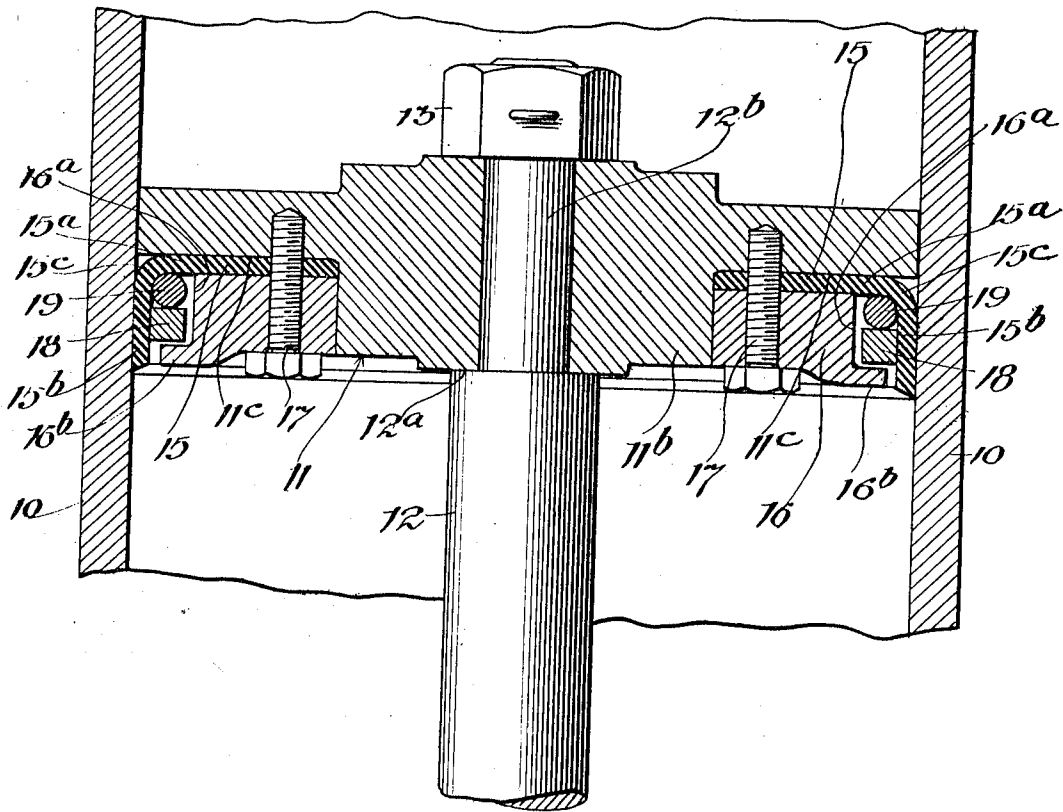


W. P. KRAUSE.
CUP LEATHER PACKING.
APPLICATION FILED APR. 5, 1915.

1,313,997.

Patented Aug. 26, 1919.



Witnesses:
Harry S. Gaither

Inventor:
William P. Krause
By *Sheridan, Wilkinson & Scott*
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM P. KRAUSE, OF CHICAGO, ILLINOIS, ASSIGNOR TO HANNA ENGINEERING WORKS, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

CUP-LEATHER PACKING.

1,313,997.

Specification of Letters Patent.

Patented Aug. 26, 1919.

Application filed April 5, 1915. Serial No. 19,284.

To all whom it may concern:

Be it known that I, WILLIAM P. KRAUSE, 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 Cup-Leather Packing, of which the following is a specification.

This invention relates to improvements in cup leather packing, and has for its principal object to provide a packing for a device of that nature which will perform its functions efficiently and which will be capable of use for a much greater period of time than those at present in use.

Another object of my invention is to provide in combination with a piston or the like cup leather packing together with co-acting elements which will at all times maintain the packing in its proper relation to the mechanism with which it is employed and which will permit of its proper arrangement and functioning without destruction or unusual wear.

