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(54) **Adjustment screw for pop-up underground sprinkler nozzle**

(57) An adjustment screw (1) for pop-up underground sprinkler nozzle, comprises a head (2) and a threaded shank (3). On the top of the head (2) and at the opposite end of the threaded shank (3) there are provided axially lined up cavities (4, 5) that are engageable with a same setscrew wrench for the fixing and, respectively, the adjustment of the screw inside the nozzle (7).

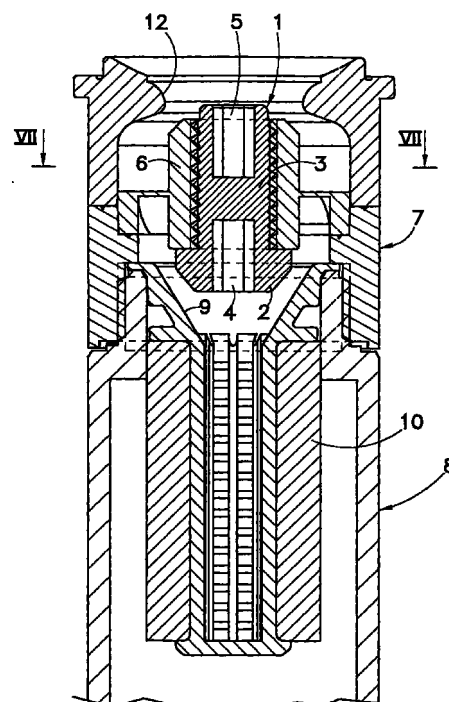


FIG.5

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Description

[0001] The present invention concerns an adjustment screw for nozzle of pop-up underground sprinkler.

[0002] As known, underground sprinklers or pop-up sprinklers deliver water at a nozzle that is fixed to the mobile part of the sprinkler at the outlet of the usual terminal filter of the same and is therefore subjected to the characteristic up and down movement of sprinklers of that type.

[0003] The length of the spray of output water jet depends on the axial position of an adjustment screw that is arranged along the vertical axis of the nozzle in front of the outlet of the filter and is accessible from its outside.

[0004] Normally the aforesaid adjustment screw has a cross slotted head or socket screw head at its internal end for its fixing to the nozzle and a slot for screwdriver for its adjustment from the outside at the end of the threading.

[0005] The slot for screwdriver makes currently available adjustment screws very fragile and in addition makes necessary the use of an adjustment tool different from the one for its fixing.

[0006] Object of the present invention has been to realise an adjustment screw for nozzle for pop-up underground sprinkler that has suitable properties of strength and that allows the use of a single tool for its fixing to the head and for its adjustment in service.

[0007] According to the invention such object has been reached with an adjustment screw comprising a head and a threaded shank that are provided with respective first and second engagement means for operating tools for the fixing and, respectively, the adjustment of the screw, characterized in that said first and second engagement means are made up of cavities for setscrew wrench engageable with the same operating tool.

[0008] In this way the adjustment screw according to the invention, realisable of stainless steel or other suitable material, is capable to resist the strains to which it is subject and at the same time it requires a single setscrew wrench for its assembly-disassembly and its adjustment.

[0009] The characteristics of the present invention will be made even more evident by the following detailed description of an embodiment thereof that is illustrated as a non limiting example in the enclosed drawings in which:

Figure 1 shows an adjustment screw according to the invention in axial section;

Figure 2 shows the same screw in a side view;

Figure 3 shows the same screw in top plan with reference to Figure 1;

Figure 4 shows the same screw in bottom plan with reference to Figure 1;

Figure 5 shows in axial section according to line V-

V in Figure 6 a nozzle for underground pop-up sprinkler that uses an adjustment screw according to the present invention;

Figure 6 shows the aforesaid nozzle in top plan with reference to Figure 5;

Figure 7 shows the same nozzle in cross section according to line VII-VII in Figure 5.

[0010] The adjustment screw illustrated in Figures 1-4, where it is indicated by the numerical reference 1 as a whole, is made up of a head 2 and of a threaded shank 3, both of metal, preferably of stainless steel.

[0011] On the top of the head 2 a central cavity 4 with hexagonal section (fig. 3) is made that is suitable to receive a setscrew wrench for the fixing of the screw 1 to the nozzle of an underground pop-up sprinkler.

[0012] At the opposite end of the threaded shank 3 there is also made an hexagonal cavity 5 (fig. 4) that is axially lined up with the cavity 4 and is suitable to receive a setscrew wrench for the adjustment of the screw 1 on the nozzle of the sprinkler and the consequent adjustment of the length of the spray of water that is delivered by the same nozzle.

