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(71) Applicant: **Vidali, Erminio**
Via Faltigliano, 91
I-50020 La Romola Chiesanuova Firenze(IT)

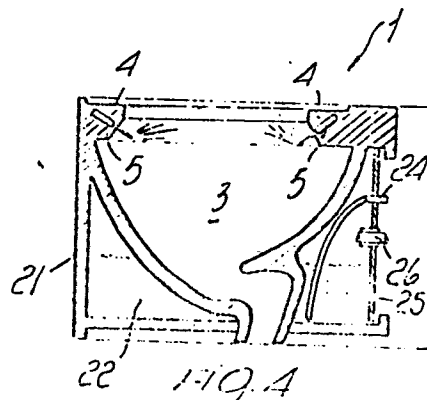
(72) Inventor: **Vidali, Erminio**
Via Faltigliano, 91
I-50020 La Romola Chiesanuova Firenze(IT)

(74) Representative: **Cicogna, Franco**
Ufficio Internazionale Brevetti Dott. Prof. Franco Cicogna
Via Visconti di Modrone, 14/A
I-20122 Milano(IT)

(54) **Closest bowl provided with means for washing the body of the user.**

(57) The present invention relates to a closet bowl, provided with means for washing the body of the user, which comprises a bowl body (2) including, in its inside, a cavity to be coupled to a discharging duct.

The main feature of the invention is that it comprises washing nozzles (5) leading to the cavity and which can be controlled to deliver washing jets to the part of the user's body to be washed, with water having a preset temperature.



BACKGROUND OF THE INVENTION

The present invention relates to a closet bowl provided with means for washing the body or bottom part of the user.

5 As is known a conventional hygienic service room is usually provided with a water or closet bowl and a bidet which are separate elements installed at a dedicated place.

10 Such arrangement is affected by space problems, particularly in the case in which the hygienic room is of comparatively reduced size.

15 Moreover, from the hygienic standpoint, it would be advantageous to be able of directly washing the user's bottom parts in such a way as to obviate the need of using hygienic paper while obtaining a more efficient cleaning of the user's bottom parts.

20 Another drawback of the known hygienic service rooms is that it is necessary to provide for installation of the so-called water box, to supply washing water to the closet bowl, as a separate unit from the closet bowl which is usually arranged at the rear top part of the closet bowl, and projects from the wall or, as is possible, is recessed into the wall itself.

 All of the mentioned embodiments, in addition to the

above mentioned space problems, are affected by problems related to the coupling of the several parts to be connected at the installation work, with the consequent related installation time and labour.

5

SUMMARY OF THE INVENTION

Accordingly the task of the present invention is to solve the above mentioned problem in a new and original way, by providing such a closet bowl which is provided with means for washing the body or bottom parts of the user, directly built in in said bowl, thereby providing an improved hygiene characteristic.

10

Within the scope of the above mentioned task, it is a main object of the present invention to provide such a closet bowl which affords the possibility of obtaining a sure hygiene, both with respect to the user's body and the inside of the closet bowl itself.

15

Another object of the present invention is to provide such a closet bowl which affords the possibility of omitting the conventional water box, in such a way as to simplify all of the problems relating to the installation and assembling of the closet bowl itself.

20

Another object of the present invention is to

provide such a closet bowl which,owing to its constructional features,is greatly reliable and safe in operation.

5 Yet another object of the present invention is to provide such a closet bowl which,while having improved features,is construction-wise very simple and,in addition,of comparatively low cost.

10 According to 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 closet bowl provided with means for washing the body of the user comprising a bowl body including,in its inside,a cavity to be coupled to a discharging duct,characterized in that it further
15 comprises washing nozzles leading to said cavity and effective to be driven for dispensing water jets for washing the user's bottom parts,with water having a preset temperature.

