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NL-5600 AP Eindhoven (NL)(54) **A device for picking up material lying on the ground.**

(57) The invention relates to a device for picking up material lying on the ground, such as for example dog excrements, said device being provided with a carrying member (1) and with scoop means (12), which are pivotable in such a manner that free ends of said scoop means are movable towards and away from each other. The scoop means (12) are comprised of plate-shaped strips (12), which, at their ends remote from their free ends, are coupled to a common carrying member (8) so as to be pivotable about pivots (10), said pivots (10) at least substantially being located on a circumferential closed line. Means are provided by which said plate-shaped strips (12) are pivotable about said pivots (10), from a first position, in which strips (12) arranged in side by side relationship overlap, forming some sort of cup-shaped means, whose largest diameter is located near the pivots (10), whilst the free ends bound a narrow opening in said cup-shaped means, into a second position, whilst moving the free ends of said plate-shaped strips (12) in a direction away from each other.

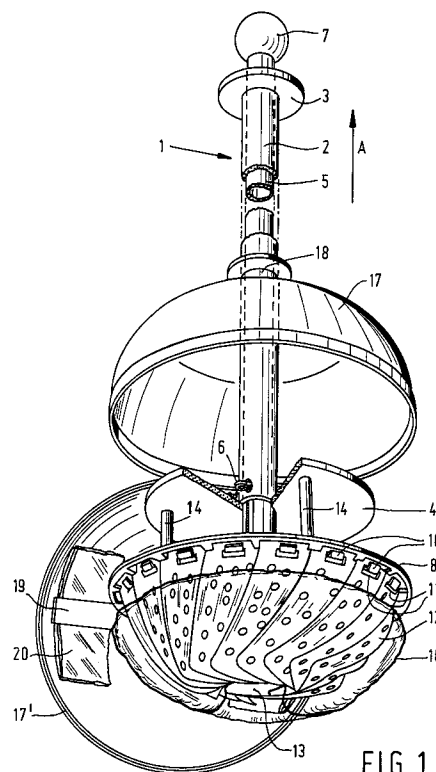


FIG. 1

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The invention relates to a device for picking up material lying on the ground, such as for example dog excrements, said device being provided with a carrying member and with scoop means, which are pivotable in such a manner that free ends of said scoop means are movable towards and away from each other.

Such a device is known from Dutch Patent Application No. 8,004,310, and provided with scoop means formed by blade-shaped parts secured to the ends of levers, which, from a position in which the free ends of said blade-shaped parts at least substantially abut against each other and the blade-shaped parts are at least substantially in line, can be brought into a position in which the blade-shaped means are spaced from each other by some distance, by pivoting of the levers with respect to each other. In this latter position a bag can be slipped over said blade-shaped means in such a manner, that the closed end of said bag can be located above the material to be picked up, whereupon the blade-shaped means are moved under the material in question by pivoting of the blade-shaped means into the former position, and said material is introduced into the bag. In this latter position the bag with the material contained therein is unprotected and in fact this device is only acceptable to the user when a facility in which the bag with the material contained therein can be deposited is present in the immediate vicinity of the place where the material has been picked up.

A further drawback of this known device is that both hands are needed to operate it. Furthermore the blade-shaped scoop means will have to comprise a comparatively great width, so as to ensure proper picking up of the material lying on the ground.

It is an object of the invention to obtain a device of the above kind, wherein the above drawbacks can be overcome.

According to the invention this may be achieved in that said scoop means are comprised of plate-shaped strips, which, at their ends remote from their free ends, are coupled to a common carrying member so as to be pivotable about pivots, said pivots at least substantially being located on a circumferential closed line, and that means are provided by which said plate-shaped strips are pivotable about said pivots, from a first position, in which strips arranged in side by side relationship overlap, forming some sort of cup-shaped means, whose largest diameter is located near the pivots, whilst the free ends bound a narrow opening in said cup-shaped means, into a second position, whilst moving the free ends of said plate-shaped strips in a direction away from each other.

When using the construction according to the invention the plate-shaped strips, over which a bag

of plastic material or the like may be slipped, can be brought into said second position for picking up material lying on the ground, whereby in said second position the device can be placed on the ground with the free ends of the plate-shaped strips, in such a manner, that said free ends surround the material on the ground to be picked up.

