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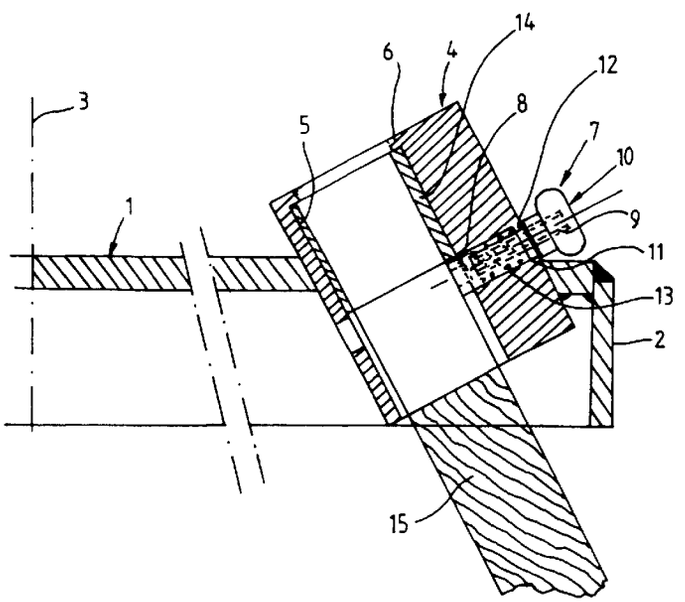
(54) Brush suitable for mounting on a sweeping machine

(57) Brush suitable for mounting on a sweeping machine, said brush comprising a disc (1) being in a horizontal plane when in use and being provided with a number of receiving bushes (4) distributed across its circumference, enclosing an angle with the plane of the disc. A sleeve (14) being clamped onto a sweeping member in the form of a steel cable (15) or strips (17), which is slidable into each receiving bush (4). Each receiving bush (4) is provided with a collar (6) against which the sleeve (14) will abut when it slides into the receiving bush (4), so that the sleeve (14) is prevented from being pushed out of the receiving bush (4). At a distance from the collar (6), the receiving bush (4) has a stop member (7) protruding inwards under spring force, and retaining the sleeve (14) in the receiving bush. The receiving bush (4) and the sleeve (14) can have a square cross-section.

FIG. 1



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Description

The invention relates to a brush suitable for mounting on a sweeping machine, said brush comprising a disc being in a substantially horizontal plane when in use and being provided with a number of receiving bushes distributed across its circumference, the axis of which enclosing an angle with the plane of the disc, and a sleeve being clamped onto the end of a sweeping member that can be in the form of a wire bundle, such as a length of steel cable, a number of strips or the like, which is slidable into each receiving bush.

With the known brush, the sleeve clamped onto the sweeping member has its free end provided with a collar. The sweeping member protruding from the other end of the sleeve is slid over the receiving bush so that the collar will come to bear on the disc or on the bush. Then, a segment of an annular piece of plate is placed on the collars of a number of sleeves, said plate being secured to the disc by bolts, so that when using the brush, the sleeves can not be pushed upwards and out of the bushes.

After the sweeping members have worn out, these must be replaced. This takes place by pressing the sweeping members from the bushes with their sleeves turned up after having removed the retaining segments. After that, new sweeping members can be slid through the receiving bushes until the collars of the sleeves are resting on the receiving bushes or the disc, whereupon the retaining segments are mounted again.

Practice has shown that this replacement of the sweeping member is rather time-consuming. Not only is it necessary to detach the retaining segments and mount them again afterwards, but the greatest difficulty lies in the fact that, by the use of the brush, the wires or strips of a sweeping member have been bent outwardly in relation to the axis of the sweeping member, and have been beaten apart. Owing to that, it is not possible to draw a sweeping member through the receiving bush just like that. In some circumstances, it is even necessary to cut away a sweeping member from beneath the receiving bush in order to be able to remove the sweeping member. It is obvious that this can only be done in the workshop and not during work in the street.