It is customary to provide cup packing of leather or the like, for attachment to the pistons or reciprocating members of pumps or cylinders, such as hoist cylinders, compressor pumps, and the like, to prevent leakage of air or other fluid past the piston. It is necessary to provide or arrange this packing member in a cup shaped manner with a portion thereof lying along and in contact with the cylinder wall in which it is located. It is also necessary to have a portion thereof angularly disposed with respect to the remainder of the cup for attachment to the piston, or the like. This ordinarily results in a sharp bent or groove. It is necessary, in order to maintain the first named portion of the cup in proper contact with the cylinder wall, to provide some means for maintaining the cup in extended position at its bent portion. Hitherto it has been the practice to bend the same sharply around a corner or edge of the piston or follower, which results, in a short time, in the cutting or breaking of the cup at the bend. Other disadvantages also obtain in present day practice in the arrangement for extending the cup packing into engagement with the cylinder wall, and to overcome these objections, and those enumerated above, I have provided the structure described in the following specification and shown in the accompanying drawing, which is a section through a por-

tion of the cylinder and piston showing my improved packing applied thereto.

Like numerals refer to like elements in the drawings, in which 10 designates a portion of the cylinder. Reciprocably mounted in the cylinder is the piston 11 mounted on a piston rod 12 against a shoulder 12^a to which it is held by a nut 13, threaded on one end of a reduced portion 12^b of the rod 12. This piston is provided with the portion 11^b of reduced diameter, for a purpose to be hereinafter described. Mounted on the rear face 11^c of the piston is a cup packing member 15, preferably formed of leather or other flexible material having the portion 15^a thereof lying on the rear face 11^c of the piston, as stated above. A follower ring or plate 16 fits around the reduced portion 11^b of the piston and rests on the portion 15^a of the packing member 15, serving to maintain the same tightly seated against the piston, said follower 16 being attached to the piston by threaded bolts 17, or the like, as shown in the drawing. The packing member 15 is further provided with the peripheral portion 15^b bent to lie along and contact with the inner wall of the cylinder 10, as shown. It is necessary for the proper and efficient functioning of the packing member 15 to provide means to maintain the portion 15^b pressed in contact with the cylinder wall, and for this purpose I provide a split spring ring 18, shown as rectangular in cross section. This ring is formed of spring steel or cast-iron, or the like, and is split to permit its acting as a spring ring, as is well known in engineering practice. This ring 18 serves to maintain a portion of the cup leather 15^b closely pressed in contact with the inner cylinder wall and is located around the outer periphery 16^a of the follower 16, being retained in position by means of the outwardly extending peripheral flange 16^b thereof, as will be obvious. To provide an ample bearing or contact surface of the packing member, and to maintain the portions 15^a and 15^b thereof in proper angularly disposed relation, I provide a second split ring 19, similar to the first, save that it is of a rounded or curved cross section and therefore presents a curved surface located at and resting against the juncture 15^c of the two portions of the cup member 15, so that the portion 15^b may be bent therearound to assume its proper

relation with the cylinder wall. At the same time the ring 19 will assist in maintaining it in such contact while presenting only a curved or rounded surface at its contact with the cup 15, so that there is no sharp edge to cut into cup member 15, as will be obvious.

It will be apparent that while the two rings may function independently and for slightly different purposes, they cooperate to cause the packing member to properly function in all necessary respects.

It will be obvious that my invention is susceptible of modifications and improvements, and I do not wish to be restricted to the form shown or described beyond the scope of the appended claims.

What I claim is:

1. In a device of the class described, a piston, a packing member carried thereby, said packing member being provided with angularly disposed portions, means to maintain one of said portions in contact with a cylinder wall or the like, said means comprising an expansible ring having a rounded surface arranged to contact with the juncture of said angularly disposed portions of said packing member, and a second expansible ring located adjacent said first named ring and also constructed and ar-

ranged to operate independently of said first-named ring to maintain a portion of said packing member in contact with a cylinder wall or the like.

2. In combination, a piston having a portion of reduced diameter, a packing member of flexible material having a portion thereof resting on one face of said piston and fitting around said reduced portion thereof, a follower also fitting around said reduced portion of said piston and attached to the latter, said packing member being arranged with a portion thereof bent or disposed around said follower, an expansible ring located around said follower and operating to maintain the adjacent portion of said packing member pressed outwardly, and a second expansible ring located around said follower at the juncture of the angularly disposed portions of said cup member, said second ring having a rounded surface contacting with said packing member at such juncture and operating independently of said first-named ring.

In testimony whereof I have subscribed my name.

WILLIAM P. KRAUSE.

Witnesses:

ARTHUR F. JENSEN,
PHILITUS W. GATES.