[0013] The two cavities 4 and 5 have identical shape and identical dimensions, so that they can receive an identical setscrew wrench.

[0014] Figures 5, 6 and 7 show an adjustment screw 1 as the one in Figures 1-4 as screwed in an axial threaded hole of a central body 6 of a spray nozzle 7 provided with output holes 11 and with an output mouth 12, that is fixed to the upper end of the mobile part 8 of a pop-up underground sprinkler.

[0015] As it can be observed from Figure 5, the assembly is such that the head 2 of the adjustment screw 1, with his fixing cavity 4, is located inside the sprinkler and extends into the output cone 9 of the filter 10 of the same sprinkler, while the adjustment cavity 5 is accessible from the outside.

[0016] By inserting a setscrew wrench in the adjustment cavity 5 it is therefore possible to adjust the degree of insertion of the head 2 of the adjustment screw 1 in the output cone of the filter of the sprinkler and therefore the length of the spray of water output by the nozzle 7.

Claims

1. Adjustment screw (1) for pop-up underground sprinkler nozzle, comprising a head (2) and a threaded shank (3) provided with respective first and second engagement means (4, 5) for operating tools for the fixing and, respectively, the adjustment of the screw, characterized in that said first and second engagement means (4, 5) consist of cavities for setscrew wrench that are engageable with the same operating tool.
2. Adjustment screw according to claim 1, characterized in that said cavities (4, 5) have identical shape

and identical dimensions.

3. Adjustment screw according to claim 1 or 2, characterized in that said cavities (4, 5) are axially lined up on the top of the head (2) and at the opposite end of the threaded shank (3). 5
4. Adjustment screw according to any one of claims 1, 2 or 3, characterized in that it is made of stainless steel. 10

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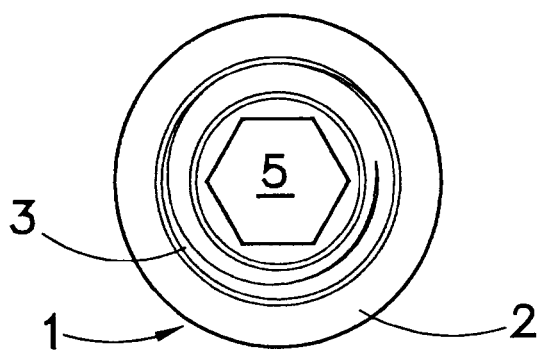