BRIEF DESCRIPTION OF THE DRAWINGS

20 Further characteristics and advantages of the present invention will become more apparent hereinafter from the following description of a preferred, though not exclusive,embodiment of a closet bowl provided with means for washing the body of the user,
25 being illustrated by way of example in the accompany-

ing drawings, where:

fig.1 schematically represents, by a perspective view, a possible embodiment of the closet bowl according to the present invention;

5 fig.2 represents the closet bowl as seen from the rear thereof;

fig.3 is a cross-section view illustrating the subject closet bowl and the nozzles for dispensing the water for washing the bowl itself;

10 fig.4 is a longitudinal cross-section view of the closet bowl, showing the nozzles for washing the user's bottom parts;

fig.5 is a schematic view illustrating the closet bowl according to the invention from the top thereof;

15 fig.6 is a top view of that same closet bowl, illustrating schematically both the ducts communicating with the washing nozzles and the nozzles for discharging the bowl washing water;

20 fig.7 is a cross-sectional view illustrating the washing nozzles;

fig.8 schematically illustrates a possible embodiment of the bowl covering seat;

25 fig.9 is a longitudinal cross-section view illustrating the bowl according to the invention and

the covering seat therefor;

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fig.10 is a cross-sectional view illustrating the bowl according to the invention and the covering seat therefor;

5 and

fig.11 is a schematic cross-section view illustrating the means for coupling to the room floor the closet bowl according to the invention.

BRIEF DESCRIPTION OF THE PREFERRED EMBODIMENT

10

With reference to the above mentioned figures, the closet bowl according to the present invention, which is indicated overall at the reference number 1, comprises a bowl body 2 which is provided, in its inside, with a cavity or hollow 3, of conventional size and shape, which may be coupled, in a known way, to the conventional discharging duct.

15

A first and important feature of the invention is that, at some points of the upper edge 4 of the bowl body 2, there are provided washing nozzles 5 leading to the top portion of the cavity 3 and which are practically embedded inside the edge having a suitable cross-section both with respect to the width and the height.

20

Preferably, though not necessarily, the washing

nozzles 5 are arranged at the front and rear zones of the conventional oval conformation of the closet bowl.

5 The nozzles 5, as shown in figure 7, are provided with an outer body 7, effective to be coupled to a fitting 6 in the inside of which an inner tubular body 8 is able of sliding, which tubular body is closed, at the free end thereof, 8a, and is provided, at the mentioned closed end, with a dispensing mouth 10 9, for dispensing the water jet.

At the other end thereof, the tubular body 8 is provided with a flange 9a thereon there acts a spring 10 which acts for withdrawing the tubular body 8 inside the outer body 7, as the water pressure 15 from the fitting 6 is not present.

In fact the water pressure tends to push the inner tubular body 8 in such a way as to exceed the force of the spring 10 to bring the water dispensing mouth 9 to the desired position to eject water inside 20 the closet bowl.

The mouth portions 9 are arranged toward the top and the center in such a way that all of the ejected jets are able of impacting on the bottom parts

of the user, to perfectly wash them.

In order to control the water supply to the
nozzles 5, there is provided a mixing faucet 15, thereto
there are coupled the hot and cold water supplying
5 ducts and downstream of which there is provided a
diverting faucet 16 which affords the user with the
possibility of diverting at the start the mixed water
part which will be inevitably cold. The mentioned
diverting faucet 16, as it is clearly shown in figure
10 6, introduces the water into an auxiliary discharging
duct 17, toward the inside of the cavity, in such a way
as to carry out a preliminary washing operation.

Another important feature of the invention
is that it is possible to omit the conventional water
15 box, arranged at the top rear portion of a conventional
bowl, by exploiting, for installation purposes, the
portion encompassing the outer surface of the closet
bowl.

To this end, on the outside of the bowl body 2
20 there is provided an outer skirt 21 encompassing, on
the periphery, the body 2 of the bowl and defining, by
cooperating with said bowl body, a chamber 22 for
accumulating the water to be used for washing the
closet bowl.

To this end there is provided a water inlet duct 23, having a comparatively reduced cross-section, thereon there is arranged a pressure reducing valve, provided for introducing water into said chamber 22 with a slight overpressure.

On the bottom of the chamber 22 there is provided a water discharging duct 24 which operates to discharge water, by means of water discharging nozzles effective to discharge the closet bowl washing water, indicated at 24a, which are peripherally arranged at the closet bowl top edge, in such a way as to efficiently wash said top edge.

The water discharging duct has an increased cross-section in such a way as to eject water with a high speed and a sufficient pressure for washing.

In order to obtain the overpressure pushing the water outwardly, there are provided pressure plenum members, to be coupled to the inlets 26, as provided on the rear portion 25 closing the chamber 22.

There is moreover provided a control valve 27, which controls the water discharging duct and which may be of the automatic return type.

This embodiment is a very efficient one, since it

-10-

does not require the use of the conventional floats and closure elements included in the conventional water boxes.

