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(54) **BATTERY-POWERED SPRAY WAND**

(57) **ABSTRACT**

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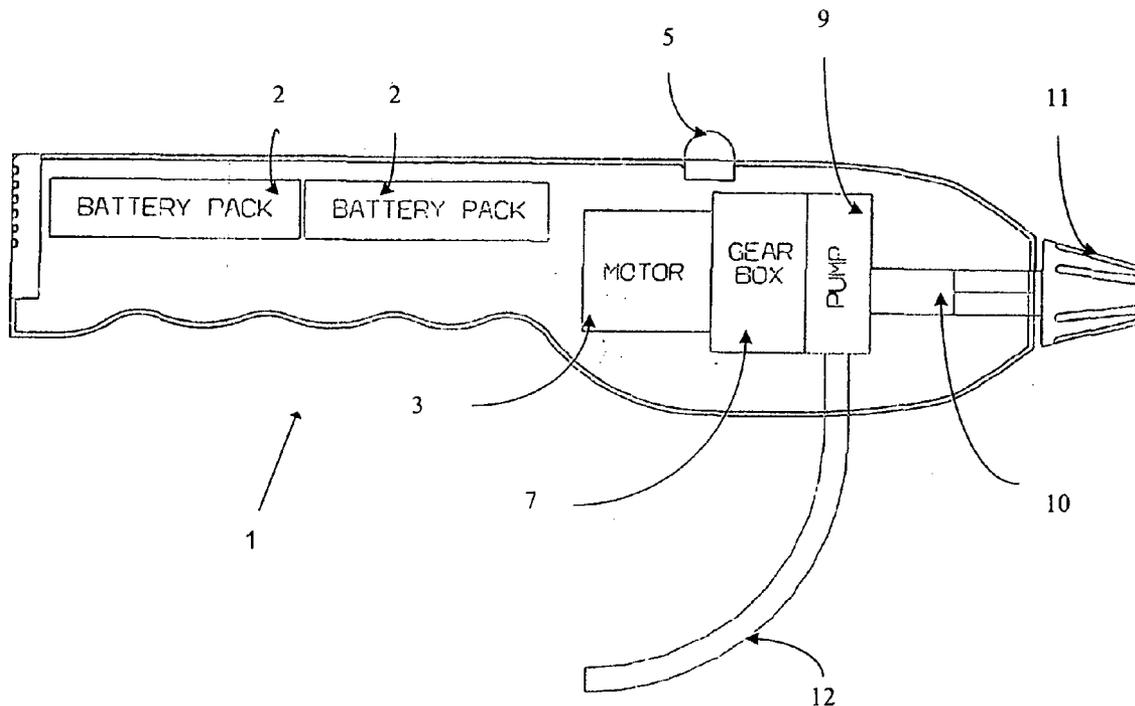
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A system, apparatus and method are provided for spraying liquid contained in a reservoir remote from said apparatus. The spray apparatus includes a housing in which a pump is positioned. The pump has an inlet and an outlet. An electric motor positioned within the housing drives the pump when a power supply located in the housing selectively provides power to the motor. A flexible intake hose connected to the inlet of the pump extends out of the housing to provide a path for liquid to flow from the remote reservoir to the pump. A discharge device in fluid communication with the outlet of the pump discharges liquid from the apparatus in a desired spray pattern. The housing also includes a hose compartment for storing a predetermined length of the intake hose when the apparatus is not in use so that the intake hose can be extracted from and inserted into the hose compartment. The spray apparatus may further include an extension for varying the distance between the discharge device and the housing. Additionally, a portion of the housing may pivot with respect to another portion of the housing.



