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(54) **DRAIN STRAINER FOR A DRAINPIPE**
ABFLUSSSIEB FÜR EINE ABLAUFLEITUNG
CRÉPINE POUR TUYAU DE VIDANGE

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Description

Technical field

[0001] The present invention relates to the field of surface drains useful for floor drains, kitchen and bathroom sinks, bathtubs, and showers.

[0002] In particular, the invention relates to a device for straining and accumulate material sloughed into wastewater such as hair while bathing.

State of the Art

[0003] Some patents are known in this field that shows drain strainers like for example US2285833 that discloses a disposable waste strainer which is perforated by holes to allow waste water to flow therethrough having a tab struck up from the body thereof and extending upwardly from its upper open edge to facilitate handling thereof.

[0004] US7150576 describes a drain strainer comprising a drain plate, a sleeve and a basket, coaxially mountable in a generally cylindrical drain pipe; the basket has a plurality of holes disposed circumferentially and the sleeve having an open bottom in such a way the drain water flow openings in the basket before traversing the flow openings and entering the drainpipe. Because of the relative disposition between the sleeve and the basket the drain also has the function of a syphon. This proposal doesn't allow the debris to be retained away from the accumulated water, due to the bottom of the sleeve is submerged in the water retained by the basket and the basket could contain water inside. This proposal is not easily removable and in other hand the disclosed embodiment does not include any element which gives a perfume during use.

[0005] Document KR20050095067A relates to a sewage pipe deodorizer and waste trap device comprising a coupling hole into which a sewer pipe is inserted and fixed, a locking protrusion formed on the coupling hole, and an accommodating space for accommodating water formed on the outer periphery of the locking protrusion. The device is fixed to the frame and inserted into the sewer pipe and has an open upper part, a fixing jaw formed on the upper rim to be fixed to the stopping jaw, and a sealing membrane formed on the lower side of the stopping jaw to be sealed with the stopping jaw.

[0006] Document FR1190383A discloses a siphon for sinks, office stamps and similar uses. The siphon comprises a siphon body in which is mounted a removable perforated basket for collecting debris, said basket, preferably in the form of a cylindrical container, is supported by its bottom or by its edge in an intermediate tubular part resting by a collar on the bottom of the sink and which screws into the body of the siphon, which is thus blocked against the bottom of the sink. The siphon body comprises a lateral water discharge orifice situated at a sufficient height above the bottom of the siphon body to provide

the desirable water seal.

[0007] Therefore, new drain strainers are needed.

Brief description of the invention

[0008] To that end the present invention proposes, according to one aspect, a drain strainer for a drain pipe of a bathtub or of a shower, that comprises a first waste accumulating container which has a tubular shape, this first waste accumulating container is open by the two ends (top and bottom parts) and comprises inside it in a transversal wall a first plane of holes, that is designed to filter or to strain and also to retain particles of collected waste material mainly hair debris.

[0009] This first plane of holes in the transversal wall has a plurality of small holes.

[0010] According to a preferred embodiment this first plane of holes consists of a sieve or a strainer very porous.

[0011] The drain strainer of the invention also comprises a second waste accumulating container that consist of a waste with tubular shape that has one end open and the other end closed, wherein this closed end defines a bottom, in such a way that the flow water could be retained in the bottom of the second waste accumulating container. The second waste accumulating container also comprises a plurality of holes through a side wall of the second waste accumulating container, the holes being defined at a distance of said bottom.

[0012] In the second waste accumulating container, the low row of the plurality of holes defines a maximum level of accumulating water inside said second waste accumulating container. That means that after a flow of water enters the drain strainer the water will be retained in the second waste accumulating container that is limited in height by the low row of the plurality of holes of the second waste accumulating container.

[0013] According to the invention the first waste accumulating container is nested and held by the second waste accumulating container and preferably includes a tab for hand removal. One of the characteristics of the drain strainer in one preferred embodiment is the fact of being easily removable and able to be disposable in particular by the materials used in its manufacture.