By subsequently pivoting the plate-shaped strips into the first position the ends of the plate-shaped strips will move towards each other, as a result of which the material to be picked up is moved together and pushed into the bag. When finally the first position has been reached, the material picked up and the part of the bag surrounding said material will be entirely enveloped by the plate-shaped strips. The end of the bag projecting beyond the cup-shaped means formed by the strips in the first position, which end has not come into contact with the material picked up, can then be closed by being twisted, buttoned or tied up, and subsequently be pushed into the cup-shaped means formed by the plate-shaped strips, so that the bag with the material contained therein is entirely surrounded by the plate-shaped strips.

A particularly advantageous embodiment of the device, which is easy to operate, is obtained when the carrying member supports an operating member which is movable with respect to the carrying member, said operating member being coupled to at least one plate-shaped strip by a transmission means, which converts a sliding movement of the operating member with respect to the carrying member into a pivoting motion of the plate-shaped strip.

Such a construction makes it possible to operate the device with one hand.

A further aspect of the invention relates to a device for picking up material lying on the ground, provided with an elongated carrying member and with at least one gripping member being pivotable about a pivot.

Such a device is known from Dutch Patent Application No. 8,502,594. Also this device is in particular intended for picking up dog excrements and comprises a scoop means and a flap, which is pivotable with respect thereto, for moving the material onto said scoop means. This device also requires two-handed operation, which makes the device user-unfriendly. Furthermore the device is rather voluminous, which at the very most makes the device suitable for applications where after use the device can immediately be deposited in a container which is suitable for that purpose. Furthermore such a device comprising throwaway parts will be expensive to use.

Furthermore devices for picking material lying on the ground, in particular paper, are known, whereby a needle is secured to the end of an

elongated carrying member, by means of which paper can be pricked. Such a device can only be used on soft ground, however, whilst also the removal of the material pricked is a difficult operation.

It is another object of the invention to obtain a simple device of the above kind, wherein the above-described drawbacks of known devices can be overcome.

According to the invention this can be achieved in that said carrying member comprises two parts which can telescope with respect to each other, whereby the gripping member is coupled to the one part of the carrying member by means of the pivot, whilst a transmission means is provided between the other part of the carrying member and the pivotable gripping member, said transmission means converting a sliding movement of the two parts of the carrying member with respect to each other into a pivoting motion of the pivotable gripping member.

The invention will be explained in more detail hereafter with reference to a few possible embodiments of the construction according to the invention diagrammatically illustrated in the accompanying Figures.

Figure 1 is a perspective view of a first embodiment of a device according to the invention, illustrating the plate-shaped parts in the first position.

Figure 2 is a perspective view of the device according to the invention, illustrating the plate-shaped parts in the second position.

Figure 3 shows the device in the transport position.

Figure 4 is a perspective view of a second embodiment of a device according to the invention.

The device shown in Figures 1 and 2 comprises an elongated carrying member 1, which comprises a tube 2, to whose upper end a disc 3 is secured. A disc 4 is secured to the lower end of the tube 2, the diameter of said disc being considerably greater than that of the disc 3.

The interior of the tube 2 accommodates a tube 5, in such a manner that the tube 5 is movable in its longitudinal direction. The distance along which the tube 5 can move inside the tube 2 is limited by a split pin 6, which is passed through holes provided in the tube 2 and through slotted holes provided in the tube 5, said split pin preventing rotation of the tubes 2 and 5 with respect to each other.

A knob 7 is secured to the upper end of the tube 5.

A plate 8 forming a carrying member and extending perpendicularly to the tube 5 and parallel to the discs 3 and 4, is secured to the lower end of the tube 5 by means of a bolt 9 screwed into the

end of the tube 5. Hooks 10 are fixed to the periphery of the circular plate 8, said hooks engaging slotted holes 11, which are provided in the ends of elongated plate-shaped strips 12, all this in such a manner that the strips 12 can pivot about the pivots formed by the hooks 10 with respect to the plate 8. In the position illustrated in Figure 1 the plate-shaped strips 12 overlap, whereby the plate-shaped strips form a cup-shaped means, as it were, which coaxially surrounds the central axis of the tube 5 and whose largest diameter is located near the pivots formed by the hooks 10. As will be apparent from Figure 1, these pivots are located on an imaginary closed line extending at least concentrically about the central axis of the tube 5. As is furthermore apparent from Figure 1, the longitudinal axis of each plate-shaped strip includes an angle with a radial plane through the central axis of the tube, when seen in the longitudinal direction of the central axis of the tube 5, said plane extending through the centre of the hook-shaped member 10, by means of which the respective plate-shaped strip 12 is coupled to the common carrying member 8 for the plate-shaped strips. Furthermore the free ends of the plate-shaped strips remote from the hook-shaped means 10 bound a passage 13 having a comparatively small diameter at the bottom end of the cup-shaped means formed by the plate-shaped strips, said passage giving access to the interior of the cup-shaped means.