FIG. 4

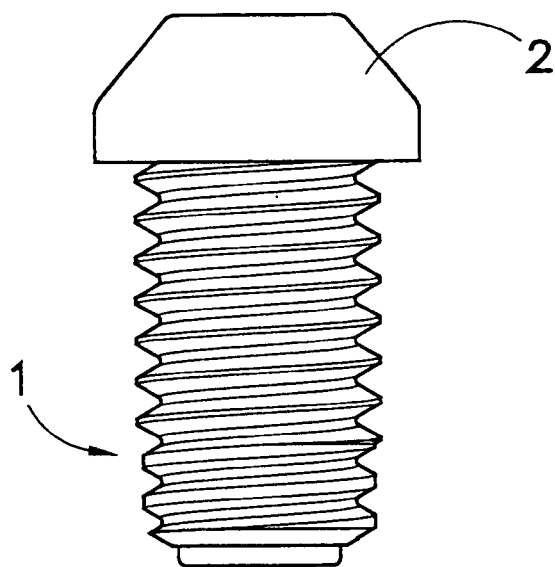


FIG. 2

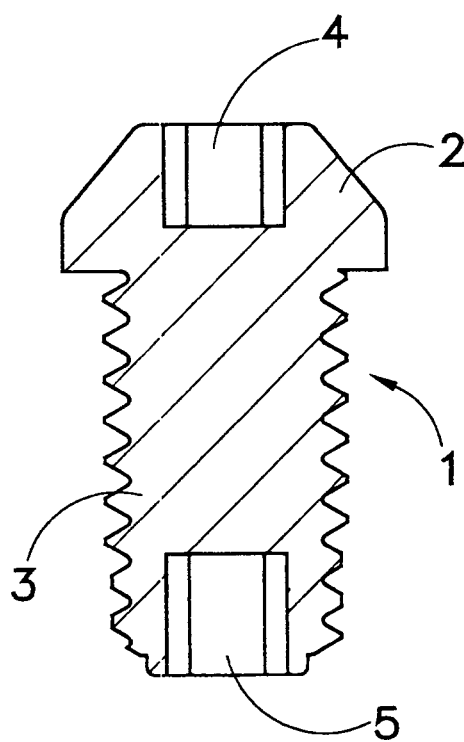


FIG. 1

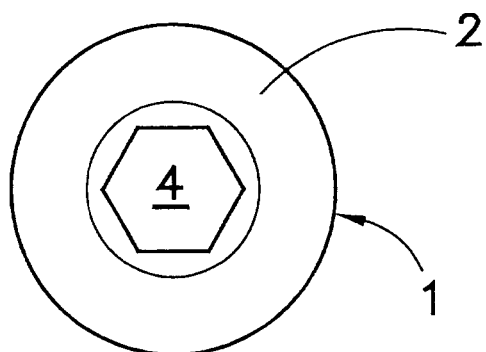