5 Another important aspect of the invention is that there is provided an anatomic seat 30, which is clearly shown in figure 8 which is laterally provided with recesses 31 and, as it appears from figures 9 and 10, with edges 32 downwardly directed and which, by cooperating with the cover 34, forms a
10 labyrinth seal for the closet bowl body, in such a way as to afford the possibility of washing the cover and seat by means of the washing nozzles 5 which emit water for washing the cover in the absence of the user.

15 Moreover, means are provided for fixing the closet bowl to the floor.

These means consist of hook elements 40, supported by bracket members 43 affixed to the lower portion of the body 2 of the bowl; on the tie rod
20 there acts a clamping bolt 45 which, as it is driven, causes the tie rod to move and the hook part 40 to engage with an eye or loop member 46 affixed to the floor.

25 Thus, an anchoring action is obtained,

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jointly with a pushing force towards the floor, to anchor it.

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

In particular the fact is to be pointed out that the subject bowl comprises built therein all of the means which are necessary for washing the bottom parts of the body of the user and that, moreover, it affords the possibility of supplying the washing water at a suitable temperature, since the starting water part, which is necessarily cold, can be diverted by means of the diverting faucet 16, directly toward the cavity without impinging on the user body.

Moreover, there are provided discharging means for discharging the bowl washing water which are directly built in inside the body of the bowl, in such a way as to reduce to a minimum the bowl installation space.

To the foregoing it should be added that in the space 50, provided at the rear of the closet bowl, there can be housed additional elements, such as an electric drier for emitting hot air in order to dry

the bottom parts of the body of the user or, possibly,
a small electric boiler effective to provide a small
amount of hot water with a preset temperature, in
the case in which it is not possible to obtain the
5 hot water from the sanitary water supplying system.

The invention as disclosed is susceptible to
several modifications and variations all of which
enter the scope of the invention.

Moreover all of the details may be replaced
10 by other technically equivalent elements.

In practicing the invention, the used materials,
provided that they are compatible with the intended
use, as well as the contingent shapes and sizes may
be any according to requirements.

C L A I M S

1 1- Closet bowl provided with means for washing the
2 body of the user, comprising a bowl body (2) provided,
3 in its inside, with a cavity (3) to be coupled to a
4 water discharging duct, characterized in that it
5 further comprises washing nozzles (5) leading to said
6 cavity and effective to be driven for ejecting water
7 jets for washing the bottom parts of the body of the
8 user, with water at a preset temperature.

1 2- A bowl according to claim 1, characterized in that
2 it comprises two washing nozzles (5) one arranged
3 at the front of said cavity and the other arranged at
4 the rear of said cavity, at the top edge (4) thereof.

1 3- A bowl according to claim 1, characterized in that
2 said washing nozzles (5) are housed inside said bowl
3 body (2) and are provided with an outer body (7)
4 coupled to the water supply duct (6) in the inside of
5 which there is provided a slidable tubular body (8)
6 effective to slide against the biasing of resilient
7 means (10), said tubular body (8) being closed at one
8 end (8a) thereof and provided herein with a dispensing
9 mouth portion effective to direct the water jet toward
10 the center of said bowl body (2), said tubular body

11 being effective to be withdrawn from said outer
12 body (7) by means of the water pressure.

1 4- A bowl, according to claim 1, characterized in
2 that it comprises a mixing faucet (15) for water
3 supplying said washing nozzles, controlling the cold
4 water and hot water delivery ducts.

1 5- A bowl according to claim 1, characterized in that
2 it comprises a diverting faucet (16) arranged down-
3 stream of said mixing faucet (15) for selectively
4 supplying said nozzles (5) with washing water, or
5 water supplying an auxiliary discharging duct (17)
6 leading to said cavity of the bowl body (2), to be
7 coupled to the water discharging duct.

1 6- A bowl according to claim 1, characterized in that
2 it comprises a chamber (22) defined between the outer
3 surface of said bowl body (2) and an outer skirt
4 (21), peripherally encompassing said bowl body, which
5 chamber is effective to receive the water for washing
6 said bowl.

1 7- A bowl according to claim 1, characterized in that
2 it comprises a reduced cross-section duct (23) for
3 introducing water into said chamber (22) and a water
4 discharging duct (24), of greater cross-section, at the
5 bottom of said chamber and controlled by a water
6 discharging faucet (27).

1 8- A bowl according to claim 1, characterized in that
2 it comprises pressurized air plenum members to be
3 operatively coupled to said chamber to hold a slight
4 overpressure therein.