[0014] The first waste accumulating container is nested and held by the second waste accumulating container and according to the invention are coaxially located between them and within the drainpipe. The first waste accumulating container and the second waste accumulating container, according to the invention are held by a first annular sealing element and the second waste accumulating container are also held with the drain pipe by a second annular sealing element, and these first and second annular sealing element are deodorant impregnated. This first and second annular sealing element are in a first portion of the drain strainer above and distanced of the planes of holes of the first waste accumulating container.

[0015] The lower end of the first waste accumulating container define a lower tubular portion that is located below the maximum level of accumulating water and this arrangement define a syphon.

[0016] It will be understood that references to geometric position, such as parallel, perpendicular, tangent, etc. allow deviations up to $\pm 5^\circ$ from the theoretical position defined by this nomenclature.

[0017] It will also be understood that any range of values given may not be optimal in extreme values and may require adaptations of the invention to these extreme values are applicable, such adaptations being within reach of a skilled person.

[0018] Other features of the invention appear from the following detailed description of an embodiment.

Brief description of the Figures

[0019] The foregoing and other advantages and features will be more fully understood from the following detailed description of an embodiment of the drain strainer above explained with reference to the accompanying drawings, to be taken in an illustrative and non-limitative manner, in which:

Fig. 1 is a cross-section view of the drain strainer for a drainpipe OF THIS INVENTION.

Fig. 2 is a perspective view of the first waste accumulating container previously referred.

Fig. 3 is a perspective view of the second waste accumulating container.

Fig. 4 is a top view of the drain strainer.

Fig. 5 is a perspective view of the first and second annular sealing element.

Detailed description of an embodiment

[0020] Firstly, regarding Fig. 1 it shows a cross-section of the drain strainer for a drainpipe 6 that comprises a first waste accumulating container 1 nested a second waste accumulating container 2 and both nested and coaxially mounted in a drainpipe 6. The first and second waste accumulating container 1,2 and the drainpipe 6 are also in contact through a first and a second annular sealing elements 5,8 respectively. The first waste accumulating container 1 has a first plane of holes 3 in a transverse wall that defines a bottom inside the first waste accumulating container 1 (in a middle region thereof) and a tab 10 for hand removal located in the upper part of the first waste accumulating container 1 foldable to the inside and the lowest part of the first waste accumulating container 1 defines a lower tubular portion 9. The second waste accumulating container 2 has a second plurality of holes 4 through a side wall 7 that define a ring coaxial with the first and the second waste accumulating container 1,2.

[0021] Fig. 2 shows a perspective view of the first waste accumulating container 1 of Fig. 1 having a cylinder

shaped that comprises one tab 10 (for example pliable to the inside and deployable) for hand removal located in the top of the first waste accumulating container 1. Also show in the interior of the first waste accumulating container 1 is a first plane of holes 3 and below the first plane of holes 3 shows a tubular portion 9 that is open.

[0022] Fig. 3 shows a perspective view of the second waste accumulating container 2 having a tubular shape with an end closed, that comprises a second plurality of holes 4 through a side wall 7 coaxial with the first and the second waste accumulating container 1,2. The low part of the second plurality of holes 4 defines a maximum level of accumulating water (H) inside said second waste accumulating container 2.

[0023] Fig. 4 is a top view of the drain strainer including the referred first and second waste accumulating containers 1,2 of a tubular shape and having a coaxial arrangement. The top view also shows the first plane of holes 3 at the bottom of the first waste accumulating container 1, and a tab 10 for hand removal.

[0024] Fig. 5 is a perspective view of the first and second annular sealing elements 1,2 having a ring form and coaxially mounted between first and second waste accumulating containers 1, 2.

