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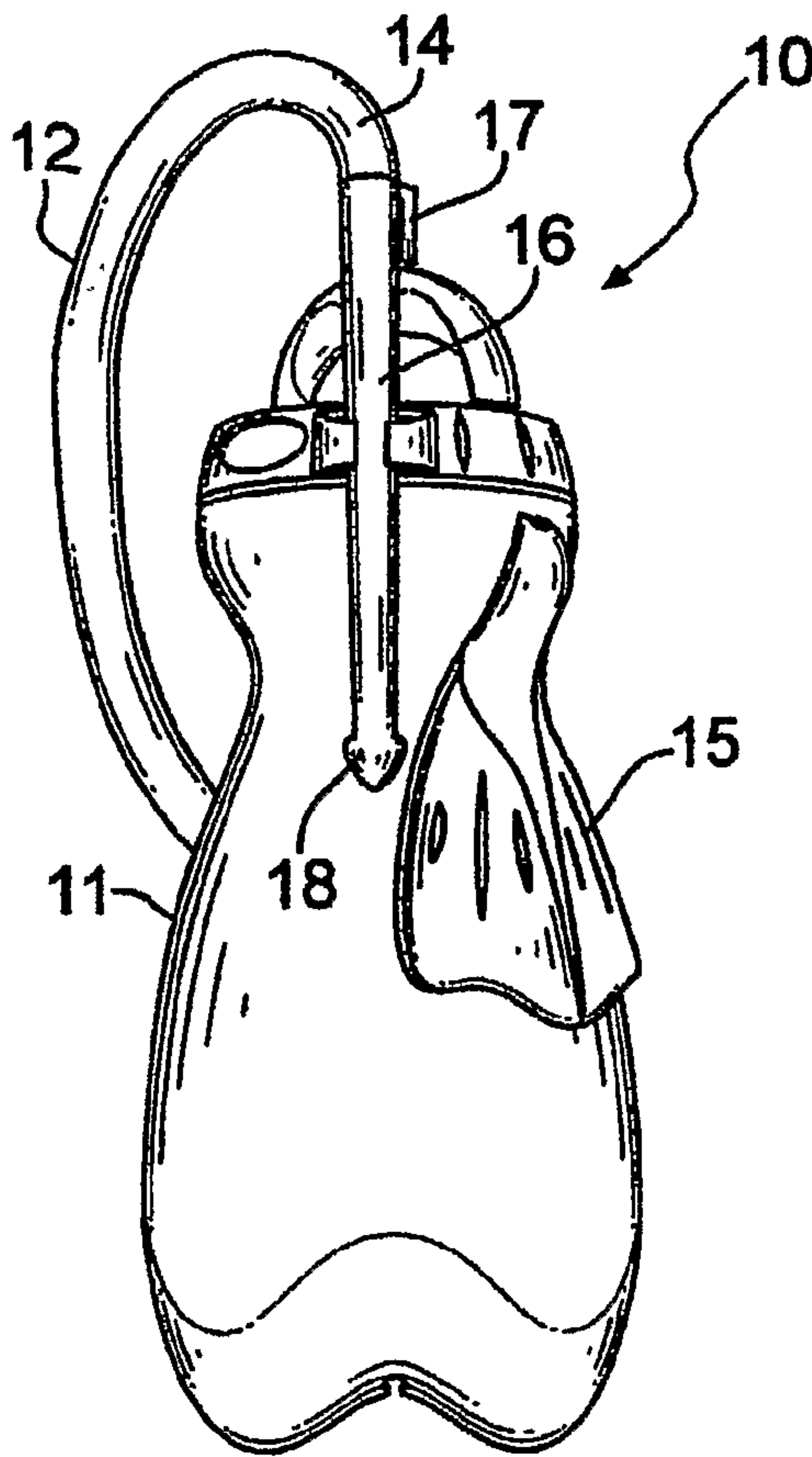
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(54) Title: SPRAYER HAVING A SPRAY SHIELD AND A SPRAY SHIELD RETAINER



(57) Abrégé/Abstract:

A sprayer has a spray shield and a spray shield retainer. The spray shield is removably attached to the spray shield retainer for efficient storage when not in use. The spray shield can be contoured to the body of the sprayer. The spray shield is configured for attachment to a spray wand proximate to a nozzle.

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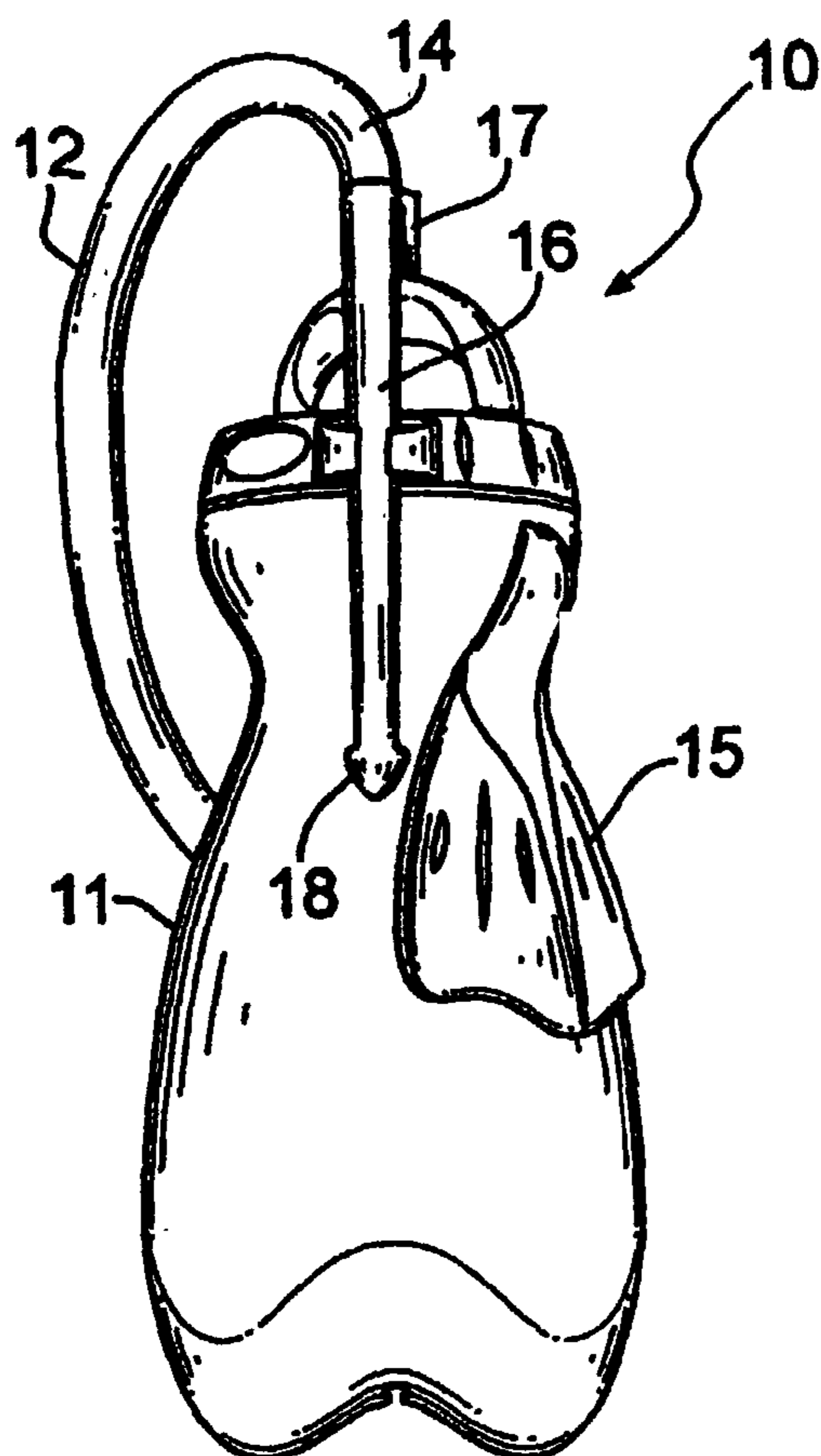
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(54) Title: SPRAYER HAVING A SPRAY SHIELD AND A SPRAY SHIELD RETAINER



