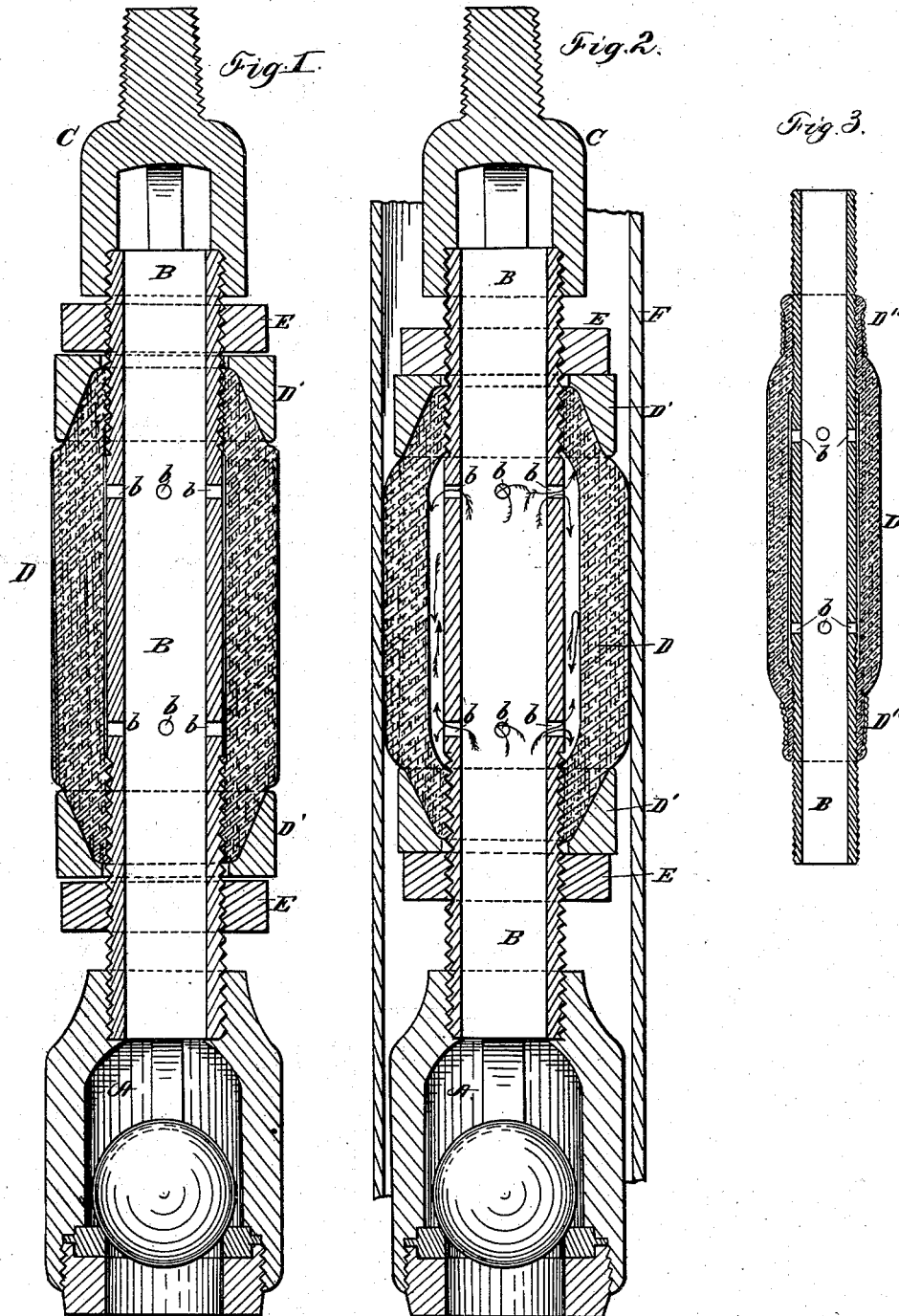


(No Model.)

A. H. JARECKI.
PUMP PISTON PACKING.

No. 262,953.

Patented Aug. 22, 1882.



Witnesses.
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UNITED STATES PATENT OFFICE.

ALBERT H. JARECKI, OF ERIE, PENNSYLVANIA.

PUMP-PISTON PACKING.

SPECIFICATION forming part of Letters Patent No. 262,953, dated August 22, 1882.

Application filed April 5, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALBERT H. JARECKI, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented new and useful Improvements in Pump-Piston Packing; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and the letters or figures of reference marked thereon.

This invention relates to piston-valves for pumps; and it consists in providing a new and improved packing therefor.

My device is applicable to various styles of reciprocating pumps, but is specially intended for oil-well pumps.

