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(54) Shower head provided with means for adjusting the ejected water spray.

(57) There is disclosed a shower head provided with means for adjusting the ejected water spray, comprising a handle body, which can be coupled to a water system, and including a delivery head, selecting means arranged inside this body, in order to selectively provide a regular rain water jet and an intermittent-pulse strong and massaging water jet, the shower head further comprising a driving element for controlling the selecting means, and including a push-button element which can be accessed from a side of the water delivery head.

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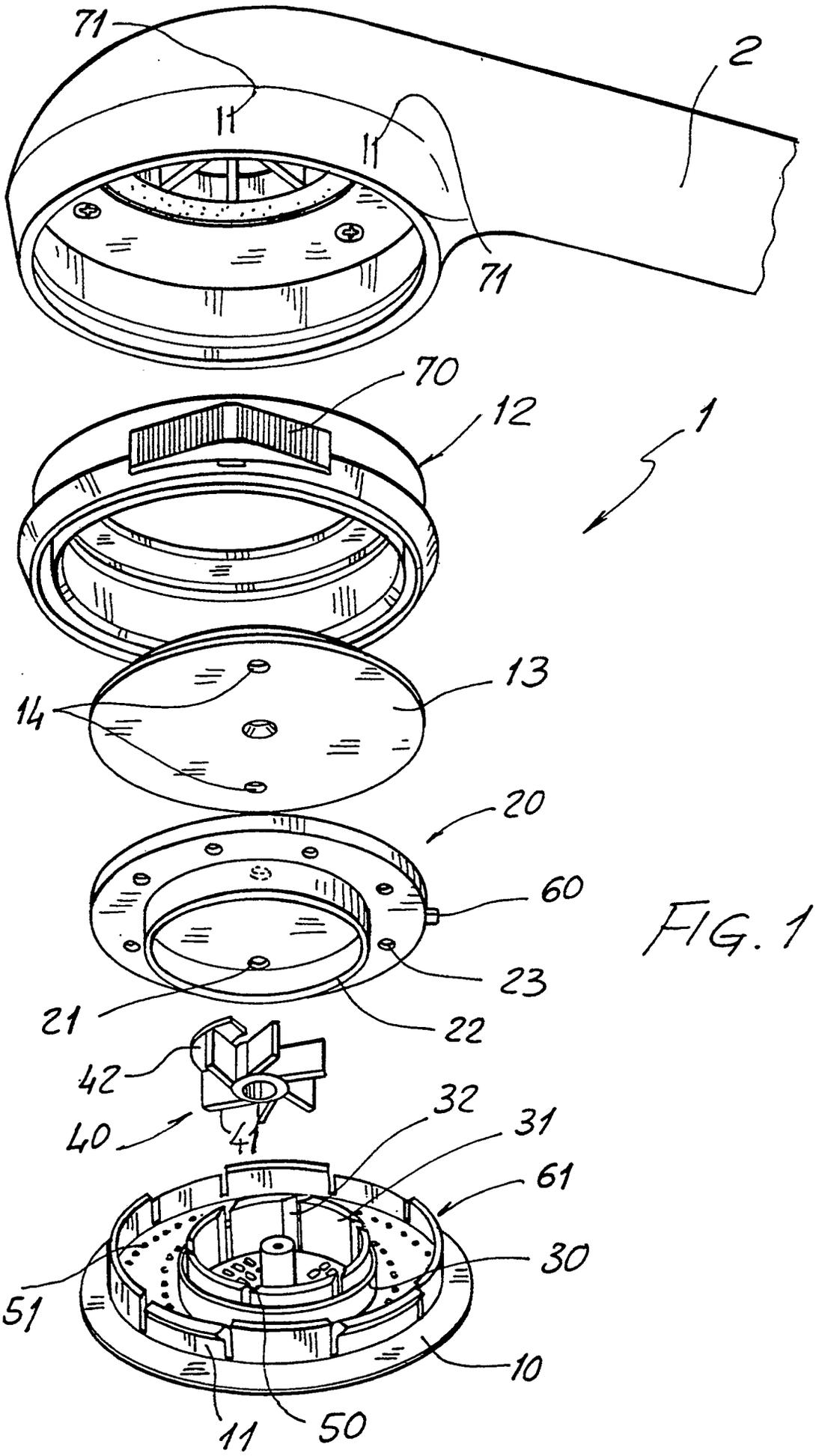
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FIG. 1

BACKGROUND OF THE INVENTION

The present invention relates to a shower head provided with means for adjusting the ejected water spray.