1 9- A bowl according to claim 1, characterized in that
2 it comprises an anatomic seat (30) defining, by
3 cooperating with a closure cover (34), a labyrinth
4 path to prevent water jets from exiting during the
5 seat and cover washing operation.

1 10-A bowl according to claim 1, characterized in that
2 it comprises, at the rear thereof, a recess (50) for
3 housing a drier effective to send hot air jets onto
4 the bottom parts of the body of the user, as well as
5 an electric boiler for heating water.

1 11- A bowl according to claim 1, characterized in that
2 it comprises means for fixing said bowl body to a
3 floor, said means consisting of hook members (40) to
4 be engaged with loop members affixed to said floor
5 and coupled to a tie rod (41) slidably supported by
6 brackets (43) rigid with the lower surface of said
7 bowl body (2), a bolt (45) being moreover provided for
8 driving said tie rod and locking said hook elements
9 in said loop members (46).

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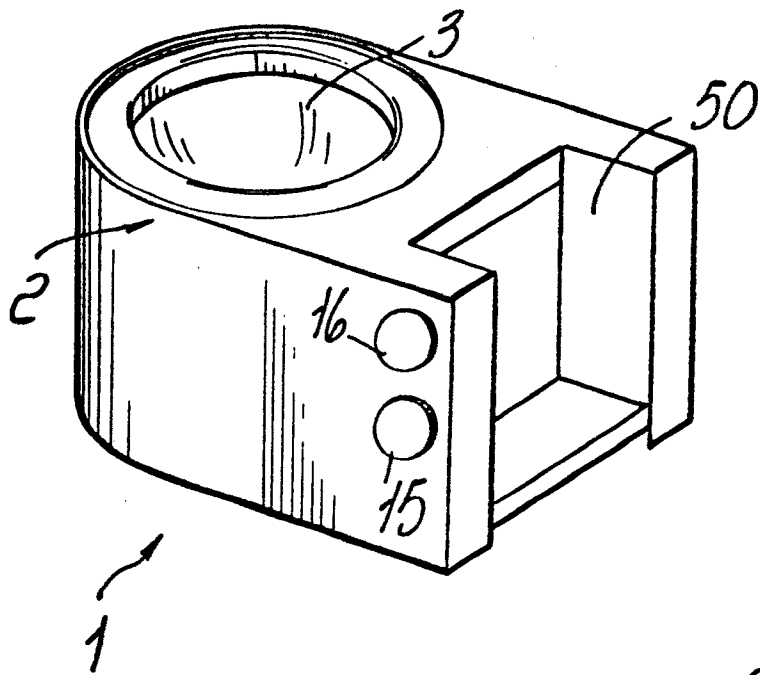