The object of the invention is to remove this difficulty and to that end provides for that each receiving bush is provided with a collar against which the sleeve will abut when, starting with its free end, it is slid into the receiving bush in such a way, that the collar prevents the sleeve from being pushed out of the receiving bush during use of the brush, and that at a distance from the collar, the receiving bush is provided with a stop member protruding into the receiving bush, which, on sliding of the sleeve into the receiving bush, can be brought out of the path of the sleeve and after that provides for retaining the sleeve into the receiving bush.

Thus, after mounting a new sweeping member, its sleeve is retained between the collar and the stop member. On replacing the sweeping member it is not necessary to draw the entire worn sweeping member through the receiving bush. Only the stop member need be brought outside the path of the sleeve so that the sleeve can be pushed down from the receiving bush. After that, the sleeve of a new sweeping member can be slid into a receiving bush from the bottom.

Preferably, the stop member will be in the form of a pin, which by means of a spring is pushed to that position, in which a part of it protrudes into the receiving bush and said pin at the outside of the receiving bush having been provided with means for pulling it out across a certain distance.

Since a certain thickness of the material is required for receiving the pin in the receiving bush, it will preferably be provided for, that the bore in the bush in which a sleeve provided with a sweeping member can be received, is mounted eccentrically in the receiving bush and that the resilient pin, being part of the stop member for the sleeve, is situated in the thickest part of the receiving bush.

Thus, on account of this, the amount of material required for a receiving bush is reduced and due to that the weight of the complete brush as well.

If the sweeping member is in the form of a length of steel cable, it can be provided for, that the part of the resilient pin protruding into the receiving bush is situated beneath the lower edge of a sleeve slid into the receiving bush.

If, however, a sweeping member is in the form of strips, the sleeve to which these strips are connected will be provided with two bores being almost at square angles to each other, both being suitable for receiving the resilient pin.

Due to this, it is achieved that such a sweeping member can be mounted in the receiving bush in two different positions, in such a way that its strips can perform a cutting or a sweeping action.

Practice has shown, that in use on the sweeping members, considerable rotational forces can be exerted. These forces will also work on the stop members, which, comparatively speaking, can have only small dimensions. Therefore, according to the invention it is provided for, that the bore in a receiving bush has a substantially square cross-section and that the outer circumference of the sleeve being clamped on the sweeping member, has a shape adapted to this cross-section.

Now, the stop member need only hold the sleeve in vertical direction in the receiving bush and will therefore hardly be loaded. Damage to the stop member, as a consequence of which it might be difficult to pull it from the sleeve, will thereby be prevented.

Further, it can be provided for, that the stop member is mounted above the disc and behind an edge extending upwards from the disc.

This will also counteract damage to the stop member.

The invention is further explained by way of embod-

iments illustrated in the drawing, in which:

Fig. 1 shows a part of a brush, partly in cross-section and partly in view, the sweeping member being represented by a length of steel cable;

Figs. 2 and 3 each show a view and a partial cross-section corresponding to Fig. 1, but in which the sweeping member is represented by steel strips being placed in two different positions;

Fig. 4 shows a cross-section substantially corresponding to Fig. 1; and

Fig. 5 shows a plan view of a part of Fig. 4.

The brush comprises a disc 1 provided with an edge 2 protruding downwards. Near the axis 3 of the disc, it is provided with means not further indicated for securing the disc to the motor-driven shaft of a sweeping machine.

A number of receiving bushes 4 have been mounted in the disc 1, distributed across its circumference. Each receiving bush 4 has an eccentrically mounted bore 5 with a collar 6 near one end of it. At a distance from the collar 6 there is the stop member 7, consisting of a pin 8 in the shape of a screw being screwed into the threaded bore 9 of the knob 10. The pin 8 is situated in a bore 11 in the receiving bush 4, said bore 11 being provided with a collar 12 near the outer end. Between the collar 12 and the head of the pin 8, a compression spring 13 is mounted, which pushes the pin 8 into the bore 5. In order to enable rotation of the screw 8 in the knob 10, the bore 11 continues into the opposite wall of the bore 5.

Between the collar 6 and the stop member 7, the sleeve 14 can be situated in the bore 5 of the receiving bush 4, said sleeve being clamped onto a wire bundle 15 in the form of a length of steel cable, according to the embodiment of Fig. 1.

