J. L. CROUSE & H. R. EDGECOMB.

METHOD OF TREATING PISTON PACKING.

APPLICATION FILED FEB. 3, 1910.

1,039,702. Patented Oct. 1, 1912

Fig. 1.

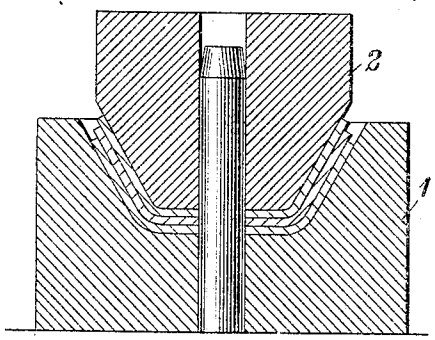


Fig. 2.

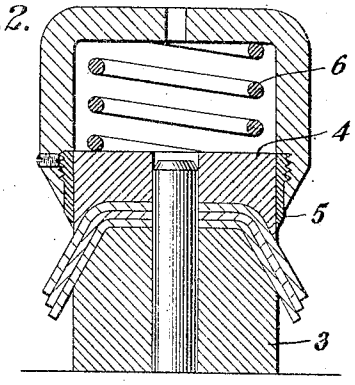


Fig. 3.

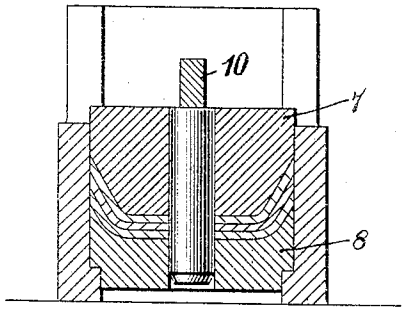


Fig. 4.

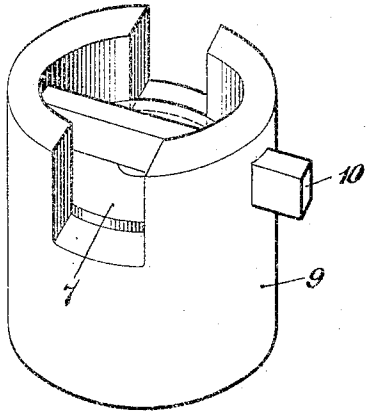


Fig. 5.

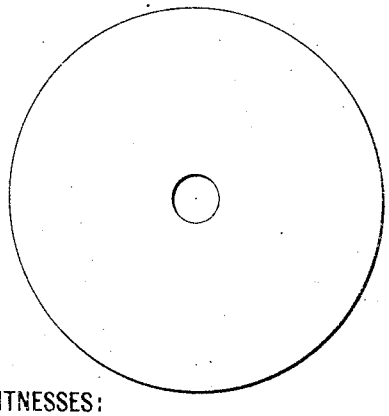
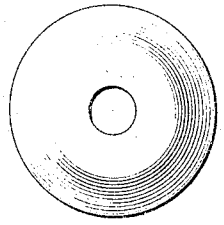


Fig. 6.



WITNESSES:

C. L. Belcher

Otto S. Schairer

INVENTORS

John L. Crouse

Henry R. Edgecomb

BY

Wesley P. Evans

ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN L. CROUSE, OF PITTSBURGH, AND HENRY R. EDGECOMB, OF EDGEWOOD PARK, PENNSYLVANIA, ASSIGNORS TO WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

METHOD OF TREATING PISTON-PACKING.

1,039,702. Specification of Letters Patent. Patented Oct. 1, 1912.

Application filed February 3, 1910. Serial No. 541,795.

To all whom it may concern:

Be it known that we, JOHN L. CROUSE and HENRY R. EDGECOMB, citizens of the United States, and residents, respectively, of Pittsburgh and Edgewood Park, both in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Methods of Treating Piston-Packings, of which the following is a specification.