As is furthermore apparent from Figure 1, the ends of a few flexible, resilient wire-shaped member 14 are secured to the disc 4. Said wire-shaped member may be formed of a flexible, resilient plastic material or of spring steel or the like.

As is furthermore apparent in particular from Figure 2, said wire-shaped members 14 are passed through slotted holes 15 provided in the plate 8, each being bent in a direction away from the central axis of the tube 5 and being secured to a plate-shaped strip 12.

As a result of this construction the plate 8 will be pulled in the direction of the disc 4, from the first position shown in Figure 1 to the second position shown in Figure 2 when the tube 5 is moved in the direction according to the arrow A with respect to the tube 2. During this movement of the plate 8 in the direction of the disc 4 the plate-shaped strips 12 connected to the ends of the wire-shaped members 14 will be stopped, as it were, as a result of which said plate-shaped strips are forced to pivot about the pivots formed by the respective hooks 10, in such a direction that the free ends of the plate-shaped strips move in a direction away from each other, towards the position shown in Figure 2. Because of the overlap of the plate-shaped strips the strips 12 that are not connected to the wire-shaped members 14 are

caught by the strips 12 that are connected to the wire-shaped members 14, so that all plate-shaped strips will pivot from the position illustrated in Figure 1 to the position shown in Figure 2.

In this second position of the plate-shaped strips shown in Figure 2 the closed end of a bag 16, for example a bag made of thin plastic material, can be provided in the interior of the space bounded by the plate-shaped strips 12, whilst the free end of the bag can be folded around the outer sides of the plate-shaped strips 12, possibly also folded over the upper side of the plate 8. When the device is not intended for immediate use, the plate-shaped strips can be returned to the position shown in Figure 1.

For use of the device, for example for picking up dog excrements or the like, the plate-shaped strips will be brought into the position shown in Figure 2 again, after which the device can be placed on the ground with the free ends of the plate-shaped strips 12, in such a manner that the excrements or the like materials to be picked up are surrounded by the ends of the plate-shaped strips 12.

When subsequently the plate-shaped strips 12 are returned to the position shown in Figure 1, by moving the tube 5 in an opposite direction to the arrow A with respect to the tube 2, the excrements or the like will be scooped up by the plate-shaped strips, as it were, and be pushed into the interior of that part of the bag which is located in the space defined by the plate-shaped strips. Because the free ends of the plate-shaped strips perform a scraping action on the ground, as it were, an effective moving together and picking up of the material to be picked up is ensured.

During said picking up of material lying on the ground the free end of the bag 16 folded around the outer side of the plate-shaped strips will not come into contact with the material picked up and consequently will not be soiled.

This free end of the bag can be folded and/or tied up and then likewise be pushed into the interior of the cup-shaped means formed by the plate-shaped strips 12, so that the filled bag is surrounded, fully protected, within said cup-shaped means formed by the plate-shaped strips in the position shown in Figure 1, whilst the material picked up is contained in the bag 16 in a practically airtight manner.

Before bringing the device into use several bags fitted into each other may be provided in the device in the above-described manner. In that case it will be possible to pick up several amounts of material, for example dog excrements, whereby each time a new, clean bag is available for picking up this material before it is necessary to discharge the filled bags.

As is furthermore illustrated in Figures 1 - 3, a shell-shaped member 17 is movable along the tube 2 in the longitudinal direction of the tube 2 by means of a hub 18 mounted on said shell-shaped member 17. A further shell-shaped member 17' is pivotally coupled to said shell-shaped member 17 by means of a pivoted joint 17". A springing clamp 19 is provided in the interior of the shell-shaped member 17', which is fixed with one end to the shell-shaped member 17', in such a manner, that a number of spare bags 20 can be moved under the free ends of the springing clamp 19.