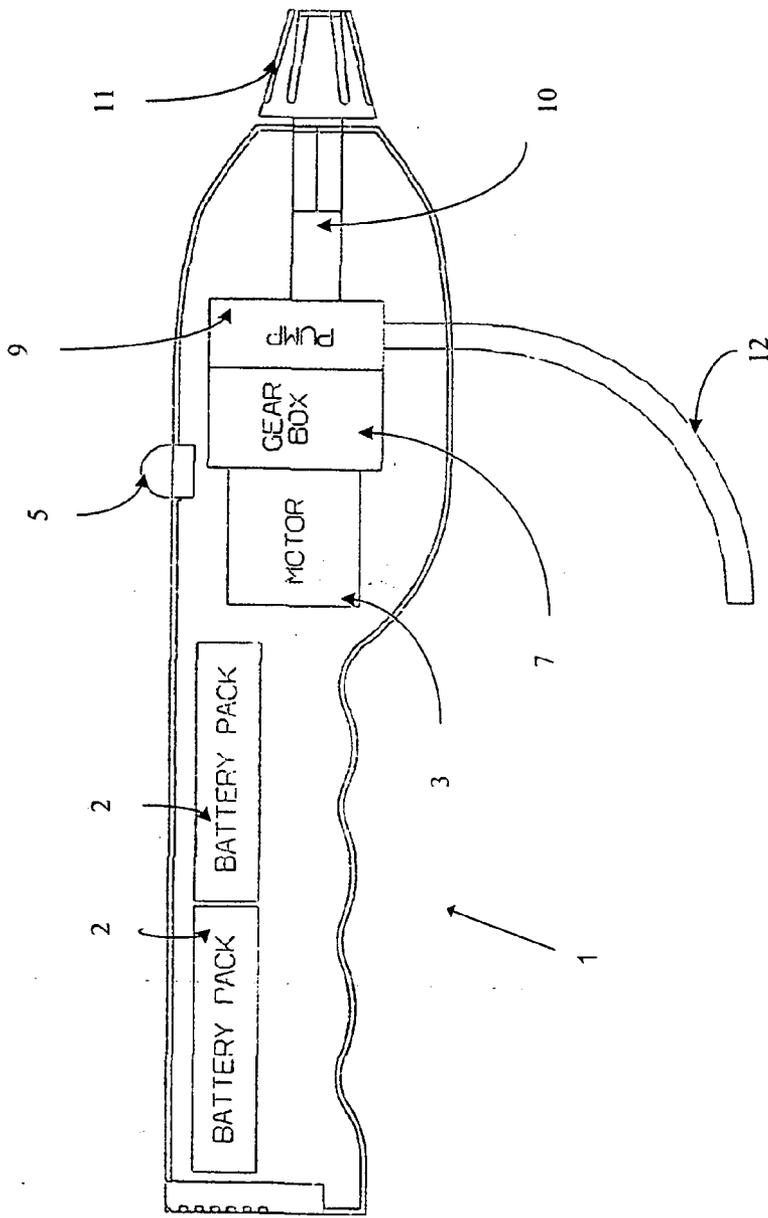


FIG. 1

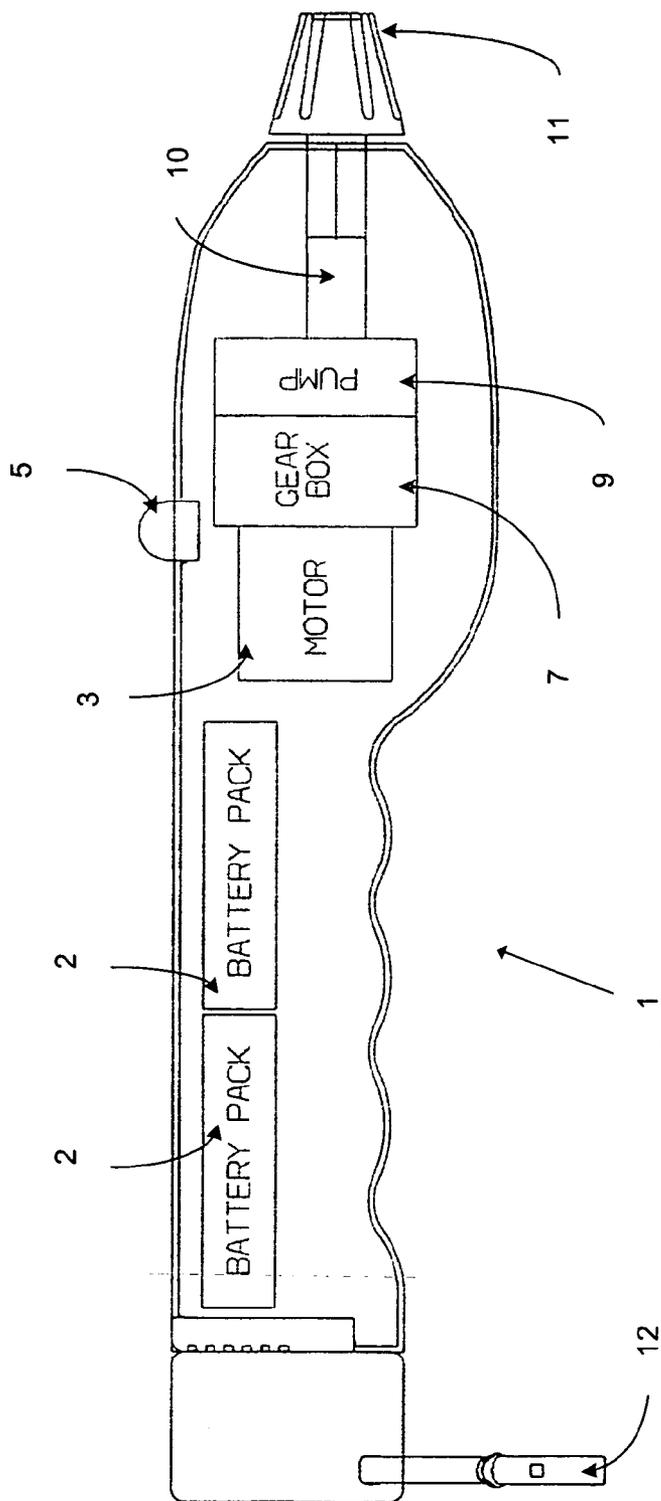


FIG. 2

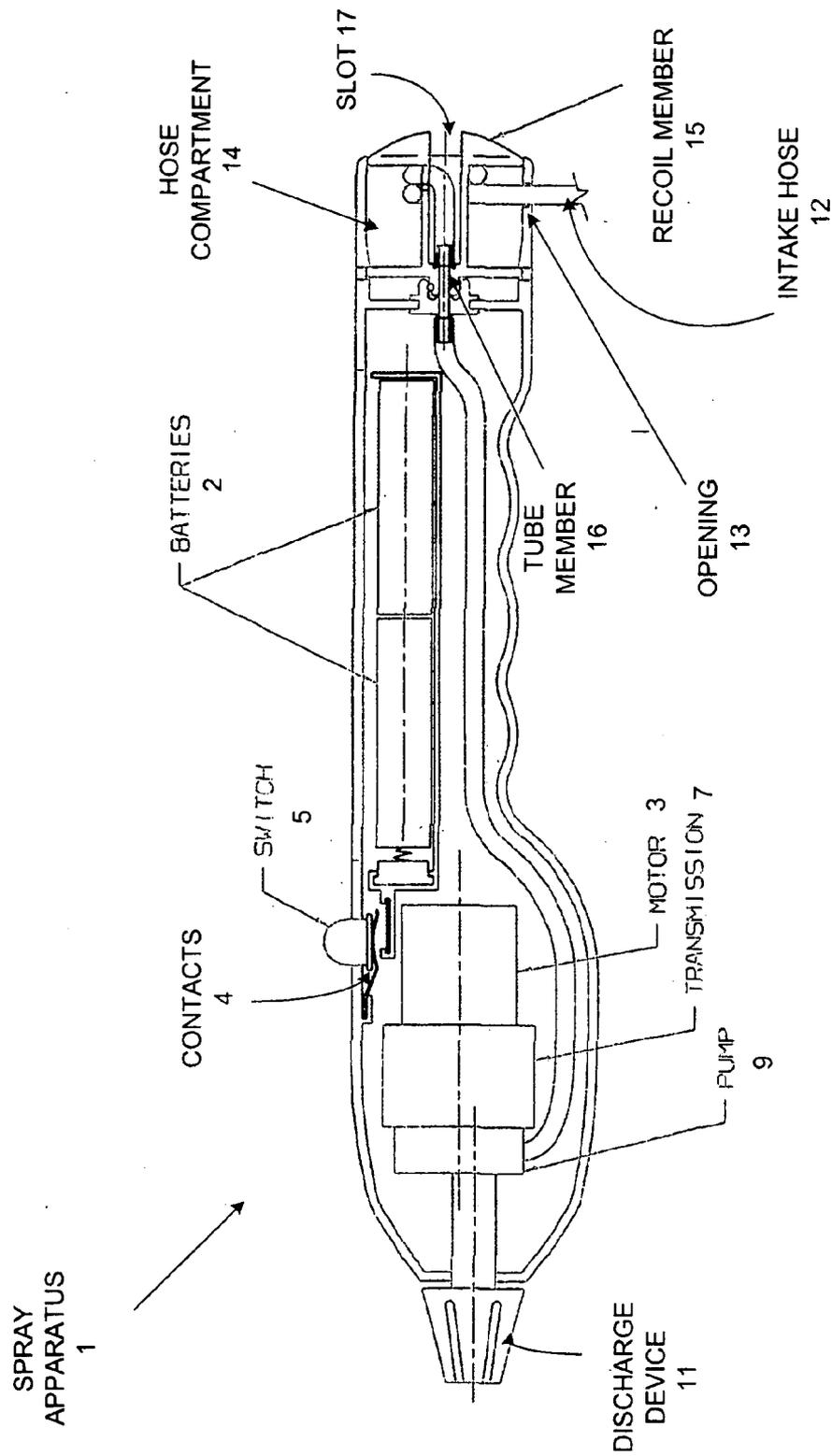


FIG. 3

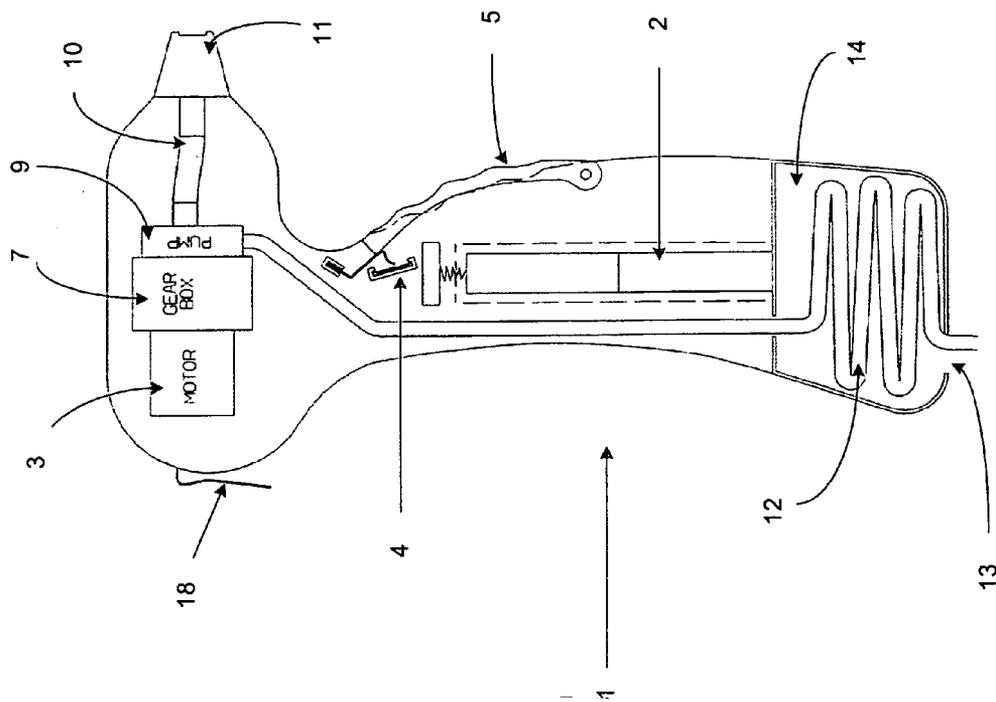


FIG. 4

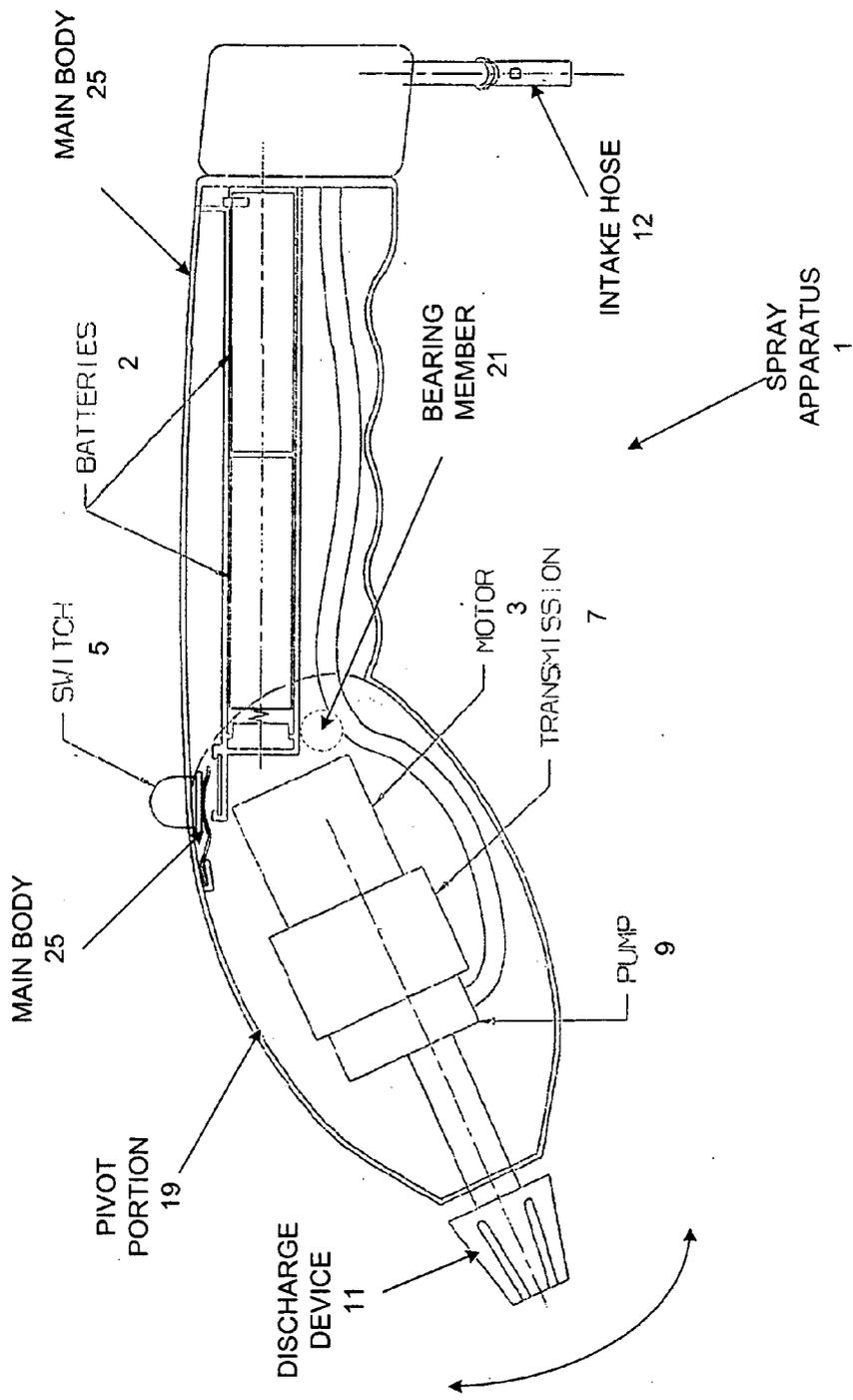


FIG. 5

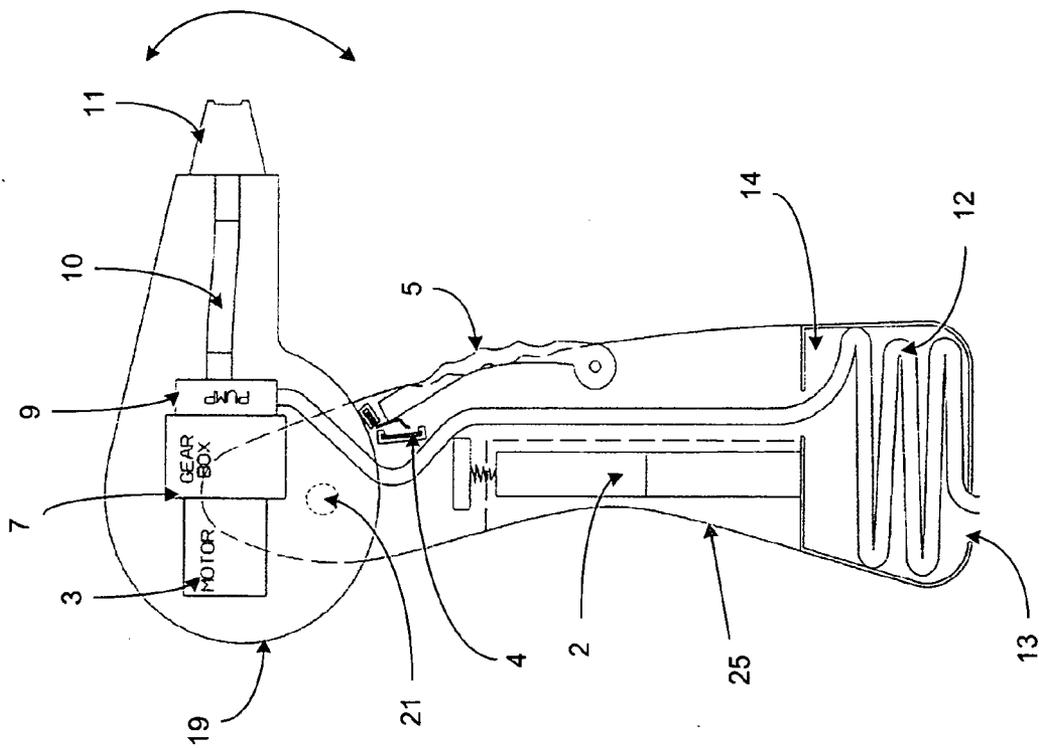


FIG. 6

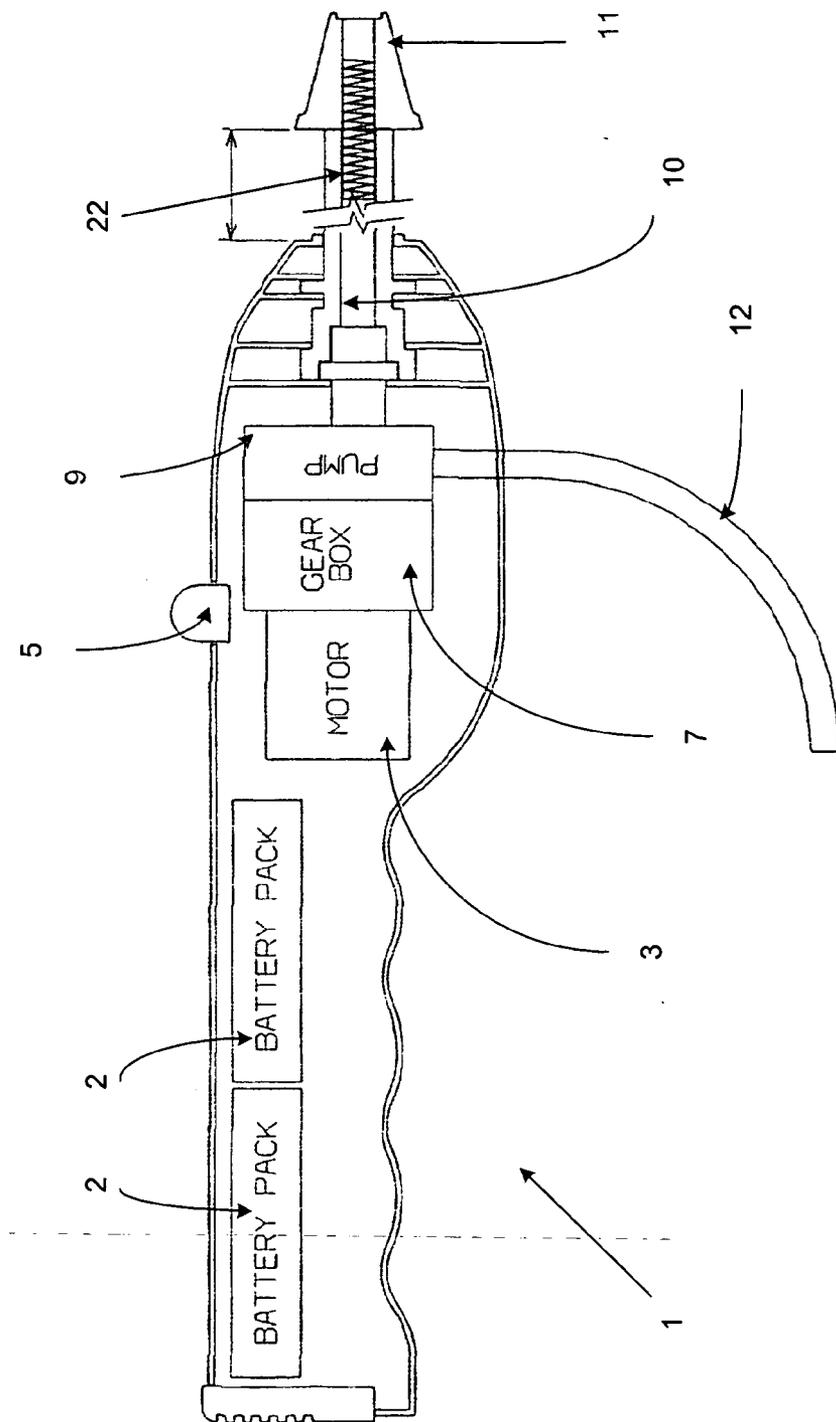


FIG. 7

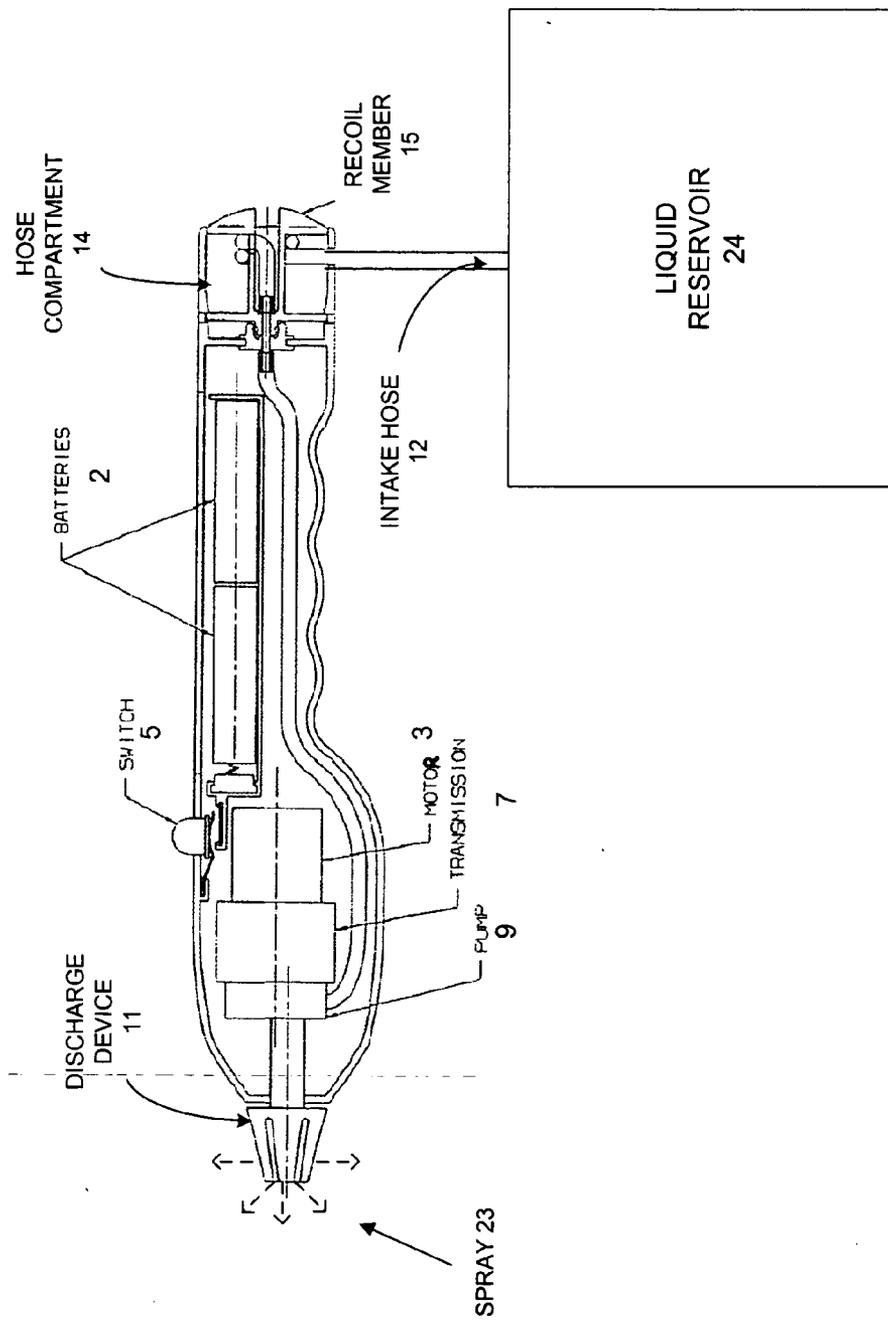


FIG. 8

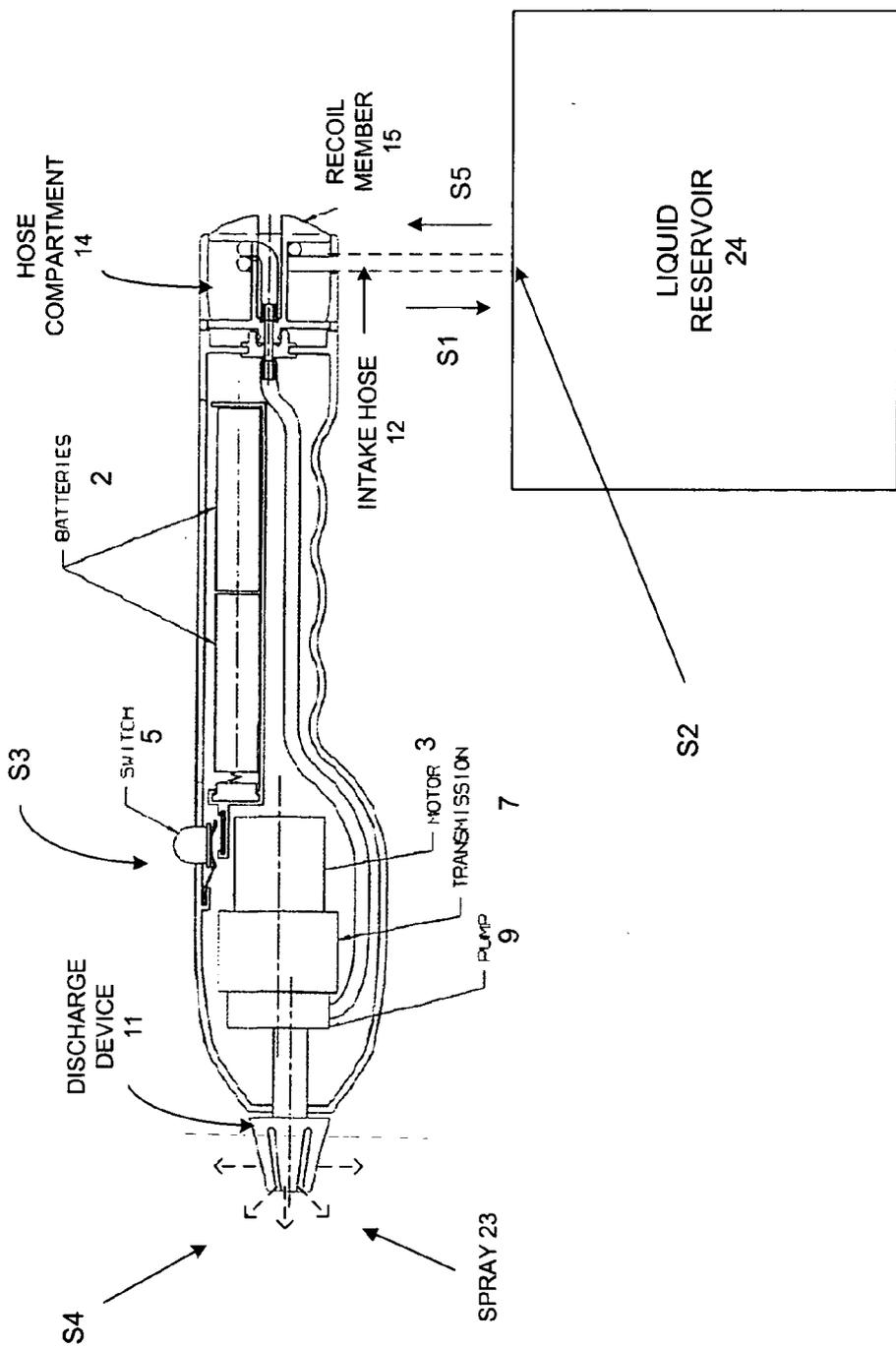


FIG. 9

BATTERY-POWERED SPRAY WAND

FIELD OF THE INVENTION

[0001] The present invention relates to liquid sprayers, and more particularly to an improved battery-powered, hand-held spray wand used for convenient spraying of a desired liquid.

BACKGROUND OF THE INVENTION

[0002] Sprayers have long been used to spray liquids of various types, such as water, pesticides, herbicides and the like. Typically, conventional sprayers include at least a liquid container, a pump and a discharge device such as a spray nozzle. The pump is used to supply the pressure necessary to deliver the liquid from the liquid container to, for example, a hand-held wand assembly for application of the liquid. The significant shortcoming associated with these conventional devices is that considerable time and effort is often required to fill the liquid container prior to spraying. Additionally, the volume of the liquid container may be inadequate for the volume of liquid needed for larger spraying operations, thereby requiring refilling of the liquid container during the spraying operation.

