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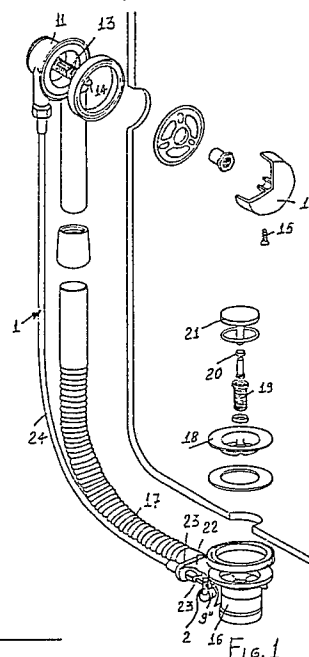
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54 **Driving assembly for bath tub discharging columns.**

57 The assembly is mounted in a symmetrical way at the two ends of the driving cable (1), applied on the outside of the discharging or draining column (17), respectively in the handle holding cap (11) and in the drain fitting (16) of the discharging column (17) and comprises means (7) for coupling the driving cable (1) and a pin member (2) the head (3) of which is threaded in a throughgoing threaded seat (8) formed in a pivot pin member (9) in a direction perpendicular to the axis thereof.



Description

DRIVING ASSEMBLY FOR BATH TUB DISCHARGING COLUMNS

BACKGROUND OF THE INVENTION

The present invention relates to a driving assembly for bath tub discharging columns or uprights.

There are presently known discharging columns or uprights for bath tubs, either of the conventional or of the seat type, including finished exposed portions that is chromed or metal treated portions.

These known bath tub discharging columns are affected by sealing and oxidation problems at the welded parts thereof.

In order to overcome this drawback plastics material discharging columns have been constructed which comprise metal inserts at the parts thereof subjected to higher stresses.

To that end there are presently used plastics materials having good resistance properties against acids and very high or low temperatures.

A further improvement consist of assembling the driving mechanism away from the water contact and using a stainless steel driving cable adapted to provide suitable sealing characteristics.

However, these improved types have been found to be affected by further drawbacks relating to the resistance properties of the metal parts against the mechanical and/or thermal stresses they are frequently subjected to.

SUMMARY OF THE INVENTION

Accordingly, the task of the present invention is to overcome the above mentioned drawbacks, by providing a driving assembly for bath tub discharging columns or uprights which is able of assuring very good sealing and resistance characteristics, even after a long time, against comparatively high thermal and mechanical stresses.

Within the scope of the above task, a main object of the present invention is to provide such a driving assembly for bath tubs discharging columns the component parts of which have a long duration.

Another object of the present invention is to provide a driving assembly for discharging columns of bath tubs, either of the conventional or of the seat type, which may be installed in a very simple and quick way.

According to one aspect of the present invention, the above mentioned task and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a driving assembly for bath tub discharging columns, characterized in that it is mounted in a symmetrical way at the two ends of the driving cable, applied on the outside of the discharging column, respectively in the handle holding cap and in the drain fitting of the discharging column.

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the present invention will become more apparent from the following detailed description of a preferred embodiment thereof, which is illustrated, by way of an indicative but not limitative example, in the figures of the accompanying drawings, where:

figure 1 is a perspective view, in exploded form, illustrating the general outline of the driving assembly according to the present invention;

figure 2 is a cross-sectional view illustrating the subject driving assembly mounted in the bath tub discharging column or upright, the drain plug being opened;

and

figures 3 and 4 show respectively two side views of the device for opening and closing the drain plug.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to the figures of the accompanying drawings, the driving assembly according to the present invention is mounted at one end of the driving cable 1 which is applied to a discharging or draining column or upright of conventional type for bath tubs either of the conventional or seat type, said column being made of a metal or special plastics material.

This assembly comprises means for affixing the driving cable 1 and a substantially cylindrical small pin member 2 having an outside threaded narrowed cross-section head 3

Said pin member 2 is also provided with a throughgoing hole 4, formed transversely of the axis, at the free end 5, adapted for housing an end 6 of the driving cable 1.

More specifically said driving cable may be adjustably locked by means of a dowels 7, having an inner thread and which can be threaded axially in the pin member 2, starting from the free end 5.

The head 3 of the pin member 2 can be threaded in a throughgoing threaded seat 8 which is perpendicularly directed with respect to the axis of a cylindrical pivot pin member 9.