FIG. 1

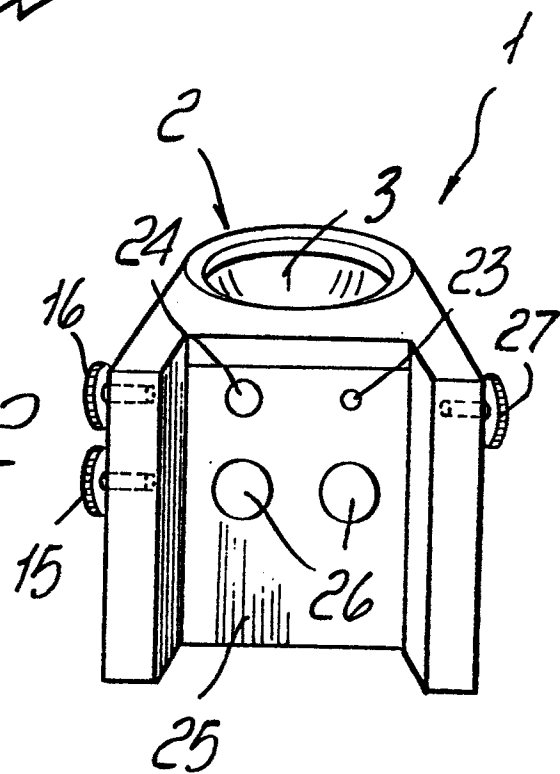


FIG. 2

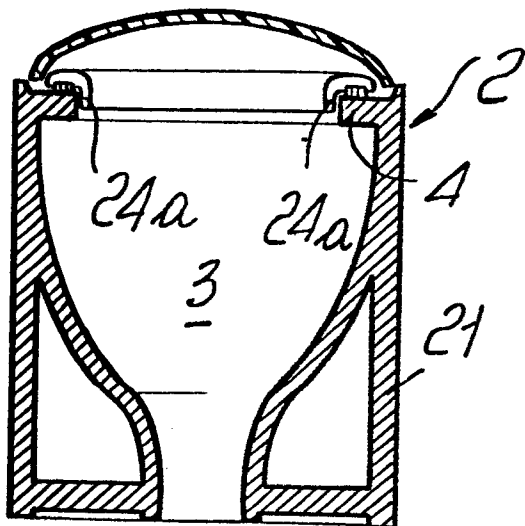


FIG. 3

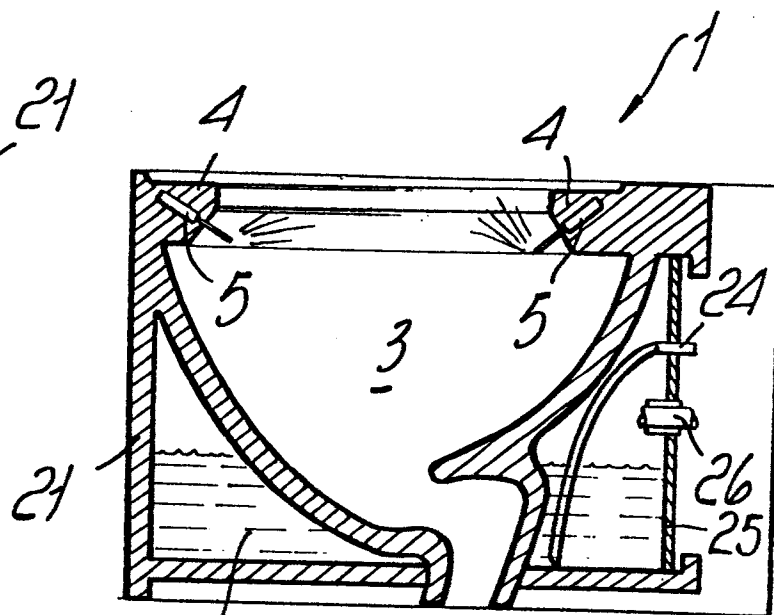


FIG. 4

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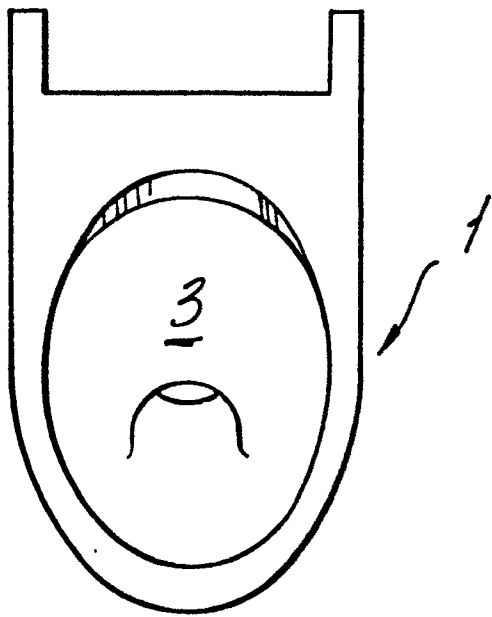