Claims

1. A drain strainer for a drainpipe (6) comprising a first waste accumulating container (1) of a tubular shape having a bottom with a first plurality of holes forming a first plane of holes (3), said first waste accumulating container (1) being nested in and held by a second waste accumulating container (2) which has a second plurality of holes (4) through a side wall (7) of the second waste accumulating container (2) surrounding said first waste accumulating container (1), wherein a lower end of said second plurality of holes (4) defines a maximum level of accumulating water (H) inside said second waste accumulating container (2), said first and second waste accumulating containers (1,2) being coaxial, wherein

said first waste accumulating container (1) has a lower tubular portion (9) located below said bottom;

an opening of said tubular portion (9) and a side wall of the tubular portion (9) define a syphon arrangement with regard to the side wall (7) having said second plurality of holes (4);

said first plane of holes (3) is located above said maximum level of accumulating water (H) so that any debris is retained on said bottom away from the accumulated water;

a first annular sealing element (5) is coaxially located between said first and second waste accumulating containers (1,2) and a second annular sealing element (8) is coaxially locatable be-

tween said second waste accumulating container (2) and said drain pipe (6); both first and second annular sealing element (5,8) are located in a first portion of the drain strainer above said first plane of holes (3); and said first and second annular sealing element (5,8) are deodorant impregnated.

2. The drain strainer for a drainpipe (6) according to claim 1, includes a tab (10) for removal fixed to said first waste accumulating container (1).
3. The drain strainer for a drainpipe (6) according to claim 1, wherein said second waste accumulating container (2) is coaxially mountable inside said drainpipe (6), wherein said drainpipe (6) is generally cylindrical.

Patentansprüche

1. Abflusssieb für eine Ablaufleitung (6), das einen ersten Abfallsammelbehälter (1) mit einer Röhrenform aufweist, der einen Boden mit einer ersten Vielzahl von Löchern aufweist, die eine erste Ebene von Löchern (3) bilden, wobei der erste Abfallsammelbehälter (1) in einen zweiten Abfallsammelbehälter (2) eingesetzt ist und von diesem gehalten wird, der eine zweite Vielzahl von Löchern (4) durch eine Seitenwand (7) des zweiten Abfallsammelbehälters (2) aufweist, die den ersten Abfallsammelbehälter (1) umgibt, wobei ein unteres Ende der zweiten Vielzahl von Löchern (4) einen maximalen Pegel an sich ansammelndem Speicherwasser (H) innerhalb des zweiten Abfallsammelbehälters (2) definiert, wobei der erste und der zweite Abfallsammelbehälter (1, 2) koaxial sind, wobei

der erste Abfallsammelbehälter (1) einen unteren rohrförmigen Abschnitt (9) aufweist, der sich unter dem Boden befindet; eine Öffnung des rohrförmigen Abschnitts (9) und eine Seitenwand des rohrförmigen Abschnitts (9) eine Siphonanordnung in Bezug auf die Seitenwand (7) definieren, die die zweite Vielzahl von Löchern (4) aufweist; die erste Ebene von Löchern (3) über dem maximalen Pegel des sich ansammelnden Wassers (H) angeordnet ist, so dass jeglicher Schmutz auf dem Boden weg von dem sich ansammelnden Wasser zurückgehalten wird; ein erstes ringförmiges Dichtungselement (5) koaxial zwischen dem ersten und dem zweiten Abfallsammelbehälter (1, 2) angeordnet ist und ein zweites ringförmiges Dichtungselement (8) koaxial zwischen dem zweiten Abfallsammelbehälter (2) und dem Abflussrohr (6) anordenbar ist; sowohl das erste als auch das zweite ringförmige

ge Dichtungselement (5, 8) in einem ersten Abschnitt des Abflusssiebs über der ersten Ebene der Löcher (3) angeordnet sind; und das erste und zweite ringförmige Dichtungselement (5, 8) mit Deodorant imprägniert sind.

2. Abflusssieb für eine Ablaufleitung (6) nach Anspruch 1, das eine Lasche (10) zum Entfernen beinhaltet, die an dem ersten Abfallsammelbehälter (1) befestigt ist.
3. Abflusssieb für eine Ablaufleitung (6) nach Anspruch 1, wobei der zweite Abfallsammelbehälter (2) koaxial innerhalb des Abflussrohrs (6) montierbar ist und wobei das Abflussrohr (6) im Allgemeinen zylindrisch ist.