The object of the invention is to provide a packing for the pump-piston of an oil-well pump, which shall be elastic and flexible and will adapt itself to the bore of the cylinder and one that will last well.

The most common form of packing for such pump-pistons are rings of leather, known as "cups." Besides these wrappings of hemp and elastic metal rings and other devices are used.

In pumping an oil-well great difficulty is encountered to keep the packing in good working order on account of the rapid wear caused by a very fine and almost impalpable grit or sand which is held in suspension by the oil. It therefore becomes necessary to provide a packing which shall, as it wears away, adapt itself to the pump-barrel and perform its work properly until entirely worn away.

To effect the above desideratum is the principal object of this invention.

My device is shown in the accompanying drawings as follows:

Figure 1 is a vertical longitudinal section through my improved piston as it appears when not in use. Fig. 2 is the same view, showing the piston in use in an oil-well pump-barrel. Fig. 3 is a similar view to Fig. 1, showing an alternative construction.

Letters of reference indicate parts as follows:

A is the valve proper.

B is the hollow stem or body of the piston.

C is the point of connection of the sucker-rods.

D is the packing.

D' D' and E E are the devices for holding the packing in place, and in Fig. 3 the wrapping D'' is for the same purpose.

F is the pump-barrel.

b b b, &c., are openings in the stem B opposite the packing, for the purpose of allowing the fluid to press upon the packing and expand it.

The packing material should be an elastic and impervious substance, and also possess sufficient tenacity to make it wear well. The best material I have found is strong duck-cloth in layers and thoroughly saturated with india-rubber, which is vulcanized after the packing is formed. India-rubber of itself would not last well, and duck cloth of itself would not be sufficiently impervious; but by building the packing up by layers of duck with rubber enough to cement the layers and also make the duck impervious I obtain a substance that possesses the qualities required.

In order to properly attach the packing material to the stem it must be held tightly to the stem at its ends only, leaving its middle free to expand or contract. There must be no leakage at the ends. I therefore make the ends of the packing thinner than the middle portion and clamp them tightly to the stem, which I roughen at the attaching-points by either a wrapping of wire or strong cord, or else by the means shown in Figs. 1 and 2, which are as follows: D' D' are cup-shaped flanges, fitting loosely on the stem B, and cupping over the ends of the packing. E E are nuts moving on screw-threads cut on the outside of the stem B. As these nuts are screwed upon the cup-flanges they press them upon the packing, and they in turn press the packing tightly upon the roughened surface of the stem and hold it there.

When the piston is in operation the fluid being pumped will pass through the openings b b b, &c., in the stem and press upon the inner walls of the packing and force it against the walls of the barrel F. As the packing wears away this pressure keeps the packing all the while tight up against the walls of the barrel, and will continue to do so until it is entirely worn away.

I am aware that pump-pistons having metallic rings are made with openings similar to

bb b, &c., for the purpose of pressing out said rings, and therefore I do not claim broadly the use of said openings.

I am also aware of the patents to F. A. Cramblitt, August 6, 1867, R. N. Allen, September 11, 1866, and P. E. Jenks, April 29, 1879, in the two former of which the packing is expanded by pressure of oil from within the piston, and in the latter of which is shown a packing
10 formed like mine, but not of the same material, nor expanded by the same means as mine. I do not intend to claim as my invention anything shown in these said patents.

I have found that the flow of oil through the
15 openings *b* wears holes in the packing material; and I propose to apply a metallic lining on the inside of the packer, so arranged as not to interfere with the elasticity of the same.

The packing—that is, the long cylindrical
20 elastic impervious device *D*, having its ends sufficiently smaller than the central part to admit of a clamping device being used to hold it by its ends to the stem—will constitute an article of manufacture of itself, as it will be
25 kept on sale to supply the place of those that are worn out.

What I claim as new is—

1. In a pump-piston, the combination, with the stem thereof roughened, as described, and having perforations *bb b*, of a long cylindrical
30 packing material with tapered ends held tightly upon said stem at its ends by the same being clamped or compressed upon said stem by cup-shaped flanges *D' D'*, driven upon said tapered ends by nuts *E E*, substantially as
35 shown.

2. As a new article of manufacture, a packing for pump-pistons, consisting of a sleeve-like cylinder having its ends thinner than the
40 central portion, and composed of layers of duck-cloth cemented together and made impervious by being interlaid or saturated with india-rubber gum, which is vulcanized after the said packing is formed, substantially as set forth.

In testimony that I claim the foregoing I
45 have hereunto set my hand this 1st day of April, 1882.

A. H. JARECKI.

Witnesses:

JNO. K. HALLOCK,
ROBT. H. PORTER.