FIG. 5

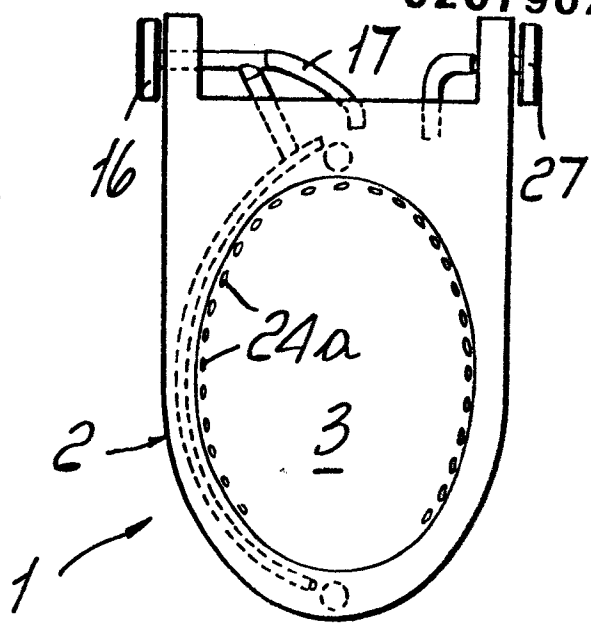


FIG. 6

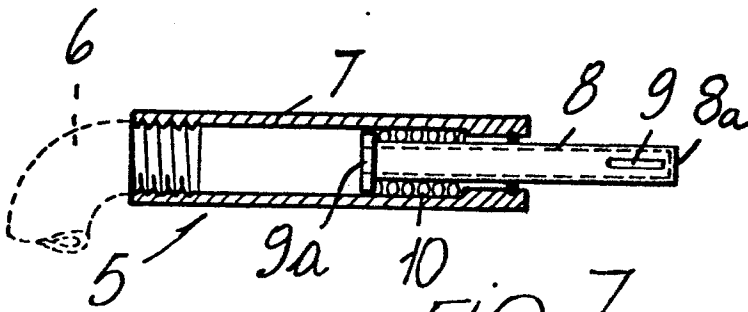


FIG. 7

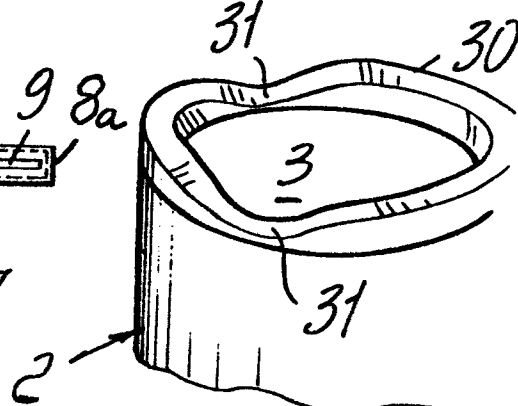


FIG. 8

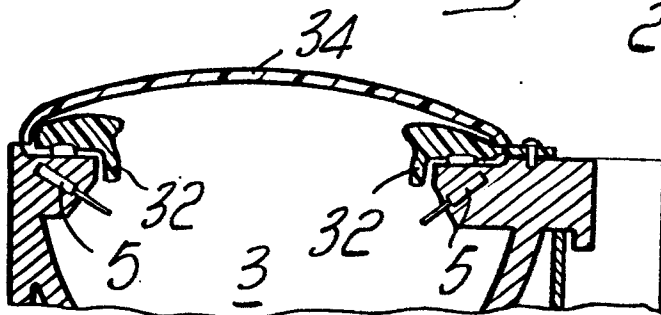


FIG. 9

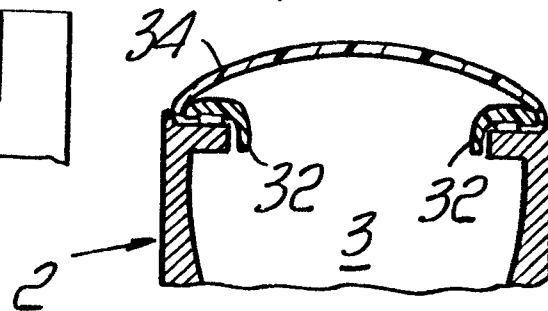


FIG. 10

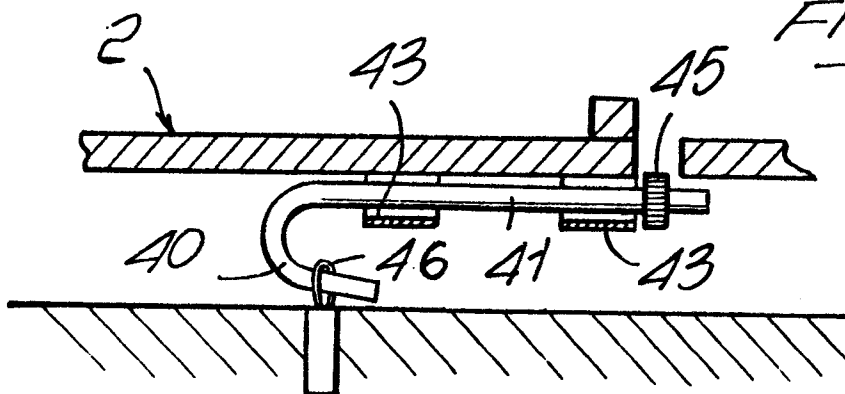


FIG. 11