer enough resistance to changes of shape. Mounted on the sleeve under tension are a trap housing 16 and a submerging tube 18. Both the trap housing and submerging tube are made of elastic material, such as rubber. It should, however, be noted that the material of the sleeve is of a more limited resiliency than the material of the trap housing and submerging tube. The trap housing is provided with a side-wardly extending tube 20 to discharge water.

The sleeve 14 which has a cupola-shaped roof 21 is provided with an exterior annularly receding shoulder 22, a groove 24, and locking ridge 26, this groove and locking ridge being likewise annularly shaped. The trap housing 16 is provided with an upper bead 28 and a lower bead 30, which two beads are spaced by a depression 32. The upper bead 28 fits flat against the shoulder 22 and is locked between this shoulder and the locking ridge 26. The locking ridge enters the depression 32. The submerging tube has a substantially S-shaped end portion which appears sandwiched in a zig-zagging fashion between the locking ridge 26 and the groove 24 of the sleeve 14, and the lower bead 30, the depression 32 and the upper bead 28 of the trap housing.

The shoulder 22, the groove 24, and the locking ridge 26 constitute interlocking means which are all integrally formed with the sleeve 14, and the beads 28 and 30 and the intervening depression 32 are interlocking means which are integrally formed with the trap housing 16. The trap housing is additionally provided with a bead 36 which bears from below against the portion 38 of the submerging tube, and helps increase the sealing effect of the interlocking means. It is the end portion of the side wall of the trap housing, that is interiorly shaped to form the interlocking means of the trap housing. The substantially S-shaped end portion 34 integrally formed with the submerging tube forms the interlocking means of the latter.

The interlocking means of the sleeve 14, on the one hand, and the interlocking means of the trap housing 16 and the submerging tube 18, on the other hand, complement each other and ensure a sealing engagement. According to the invention, both the trap housing and submerging tube may easily be removed from the sleeve, but the sleeve is firmly mounted on the drain pipe. On the other hand, any unintentional loosening of the submerging tube 18 from the sleeve 14 is obviated, due to the frictional engagement between the submerging tube and the sleeve, when both parts are made of rubber.

It will be seen that the trap housing and the submerging tube are secured to the sleeve in a spaced relationship. It will further be seen that the trap housing and submerging tube have the interlocking means on their upper end portions and that the rest of the side walls of the trap housing and submerging tube are spaced from each other.

It will be apparent that while I have shown and described my invention in a preferred form, many changes and modifications may be made without departing from the spirit of the invention defined in the appended claims,

I claim:

1. Trap for lavatories, sinks, and the like, the latter devices including a basin and a drain pipe, the trap comprising a sleeve shaped to tightly embrace at least a portion of the drain pipe, a trap housing, a submerging tube extending within the trap housing, the sleeve, trap housing, and submerging tube being of resilient material, the material of the sleeve being of a more limited resiliency than the material of the trap housing and submerging tube and interlocking means integrally formed with the sleeve, trap housing, and submerging tube, the interlocking means of the sleeve, and the interlocking means of said housing and tube, complementing and sealingly engaging each other, the trap housing and the submerging tube being secured to the sleeve in a spaced relationship, the interlocking means of the sleeve being constituted by exterior annularly extending groove means, the interlocking means of the trap housing being constituted by interior annularly extending bead means, the interlocking means of the submerging tube being constituted by a substantially S-shaped end portion, the S-shaped end portion, and the bead means being held under pressure in the groove means, the S-shaped end portion being sandwiched between the groove means and the bead means.

2. In the trap according to claim 1, the sleeve being formed with a cupola-shaped roof and, below the roof

and in the indicated succession, with an exterior annularly extending receding shoulder, a groove, and a locking ridge, the bead means of the trap housing being formed by an upper and a lower bead, the two beads being spaced by a depression, the upper bead fitting flat against said shoulder and being locked between the shoulder and the locking ridge, the locking ridge entering the depression, the S-shaped end portion zigzagging between the locking ridge and groove, on the one hand, and the lower bead, depression and upper bead, on the other hand.

3. In the trap according to claim 1, the trap housing having a side wall, the end portion of the side wall being interiorly shaped to form the interlocking means of the trap housing, the rest of the side wall being spaced from the submerging tube.

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