In order to assemble the driving assembly according to the present invention, the pivot pin member 9 is hinged in a throughgoing sleeve 10, which is axially mounted in the cap 11 provided for holding the plastics material or metal handle 12.

The pivot pin member 9 has an extension cylindrical body 13 extending inside said cap 11.

The cylindrical body is in turn provided, along its side surface, in a parallel direction to the axis, with a circle segment shaped groove 14 therein an adjustable screw 15 engages for coupling the handle 12 which, in this manner, is keyed on the extension

13.

A member 9" is pivoted in the special plastics material fitting 16 of the discharging or draining column to the drain member 18 and is provided, at the bottom thereof, with a cylindrical metal small arm 27, which extends inside said fitting 16 to support the screw 19-nut 20 assembly of the plug 21 of the drain member 18.

As the pivot pin member 9 is rotated either in the clockwise or in the anticlockwise direction, through the suitably tensioned driving cable 1, the member 9" will cause the plug 21 to be displaced so as to open or close it.

The mentioned cable 1 coupling means comprise two bracket members 22 respectively fitted on the outside of the handle 12 containing cap 11 and on the fitting 16 coupling the discharging column or upright 17 to the drain 18.

Each bracket member is formed with a hole 23 which is aligned with a hole 24 formed in each pin 2, which are respectively installed on the pivot pin 9" and on the pivot pin 9.

Said coupling means also comprise a plastics material tubular element 24 the resilient ends 25 of which are cut so as to provide lead in tapered portions 26 which can be snap engaged in the mentioned holes 23.

Said tapered portions 26, upon engaging, may be recovered to their original extension so as to abut against the respective bracket member 22.

The driving cable, in particular, can be threaded through said tubular element 24 and the pulling stress on said driving cable 1 may be adjusted by screwing on said locking dowel 7 in the pin members 2.

From the above disclosure it should be apparent that the driving assembly according to the present invention fully achieves the intended task and objects.

While the invention has been disclosed with reference to a preferred embodiment thereof, it should be apparent that the disclosed embodiment is susceptible to several modifications and variations all of which will come within its scope and spirit, as defined in the accompanying claims.

Claims

1- A driving assembly for bath tub discharging columns, characterized in that it is mounted in a symmetrical way at the two ends of the driving cable, applied on the outside of the discharging or draining column, respectively in the handle holding cap and in the drain fitting of said discharging column.

2- A driving assembly according to the preceding claim, characterized in that it comprises means for coupling said driving cable and a pin member the head of which is threaded in a throughgoing threaded seat formed in a pivot pin member in a direction perpendicular to its axis.

3- A driving assembly according to one or more of the preceding claims, characterized in that said pivot pin, of substantially cylindrical shape, is provided with two rubber or plastics sealing ring arranged in respective grooves formed on the outer surface of said pivot pin.

4- A driving assembly, according to one or more of the preceding claims, characterized in that said cylindrical pivot pin has an outside threaded head and a throughgoing hole formed at its bottom transversely of its axis.

5- A driving assembly, according to one or more of the preceding claims, characterized in that said throughgoing hole of said pivot pin is adapted to house one end of said driving cable which may be locked in an adjustable way by means of a dowel to be axially threaded in said bottom threaded hole of said pivot pin.

6- A driving assembly, according to one or more of the preceding claims, characterized in that a pivot pin or hinging member is hinged in a throughgoing sleeve axially mounted in the handle holding cap and provided with an extension cylindrical body extending it inside said cap.

7- A driving assembly, according to one or more of the preceding claims, characterized in that said extension body is provided, along its side surface, with a circle segment cross-section groove therein an adjustable screw is engaged for coupling said handle in a keyed way on said extension.

8- A driving assembly, according to one or more of the preceding claims, characterized in that a further pivot pin member is hinged in the fitting coupling said discharging column to the drain member, said further pivot pin member being provided, at the bottom thereof, with a cylindrical arm member extending inside said fitting so as to support the screw-nut-plug assembly of said drain member.

9- A driving device, according to one or more of the preceding claims, characterized in that it is so designed and arranged that, as the pivot pin member rigid with said handle is rotated either in the clockwise or in the anticlockwise direction, by means of said driving cable, the further pivot pin member causes the drain plug to be displaced.

10- A driving assembly, according to one or more of the preceding claims, characterized in that said coupling means comprise two bracket members, respectively fitted on said handle holding cap and on said drain fitting, each said bracket member being formed with a hole aligned with a respective hole of said pins mounted on the corresponding pivot pin member.