(57) Abstract: A sprayer has a spray shield and a spray shield retainer. The spray shield is removably attached to the spray shield retainer for efficient storage when not in use. The spray shield can be contoured to the body of the sprayer. The spray shield is configured for attachment to a spray wand proximate to a nozzle.

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## **BACKGROUND**

It is customary for gardeners, both professional and amateur, to apply various types of fertilizers, insecticides, pesticides and herbicides by spray applicators. Typically these spray applicators include a tank which contains the liquid to be sprayed. Often liquid is provided in concentrated form and is mixed with water and then poured into the tank. The tank may be of varying capacity from a gallon or two to one having a much larger volume. The contents of the tank may be pressurized either by a hand pump and in some cases may be pressurized using an air source such as an air compressor. A flexible hose is attached to the tank and is then connected to a feed tube which depends within the tank. A tubular wand at the end of the flexible hose is attached to a spray nozzle which is often adjustable to regulate the spray from a fan-shaped spray to a more concentrated stream. A valve having a lever is manually operable to control the flow from the nozzle.

Because of wind conditions, or improper use of the spray device due to inattentiveness or carelessness, the spray may drift onto the user. This may



be a particularly serious problem, especially when chemicals such as herbicides or other chemicals potentially harmful to humans are being applied. Therefore, even if the users of such equipment are extremely careful, unintended harm can result when spraying, particularly when using lawn, garden and agricultural chemicals.

U.S. Patent No. 6,679,438 discloses a spray shield that attaches to a sprayer wand and directs spray from a sprayer away from the operator. Since the spray shield projects from the slender wand, it may be awkward to store the sprayer and wand when not in use. Further, there may be occasions when the operator does not desire to use the shield when operating the sprayer. However, the prior art does not disclose a way to conveniently and efficiently store the spray shield when it is not being used.

Accordingly, there is a need in the art for a sprayer having a spray shield that can be efficiently and conveniently stored when not in use.

### **Summary**

A sprayer embodying the present invention can comprise a body; a hose operably attached to the body, the hose having a spray end; a nozzle operably attached to the hose; and a spray shield; the spray shield, the hose and the body being configured so that the spray shield is removably attached to the body and configured for attachment to the hose proximate to the nozzle.

The body can have a shield retainer to which the spray shield is removably attached. The spray shield preferably is contoured to the body.

The sprayer can further comprise a wand and the spray shield can be configured for attachment to the wand proximate to the nozzle.

### Brief Description of the Drawings

These and other features, aspects and advantages of the present invention will become better understood with regard to the following descriptions, appended claims, and accompanying drawings where:

**Fig. 1** is a perspective view of a sprayer embodying the invention;

**Fig. 2** is a perspective view of the sprayer of **Fig. 1** without the spray shield attached;

**Fig. 3** is a bottom view of the spray shield of **Fig. 1**;

**Fig. 4** is a perspective view of the spray shield of **Fig. 1** attached to a wand;

**Fig. 5** is a perspective view of a second embodiment of the invention;

**Fig. 6** is a perspective view of the sprayer of **Fig. 5** without the spray shield attached;

**Fig. 7** is a bottom perspective view of the spray shield of **Fig. 5** with the hinged portion folded;

**Fig. 8** is a bottom perspective view of the spray shield of **Fig. 5** with the hinged portion unfolded; and

**Fig. 9** is a perspective view of the spray shield of **Fig. 5** attached to a wand.

### Description

Referring now to **Fig. 1** sprayer **10** embodying the present invention may be of the type containing liquid to be applied under pressure through a flexible hose **12** having a spray end **14**, which terminates at a wand **16**. The distal end of the wand can carry a nozzle **18**, which may be adjustable from a

fan spray to a more concentrated spray. Generally, a hand-operated valve having a lever **17** is positioned adjacent to the distal end of the wand **16** to allow an operator to manually control the spray. This type of sprayer is well-known to those of ordinary skill in the art. A spray shield **15** can be removably attached to the sprayer **10** when the spray shield is not being used. The shield **15** preferably is configured so that when it is attached to the sprayer **10**, it is substantially contoured to the sprayer.

The shield **15** preferably is attached to the sprayer **10** via a shield retainer **20**. As seen best in **Fig. 2**, the shield retainer **20** can be molded as an integral portion of the sprayer **10** or can be attached as a separate component. In the illustrated embodiment, the shield retainer **20** is located on the sprayer body **11** and comprises an elongated protusion **22** having an elongated flange **24**. The flange **24** has semi-circular horizontal cross-section.

The spray shield **15** in **Fig. 3** is comprised of a rigid plastic material formed by injection molding and has a flared portion **30** and a retaining portion **32**. The retaining portion **32** has a groove **33** and the groove has two ridges **34** one on each side **36** of the groove, about midway between the top and the bottom of the groove. Optionally, the shield **15** can have a rubber brake **38** between the two ridges **34** in order to more securely attach the shield to the sprayer **10** and to the wand **16**.