There are already known shower heads, of the so-called phone or wall type, the water jet of which can be adjusted.

More specifically, among these prior shower heads, there are broadly diffused shower head assemblies which, in addition to a regular rain jet, are also adapted to provide a "stronger" water jet providing a massaging effect, and which is usually delivered by intermittent pulses.

These prior shower heads, however, have the drawback that they are very complex construction-wise, and, moreover, for selecting the water delivery modes of operation they usually comprise a circular outer ring-nut arranged on the shower head, which ring-nut must be manually operated by the user.

It should be apparent that such an arrangement is very unconfortable, since the user, in order to select the water delivery mode of operation must use the two hands.

Moreover, these prior shower heads do not provide the user with the possibility to easily see the water delivery mode of operation set for the shower head.

SUMMARY OF THE INVENTION

Accordingly, the aim of the present invention is to overcome the above mentioned drawbacks, by providing a shower head, including means for easily and quickly adjusting the water jet, which provides the user with the possibility of easily and quickly selecting the water delivery mode of the operation, by using a single hand.

Within the scope of the above mentioned aim, a main object of the present invention is to provide such a shower head which is very simple construction-wise.

Yet another object of the present invention is to provide such a shower head which can easily display to the user the delivery water mode of operation.

Yet another object of the present invention is to provide such a shower head which can be made at a very reduced cost starting from easily available materials and elements.

According to one aspect of the present invention, the above mentioned aim and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a shower head provided with means for adjusting the ejected water spray comprising a handle body, which can be coupled to a water supply system and being provided with a water delivery head, selecting means arranged inside said body for selectively providing a regular rain water jet and an intermittent pulse strong and massaging water jet, characterized in that said shower head further comprises a driving element for operating said selecting means, said driving element including a push-button element which can be accessed from a side of said shower head.

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, though not exclusive, embodiment thereof, which is illustrated, by way of an indicative but not limitative example, in the figures of the accompanying drawings, where:

Figure 1 schematically illustrates, by a perspective exploded view, a possible embodiment of a shower head provided with means for adjusting the ejected water spray according to the present invention;

Figure 2 is a cross-sectional view of the shower head, set for providing an intermittent pulse strong water jet;

Figure 3 is another cross-sectional view of the subject shower head, set for providing a rain water jet or spray;

Figure 4 is a schematic view of the subject shower head, set for providing a pulse water jet; and

Figure 5 illustrates the subject shower head set for providing a rain water jet.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to the figures of the accompanying drawings, the shower head provided with means for adjusting the ejected water spray according to the present invention, which is generally indicated at the reference number 1, comprises a handle body 2, which can have any suitable shape and which, at one end thereof, can be coupled to a water supply system.

At the other end thereof, the body 2 defines a shower head 3 proper, for supplying water jets or sprays.

More specifically, the shower head 3 comprises a perforated plate 10, of substantially circular shape, which, on the inner surface thereof, is provided with circumferential tooth elements 11, for snap coupling said head to a ring-nut 12, which is rotatively associated with said body 2 through a plate 13 having calibrated holes 14, which have fixed positions and communicate with the water supply system to allow water to pass therethrough.

Overlaying the plate 13 there is provided a selecting disc element 20 which, at its central portion, is provided with registering holes 21, arranged in a cylindric zone delimited by a cylindric shell 22 and which is pro-

vided with perimetrical holes 23.

At the mentioned registering holes 21, on the surface opposite to that provided with the cylindric shell 22, there are provided a plurality of projections or lugs 25 restraining annular gaskets 26 which tightly engage against the plate 13.