The construction is thereby such, that when the plate-shaped strips 12 occupy the position shown in Figure 1, the shell-shaped member 17 can be moved downwards, so that said shell-shaped member surrounds the disc 4 and the plate 8, with its lower edge located near the plate 8. In this position the shell-shaped member 17' can be pivoted with respect to the shell-shaped member 17, in such a manner that the shell-shaped member 17' surrounds the plate-shaped strips 12, whilst in this position of the two shell-shaped members 17 and 17' the facing edges of the shell-shaped members 17 and 17' can be secured together by means of a snap connection or the like (Figure 3). Consequently the cup-shaped space formed by the plate-shaped strips, with material possibly contained therein, such as dog excrements, is practically hermetically sealed, so that having to carry such material along for some time, for example during shopping or the like, does not constitute a problem, since in fact a double hermetical sealing is provided. Upon reaching a suitable waste container, if present, the shells 17 and 17' can be opened again and be moved upwards along the tube 2 beyond reach of the plate-shaped strips 12, after which the plate-shaped strips 12 can be pivoted into the position illustrated in Figure 2, so as to be able to drop the bag(s) containing the picked-up material from the device, without having to touch said bag(s) by hand.

The device can readily be operated with one hand by grabbing the upper end of the rod 5 by the knob 7 and pushing down the disc 3 or pulling up the disc 3, as the case may be, so as to move the tube 2 with respect to the tube 5. Possibly a spring can be suitably provided between the tubes 2 and 5, said spring attempting to maintain the tubes 2 and 5 in the position shown in Figure 1 with respect to each other.

The length of the carrying member 1 may be selected at will. When the device is mainly intended for use near the user's dwelling, the carrying member may be comparatively long, so that the user of the device hardly needs to stoop.

When people for example wish to take the device along when for example taking longer walks

with a dog, it may be desirable for the carrying member 1 to be relatively short, so as to save weight and facilitate handling, whereby in that case a provision may furthermore be made near the disc 3 for attaching the end of a dog leash or the like.

As is furthermore illustrated in the Figures, the plate 8 and the plate-shaped strips 12 may have holes provided therein so as to save weight. These holes are not essential, however.

Although the above discussion primarily pertains to picking up dog excrements, since the fouling caused by dog excrements is a major problem, it will be apparent that the device according to the invention can also be used for picking up other waste materials or the like lying on the ground.

Figure 4 shows a device for picking up material lying on the ground, which is particularly suited for picking up paper or the like. This device is provided with a tube 21 having one flattened end 22. A disc 23 is secured to the end remote from the flattened end 22 of the tube 21.

A tube 24 is movably provided inside the tube 23, said tube 24 at one free end having a knob 25. A compression spring 26 is provided between the knob 25 and the disc 23, said spring attempting to move the tube 24 in the direction according to the arrow B with respect to the tube 21. This movement is limited by stops (not shown).

An elongated finger 28 forming a gripping member is pivotally connected near the end of the tube 21 by means of a pivot pin 27 extending perpendicularly to the longitudinal direction of the tube 21. The end of a wire-shaped member 29 formed of a flexible, resilient material is secured to the finger 28. Inside the tube 21 one end of this wire-shaped member 29 is connected to the end of the tube 24 located near the pivot pin 27, whilst the other end of said wire-shaped member 29 is bent, as shown in Figure 4, and passed outside through an opening 30 provided in the tubular means 21, near that location being connected to the end of the gripping means 28 located near the pivot pin 27.

It will be apparent that when the rod 24 moves in the direction according to the arrow B with respect to the rod 21, the spring 26 will cause the gripping means 28 to pivot about the pivot pin 27, from the position shown in Figure 4 in the direction according to the arrow C, whereby material, such as for example paper, can be gripped between the free end of the gripping means 28 and the flattened end 22 of the tube 21 in this manner. When the rod 24 is moved, against the action of the spring 26, into the position shown in Figure 4, the gripping means 28 will be pivoted back to the position shown in Figure 4 via the resilient wire-shaped member 29, so as to release any material that has been gripped. Also this device can be operated in

a simple manner with one hand, whilst material to be picked up can readily be gripped and released again.

It will be apparent that additions and/or modifications to the above-described embodiments are possible.

Thus it will for example be possible to use rod transmissions having toggle levers or the like instead of the transmission means 14, 29 formed of a resilient, flexible material, which are used in the above-described embodiments, for converting the sliding movement of the tubes 2 and 5 or 21 and 24 with respect to each other into a pivoting motion of the plate-shaped parts 12 or the gripping member 28 respectively.