[0003] Accordingly, a need exists for a portable sprayer that allows for more convenient spraying of a desired liquid that is not limited by the size and location of the liquid reservoir. Additionally, there is a need for a portable sprayer that does not require filling of a liquid reservoir in the apparatus prior to and during spraying.

SUMMARY OF THE INVENTION

[0004] To overcome these and other disadvantages associated with known portable sprayers, a system, apparatus and method are provided for spraying liquid contained in a reservoir remote from said apparatus. The spray apparatus includes a housing in which a pump is positioned. The pump has an inlet and an outlet. An electric motor positioned within the housing drives the pump when a power supply located in the housing selectively provides power to the motor. A flexible intake hose connected to the inlet of the pump extends out of the housing to provide a path for liquid to flow from the remote reservoir to the pump. A discharge device in fluid communication with the outlet of the pump discharges liquid from the apparatus in a desired spray pattern.

[0005] The housing also includes a hose compartment for storing a predetermined length of the intake hose when the apparatus is not in use so that the intake hose can be extracted from and inserted into the hose compartment. The spray apparatus may further include an extension for varying the distance between the discharge device and the housing. Additionally, a portion of the housing may pivot with respect to another portion of the housing.

[0006] The foregoing specific objects and advantages of the invention are illustrative of those that can be achieved by the present invention and are not intended to be exhaustive or limiting of the possible advantages which can be realized. Thus, these and other objects and advantages of this invention will be apparent from the description herein or can be learned from practicing this invention, both as embodied herein or as modified in view of any variations which may

be apparent to those skilled in the art. Accordingly, the present invention resides in the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The accompanying figures best illustrate the details of the preferred apparatus, system and method of the present invention. Like reference numbers and designations in these figures refer to like elements.

[0008] FIG. 1 is a detailed illustration of a spray apparatus in accordance with an embodiment of the present invention;

[0009] FIG. 2 is a detailed illustration of a spray apparatus in accordance with another embodiment of the present invention;

[0010] FIG. 3 is a detailed illustration of a spray apparatus in accordance with an embodiment of the present invention that includes a hose compartment;

[0011] FIG. 4 is a detailed illustration of a spray apparatus in accordance with another embodiment of the present invention that includes a compartment;

[0012] FIG. 5 illustrates a spray apparatus in accordance with an embodiment of the present invention that includes a portion that pivots with respect to the main body of the apparatus;

[0013] FIG. 6 illustrates a spray apparatus in accordance with another embodiment of the present invention that includes a portion that pivots with respect to the main body of the apparatus;

[0014] FIG. 7 is a detailed illustration of a spray apparatus in accordance with an embodiment of the present invention that includes an extension for increasing the distance between the discharge device and the main body of the apparatus;

[0015] FIG. 8 illustrates a system using a spray apparatus in accordance with an embodiment of the present invention; and

[0016] FIG. 9 illustrates a method of using a spray apparatus in accordance with an embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0017] FIG. 1 illustrates a spray apparatus or wand assembly 1 in accordance with an embodiment of the present invention. The main components of the spray apparatus or wand assembly 1 preferably include a power supply 2, motor 3, gear box or transmission 7, pump 9, intake hose 12, and spray or discharge device 11. The motor 3 preferably drives the transmission 7, which drives the pump 9. The power supply 2, motor 3, transmission 7 and pump 9 are preferably mounted within the main body or housing of the spray apparatus 1.