When the sleeve 14 must be removed from the receiving bush 4 because the wire bundle 15 connected to the sleeve is worn out, by means of pulling the knob 10 outwards, the head of the pin 8 can be moved slightly outwards so that the sleeve 14 can be pulled out of the receiving bush 4. On applying a new wire bundle, the pin is again pulled out in the same way.

With the embodiment according to the Figs. 2 and 3, the sleeve 14 is connected to a sweeping member 16 in the form of strips 17 made of steel, for example. These strips 17 can be slid into a rectangular length of pipe 18 which was subsequently bent as appears in particular from Fig. 2. After that, the pipe 18 was secured to the sleeve 14. The sleeve 14 ow extends past the pin 8 and the sleeve 14 has two bores 19 being at square angles to each other. Owing to this, the strips 17 can take up the position as shown in Fig. 2, or the position as shown in Fig. 3.

In the case shown in Fig. 2, the strips 17 will perform a more cutting action, and with the position shown in Fig. 3 a more sweeping action.

In the drawing, the receiving bush 4 is mounted in the disc 1 under an oblique angle. In general, this will be preferred, since with such an oblique position of the wire bundles 15 or the strips 17, grass and other vegetation can be removed from between the paving bricks and the like in the best way. However, a more square position of the receiving bushes 4 can be applied as well.

The Figures 4 and 5 show an embodiment in which the bore 5 in the receiving bush 4 has an approximately square cross-section. Due to this, rotation of the sleeve 14 in the receiving bush 4 is counteracted, so that almost no forces will be exerted upon the stop member 7.

The knob 10 of the stop member 7 can be protected against damage by providing the edge 2 of the disc 1 with a part 20 protruding upwards.

It will be obvious, that only some possible embodiments of a device according to the invention have been illustrated in the drawing and described above and that many modifications can be made without leaving the inventive idea.

Thus, the stop member 7 can also be designed in another way, so that e.g. on sliding a sleeve 14 into the bore 5, it will be pushed away automatically, and subsequently will snap in again.

Claims

1. Brush suitable for mounting on a sweeping machine, said brush comprising a disc (1) being in a substantially horizontal plane when in use and being provided with a number of receiving bushes (4) distributed across its circumference, the axis of which enclosing an angle with the plane of the disc, and a sleeve (14) being clamped onto the end of a sweeping member that can be in the form of a wire bundle (15), such as a length of steel cable, a number of strips (17) or the like, which is slidable into each receiving bush (4), characterized in that each receiving bush (4) is provided with a collar (6) against which the sleeve (14) will abut when, starting with its free end, it is slid into the receiving bush (4) in such a way, that the collar (6) prevents the sleeve (14) from being pushed out of the receiving bush (4) during use of the brush, and that at a distance from the collar (6), the receiving bush (4) is provided with a stop member (7) protruding into the receiving bush, which, on sliding the sleeve (14) into the receiving bush (4), can be brought out of the path of the sleeve (14) and after that provides for retaining the sleeve (14) in the receiving bush (14).

2. Brush according to claim 1, characterized in that the stop member (7) is a pin (8), which by means of a spring (13) is pushed to that position, in which a part of it protrudes into the receiving bush (4) and said

pin at the outside of the receiving bush being provided with means (10) for pulling it out across a certain distance.

3. Brush according to claim 2, characterized in that the bore (5) in the receiving bush (4) in which a sleeve (14) provided with a sweeping member (15, 16) can be received, is mounted eccentrically in the receiving bush (4) and that the resilient pin (8), being part of the stop member (7) for the sleeve (14), is situated in the thickest part of the receiving bush (4).

4. Brush according to one of the preceding claims, characterized in that the part of the resilient pin (8) protruding into the receiving bush (4) is situated beneath the lower edge of a sleeve (14) slid into the receiving bush (4).

5. Brush according to one of the claims 1 - 3, characterized in that with a sweeping member (16) in the form of strips (17), the sleeve (14) to which these strips are connected is provided with two bores (19) being almost at square angles to each other, both being suitable for receiving the resilient pin (8).