The retaining portion **32** and shield retainer **20** are configured so that the retaining portion can be releasably attached to the shield retainer via friction. The operator can easily push the retaining portion **32** on the shield retainer **20** until the retaining portion "snaps" into place. The retaining portion



**32** will remain attached to the sprayer **10**, as depicted in **Fig.1**, until the operator pulls the spray shield **15** away from the sprayer.

When the operator wishes to utilize the spray shield, the operator can attach the spray shield to the wand in a similar manner. The operator can push the retaining portion onto the wand proximate to the nozzle until the retaining portion “snaps” into place, as shown in **Fig. 4**.

**Fig. 5** illustrates a second embodiment of the invention. In this embodiment, the shield retainer **60** is comprised of a cavity **62**, best seen in **Fig. 6**, molded into the sprayer **50**. The cavity **62** has two snap fingers **64**. Each snap finger has a tapered retaining lip **65**. Referring now to **Figs. 7 & 8**, the retaining portion **70** of the shield **72** has hinge **71**, a hinged portion **73** and a cut-out portion **74**. The hinged portion has a groove **75**. Each edge **76** of the groove **75** has a ridge **77**, which helps to retain the shield **72** on the wand **16** when the shield is being utilized. The groove **75** has an aperture **78**.

When the operator wishes to store the shield **72**, the operator can fold the hinged portion **73** via the hinge **71** over the cut-out portion **74**, as shown in **Fig. 7** and push the groove **75** into the cavity **62** and the snap fingers **64** through the aperture **78** until the shield “snaps” into place as shown in **Fig.5**. The tapered retainer lips **65** are spaced slightly wider than the aperture **78** so that when the groove **75** is pushed into the cavity **62** the snap fingers **64** are forced together allowing them to pass through the aperture **78**. Once the tapered retaining lips **65** have passed through the aperture **78** they snap back to their original position and thereby retain the shield **72** to the sprayer **50**. The shield **72** will remain attached to the sprayer **50** until the operator



squeezes the retaining lips **65** apart and pulls the spray shield away from the sprayer.

When the operator wishes to utilize the spray shield **72**, the operator can unfold the retaining portion **70**, as seen in **Fig. 8**, and push the hinged portion **73** onto the wand **16** proximate to the nozzle **18** until the hinged portion "snaps" into place, as shown in **Fig. 9**.

Although the present invention has been described in considerable detail with reference to certain preferred versions thereof, other versions are possible. For example, the shield retainer can be comprised of an adhesive or fastener, such as a Velcro® fastener. Therefore, the spirit and scope of the appended claims should not be limited to the description of the preferred version contained herein.

All features disclosed in the specification, including the claims, abstract, and drawings, and all the steps in any method or process disclosed, may be combined in any combination, except combinations where at least some of such features and/or steps are mutually exclusive. Each feature disclosed in the specification, including the claims, abstract, and drawings, can be replaced by alternative features serving the same, equivalent or similar purpose, unless expressly stated otherwise. Thus, unless expressly stated otherwise, each feature disclosed is one example only of a generic series of equivalent or similar features.

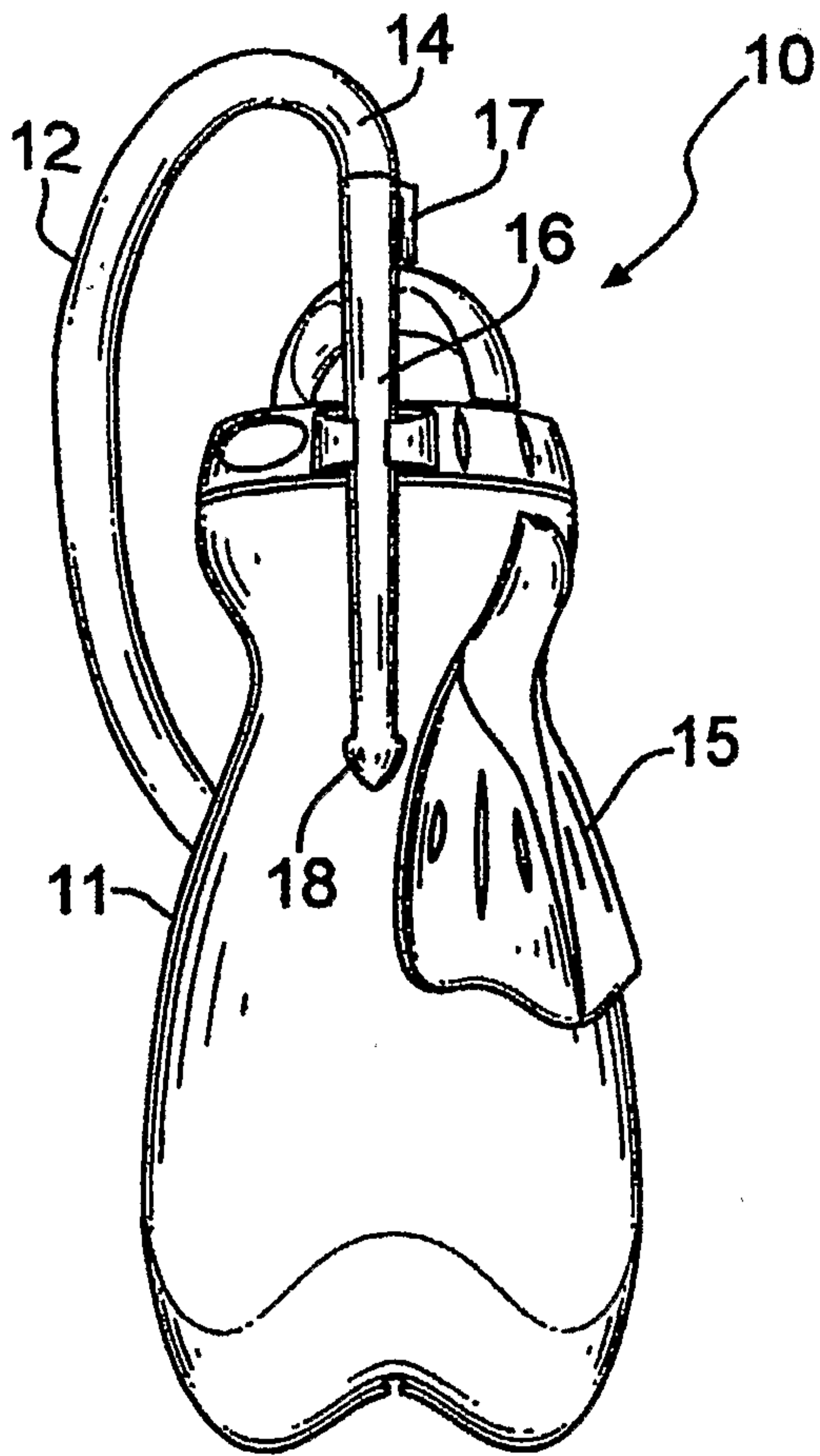
Any element in a claim that does not explicitly state "means for" performing a specified function or "step for" performing a specified function should not be interpreted as "means for" or "steps for" clause as specified in 35 U.S.C. § 112.