[0018] The power supply 2 can be one or more rechargeable batteries, one-time disposable batteries, or battery packs. The power supply 2 should be of sufficient voltage to adequately supply power to the internal electrical components of the spray apparatus 1, such as the motor 3. By way

of example, the power supply 2 can be any voltage between 1 and 12 volts DC. However, the voltage of the power supply 2 is in no way limited to these sizes and may vary depending on the size and power requirements of the spray apparatus 1. The power supply 2 is able to provide power to the internal components of the spray apparatus 1 (e.g., motor 3) by depressing an on/off switch 5, which closes the circuit between the power supply and the electrical components of the spray apparatus 1. A more detailed description of the communication between the on/off switch 5 and the electrical power circuit will be addressed in the figures that follow.

[0019] Referring to FIG. 1, the intake hose 12 is preferably a flexible hose that is capable of being wound or folded as necessary. The intake hose 12 is preferably made from a flexible or pliable material such as, but in no way limited to, rubber, plastic or other similar material. One end of the intake hose 12 is connected to the pump 9 in a conventional manner and the intake hose exits the spray apparatus 1 proximate to the front of the spray apparatus 1 or proximal to the discharge device 11. Liquid passes through the intake hose 12 to the pump 9, where the pressurized liquid then passes through pump output conduit 10 for discharge by the discharge device 11. The pump output conduit is preferably made from a flexible or rigid hose, pipe or tubing that is connected to the pump in a conventional manner. The discharge device 11 is preferably a spray nozzle attached to the pump output conduit 10 in a conventional manner, such as by threading the nozzle onto the free end of the pump output conduit. The discharge device 11 is preferably capable of providing a fixed and/or variable spray pattern. Preferably, if a variable spray pattern is desired, the discharge device 11 can be rotated relative to the pump output conduit 10 to vary the spray pattern.

[0020] FIG. 2 illustrates a spray apparatus or wand assembly 1 in accordance with another embodiment of the present invention. The FIG. 2 embodiment differs from the embodiment in FIG. 1 in that the intake hose 12 enters the spray apparatus 1 proximate to the rear of the spray apparatus 1 or distal to the discharge device 11. In this embodiment, a first portion of intake hose 12 passes through the body or housing of the spray apparatus 1 to connect to the pump 9 in a conventional manner. FIG. 3 illustrates an example of how the intake hose 12 passes through the body or housing of the spray apparatus 1 and connects to the pump 9. However, unlike the intake hose 12 shown in FIG. 3, the intake hose 12 shown in FIG. 2 that extends outside the spray apparatus 1 is not meant to be recoiled on a recoil member.

[0021] FIG. 3 illustrates an embodiment of the spray apparatus or wand assembly 1 that includes a hose compartment 14 at the rear of the spray apparatus 1 for storing the intake hose 12 when the spray apparatus is not in use. The hose compartment 14 includes an open chamber in which a recoil member 15 is located. The recoil member 15 is preferably rotatably connected to the main body or housing of the spray apparatus 1. The recoil member 15 is preferably bolt-shaped having a slotted end 17. However, the recoil member 15 is not limited to this particular shape. For example, instead of having a slotted end, the end 17 can be rounded or hexagon-shaped, or have a handle formed thereon, to allow for easy manipulation when assisting in the recoiling of the portion of the intake hose 12 extending outside the spray apparatus 1.

[0022] Preferably, at least a portion of the intake hose 12 is fixed to the recoil member 15 within the hose compartment 14. In this way, when the slotted end 17 of the recoil member 15 is rotated using a screw driver, finger or the like, the second portion of the intake hose 12 extending outside the spray apparatus 1 will wind around the recoil member 15 for storage within the hose compartment 14 when the apparatus is not in use. The hose compartment 14 has an opening 13 that allows the second portion of the intake hose 12 to be moved freely to and from the hose compartment 14. The recoil member 15 can be used for either inserting or extracting the intake hose 12 from the hose compartment 14. However, it is understood that the intake hose 12 can also be extracted by gently pulling the intake hose 12 from the hose compartment 12.

[0023] In addition, the recoil member 15 may be spring-loaded such that rotation in a first direction (e.g., to unwind the intake hose 12) compresses the spring and when the rotating force is released, the spring causes the recoil member 15 to rotate in the opposite direction to recoil or wind the intake hose 12.

[0024] In this embodiment, the first portion of the intake hose 12 in the hose compartment 14 preferably communicates with the second portion of the intake hose 12 passing through in the main body or housing of the spray apparatus 1 via a tube member or coupling 16 that passes between the main body of the apparatus 1 and the hose compartment 14. The tube member 16 can preferably be made from a material similar to that of the intake hose or from a more rigid material such as metal. The tube member 16 is at least partially hollow to allow liquid to pass freely through the intake hose 12 to the pump 9.

[0025] FIG. 3 also illustrates a preferred power circuit used to supply power from the power supply 2 to the other electrical components (e.g., motor 3) in the spray apparatus 1. The preferred power circuit in the spray apparatus 1 includes normally-opened electrical contacts 4 that come together or close when the switch 5 is depressed or otherwise actuated. The contacts 4 close the power circuit in the spray apparatus 1 so that the motor 3 receives power from the power supply 2 to drive the transmission 7 and pump 9. Power is preferably removed from the power circuit when the switch 5 is released or otherwise actuated a second time, to separate the normally-open contacts 4 and thereby open the circuit and disconnect power to the motor 3.

[0026] FIG. 4 illustrates another embodiment of the spray apparatus or wand assembly 1 that includes a hose compartment 14. However, the hose compartment 14 shown in FIG. 4 does not include a recoil member 15. In this embodiment, the intake hose 12 is both manually inserted and extracted from the hose compartment 14. Additionally, the intake hose 12 is preferably a single, continuous flexible hose that passes through the main body or housing of the spray apparatus 1 to the hose compartment 14 without the need for a tube member or coupling 16. A hook 18 is also provided, preferably on the upper part of the body of the spray apparatus 1 for conveniently storing the apparatus after use.

[0027] FIG. 5 illustrates another embodiment of the spray apparatus or wand assembly 1 that includes an upper portion 19 that pivots with respect to a lower portion or main body 25. This embodiment differs from the aforementioned embodiments in that the body of the spray apparatus 1 is

essentially two components that are hinged together via a bearing member or pivot **21**. The bearing member **21** allows for the upper or pivot portion **19** of the spray apparatus **1** to pivot with respect to the lower or main body **25** of the apparatus **1**. In this embodiment, the power supply **2** is preferably located in the lower or main body **25**, and the motor **3**, transmission **7** and pump **9** are preferably located within the upper or pivot portion **19** of the spray apparatus **1**.

[0028] FIG. 6 illustrates another embodiment of the spray apparatus or wand assembly **1** that also includes an upper or pivot portion **19** that pivots. Like the previous embodiment shown in FIG. 5, the spray apparatus **1** shown in FIG. 6 has an upper or pivoting portion **19** that is hinged to the lower or main body **25** of the spray apparatus **1** by a bearing member or pivot **21**. This embodiment differs slightly from the previous embodiment both in appearance and function. Specifically, the spray apparatus **1** shown in FIG. 6 includes a hose compartment **14** similar to that previously discussed in FIG. 4 in which the flexible hose **12** is manually inserted into/retracted from the hose compartment **14**.