6. Brush according to claim 4, characterized in that the bore (5) in a receiving bush (4) has a substantially square cross-section and that the outer circumference of the sleeve (14) being clamped on the sweeping member (15, 16, 17), has a shape adapted to this cross-section.

7. Brush according to one of the preceding claims, characterized in that the stop member (7) is mounted above the disc (1) and behind an edge (20) extending upwards from the disc.

8. Brushing member for application with a brush as described in one or more of the preceding claims.

FIG. 1

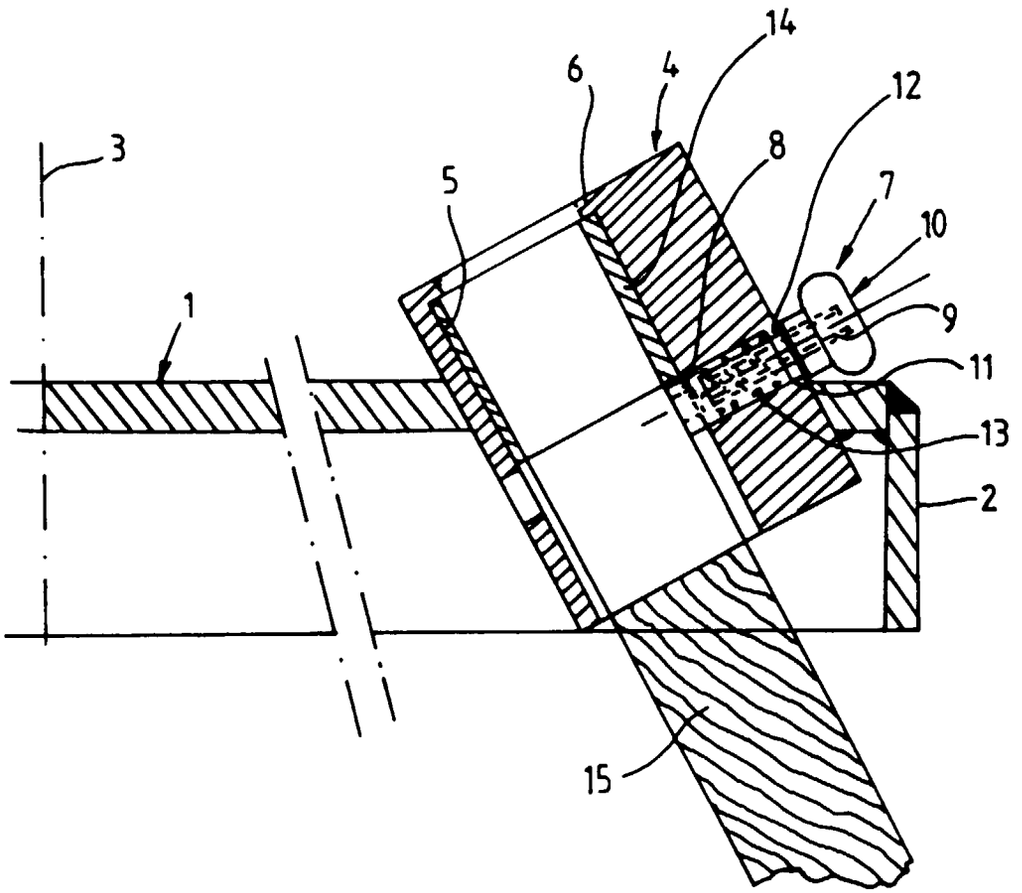

FIG. 2

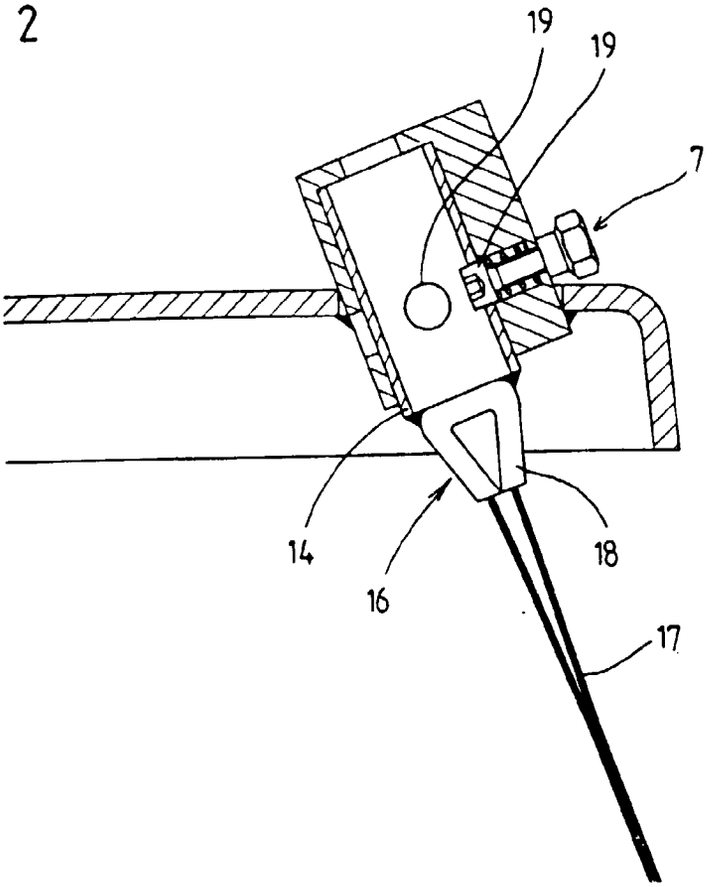

FIG. 3

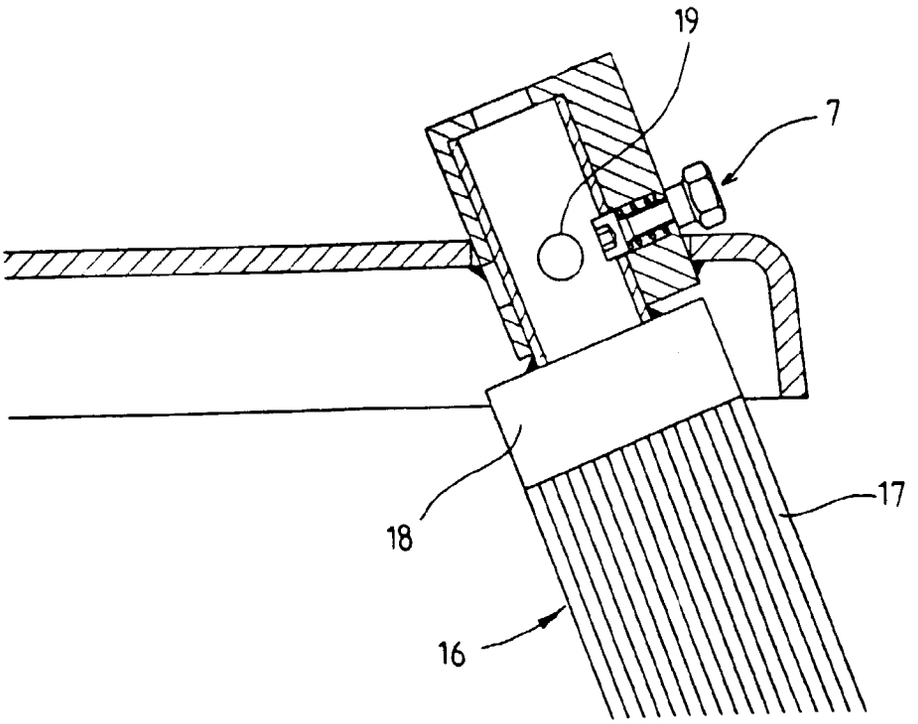

FIG. 5

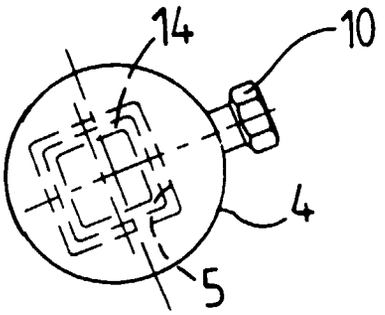

FIG. 4