## Claims

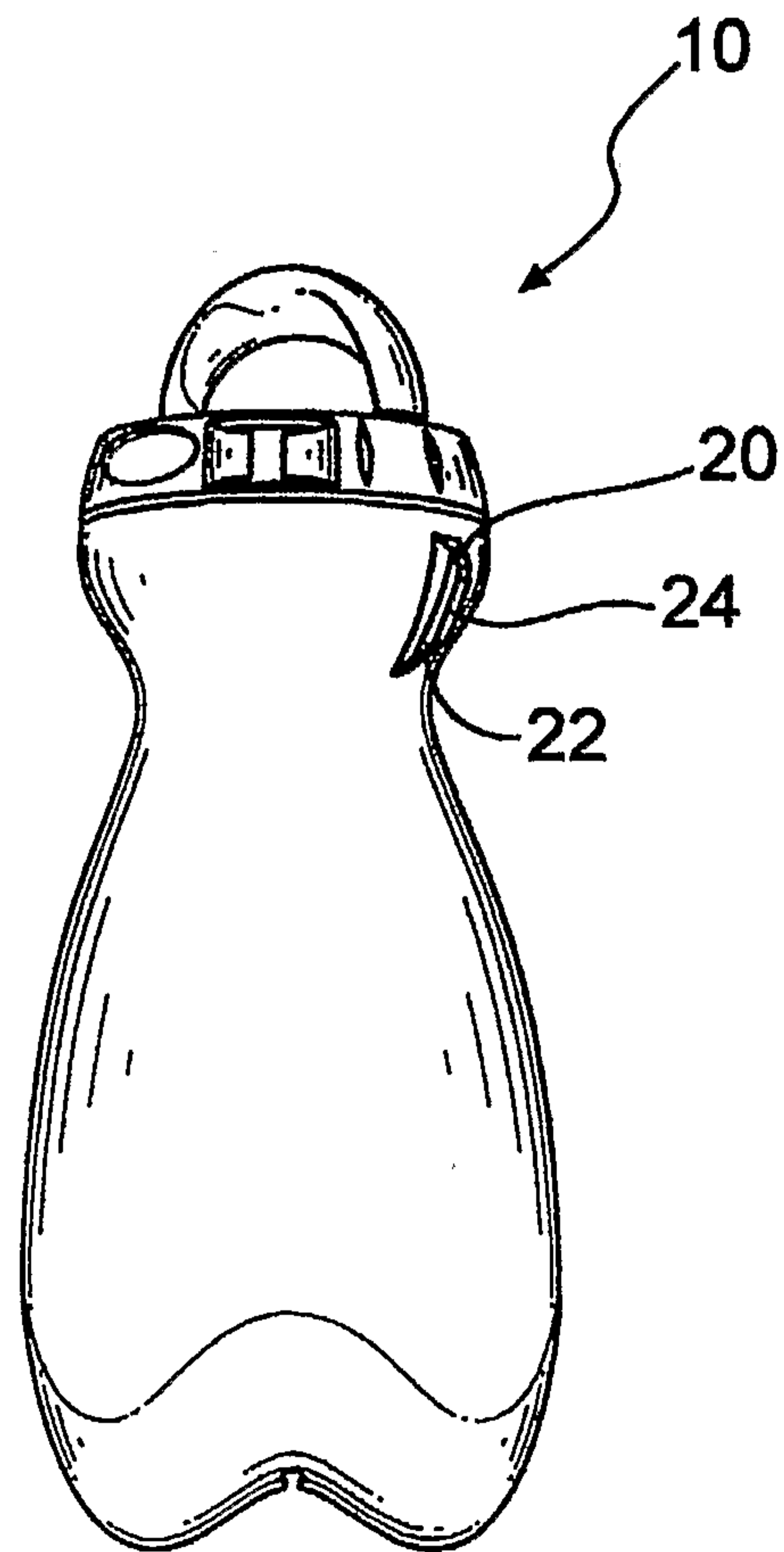
What is claimed is:

1. A sprayer comprising:
  - (a) a body;
  - (b) a hose operably attached to the body, the hose having a spray end;
  - (c) a nozzle operably attached to the hose; and
  - (d) A spray shield; the spray shield, the hose and the body being configured so that the spray shield is removably attached to the body and configured for attachment to the hose proximate to the nozzle.
2. The sprayer of claim 1 wherein the body has a shield retainer to which the spray shield is removably attached.
3. The sprayer of claim 1 wherein the spray shield is contoured to the body.
4. A sprayer comprising:
  - a) a body;
  - b) a hose operably attached to the body;
  - c) a wand operably attached to the hose;
  - d) a nozzle operably attached to the wand; and
  - e) a spray shield; the spray shield and the body being configured so that the spray shield is removably attached to the body.
5. The sprayer of claim 4 wherein spray shield is configured for attachment to the wand proximate to the nozzle.

