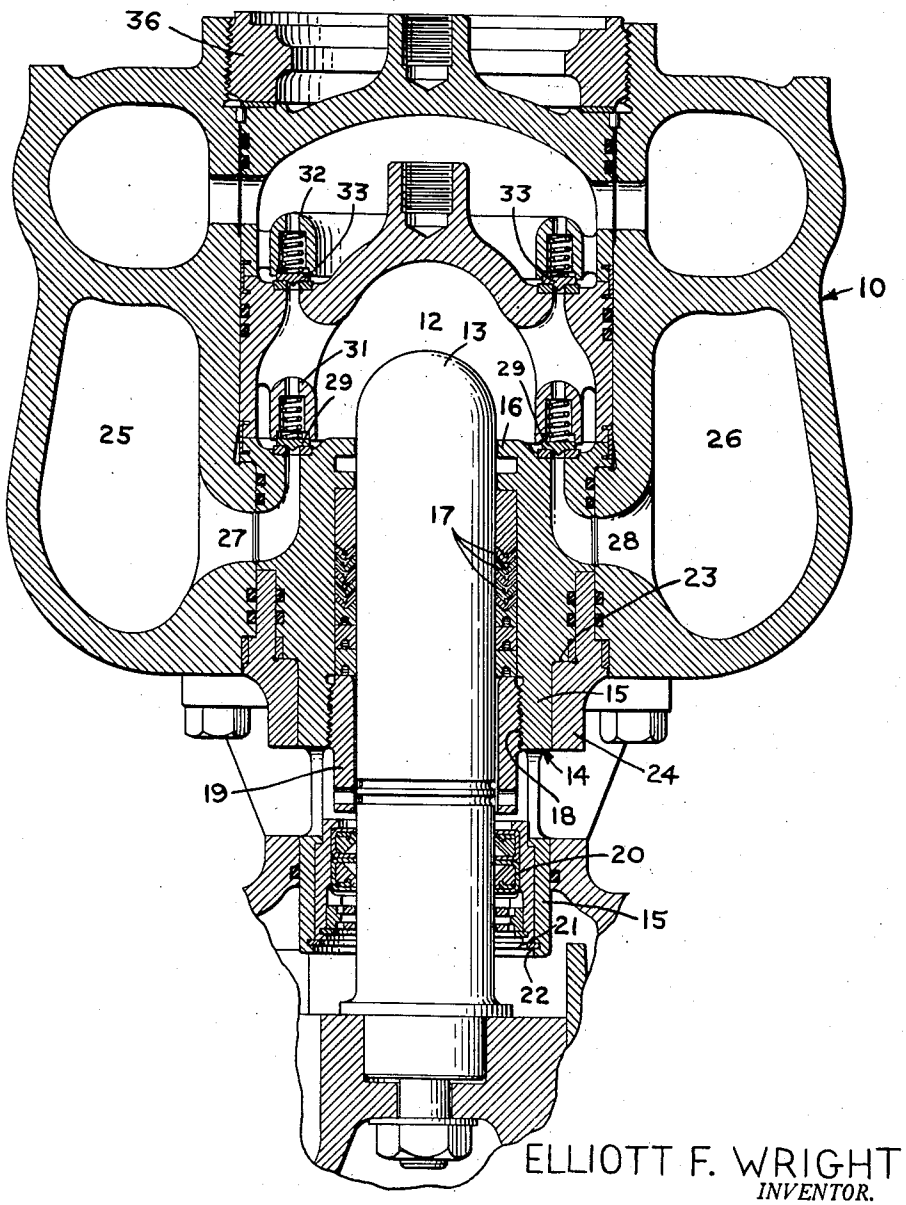
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PACKING FOR A RECIPROCATING PUMP

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PACKING FOR A RECIPROCATING PUMP

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1 Claim. (Cl. 103—153)

The present invention relates to packing and more particularly to a packing assembly for the plunger of a reciprocating pump.