As shown, the shell 22 is tightly coupled against a central inlet 30, provided on the inner surface of the perforated plate 10, which defines an inner circular region, encompassed by baffles 31, spaced from one another by inclined slots 32, for communicating with the inner cylindric portion therein there is rotatably housed an impeller 40, provided with a plurality of blades 41 which are connected at one end thereof, for a given length, by a closing element 41 which practically leaves free a reduced region, so as to provide an intermittent delivery of water, as it will become more apparent hereinafter.

Inside the cylindric region defined by the baffles 31 there are provided sets of holes 50, which are mutually radially distributed, whereas at the region included between the cylindric portion 30 and coupling tooth elements 11 there are provided a plurality of holes for rain supplying a water jet or spray, and generally indicated at the reference number 51.

The selected disc element 20, as shown, is provided with a radially extending notch 60, which engages in a recess 61 correspondingly defined on the inner surface of the plate and which also nests in a corresponding further recess.

The latter is defined inside the ring nut 12, so as to make rigid with one another the ring-nut 12, the selecting disc 20 and perforated plate 10, the plate 13, in turn, being fixed, that is it can not turn.

A main feature of the present invention is that the ring-nut 12 is radially provided with a driving element for driving the selecting means of the shower head, which driving element comprises a push-button element indicated at the reference number 60, which has an arrow shape, so as to operate as an indicating or display means for the notches 71 formed on the body of the shower head.

Thus, it should be apparent that the user can easily see the mode of operation of the shower head.

For operating the shower head, the ring-nut 12 will be turned (as shown in figure 2) so as to bring the holes 21 to register with the holes 14; thus, water will be introduced into the cylindric portion and then, said water will pass through the slots so as to radially impinge on the impeller 40, which is turned so as to provide a strong pulse water jet.

The water pulses, in particular, are due to the provision of the closure element 42, in combination with the plurality of holes 50 circumferentially distributed through the surface 10.

As the ring nut is turned so as to prevent water from communicating with said cylindric portion, water will be introduced, through the holes 23, into the plate portion arranged between the tooth elements 11 and cylindric portion 30, and said water will be ejected, as a rain jet, from the holes 51.

Yet another main feature of the invention, is that the shower head can be operated by the user by a single hand, by simply operating the push-button 70 which will allow the ring-nut 12 to he quickly and easily turned.

From the above disclosure it should be apparent that the invention fully achieves the intended aim and objects.

In particular, the fact is to be pointed out, that the provision of a push-button 70 on the shower head ring nut allows the user to easily operate by a single hand the shower selecting means.

While the invention has been disclosed and illustrated 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 become more apparent withing the spirit and scope of the appended claims.

Claims

1. A shower head provided with measn for adjusting the ejected water spray comprising a handle body, which can be coupled to a water supply system and being provided with a water delivery head, selecting means arranged inside said body for selectively providing a regular rain water jet and an intermittent pulse strong and massaging water jet, characterized in that said shower head further comprises a driving element for operating said selecting means, said driving element including a push-button element which can be accessed from a side of said shower head.

2. A shower head, according to Claim 1, characterized in that said selecting means comprises a perforated plate snap engaged with a ring nut which is rotatably supported on said body for engaging with a perforated plate fixedly connected to said body.

3. A shower head, according to Claims 1 and 2, characterized in that said perforated plate is provided with a shell defining an inner region therethrough there are provided a plurality of holes which can be registered with corresponding holes provided through a selecting disc having a further plurality of holes arranged outside of a cylindric shell which can be tightly associated with a middle cylindric portion formed on said perforated plate.

4. A shower head, according to one or more of the preceding claims, characterized in that on said

middle cylindric portion there is rotatably supported an impeller on which there is directed radially the water delivered into said cylindric portion through said registering holes and passing through slots defined on side baffles.

5. A shower head, according to one or more of the preceding claims, characterized in that said perforated plate is provided, at said cylindric portion, with a plurality of sets of holes evenly distributed and adapted to provide, in cooperation with a closure element for said impeller, an intermittent pulse water jet.

6. A shower head, according to one or more of the preceding claims, characterized in that said perforated plate is provided with a plurality of holes formed through an outer region with respect to said middle cylindric portion, in order to provide a rain water jet.

