No. 772,457. PATENTED OCT. 18, 1904.

J. H. CRAMER.

HYDROSTATIC OR PNEUMATIC PISTON.

APPLICATION FILED JAN. 23, 1904.

NO MODEL.

Fig. 1

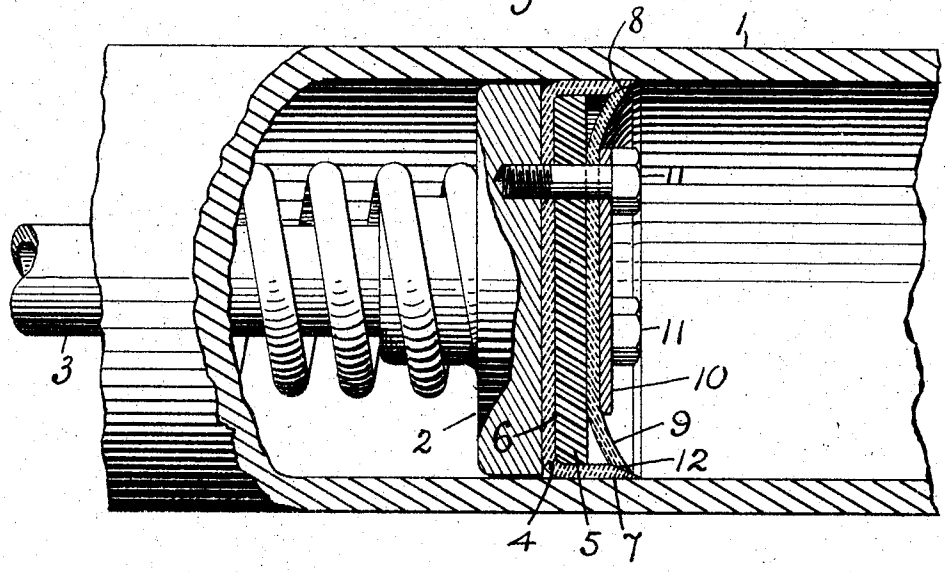
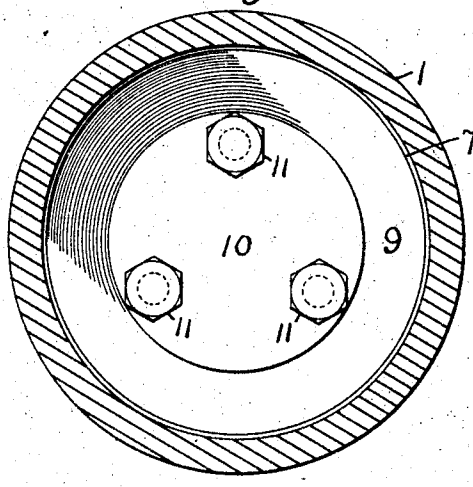


Fig. 2



Witnesses.
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No. 772,457. Patented October 18, 1904.

UNITED STATES PATENT OFFICE.

JOHN H. CRAMER, OF LANCASTER, PENNSYLVANIA, ASSIGNOR TO JOHN E. REYBURN, OF PHILADELPHIA, PENNSYLVANIA.

HYDROSTATIC OR PNEUMATIC PISTON.

SPECIFICATION forming part of Letters Patent No. 772,457, dated October 18, 1904.

Application filed January 23, 1904. Serial No. 190,261. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. CRAMER, a citizen of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Hydrostatic or Pneumatic Pistons, of which the following is a specification.

This invention relates to pistons for single-action cylinders operated by hydrostatic or pneumatic pressure and wherein the fluid-pressure is prevented from passing the piston by a soft packing, leather or like material being generally employed for the purpose; the object being to reinforce the usual cup-packing in manner to positively confine the fluid to the pressure side of the piston.

The invention is illustrated in the accompanying drawings, in which similar parts are designated by similar reference characters, in which—

Figure 1 is a central vertical section of the piston within any suitable construction of cylinder adapted to use hydrostatic or pneumatic pressure. Fig. 2 is an elevation view of the piston on its pressure side, the cylinder being in section.

The piston is placed for use in any suitable form of cylinder 1 and is formed of a head 2, to which is attached the piston-rod 3, and oppositely thereto the cup packing-disk 4 is placed under a follower 5, which fits snugly against its side 6 and under a portion of its flange 7, all of which is as heretofore known and used. The flange 7 has its inner edge outwardly beveled at 8, also as heretofore sometimes done; but it has been found defective to prevent the passing of fluid-pressure owing to too much flexibility, and when not beveled it is too stiff to hug the cylinder. Therefore the pressure-disk 9 has been provided, and this insures perfect results. The pressure-disk 9 is of flexible material, preferably of leather, is seated on follower 5, and its central part is covered by a plate 10, and members 4 5 9 10 are secured together and to piston-head 2 by bolts 11. Exterior to plate 10 the pressure-disk 9 is outwardly curved and its edge 12 beveled to fit closely under the beveled edge 8 of the cup-disk packing 4. By this construction the flanges 7 can be deeper than heretofore, giving more bearing-surface on the cylinder, which insures longer wear, and can be beveled to insure flexibility, as the action of the pressure-disk 9 positively forces the outer free part of flanges 7 tightly against the cylinder and prevents any leakage by the piston.

I claim—

1. In a piston, a head and a rod, a cup-disk packing having a deep flange, an interior bevel on the flange edge, a follower fitting under the flange for a portion of its depth, a pressure-disk lying upon the follower for a portion of its diameter and exterior to which it is turned outward with its edge under the outer edge of the cup-flange, a plate covering its central portion, and means to secure the plate, the pressure-disk, the follower and the cup-disk to the piston-head.

2. In a piston, a packing formed of a cup-disk secured by a follower of less thickness than the depth of the cup-flange, a pressure-disk of greater diameter than the interior of the disk-flanges, and secured to the piston in manner for its edge to be pressed against the interior of the cup-flange.

3. In a piston, a cup-disk packing having an interior bevel at the inner edge of its flange, a pressure-disk secured to the piston in manner to be outwardly curved, and a bevel upon its outer edge adapted to fit the bevel upon the cup-disk flange.

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

JOHN H. CRAMER.

Witnesses:
R. C. WRIGHT,
LEWIS H. BEDNER.