11- A driving assembly, according to one or more of the preceding claims, characterized in that said coupling means comprise a tubular plastics material member the ends of which are cut so as to define lead in tapered portions to be snap engaged in said holes of said bracket members.

12- A driving assembly according to one or more of the preceding claims, characterized in that said driving cable is adapted to be threaded in said tubular member, the pulling force on said driving cable being adjustable by means of said dowel.

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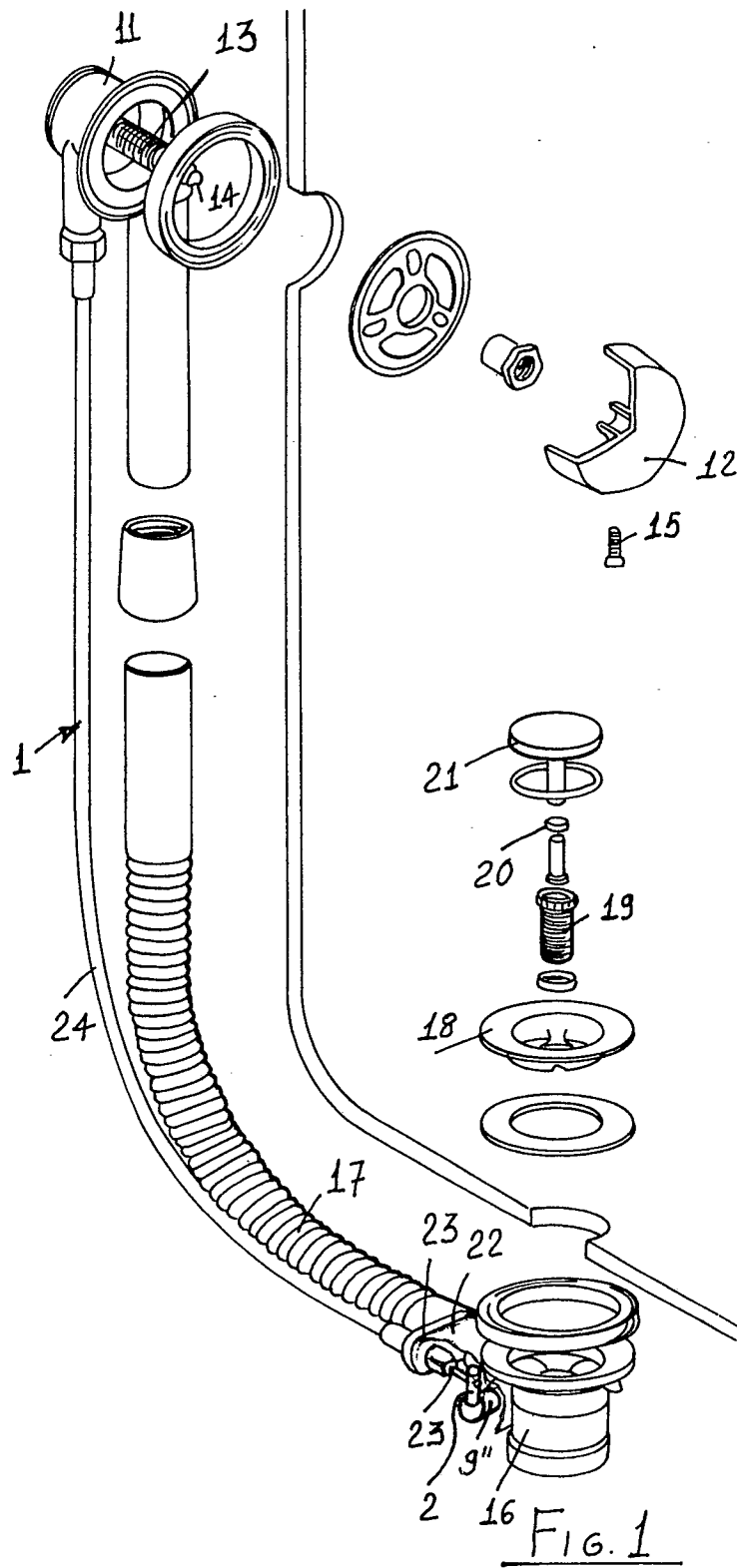
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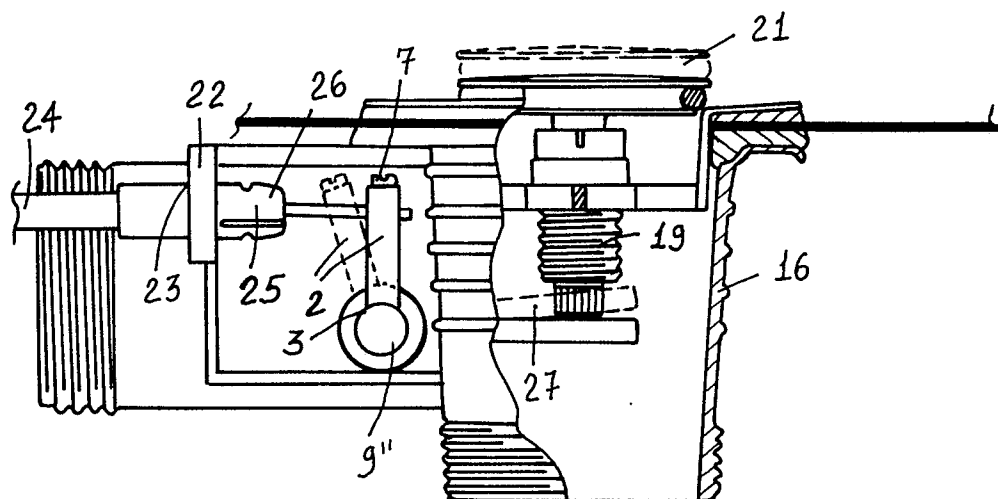