7. A shower head, according to one or more of the preceding claims, characterized in that said push-button element is arranged on the outer surface of said ring-nut.

8. A shower head, according to one or more of the preceding claims, characterized in that said push-button has an arrow shape, and is adapted to operate as a registering and display element cooperating with marks provided on said body in order to display the mode of operation of said shower head.

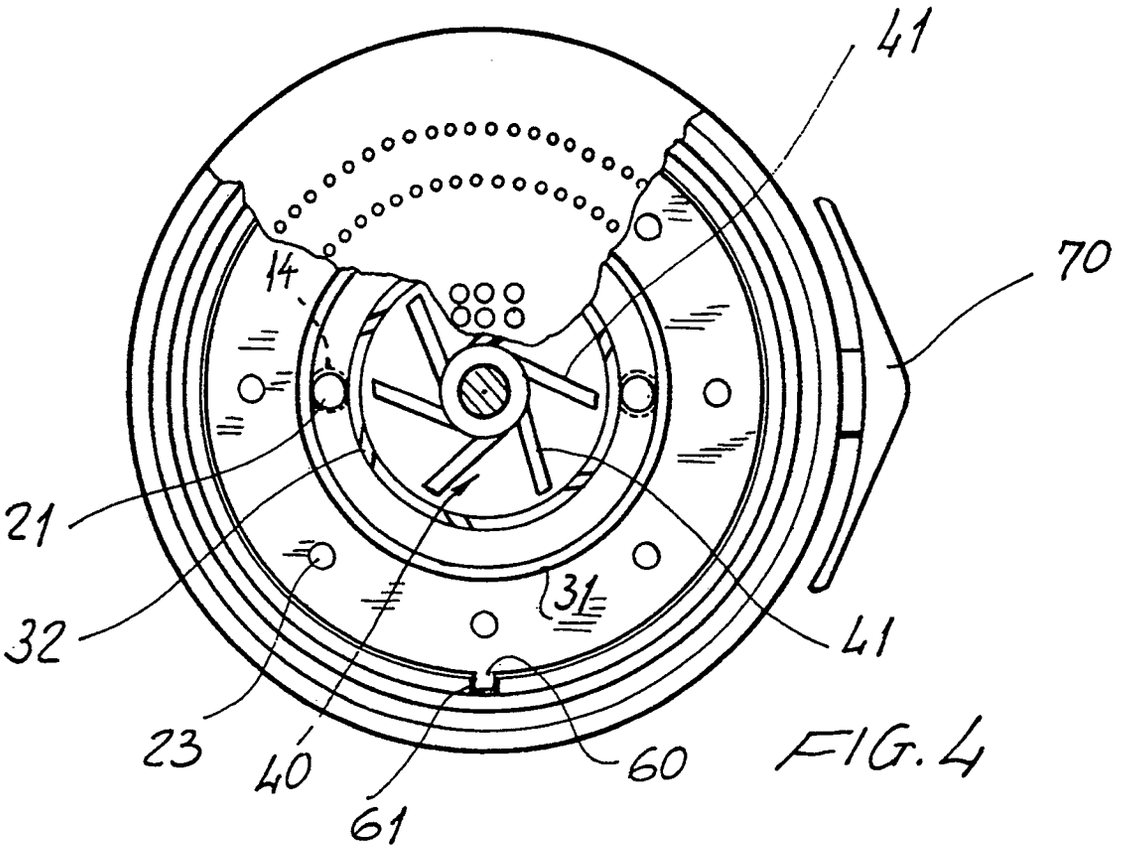


FIG. 4

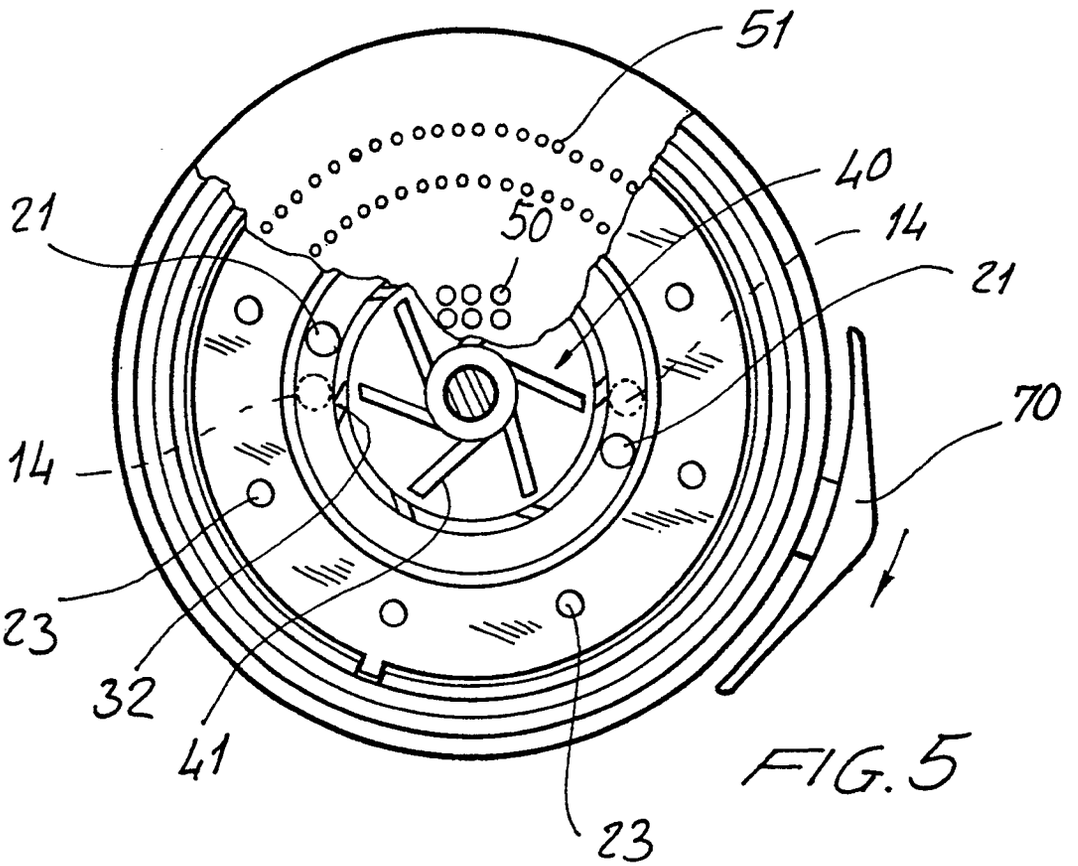


FIG. 5

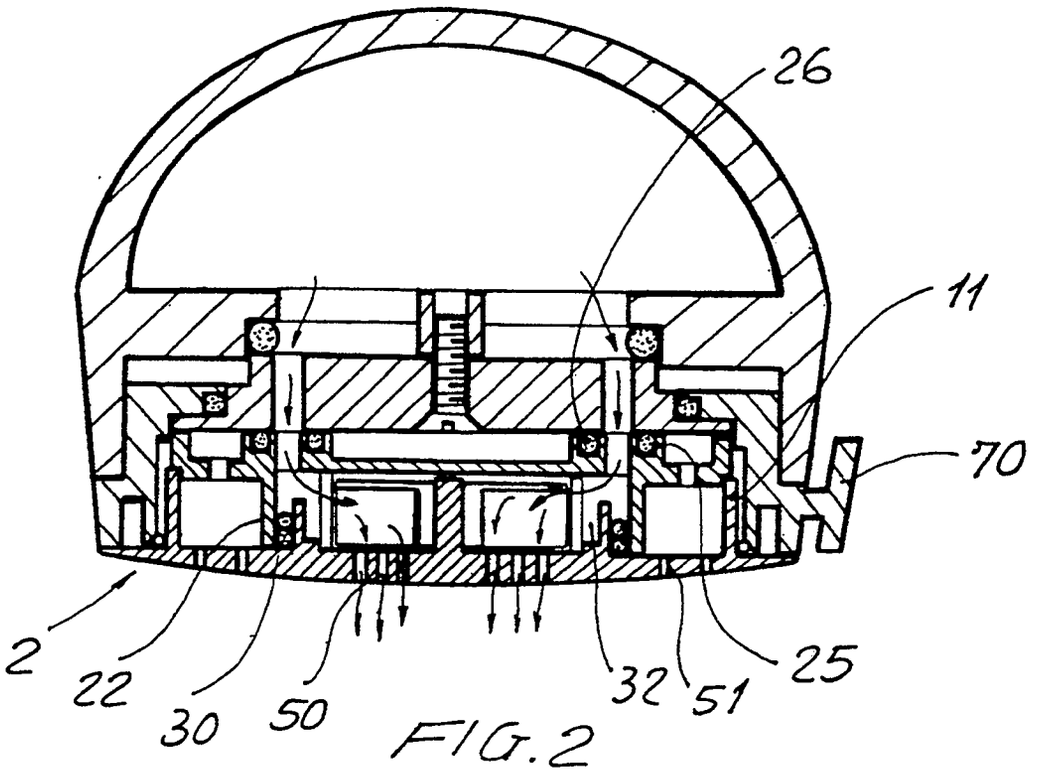
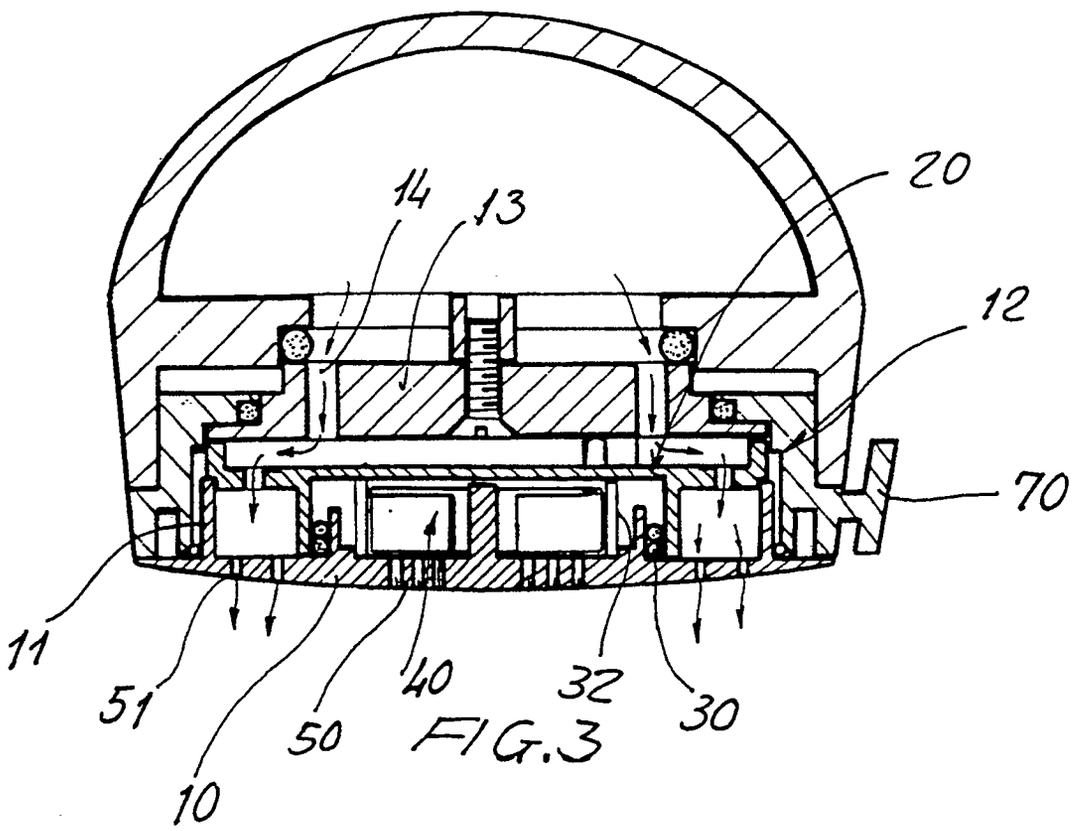