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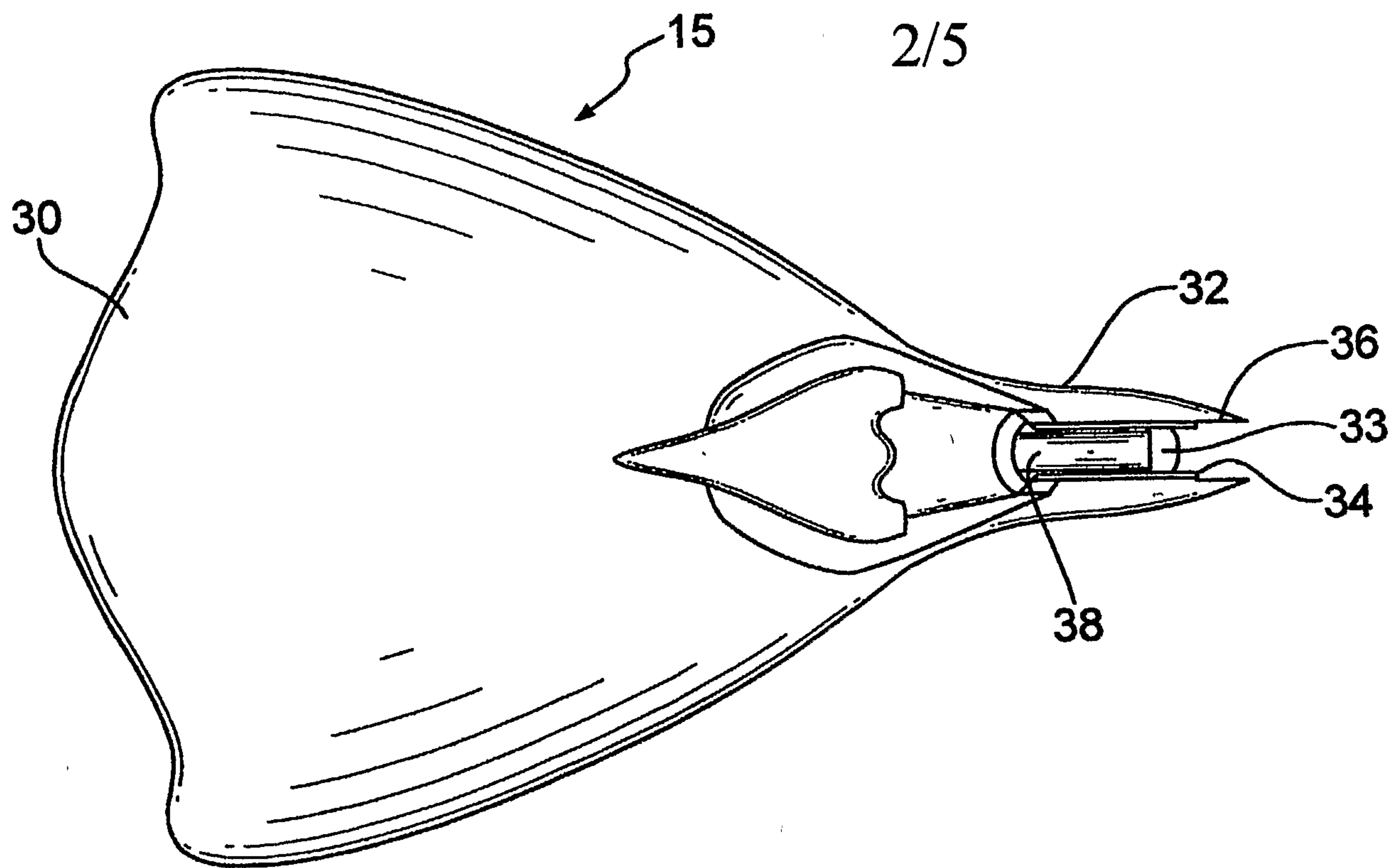