Revendications

1. Crépine pour tuyau de vidange (6) comprenant un premier récipient d'accumulation de déchets (1) de forme tubulaire ayant un fond avec une première pluralité de trous formant un premier plan de trous (3), ledit premier récipient d'accumulation de déchets (1) étant emboîté dans et maintenu par un second récipient d'accumulation de déchets (2) qui a une seconde pluralité de trous (4) à travers une paroi latérale (7) du second récipient d'accumulation de déchets (2) entourant ledit premier récipient d'accumulation de déchets (1), dans laquelle une extrémité inférieure de ladite seconde pluralité de trous (4) définit un niveau maximum d'eau d'accumulation (H) à l'intérieur dudit second récipient d'accumulation de déchets (2), lesdits premier et second récipients d'accumulation de déchets (1, 2) étant coaxiaux, dans laquelle

ledit premier récipient d'accumulation de déchets (1) a une partie tubulaire inférieure (9) située sous ledit fond ; une ouverture de ladite partie tubulaire (9) et une paroi latérale de la partie tubulaire (9) définissent un agencement de siphon par rapport à la paroi latérale (7) ayant ladite seconde pluralité de trous (4) ; ledit premier plan de trous (3) est situé au-dessus dudit niveau maximum d'eau d'accumulation (H) de sorte que tout débris est retenu sur ledit fond à l'écart de l'eau accumulée ; un premier élément d'étanchéité annulaire (5) est situé coaxialement entre lesdits premier et second récipients d'accumulation de déchets (1, 2) et un second élément d'étanchéité annulaire (8) peut être situé coaxialement entre ledit second récipient d'accumulation de déchets (2) et ledit tuyau de vidange (6) ; les premier et second éléments d'étanchéité an-

nulaires (5, 8) sont situés dans une première partie de la crépine au-dessus dudit premier plan de trous (3) ; et
lesdits premier et second éléments d'étanchéité annulaires (5, 8) sont imprégnés de déodorant.

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2. Crépine pour tuyau de vidange (6) selon la revendication 1, qui comprend une languette (10) pour le retrait fixée audit premier récipient d'accumulation de déchets (1).

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3. Crépine pour tuyau de vidange (6) selon la revendication 1, dans laquelle ledit second récipient d'accumulation de déchets (2) peut être monté coaxialement à l'intérieur dudit tuyau de vidange (6), ledit tuyau de vidange (6) étant généralement cylindrique.

