A pump includes a cylinder, a head, a piston, a rod, a ring and a handle. The cylinder includes a first section and a second section. The head is connected to the first section of the cylinder. The piston is positioned movably in the cylinder. The rod is connected to the piston. The ring is fit in the second section of the cylinder and a handle connected to the rod. The handle wraps the second section when the rod is retracted in the cylinder.
ROBUST MANUAL PUMP

BACKGROUND OF INVENTION

[0001] 1. Field of Invention

[0002] The present invention relates to a manual pump and more particularly to a robust manual pump.

[0003] 2. Related Prior Art

[0004] There have been various manual pumps such as shown in Taiwanese Patent Publication No. 465676. The manual pump includes a head 10, a nozzle 11 attached to the head 10, a cylinder 12 connected to the head 10, a piston positioned movably in the cylinder 12, a rod connected to the piston and a handle 14 connected to the rod. The rod includes a first section that can be inserted in the cylinder 12 and a second section that is always outside the cylinder 12. The handle 14 is abutted against the cylinder 12. The length of the handle 14 adds a lot to the entire length of the manual pump. The entire length of the manual pump is large. Moreover, the combination of the handle 14 with the second section of the rod is bulky and heavy.

[0005] The present invention is therefore intended to obviate or at least alleviate the problems encountered in prior art.

SUMMARY OF INVENTION

[0006] According to the present invention, a pump includes a cylinder, a head, a piston, a rod, a ring and a handle. The cylinder includes a first section and a second section. The head is connected to the first section of the cylinder. The piston is positioned movably in the cylinder. The rod is connected to the piston. The ring is fit in the second section of the cylinder and a handle connected to the rod. The handle wraps the second section when the rod is retracted in the cylinder.

[0007] The primary advantage of the pump of the present invention is its robust size. The handle wraps the first section of the cylinder when the rod is retracted in the cylinder. The length of the handle adds very little to the entire length of the pump.

[0008] Other advantages and novel features of the present invention will become apparent from the following detailed description referring to the attached drawings.

BRIEF DESCRIPTION OF DRAWINGS

[0009] The present invention will be described through illustration of the preferred embodiment referring to the drawings.

[0010] FIG. 1 is a perspective view of a robust manual pump according to the preferred embodiment of the present invention.

[0011] FIG. 2 is a cross-sectional view of the robust manual pump taken along a line 2-2 in FIG. 1.

[0012] FIG. 3 is a side view of the robust manual pump shown in FIG. 1.

[0013] FIG. 4 is a cross-sectional view of the robust manual pump taken along a line 4-4 in FIG. 3.

[0014] FIG. 5 is a perspective view of the robust manual pump in another position than shown FIG. 1.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

[0015] Referring to FIGS. 1 and 2, there is shown a robust manual pump 10 according to the preferred embodiment of the present invention. The pump 10 includes a cylinder 11, a head 12 connected to a first section 111 of the cylinder 11, a nozzle 20 attached to the head 12, a piston 14 positioned movably in the cylinder 11, a rod 15 connected to the piston 14, a ring 13 fits in a second section 112 of the cylinder 11 and a handle 16 connected to the rod 15. The piston 14 is kept in the cylinder 11 by means of the ring 13.

[0016] An annular shoulder 19 is formed on the cylinder 11. A sleeve 17 is positioned around the first section 111 of the cylinder 11 between the head 12 and the annular shoulder 19. The sleeve 17 is positioned by means of a collar 18 positioned securely around the annular shoulder 19. The sleeve 17 can be made with a soft material in order to provide a comfortable feel to a user. Colors, patterns and words can be provided on the sleeve 17 for aesthetic purposes.

[0017] The handle 16 defines a space 161 for receiving the second section 112 of the cylinder 11 when the pump 10 is retracted as shown in FIG. 5.

[0018] The collar 18 is thinner than the sleeve 17. The sleeve 17 is as thick as the handle 16. Thus, the collar 18, the sleeve 17 and the handle 16 will be flush with one another when the pump 10 is retracted referring to FIG. 5.

[0019] The pump 10 of the present invention exhibits several advantages.

[0020] Firstly, the handle 16 wraps the second section 112 of the cylinder 11 when the pump 10 is retracted. The length of the handle 16 adds very little to the entire length of the pump 10. Hence, the pump 10 is robust.

[0021] Secondly, as the pump 10 is retracted, the handle 16 wraps the second section 112 of the cylinder 11, thus protecting the rod 15 from bending that would otherwise damage the rod 15. On the other hand, the second section 112 of the cylinder 11 supports the handle 16 that is hollow, thus protecting the handle 16 from breach.

[0022] Thirdly, the collar 18, the sleeve 17 and the handle 16 are flush with one another, thus providing an aesthetically pleasing profile.

[0023] Fourthly, the sleeve 17 made of the soft material provides a comfort feel to a user.

[0024] The present invention has been described through the illustration of the preferred embodiment. Those skilled in the art can derive variations from the preferred embodiment without departing from the scope of the present invention. Therefore, the preferred embodiment shall not limit the scope of the present invention defined in the claims.

What is claimed is:

1. A pump comprising a cylinder with a first section and a second section, a head connected to the first section of the cylinder, a piston movable in the cylinder, a rod connected to the piston and a handle connected to the rod, wherein as the rod is retracted in the cylinder, the handle wraps the second section in order to protect the rod from external forces.

2. The pump according to claim 1 further comprising a sleeve positioned around the first section of the cylinder.
3. The pump according to claim 2 wherein the sleeve is flush with the handle as the handle wraps the second section of the cylinder.

4. The pump according to claim 2 wherein the sleeve is made of a soft material for providing a comfort feel.

5. The pump according to claim 2 wherein the sleeve is provided with colors for aesthetic purposes.

6. The pump according to claim 2 wherein the sleeve is provided with patterns for aesthetic purposes.

7. The pump according to claim 2 wherein the sleeve is flush with the head.

8. The pump according to claim 2 comprising a collar positioned around the cylinder between the first section and the second section in order to restrain the sleeve.

9. The pump according to claim 5 wherein the collar, the sleeve and the handle are flush with one another when the rod is retracted in the cylinder.

10. The pump according to claim 5 wherein the cylinder comprises an annular shoulder to which the collar is connected.

11. The pump according to claim 1 further comprising a nozzle attached to the head.

12. The pump according to claim 1 further comprising a ring fit in the second section of the cylinder in order to retain the piston in the cylinder.

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