**FIG. 1**

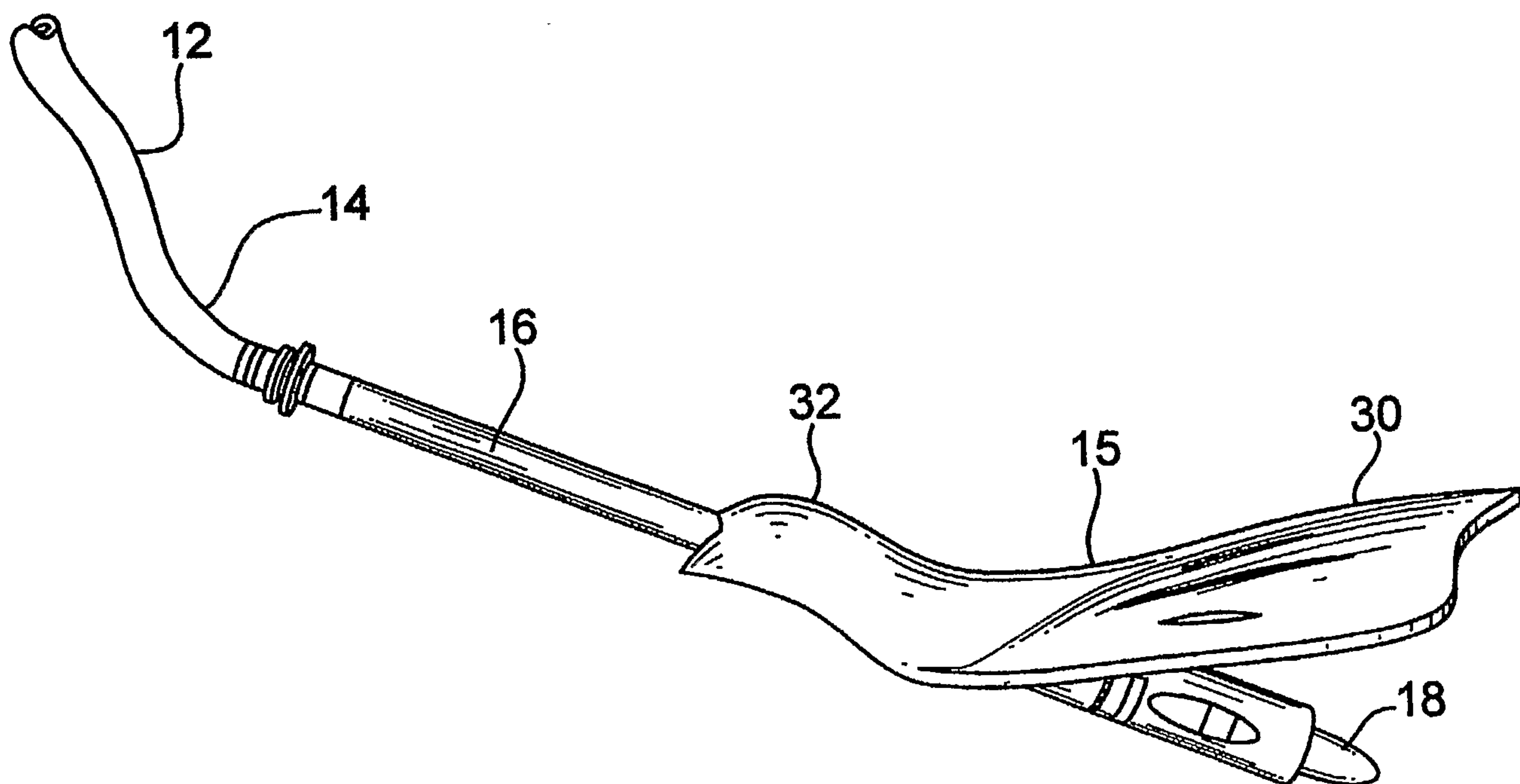


**FIG. 2**

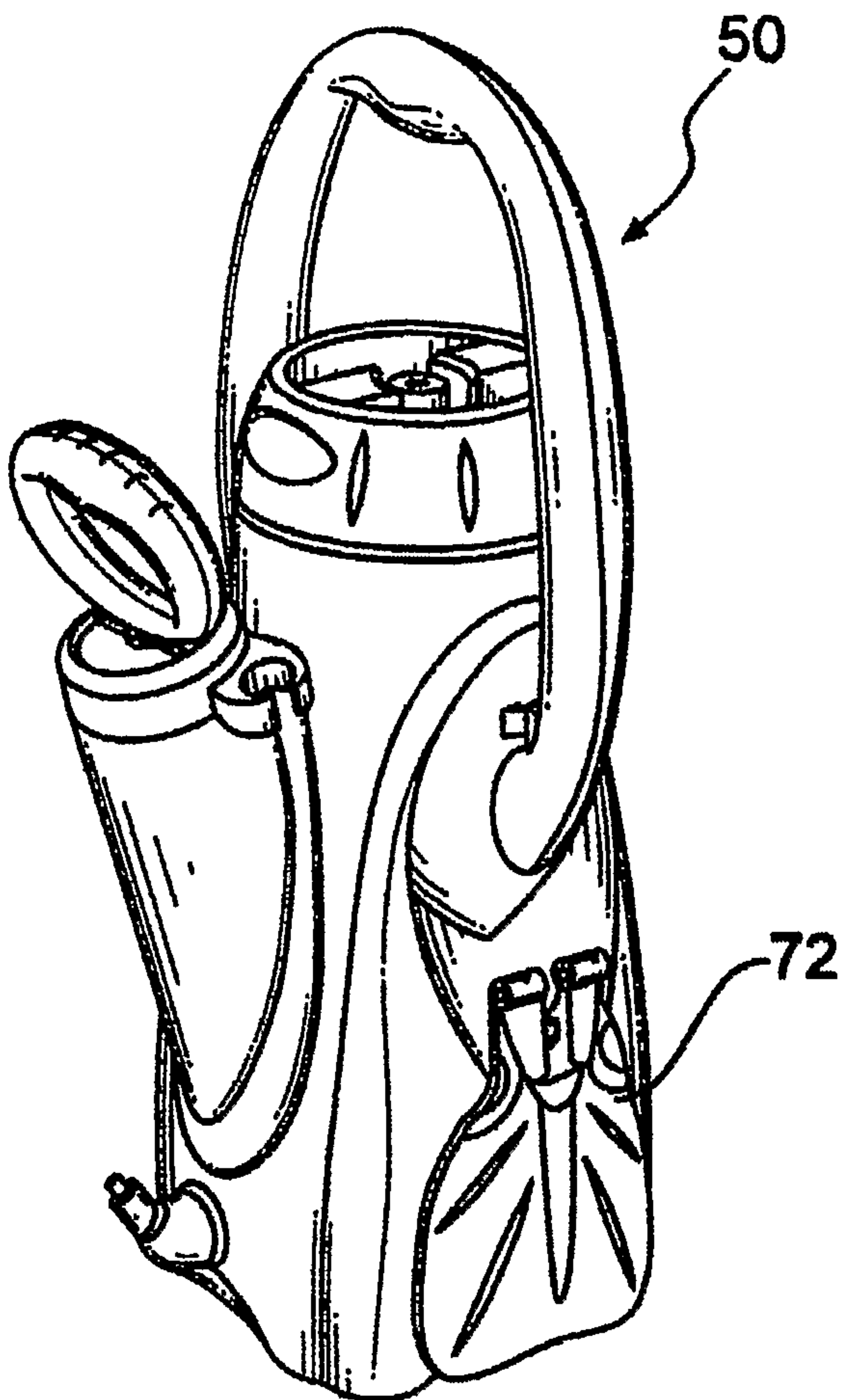