[0029] FIG. 7 illustrates an embodiment of the spray apparatus or wand assembly **1** that includes an extension **22** for varying the distance **22** between the discharge device **11** and the main body of the spray apparatus **1**. By way of example, the extension **22** can be permanent or removable from the main body of the spray apparatus **1**. The length of the extension **22** may vary between 3-12 inches, and the extension may also be straight in its entirety or curved at the end proximate to the discharge device **11**. However, the length of the extension **22** is in no way limited to the range of 3-12 inches and can vary depending on the desired spray operation to be completed. One end of the extension **22** may, for example, be removably threaded onto the main body **25** or onto the free end of the pump output conduit **10** to provide fluid communication between the conduit **10** and the discharge device **11**. Additionally, the discharge device **11** may be removably threaded onto the opposing end of the extension **22** for attachment to and removal from the main body of the spray apparatus **1**.

[0030] FIG. 8 illustrates a preferred system for using a spray apparatus or wand assembly **1** in accordance with an embodiment of the present invention. The system shown in FIG. 8 preferably includes two main components—a liquid reservoir **24** and the spray apparatus or wand assembly **1**. The components of the spray apparatus **1** are the same as, for example, those already discussed with respect to FIG. 3.

[0031] In FIG. 8, the flexible intake hose **12** extending from the spray apparatus or wand assembly **1** is preferably attached to the liquid reservoir **24** using a clip, tie, hose clasp or the like, such that the free end of the intake hose **12** is positioned below the surface of the fluid contained within the liquid reservoir **24**. In the alternative, the free end of the flexible intake hose **12** can be inserted directly into the liquid reservoir **24** as a freestanding hose without the need for an attachment mechanism. The liquid reservoir **24** can be a portable or stationary container of liquid. The size of the liquid reservoir **24** can vary depending on the desired spraying operation. By way of example, the liquid reservoir **24** can be a single gallon container or a container large enough to hold several gallons or more. Also, by way of example, the liquid reservoir **24** can contain any desired

liquid to be sprayed, such as water, pesticides, herbicides and the like. However, the type of liquid used by the spray apparatus **1** will vary depending on the desired spray operation and the spray apparatus **1** is in no way limited to any specific type of liquid. It is recognized that the spray apparatus components should be compatible with the type of liquid being used.

[0032] Upon depression of the switch **5** on the spray apparatus **1**, power is supplied to the motor **3** to drive the pump **9** via the transmission **7**. The pump **9** draws liquid from the reservoir **24** through the intake hose **12** and out through the outlet conduit **10** to the discharge device **11**, resulting in the spray pattern **23** defined by the characteristics of the discharge device **11**. The switch **5** is released or depressed again to disconnect power to the motor **3** when the spray operation is completed. After completion of the spray operation, the intake hose **12** is recoiled onto the recoil member **15** and stored in the hose compartment **14** on the spray apparatus **1**.

[0033] FIG. 9 illustrates a preferred method of using the spray apparatus or wand assembly **1**. In Step S_i, the intake hose **12** is extracted from the hose compartment **14** of the spray apparatus **1**. The intake hose **12** is preferably extracted from the hose compartment **14** either by rotating the recoil member **15** to unwind the recoiled hose and/or by gently pulling the intake hose **12** from the hose compartment **14**.

[0034] Once a sufficient length of intake hose **12** is extracted from the spray apparatus or wand assembly **1**, the free end of the intake hose **12** is preferably attached to or otherwise inserted into the liquid reservoir **24** in Step S₂ such that the free end of the hose is below the surface of the liquid to be sprayed. The intake hose **12** can be attached to the liquid reservoir **24** using a conventional attachment mechanism known in the art such as a clip, tie, hose clasp or the like. The free end of the intake hose **12** may also pass through a cap or closure (not shown) on the liquid reservoir **24** and extend into and below the surface of liquid contained in the reservoir. As mentioned previously, the intake hose **12** can also be inserted directly into the liquid reservoir **24** as a freestanding hose.

[0035] Once the free end of the intake hose **12** is attached to or otherwise inserted within the reservoir **24**, the switch **5** on the spray apparatus **1** is depressed in Step S₃. The depression of the switch **5** will result in power being supplied from the batteries **2** to the motor **3**, which drives the transmission **7** and pump **9** of the spray apparatus **1**. The driven pump **9** draws liquid from the reservoir **24** through the intake hose **12**.

[0036] In Step S₄, pressurized liquid from the pump **9** passes through pump outlet conduit **10** and is discharged via the discharge device **11**. The pattern of spray **23** from the discharge device **11** is determined by the characteristics of the discharge device, as well as by the rotation or movement of the discharge device **11** relative to the pump outlet conduit **10**.

[0037] At the completion of the spray operation, the switch **5** is released or depressed again to disconnect power to the motor **3**. In Step S₅, the intake hose **12** is then preferably inserted or recoiled back into the hose compartment **14** by rotating the recoil member **15** to wind some or all of the intake hose **12** extending outside the spray appa-

ratus or wand assembly **1** about the recoil member for storage in hose compartment **14** when the spray apparatus is not in use. Alternatively, the intake hose **12** can be manually inserted back into the hose compartment **14**, such as is in the embodiment described above with respect to **FIG. 4**.

[0038] Although illustrative embodiments have been described herein in detail, it should be noted and understood that the descriptions and drawings have been provided for purposes of illustration only and that other variations both in form and detail can be added thereupon without departing from the spirit and scope of the invention. The terms and expressions have been used as terms of description and not terms of limitation. There is no limitation to use the terms or expressions to exclude any equivalents of features shown and described or portions thereof.

We claim:

1. An apparatus for spraying a liquid contained in a reservoir remote from the apparatus, comprising:

- a housing;
- a pump positioned in the housing the pump having an inlet and an outlet;
- an electric motor positioned within the housing for driving the pump;
- a power supply located in the housing for selectively providing power to the motor;
- a discharge device in fluid communication with the outlet of the pump for discharging liquid from the apparatus in a desired spray pattern; and
- a flexible intake hose connected to the inlet of the pump and extending out of the housing to provide a path for liquid to flow from the remote reservoir to the pump;

wherein the housing includes a hose compartment for storing a predetermined length of the intake hose when the apparatus is not in use so that the intake hose can be extracted from and inserted into the hose compartment.

2. The spray apparatus of claim 1, further comprising a recoil member rotatably positioned within the hose compartment for recoiling the intake hose into the hose compartment.

3. The spray apparatus of claim 2, wherein a portion of the recoil member extends through the housing to facilitate rotation of the recoil member.

4. The spray apparatus of claim 3, wherein the portion of the recoil member extending through the housing includes means for rotating the recoil member.

5. The spray apparatus of claim 2, further comprising a spring cooperating with the recoil member to bias the recoil member in a first rotational direction.

6. The spray apparatus of claim 1, wherein the housing comprises a first housing portion pivotally connected to a second housing portion.

7. The spray apparatus of claim 1, wherein the discharge device is positioned on the first housing portion and the hose compartment is located in the second housing portion.

8. The apparatus of claim 1, wherein the hose compartment is located distal to the discharge device.

9. The spray apparatus of claim 1, further comprising a switch to selectively control the supply of power to the motor.

10. The spray apparatus of claim 1, wherein the power supply comprises at least one battery.

11. The spray apparatus of claim 9, wherein the battery is rechargeable.

12. The spray apparatus of claim 9, wherein battery is a one-time use battery.

13. The spray apparatus of claim 1, wherein the discharge device is a spray nozzle.

14. The spray apparatus of claim 1, further comprising an outlet conduit having a first end connected to the outlet of the pump and a second end in fluid communication with the discharge device to provide a path for liquid to flow from the pump to the discharge device.