Claims

1. A device for picking up material lying on the ground, such as for example dog excrements, said device being provided with a carrying member and with scoop means, which are pivotable in such a manner that free ends of said scoop means are movable towards and away from each other, characterized in that said scoop means are comprised of plate-shaped strips, which, at their ends remote from their free ends, are coupled to a common carrying member so as to be pivotable about pivots, said pivots at least substantially being located on a circumferential closed line, and that means are provided by which said plate-shaped strips are pivotable about said pivots, from a first position, in which strips arranged in side by side relationship overlap, forming some sort of cup-shaped means, whose largest diameter is located near the pivots, whilst the free ends bound a narrow opening in said cup-shaped means, into a second position, whilst moving the free ends of said plate-shaped strips in a direction away from each other.
2. A device according to claim 1, characterized in that said carrying member supports an operating member which is movable with respect to the carrying member, said operating member being coupled to at least one plate-shaped strip by a transmission means, which converts a sliding movement of the operating member with respect to the carrying member into a pivoting motion of the respective plate-shaped strip.
3. A device according to claim 1 or 2, characterized in that said common carrying member of the plate-shaped strips is movable in the longitudinal direction of the carrying member with

respect to said carrying member, whilst a transmission means is provided between the carrying member and the plate-shaped strips, which causes the plate-shaped strips to pivot upon movement of the common carrying member. 5

by means of a flexible, resilient wire-shaped member.

4. A device according to claim 3, characterized in that said carrying member comprises a tube, in which a second tube is movably provided, to whose free end the common carrying member is secured. 10

5. A device according to claim 4, characterized in that openings are provided in said common carrying member, through which openings flexible, resilient wire-shaped members are passed, which wire-shaped members are fixed to the carrying member with one end, the other ends being bent in a direction away from each other and being secured to plate-shaped strips. 15
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6. A device according to any one of the preceding claims, characterized in that a cup-shaped guard is movable along said carrying member, between a position, in which said guard is located at some distance from said common carrying member with the plate-shaped strips coupled thereto, and a position, in which a second cup-shaped means can be connected to said first cup-shaped means, in such a manner that the two cup-shaped means define a space in which the common carrying means with the plate-shaped strips coupled thereto can be accommodated. 25
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7. A device for picking up material lying on the ground, provided with an elongated carrying member and with at least one gripping member being pivotable about a pivot, characterized in that said carrying member comprises two parts which can telescope with respect to each other, whereby the gripping member is coupled to the one part of the carrying member by means of the pivot, whilst a transmission means is provided between the other part of the carrying member and the pivotable gripping member, said transmission means converting a sliding movement of the two parts of the carrying member with respect to each other into a pivoting motion of the pivotable gripping member. 40
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8. A device according to claim 7, characterized in that said movable parts are two coaxially arranged tubes, which can telescope with respect to each other, and that said pivotable gripping member is coupled to the inner tube 55

