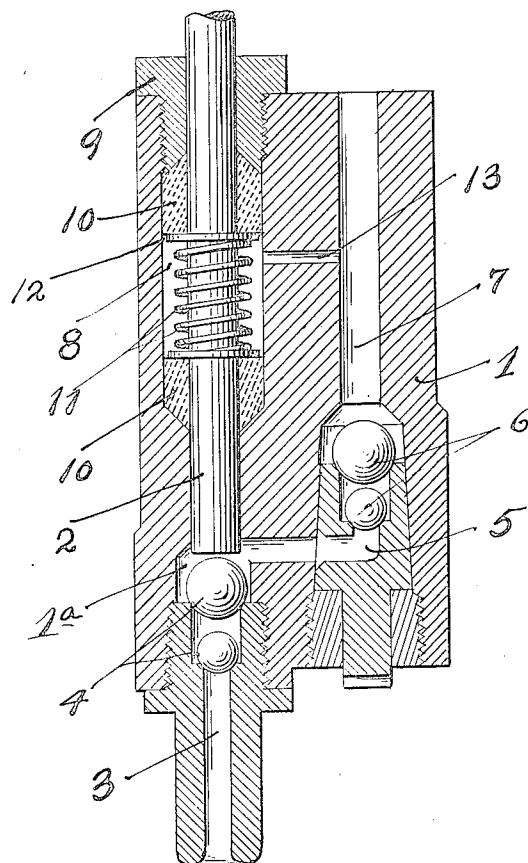


W. J. SCHLACKS.
PISTON PACKING.
APPLICATION FILED AUG. 8, 1918.

1,384,097.

Patented July 12, 1921.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM J. SCHLACKS, OF CHICAGO, ILLINOIS, ASSIGNOR TO McCORD & COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE.

PISTON-PACKING.

1,384,097.

Specification of Letters Patent. Patented July 12, 1921.

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To all whom it may concern:

Be it known that I, WILLIAM J. SCHLACKS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Piston-Packing; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to pumps employing reciprocating pistons and is directed to the provision of an improved packing for rendering tight the joint around the reciprocating piston.

Generally stated, the invention consists of the novel construction and combination of parts hereinafter described and defined in the claims.

My invention provides means whereby the pressure on the packing surrounding the piston will increase and decrease with the increasing pressure produced by the pump on the fluid discharged therefrom. Otherwise stated, I provide what may be designated as a balance piston packing. The invention is illustrated in the single view of drawings which is a vertical section showing a lubricator pump of the type used in certain locomotive lubricators.

This pump is shown for the purposes of illustration, and as shown, comprises a body casting 1 in which the customary plunger-acting pump piston 2 is arranged to reciprocate. The body 1 is formed in its lower end with a ball chamber 1^a, to which oil is admitted through a tube 3 controlled by the action of check balls 4. From chamber 1^a, oil is delivered through a hollow plug-like valve cage 5 and is discharged under the action of check ball 6; and from thence, oil passes out through delivery conduit 7. The particular valve structure shown is not claimed in this application but is claimed in my co-pending application, S. N. 246,736, filed July 25, 1918.

Pump plunger 2 reciprocates through a stuffing box chamber 8 formed in the body 1 and through a packing nut 9 that is threaded into the upper end of chamber 8. The bottom of chamber 8 is made conical and the inner end of nut 9 is also made concavely conical. Suitable packings 10 surround the piston or pump plunger 2, and snugly fit the

same and the interior chamber 8 and are formed with conical ends that fit the conical portions of said seat 8 of the nut 9. A coiled spring 11 is compressed between the two packings and surrounds the piston within chamber 8. Preferably, metal washers 12 are placed around the pump plunger or piston and are spring pressed against the inner ends of the two packings. A by-passage 13 connects oil delivery conduit 7 to the interior of the stuffing box chamber 8. As already indicated, the peculiar form of pump illustrated constitutes no part of the present invention.

The spring 11 is necessary to hold the packings against the bottom of the stuffing box and the bottom of the packing nut before the pump has begun pumping action at pressure. The pressure that the pump exerts after the pumping action is established, drives the oil into chamber 8 and causes the same to exert the same pressure on both packings, and this, as is evident, causes proper seating from under the pressure that varies with the pumping pressure. The spring, however, is highly important to insure proper initial seating of the packings so that the pressure will always be rendered effective during the pumping action.

In the pumping action, any pressure that the pump exerts above the check balls or valves of the pump (regardless of whether the plunger is arranged to work vertically or horizontally) acts to seat the packings by exerting pressure between the same, so that at every pumping stroke of the plunger, movement of the packing with the plunger is resisted by the pressure against which the pump is working, plus the tension of the spring, so that the packings are under minimum necessary pressure at all times. As the packings wear, the spring automatically takes up play, and maintains the proper seating of the packings, and moreover, a little more oil enters the chamber to compensate for displacement and continues the proper seating of the packings. This continues until the packings are worn out so that a joint between the plungers and the packings and between the packings and the stuffing box wall cannot longer be maintained.

What I claim is:

1. A high pressure pump having in combination a pump casing, intake and dis-

- charge check valves arranged therein, a pump piston chamber and a pressure chamber extending parallel thereto, spaced packing members disposed about said piston, the
5 pressure chamber communicating with the space between said members whereby said packing will be subjected to the pressure produced by the piston in the said pressure chamber.
- 10 2. In a high pressure pump structure, the combination with a pump casing equipped with intake and discharge check valves, a piston chamber, a piston therein, spaced packing members surrounding said piston, a
15 pressure chamber extending parallel to the piston chamber and having an opening extending therefrom to the space between said packing members whereby said packing members will be subjected to the pressure produced by the piston in the pressure chamber, and a spring acting on said packing members to keep the same initially seated, regardless of the fluid pressure.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM J. SCHLACKS.

Witnesses:

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