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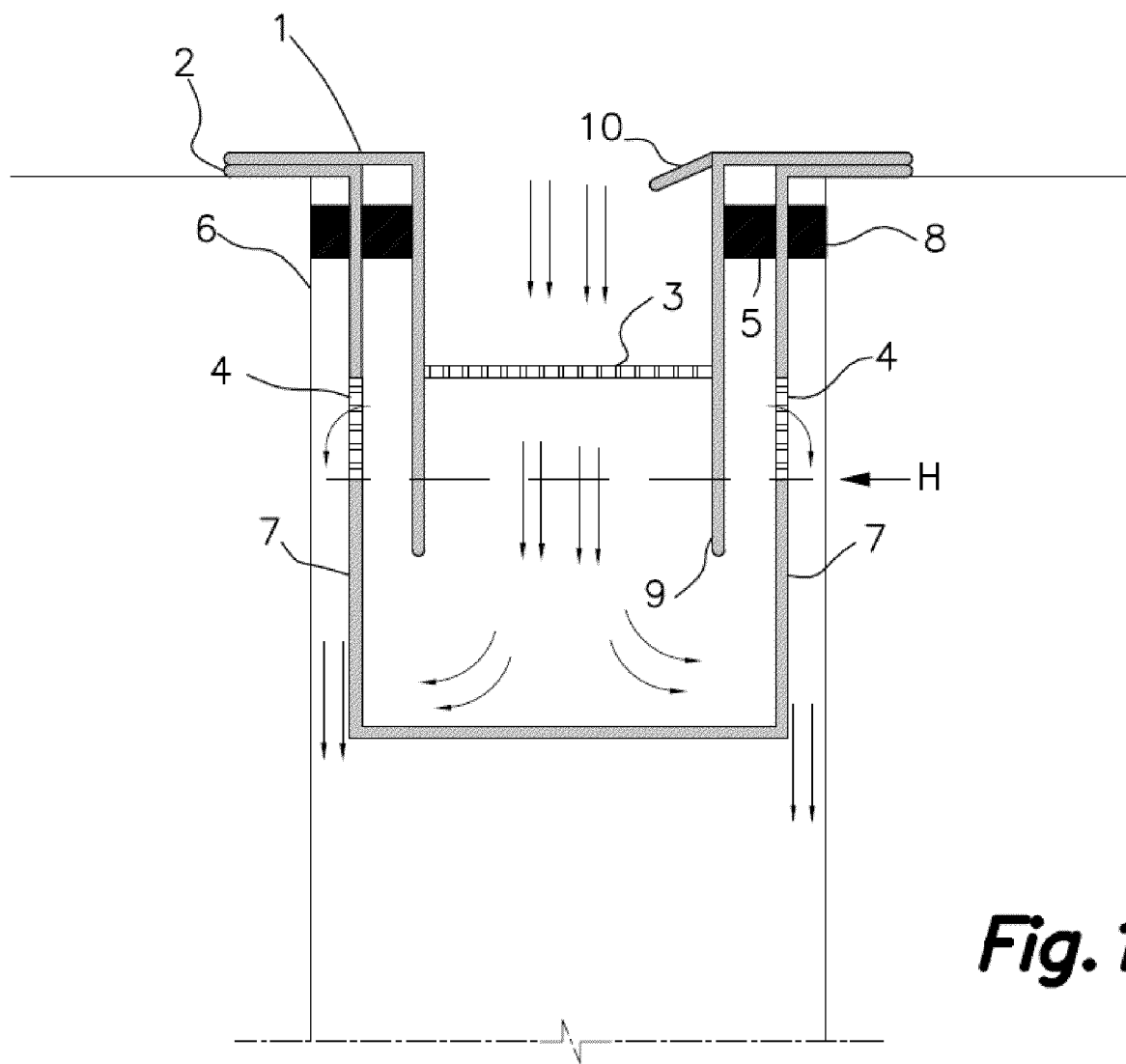