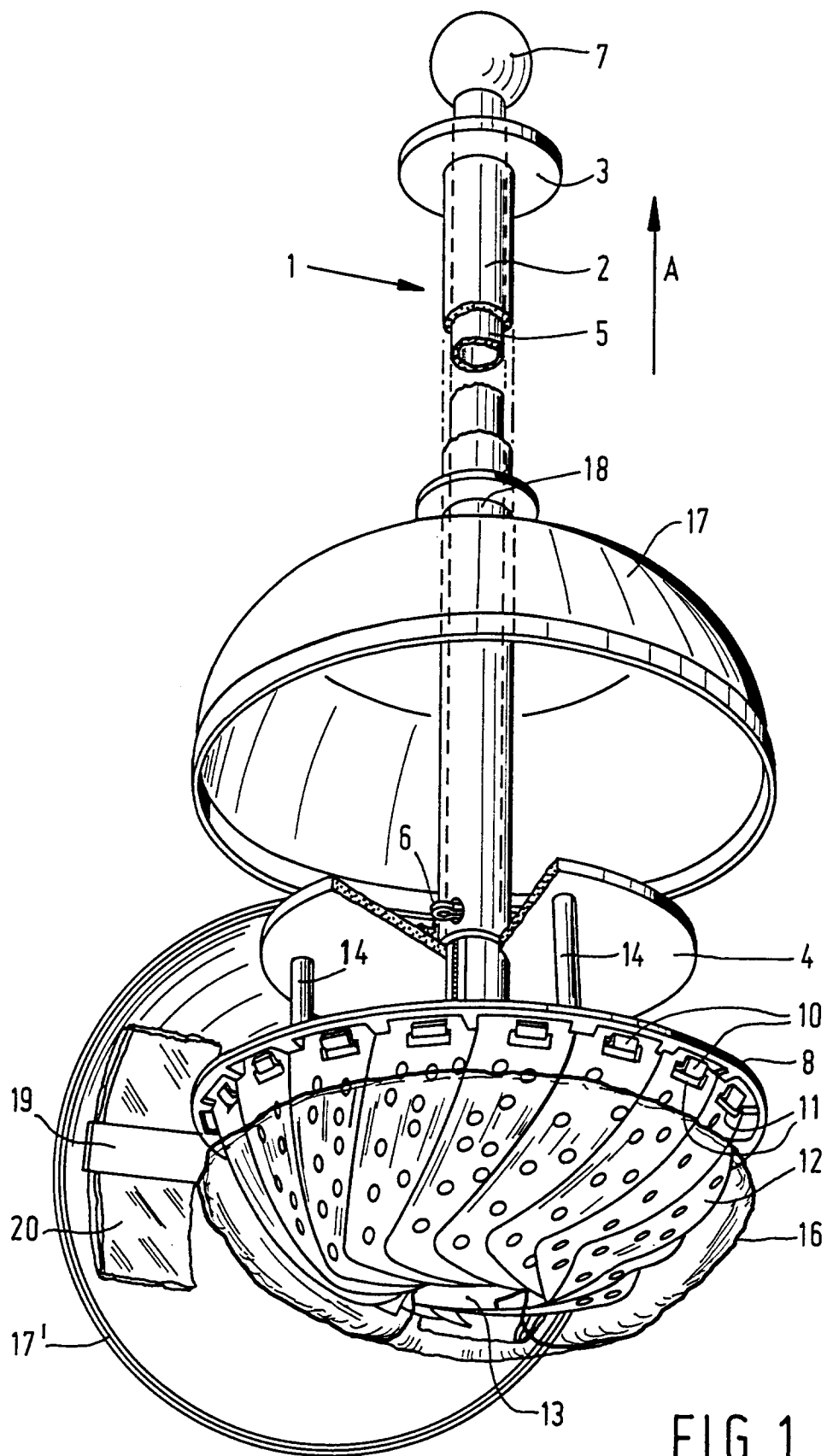