FIG. 2

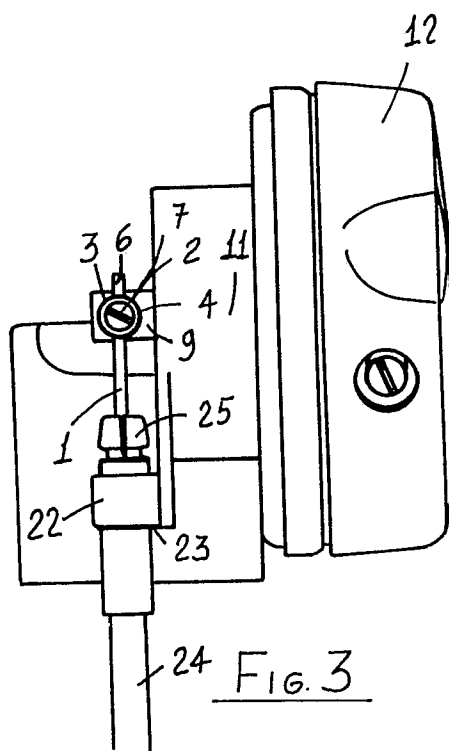


FIG. 3

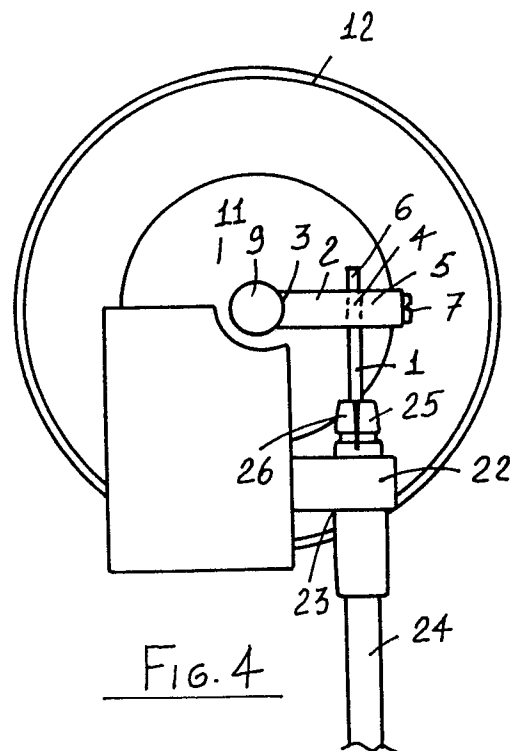


FIG. 4



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
X	US-A-4 594 738 (GEBERT) * Whole document *	1,2,6-9	E 03 C 1/232
Y	---	3-5,10,12	
Y	GB-A-2 184 011 (EDWARDS) * Page 1, lines 69-79 *	3,4,10	
Y	---		
Y	FR-A-2 502 211 (DALPHINET) * Whole document *	5,12	
A	---		
	GB-A- 830 734 (GROHE) -----	6-9	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			E 03 C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 16-03-1989	Examiner HANNAART J. P.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			