Our invention relates to piston packings and it has for its object to provide a process of treatment for such packings that will render them tough, durable, pliable and substantially impervious to fluid pressure and will also reduce them to such thickness that they will not shrink when in use.

Considerable difficulty has heretofore been experienced in preventing leakage through and around the packings of fluid pressure actuated pistons, because the packings that have heretofore been provided have not been impervious to fluids under compression, and have shrunk and become loose during service. Of course, the loosening of the packings may be remedied by tightening the clamping nuts, but it is seldom convenient or practical to do this after the packings have once been placed in service, and it is, accordingly, highly desirable that they should not require such attention after installation.

According to the present invention, a packing is provided that is not only substantially impervious to air and other fluids that are employed for actuating pistons, but is also reduced to such thickness that it will not shrink further while in service. The packing is also exceptionally pliable, tough and durable.

Figures 1, 2, 3 and 4 of the accompanying drawings illustrate devices whereby the present invention may be practised. Fig. 5 represents one of the blanks from which the packings are made, and Fig. 6 represents one of the completed packings.

The blanks from which the packing washers are made are shown in Fig. 5 and are preferably composed of leather or other suitable tough and pliable material. They are first thoroughly impregnated with a compound containing soap, glycerin and graphite, as by soaking them in the compound at a temperature of from 50° to 60° C. and then thoroughly rubbing it into them. The blanks are next formed into substantially a dish shape by being pressed between two dies 1 and 2 of Fig. 1. After the forming operation, the blanks are placed between two blocks 3 and 4 that are similar in shape to the dies of Fig. 1, but smaller in diameter, and they are trimmed or cut to size by means of a cylindrical knife 5, which, for that purpose, is pressed downwardly against the action of a spring 6, the edges of the washers being thus beveled. After the washers are trimmed, they are placed between other blocks 7 and 8, which fit closely within a cylindrical member 9, and are compressed until a pin 10 may be inserted in the apertures in the cylindrical member 9 directly above the block 7 for the purpose of maintaining them under compression, the block 8 being seated upon an internal shoulder in the member 9. As the washers are thus compressed while contained within a confined space, they are not permitted to flow non-uniformly and are not strained or weakened. While thus compressed, the washers are heated for several hours at a temperature from 50° to 60° C., after which treatment they are removed from between the blocks 7 and 8 and are ready for use. Before the final compression and heating of the washers, it is preferable to apply an excess of the soap-glycerin-graphite composition, in order that as much of the composition as possible may be forced into them.

As illustrated, several washers are treated at a time, but they may be treated singly, if desired, and the process may be further modified within considerable limits without departing from the spirit and scope of the invention.

We claim as our invention:

1. The process of preparing packing washers which consists in impregnating porous blanks with pore-filling material, then forming and trimming the same, and finally heating and compressing them in a confined space.

2. The process of preparing packing washers which consists in impregnating the blanks with a compound containing soap, glycerin and graphite, then forming and trimming the same, and finally heating and compressing them in a confined space.

3. The process of preparing packing

washers which consists in soaking the blanks in a warm compound containing soap, glycerin and graphite, then forming and trimming the same, and finally heating and compressing them in a confined space.

4. The process of preparing packing washers which consists in soaking the blanks in a compound containing soap, glycerin and graphite at a temperature of from 50° to 60° C., then forming and trimming the same, and finally heating and compressing them in a confined space.

5. The process of preparing packing washers which consists in impregnating porous blanks with a compound containing soap, glycerin and graphite superposing a plurality of blanks and pressing the same in dish shape, then trimming them and finally subjecting them to heat and pressure in a confined space.

6. The process of preparing packing washers which consists in impregnating porous blanks with a lubricating material, then forming and trimming them and finally subjecting them to heat and pressure in a confined space.

In testimony whereof, we have hereunto subscribed our names this 31st day of Jan., 1910.

JOHN L. CROUSE.
HENRY R. EDGECOMB.

Witnesses:
T. D. LYNCH,
B. B. HINES.