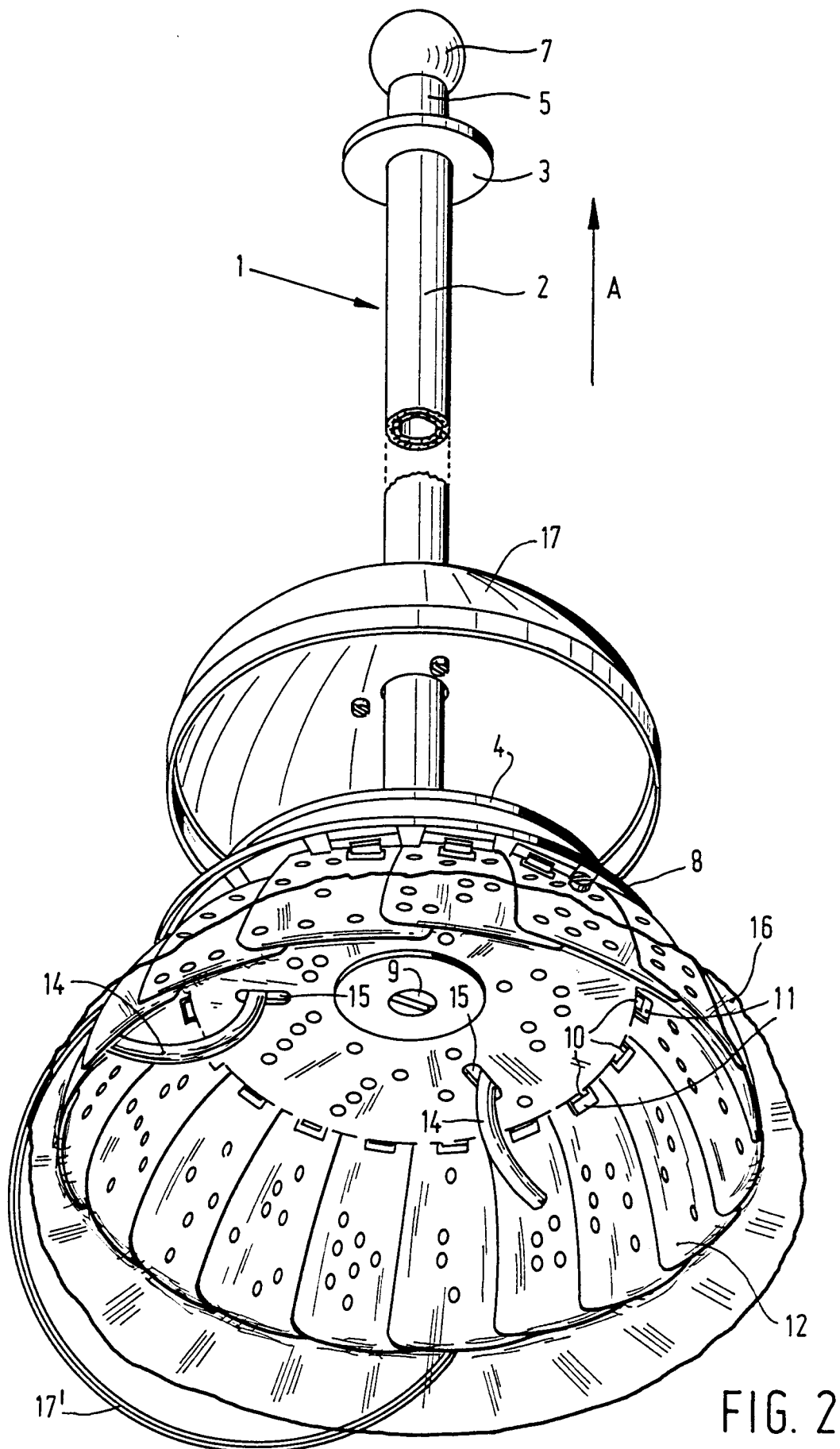