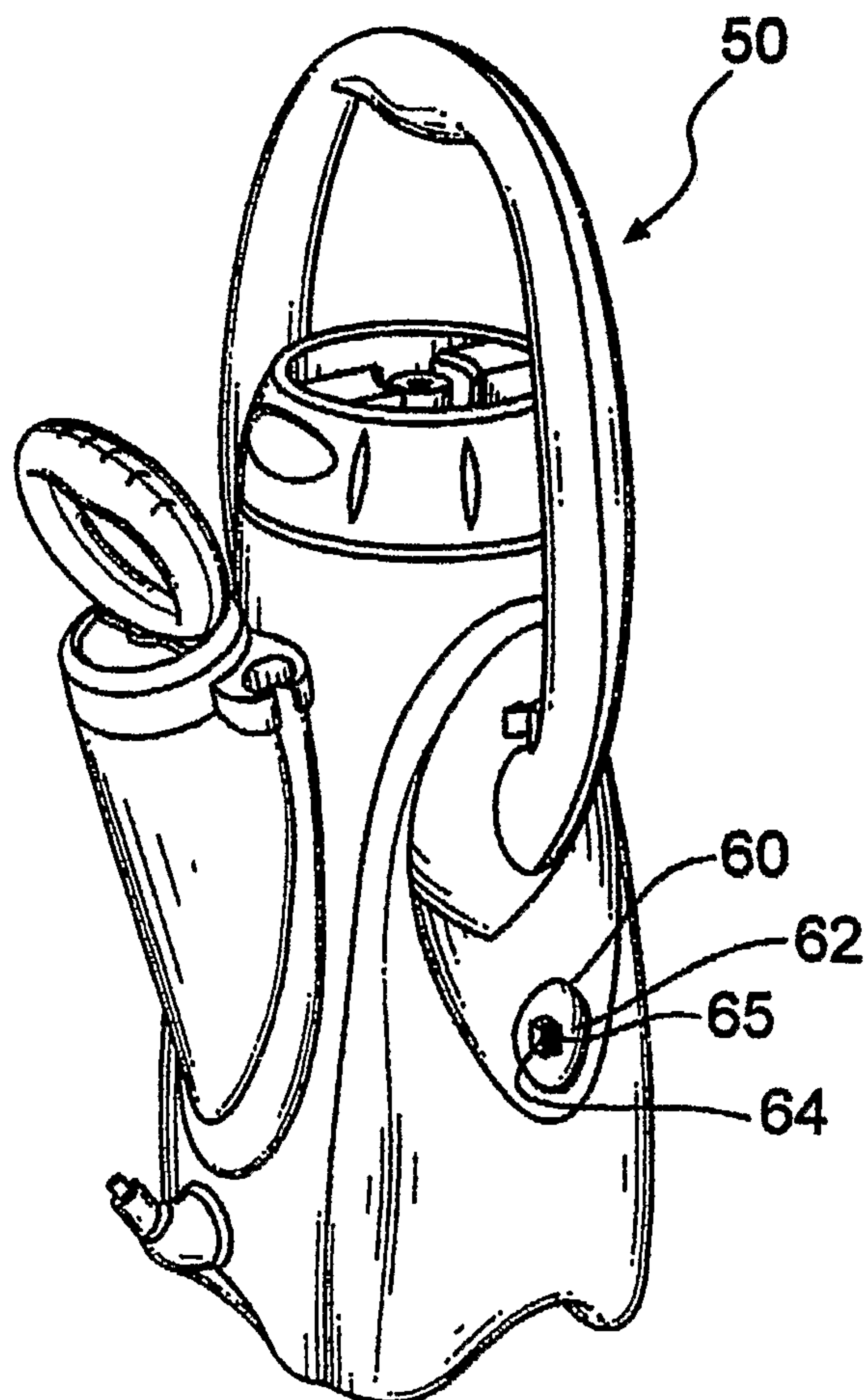
**FIG. 3**



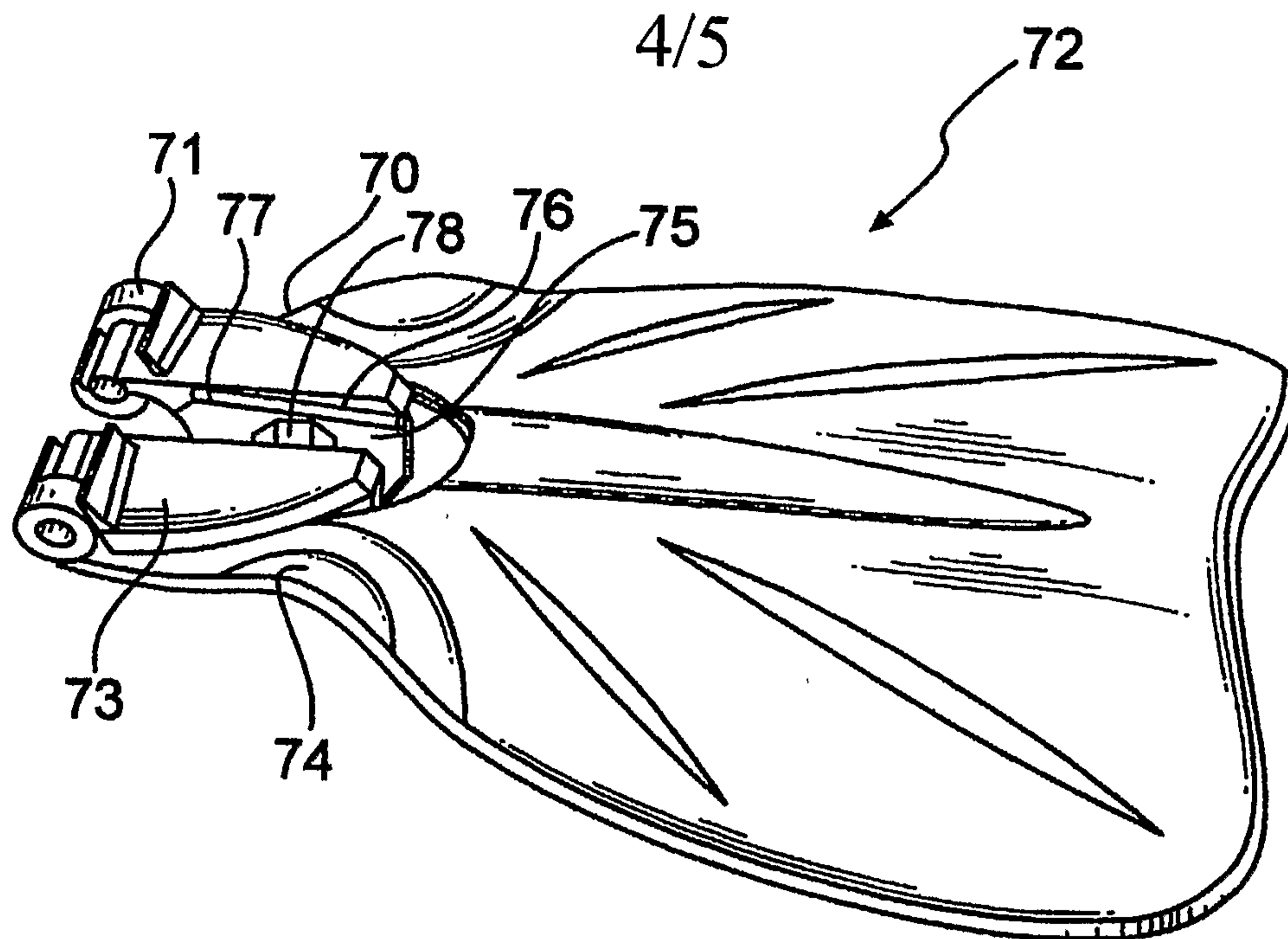
**FIG. 4**



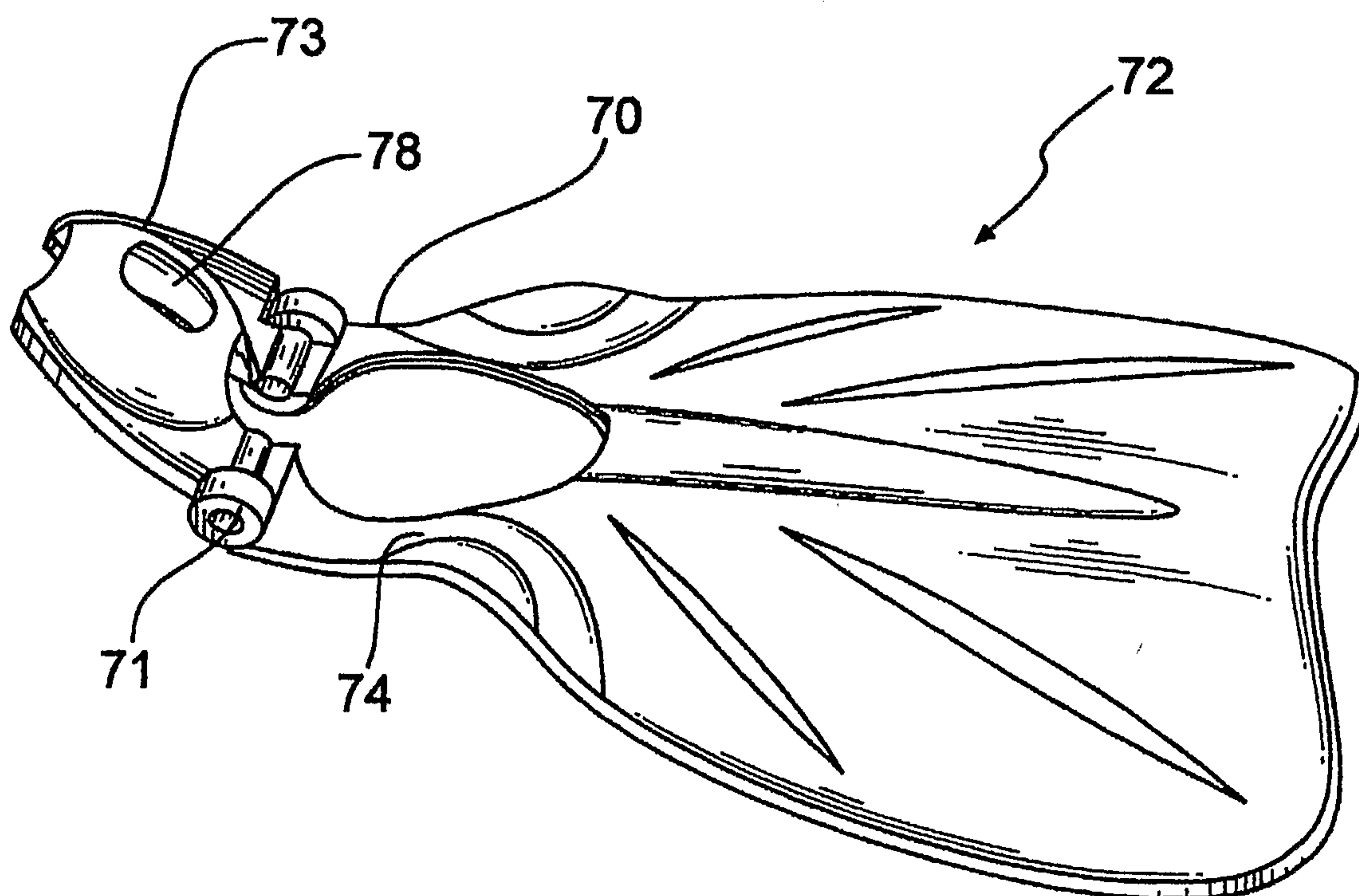