Fig. 1

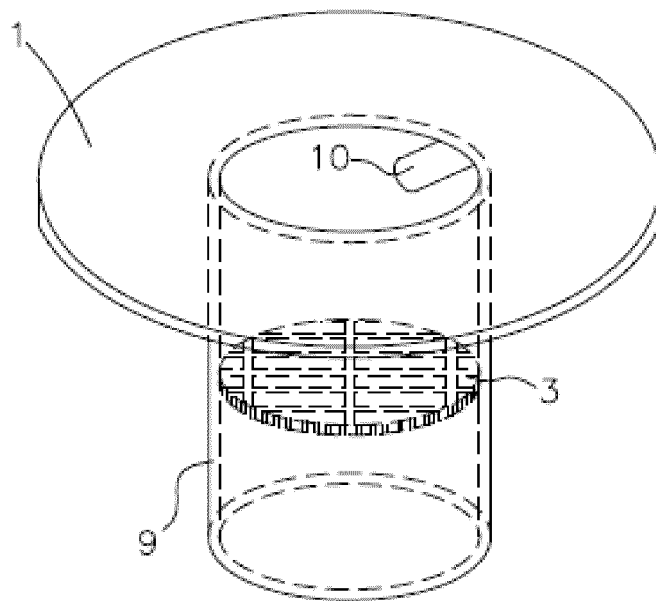


Fig. 2

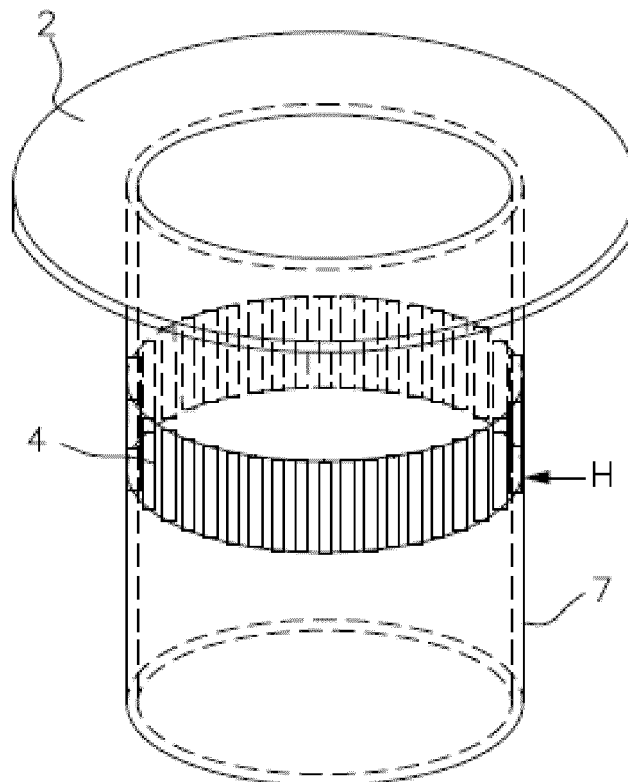


Fig. 3

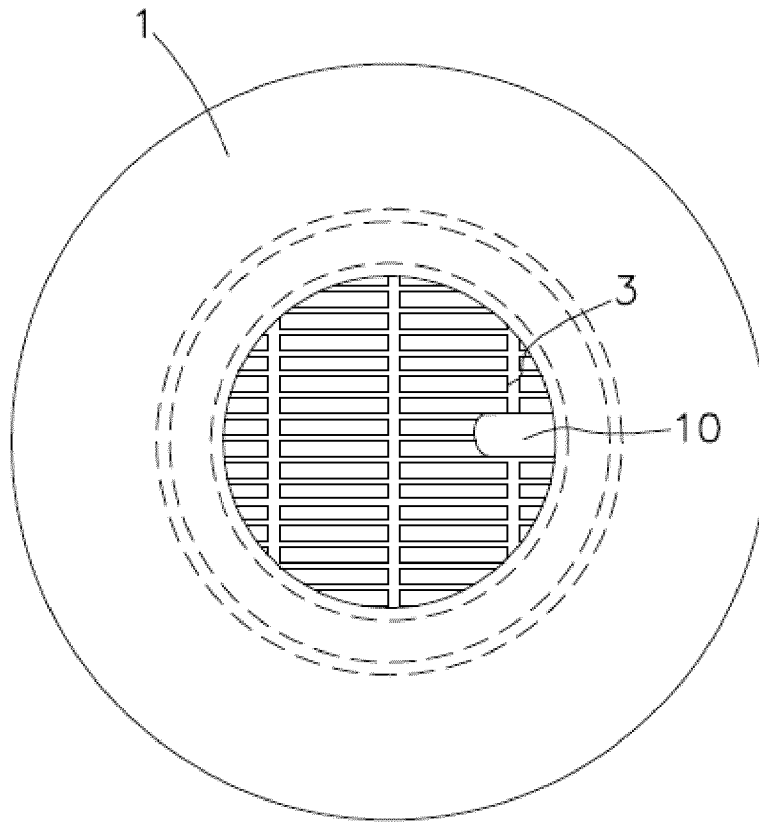


Fig. 4

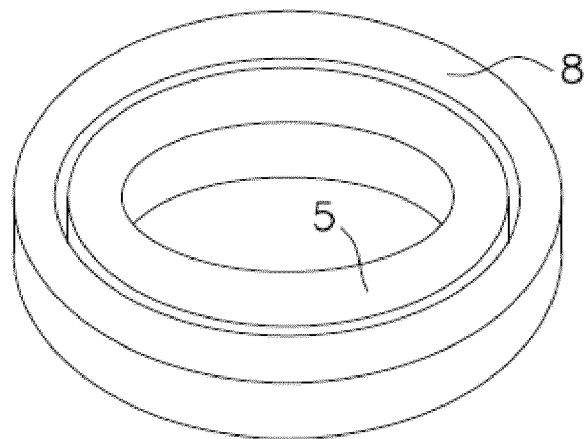


Fig. 5

REFERENCES CITED IN THE DESCRIPTION

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