FIG. 1



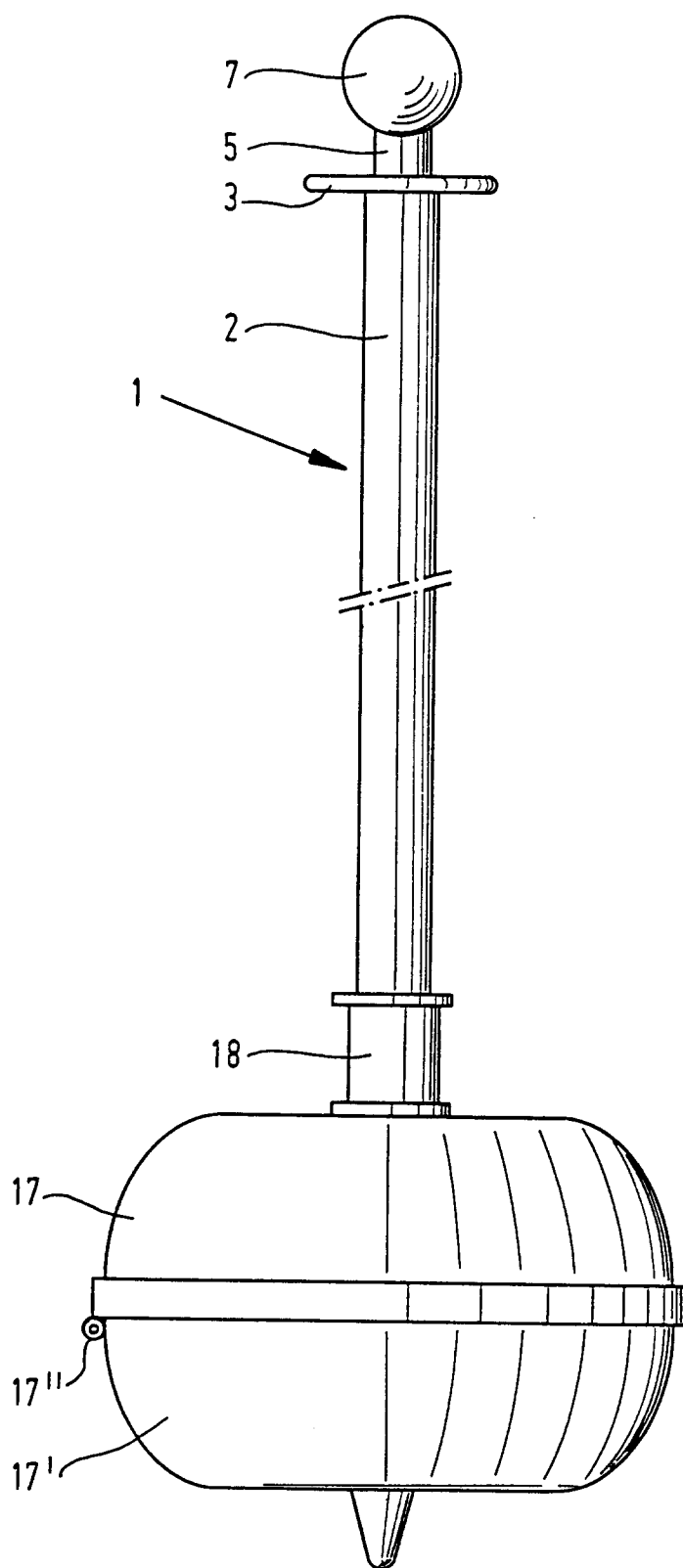


FIG. 3

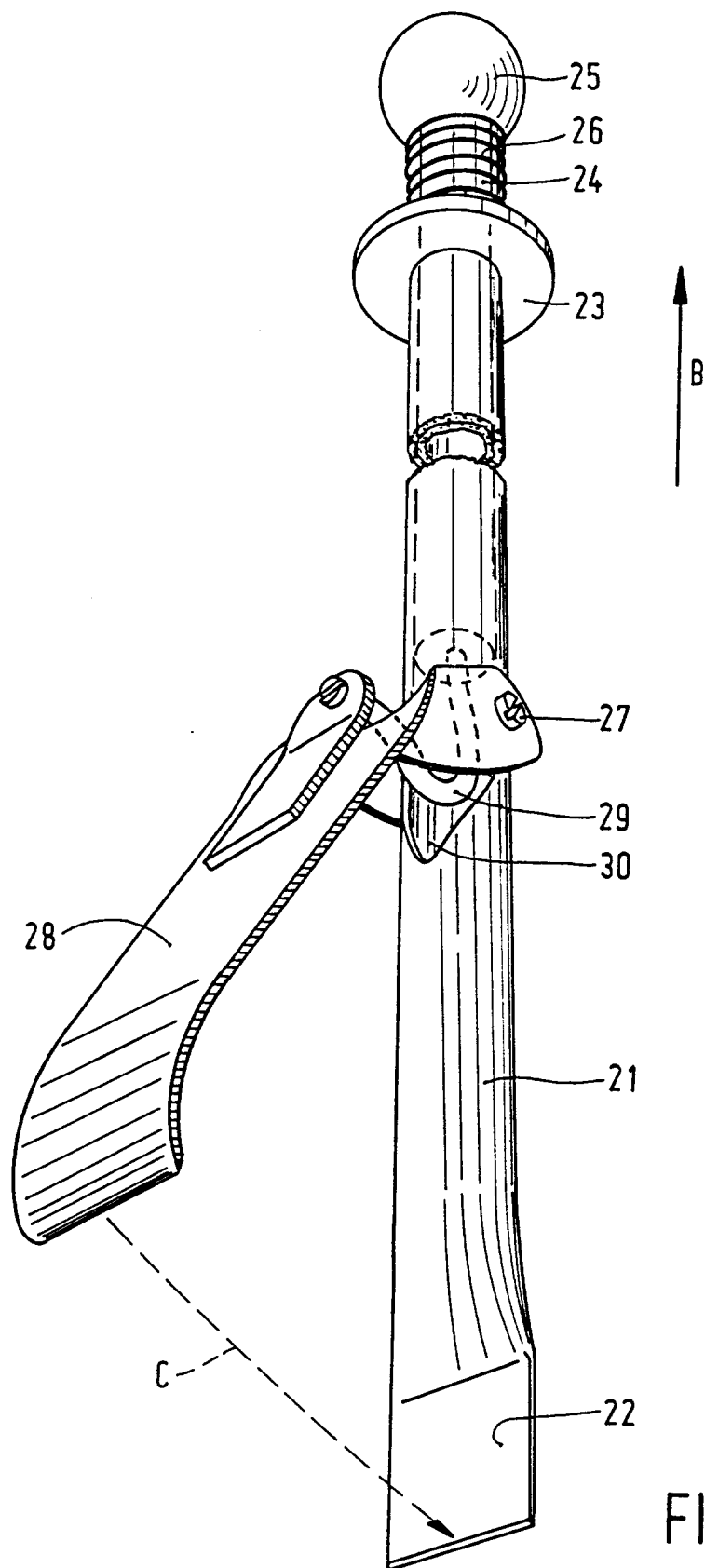


FIG. 4