(No Model.)

C. NEWBURGH.

PUMP PISTON.

No. 277,919. Patented May 22, 1883.

Fig. 1

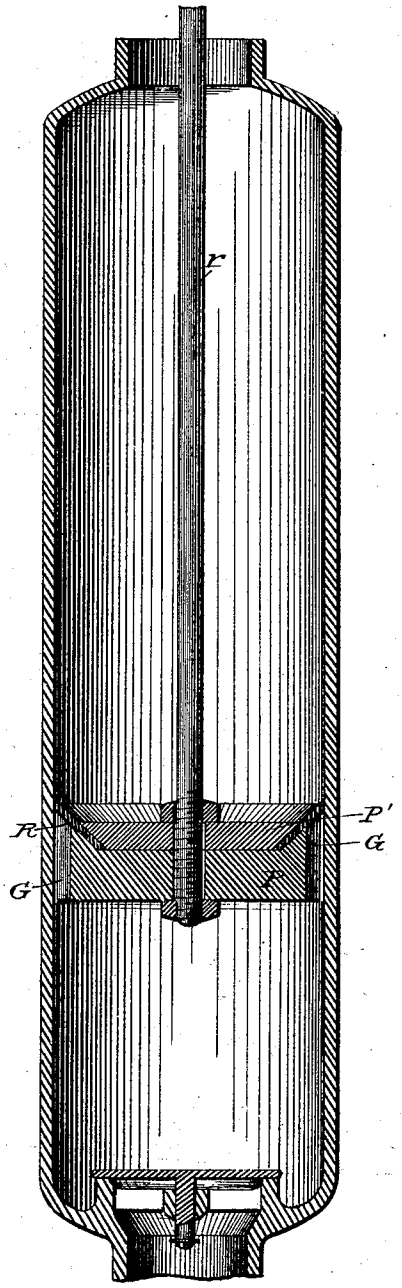
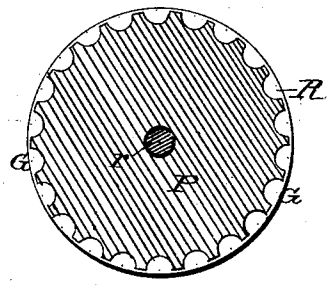


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES NEWBURGH, OF BELOIT, WISCONSIN.

PUMP-PISTON.

SPECIFICATION forming part of Letters Patent No. 277,919, dated May 22, 1883.

Application filed September 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES NEWBURGH, a citizen of the United States, residing at Beloit, county of Rock, and State of Wisconsin, have invented certain new and useful Improvements in Pump-Pistons, of which the following is a specification.

My invention relates to improvements in pump-pistons, in which the piston or plunger packing is formed by a flaring or conical-shaped ring held between two beveled surfaces on the piston-disk, and acts also as a valve in combination with grooves on the circumference of the piston.

The objects of my invention are, first, to make a self-adjusting piston-packing; second, to simplify the construction of the piston; third, to lessen the friction and resistance of the piston against the cylinder-barrel in the reciprocating movement of the piston. I accomplish these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical central section, and Fig. 2 is a cross-section of the piston.

Similar letters refer to like parts in the different views.

The two disks or parts P and P′ of the piston in Fig. 1 are provided with beveled surfaces corresponding to the shape or angle of the packing-ring R, which is an inverted hollow cone, made of leather or some other suitable material, and is firmly held in place by a nut on the end of piston-rod *r*. The lower part, P, of the piston has grooves or corrugations G, running lengthwise up and down on its outer circumference, to provide a way for the water to pass up during the downward stroke of the piston. The material between the grooves forming an angle with the beveled surface heretofore described ends in a row of points for the better support of the ring-packing R. P′ is smaller in diameter than P, so as not to interfere with the grooves G, which are covered by the packing-ring R. At the upward stroke of the piston the packing-ring R is held firmly down against the grooves G and against the sides of the cylinder-barrel by the pressure of the water above; but during the downward stroke the packing-ring R is to some extent closed by the pressure of the water in the lower part of the cylinder-barrel, and permits the free passage of the water upward above the piston.

Heretofore pump-pistons have been usually made hollow, and the piston-valve has been inclosed in a cage, and the piston-packing has been wound around the surface of the circumference of the piston.

My packing permits a perfectly loose fit of the piston to the cylinder-barrel and reduces the friction to a minimum, while it adjusts itself, and is perfectly water-tight during the upward stroke of the piston.

I am aware that it is not new to employ, in connection with a channeled or notched piston, a packing-ring arranged to serve also as a valve; but I am not aware that a combined valve and piston has hitherto been formed of a notched or channeled disk having its upper face formed with a flaring seat or recess, a second disk shaped to conform to said seat or recess, and a leather packing clamped between the periphery of the second disk and the flaring walls of the first. This construction permits the use of a narrow strip of packing material, instead of a large circular piece, such as is required where the second beveled disk is not employed, and renders the packing firmer and more efficient, because it gives a support to the same near its edge.

I am also aware that a piston-packing has been seated between the inclined wall of a recess in the piston and the beveled face of a thin ring placed loosely upon it; but such packing was not adapted or arranged to act as a valve.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The herein-described piston, consisting of grooved or channeled disk P, having beveled flange, as shown, disk P′, having beveled edge, and intermediate packing-ring, R, clamped between the disks P P′ and extending slightly beyond the circumference of the latter, as and for the purpose explained.

2. The herein-described piston, consisting of disks P P′, the former having channels in its periphery, and both beveled as explained, the packing-ring R, clamped between said disks, central rod, *r*, and nuts applied to said rod above and below the disks, as shown.

CHARLES NEWBURGH.

Witnesses:
A. REITTER,
R. E. HEINY.