FIG. 3

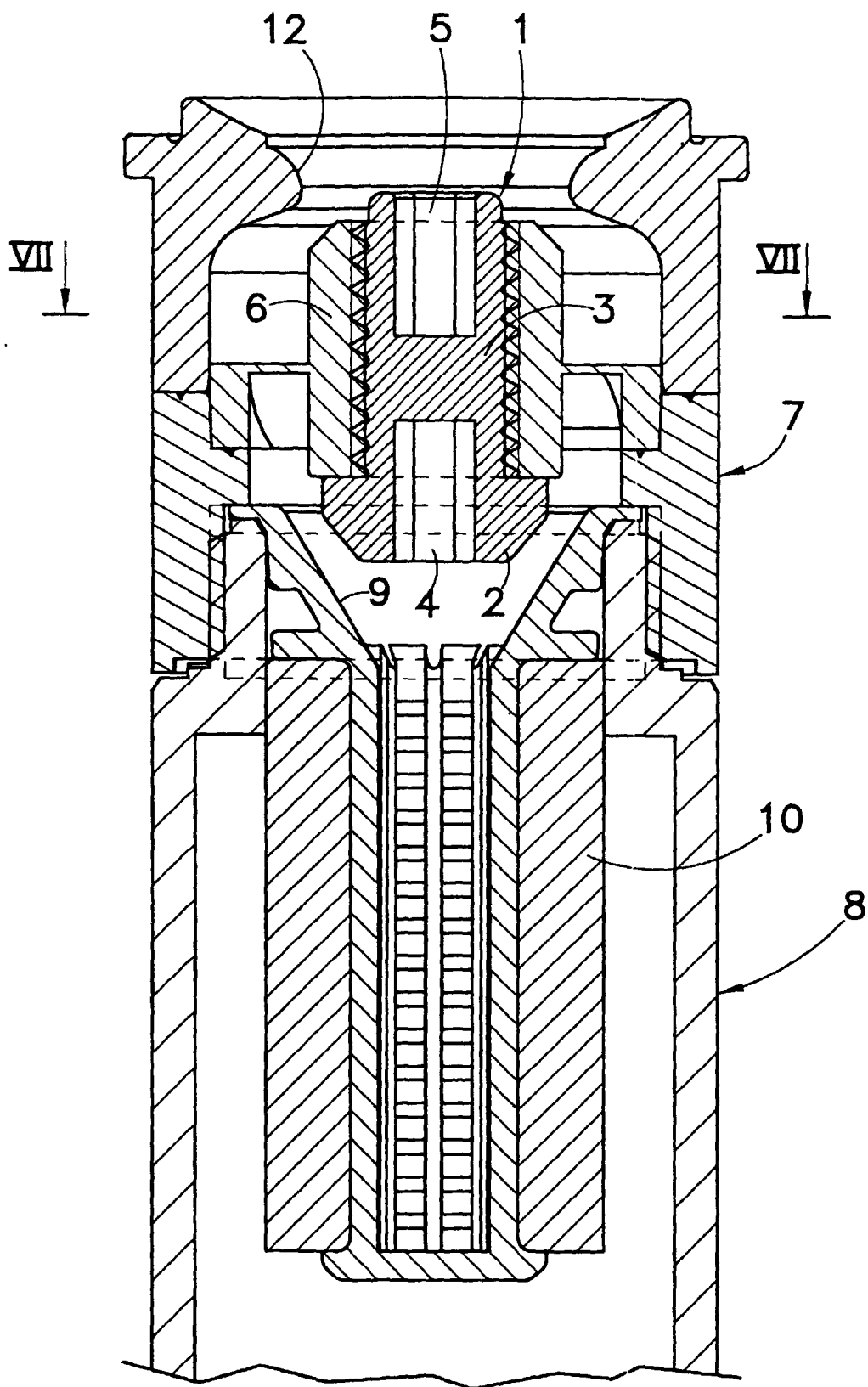


FIG.5

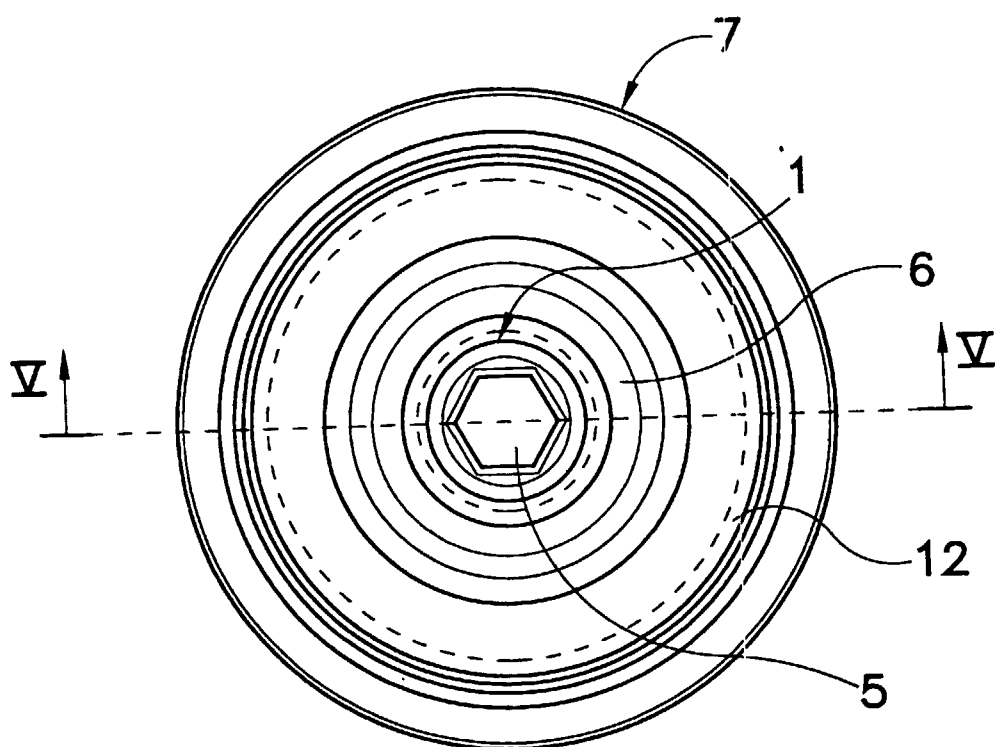


FIG. 6

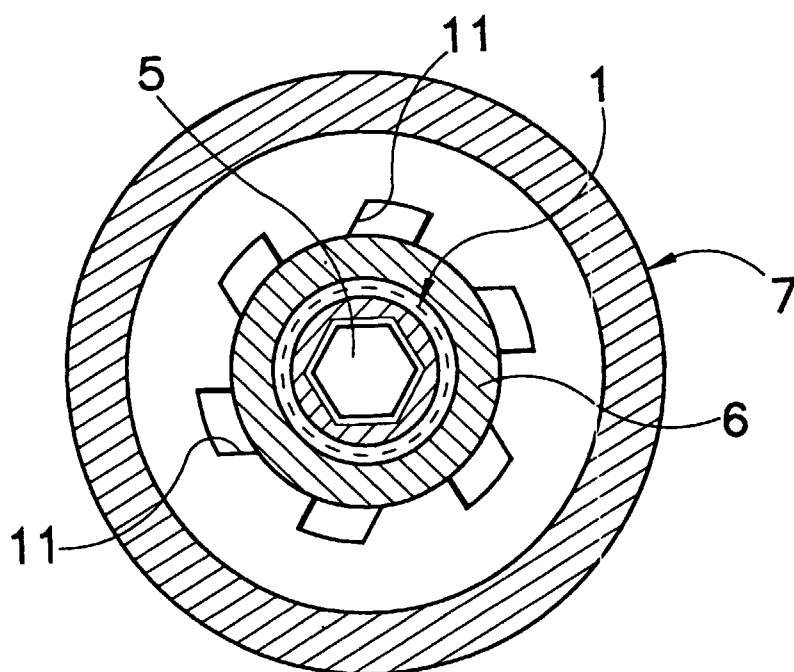


FIG. 7