15. The spray apparatus of claim 14, wherein the discharge device is mounted on the second end of the outlet conduit.

16. The spray apparatus of claim 15, wherein the discharge device is removably threaded onto the second end of the outlet conduit.

17. The spray apparatus of claim 14, further comprising an extension conduit having a proximal end connected to the first end of the outlet conduit and a distal end attached to the discharge device to vary the distance between the discharge device and the housing.

18. The spray apparatus of claim 17, wherein the discharge device removably threads onto the distal end of the extension conduit.

19. The spray apparatus of claim 17, wherein the extension conduit is straight.

20. The spray apparatus of claim 17, wherein the extension conduit is curved.

21. The spray apparatus of claim 1, wherein the intake hose extends from the housing proximal to the discharge device.

22. The spray apparatus of claim 1, wherein the intake hose extends from the housing distal to the discharge device.

23. The spray apparatus of claim 1, wherein the intake hose extends through a cap for sealing at least part of the remote liquid reservoir.

24. A system for spraying a liquid, comprising:

a liquid reservoir, and

a spray apparatus remote from the liquid reservoir, the spray apparatus including a housing, a pump positioned in the housing, the pump having an inlet and an outlet, an electric motor positioned within the housing for driving the pump, a power supply located in the housing for selectively providing power to the motor, a discharge device in fluid communication with the outlet of the pump for discharging liquid from the apparatus in a desired spray pattern, and a flexible intake hose connected to the inlet of the pump and extending out of the housing to provide a path for liquid to flow from the remote reservoir to the plump;

wherein the housing includes a hose compartment for storing a predetermined length of the intake hose when the apparatus is not in use so that the intake hose can be extracted from and inserted into the hose compartment.

25. The system of claim 24, further comprising a recoil member rotatably positioned within the hose compartment for recoiling the intake hose into the hose compartment.

26. The system of claim 25, wherein a portion of the recoil member extends through the housing to facilitate rotation of the recoil member.

27. The system of claim 26, wherein the portion of the recoil member extending through the housing includes means for rotating the recoil member.

28. The system of claim 24, further comprising a spring cooperating with the recoil member to bias the recoil member in a first rotational direction.

29. The system of claim 24, wherein the housing comprises a first housing portion pivotally connected to a second housing portion.

30. The system of claim 24, wherein the discharge device is positioned on the first housing portion and the hose compartment is located in the second housing portion.

31. The system of claim 24, wherein the hose compartment is located distal to the discharge device.

32. The system of claim 24, further comprising a switch to selectively control the supply of power to the motor.

33. The system of claim 24, wherein the power supply comprises at least one battery.

34. The system of claim 33, wherein the battery is rechargeable.

35. The system of claim 33, wherein battery is a one-time use battery.

36. The system of claim 24, wherein the discharge device is a spray nozzle.

37. The system of claim 24, further comprising an outlet conduit having a first end connected to the outlet of the pump and a second end in fluid communication with the discharge device to provide a path for liquid to flow from the pump to the discharge device.

38. The system of claim 37, wherein the discharge device is mounted on the second end of the outlet conduit.

39. The system of claim 38, wherein the discharge device is removably threaded onto the second end of the outlet conduit.

40. The system of claim 37, further comprising an extension conduit having a proximal end connected to the first end of the outlet conduit and a distal end attached to the discharge device to vary the distance between the discharge device and the housing.

41. The system of claim 40, wherein the discharge device removably threads onto the distal end of the extension conduit.

42. The spray apparatus of claim 40, wherein the extension conduit is straight.

43. The system of claim 40, wherein the extension conduit is curved.

44. The system of claim 24, wherein the intake hose extends from the housing proximal to the discharge device.

45. The system or claim 24, wherein the intake hose extends from the housing distal to the discharge device.

46. The system of claim 24, further comprising a cap attached to the remote reservoir, wherein the intake hose extends through the cap and into the remote reservoir.

47. A method of spraying a liquid from a spray apparatus, comprising:

extracting a length of flexible intake hose from a hose compartment in the apparatus;

attaching an end of the intake hose to a liquid reservoir remote from the apparatus;

energizing a motor within the apparatus via a power supply,

pumping liquid from the remote liquid reservoir to the apparatus via the intake hose; and

discharging the pumped liquid through a discharge device.

48. The method of claim 47, further comprising inserting the length of intake hose within the hose compartment to store the intake hose when the apparatus is not in use.

49. The method of claim 48, wherein the intake hose is inserted within the hose compartment using a recoil member rotatably mounted within the hose compartment.

50. The method of claim 49, wherein a spring biases the recoil member to rotate in a direction to cause the intake hose to wrap about the recoil member within the hose compartment.

51. The method of claim 47, further comprising changing the direction or spray by attaching the discharge device to an extension conduit that is curved with respect to a main body of the apparatus.

52. The method of claim 47, further comprising changing the direction of spray by pivoting one housing portion of the apparatus relative to a second housing portion of the apparatus.

53. The method of claim 47, wherein the intake hose is attached to the remote liquid reservoir by passing an end of the intake hose through a cap mounted on the reservoir and into the reservoir.

54. The apparatus of claim 1, wherein the remote liquid reservoir is portable.

55. The apparatus of claim 54, wherein the portable remote liquid reservoir is adapted to be carried on a person.

56. The apparatus of claim 55, wherein the portable remote liquid reservoir is adapted to be carried about the person's waist.

57. The apparatus of claim 56, wherein the portable remote liquid reservoir is dimensioned to contain various amounts of liquid.

58. The apparatus of claim 56, wherein the portable remote liquid reservoir is dimensioned to contain about one gallon of liquid.

59. The apparatus of claim 55, wherein the portable remote liquid reservoir is adapted to be carried about the person's back.

60. The apparatus of claim 59, wherein the portable remote liquid reservoir is dimensioned to contain various amounts of liquid.

61. The apparatus of claim 59, wherein the portable remote liquid reservoir is dimensioned to contain about three to four gallons of liquid.

62. The apparatus of claim 54, wherein the portable remote liquid reservoir is adapted to be carried by a person's hand.

63. The apparatus of claim 62, wherein the portable remote liquid reservoir is dimensioned to contain various amounts of liquid.

64. The apparatus of claim 62, wherein the portable remote liquid reservoir is dimensioned to contain about one gallon of liquid.

65. The apparatus of claim 54, wherein the portable remote liquid reservoir comprises a wheel assembly to facilitate movement of the reservoir.

66. The system of claim 24, wherein the remote liquid reservoir is portable.

67. The system of claim 66, wherein the portable remote liquid reservoir is adapted to be carried on a person.

68. The system of claim 67, wherein the portable remote liquid reservoir is adapted to be carried about the person's waist.

69. The system of claim 68, wherein the portable remote liquid reservoir is dimensioned to contain various amounts of liquid.

70. The system of claim 68, wherein the portable remote liquid reservoir is dimensioned to contain about one gallon of liquid.

71. The system of claim 67, wherein the portable remote liquid reservoir is adapted to be carried about the person's back.

72. The system of claim 71, wherein the portable remote liquid reservoir is dimensioned to contain various amounts of liquid.

73. The system of claim 71, wherein the portable remote liquid reservoir is dimensioned to contain about three to four gallons of liquid.

74. The system of claim 66, wherein the portable remote liquid reservoir is adapted to be carried by a person's hand.

75. The system of claim 74, wherein the portable remote liquid reservoir is dimensioned to contain various amounts of liquid.

76. The system of claim 74, wherein the portable remote liquid reservoir is dimensioned to contain about one gallon of liquid.

77. The system of claim 66, wherein the portable remote liquid reservoir comprises a wheel assembly to facilitate movement of the reservoir.

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