In a reciprocating pump in which a plunger is slidably disposed within a pumping chamber for reciprocating movement therein it is necessary to provide packing for the plunger to prevent the leakage of liquid out of the pumping chamber between the plunger and the cylinder wall.

It is a common practice to provide a bore in the head of the pumping chamber for the packing box. However, with this type of construction it is difficult to replace the worn packing without removing the plunger from the head of the pumping chamber, especially if the packing is of the closed ring type.

In accordance with the present invention, a removable packing insert or assembly is provided which fits into the pumping chamber and which is removable from the head of the pumping chamber without removal of the pump plunger.

The preesnt invention further provides inlet and outlet ring valves which are also removable from the head of the pumping chamber.

The invention will be better understood from the following description when considered in connection with the accompanying drawing showing a sectional view of the pumping chamber of a reciprocating pump embodying the packing assembly of the present invention.

Referring to the drawings, the reference numeral **10** designates the pumping chamber head of a reciprocating pump having a pumping chamber **12** in which is disposed a plunger **13** for reciprocating movement therein. Plunger **13** is provided with a packing insert or assembly **14** comprising a hollow cylindrical body **15** open at the opposite ends thereof and having an inwardly extending flange portion **16** at the upper end thereof for retaining packing **17** disposed therein. An annular locking ring **19** is threaded into said body at **18** for compressing the packing **17** therein to prevent leakage of fluid between the plunger **13** and the packing. Other packing **20** is disposed in the lower portion of body **15** and retained therein by a snap ring **21** inserted in a circumferential groove **22** adjacent the bottom of the body. Body **15** is provided with an outwardly extending shoulder portion **23** above threads **18** for supporting the body in a cylinder liner guide housing **24**.

The pumping chamber head is provided with inlet or suction chambers **25** and **26** on opposite sides thereof in communication with inlet passages **27** and **28**, respectively, extending through body **15** and in communication with inlet valve **29** disposed in an inlet valve ring or insert **31** positioned in pumping chamber **12** above body **15** and supported thereby. An outlet valve ring or insert **32** is positioned in the cylinder above valve ring **31** and supported thereby. Outlet or discharge valve **33** is disposed in outlet valve ring **32** in communication with pumping chamber **12** for discharging fluid therefrom. A pumping chamber head locking ring or nut **36** is threaded into the upper portion of the pumping chamber head for securing the insert valve rings **32** and **31** and insert assembly **14** rigidly in the cylinder.

In the present invention, when it is desired to replace packing in the plunger, the packing assembly **14** is first removed from head **10** by removing the pumping chamber head locking ring or nut **36** from the top of the pumping chamber and pulling out or removing from pumping chamber **12** outlet and inlet valve rings **32** and **31** and then insert **14**. Thereafter, with the insert removed from the pumping chamber head, snap ring **22** is removed through the bottom of the insert, packing **20** removed therefrom, locking ring **19** is thereafter removed. Thereafter, packing **17** in the upper part of the insert may be replaced by new packing, the insert reassembled and replaced back in the chamber. Thus, the present invention provides a packing assembly for a plunger type reciprocating pump which can be removed without removal of the plunger to replace worn packing.

It will be understood that the invention is not to be limited to the specific construction or arrangement of parts shown but that they may be widely modified within the invention defined by the claim.

What is claimed is:

The combination of a reciprocating pump having a pumping chamber therein, a plunger disposed for reciprocating movement in said pumping chamber, a packing insert in said pumping chamber and supported thereby, said insert comprising a hollow cylindrical body arranged around said plunger, said body having an inwardly extending portion adjacent the upper end thereof, packing in said insert, a locking nut threaded into said body for retaining packing in the insert, an inlet valve ring having a suction valve therein disposed in said pumping chamber above said body and supported thereby, an outlet valve ring having a discharge valve therein disposed in said pumping chamber above said inlet ring and supported thereby, and detachable pumping chamber head locking nut disposed adjacent said outlet ring for maintaining said rings and insert rigidly fixed to said pumping chamber.

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