**FIG. 5**



**FIG. 6**

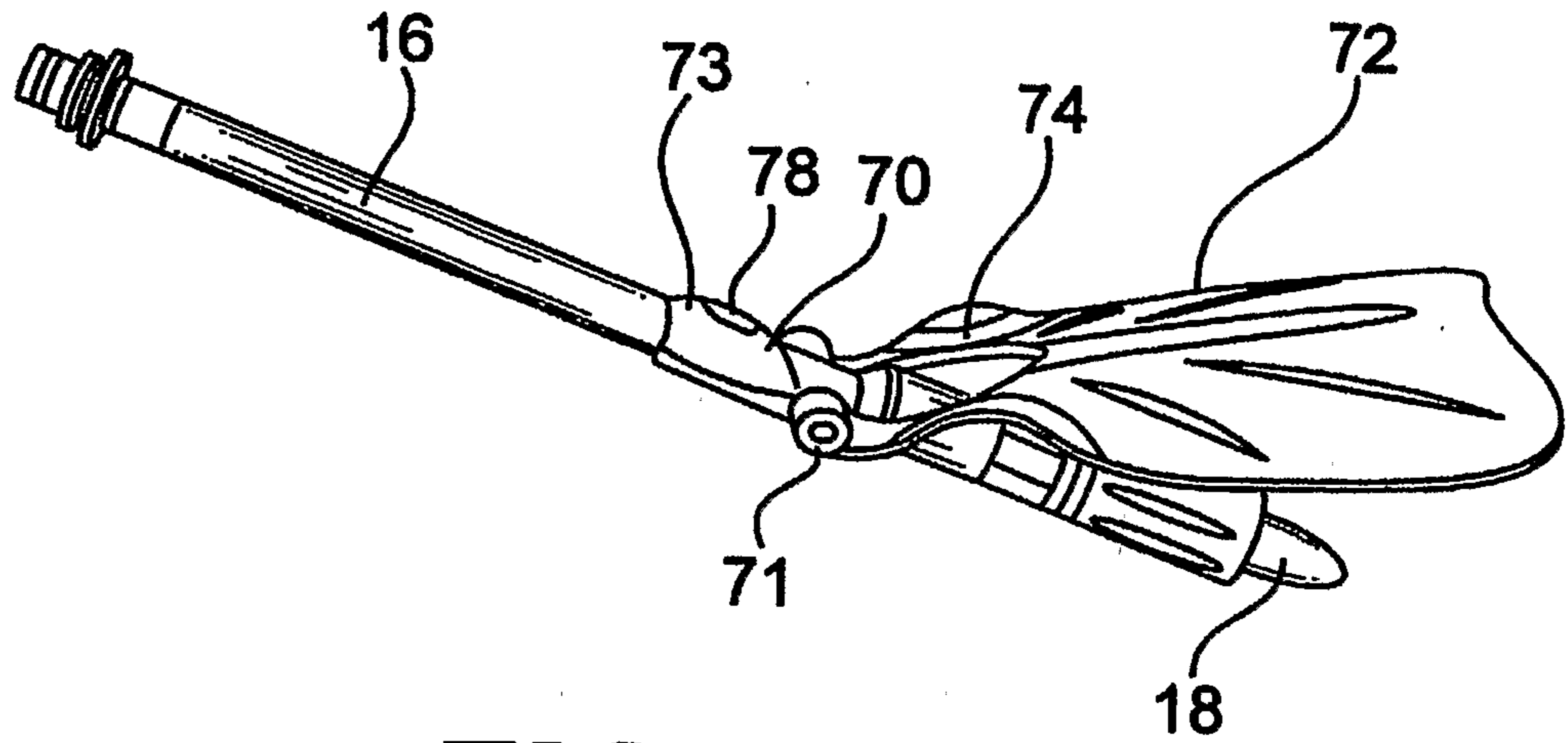


**FIG. 7**



**FIG. 8**





**FIG. 9**