FIG.2



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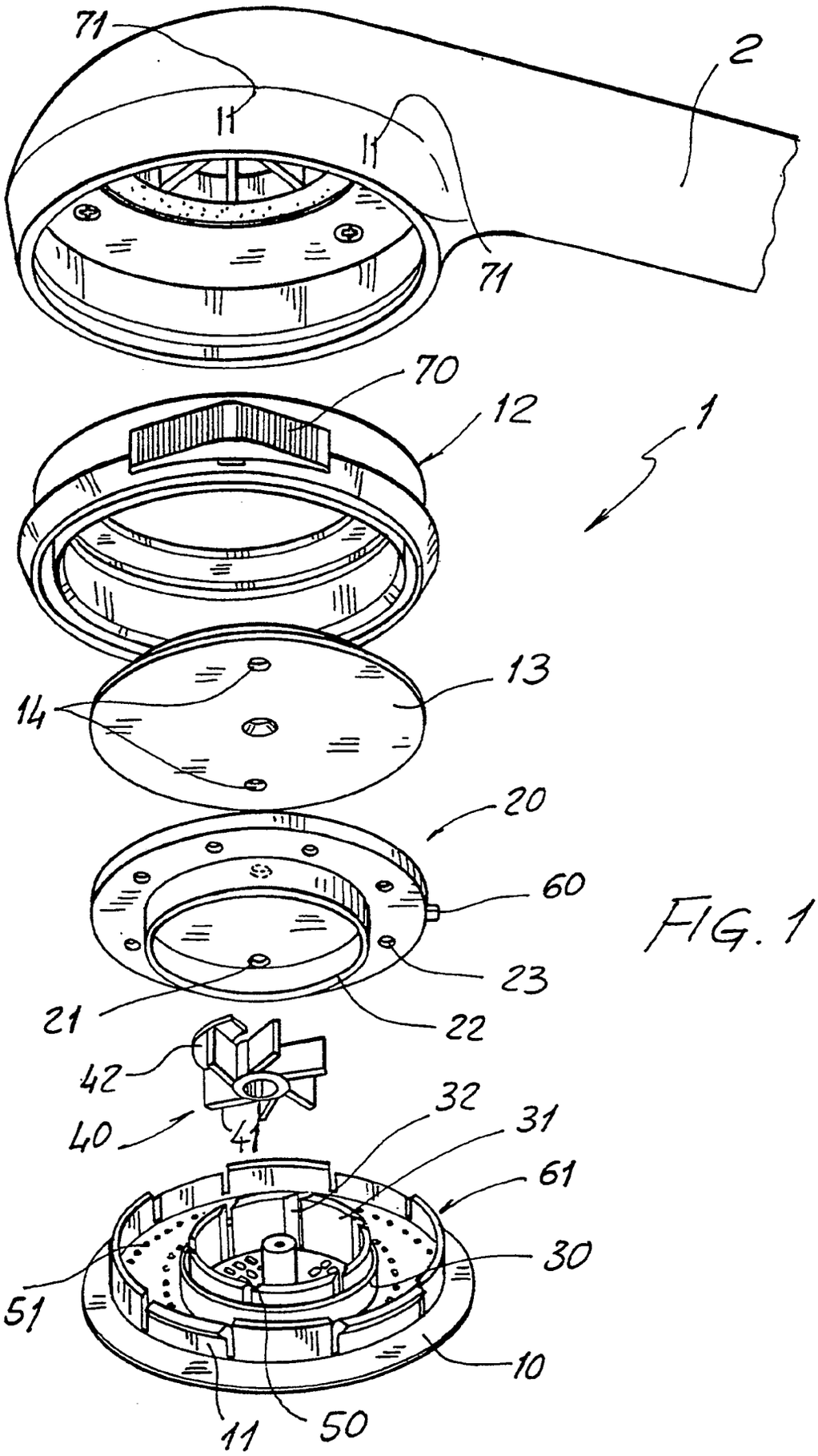
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FIG. 1