

July 17, 1923.

B. B. HOLMES

1,461,902

LEATHER GASKET

Filed April 19, 1922

3 Sheets-Sheet 1

FIG. 1-

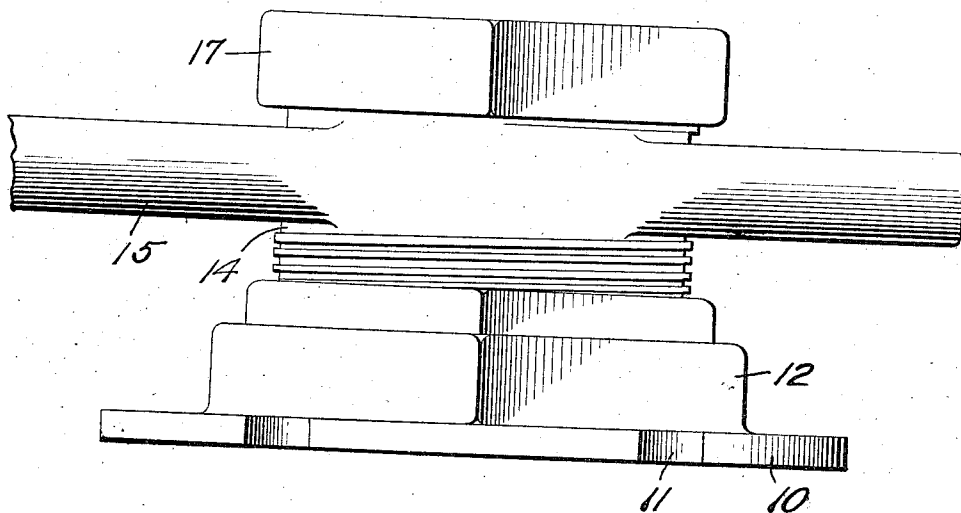
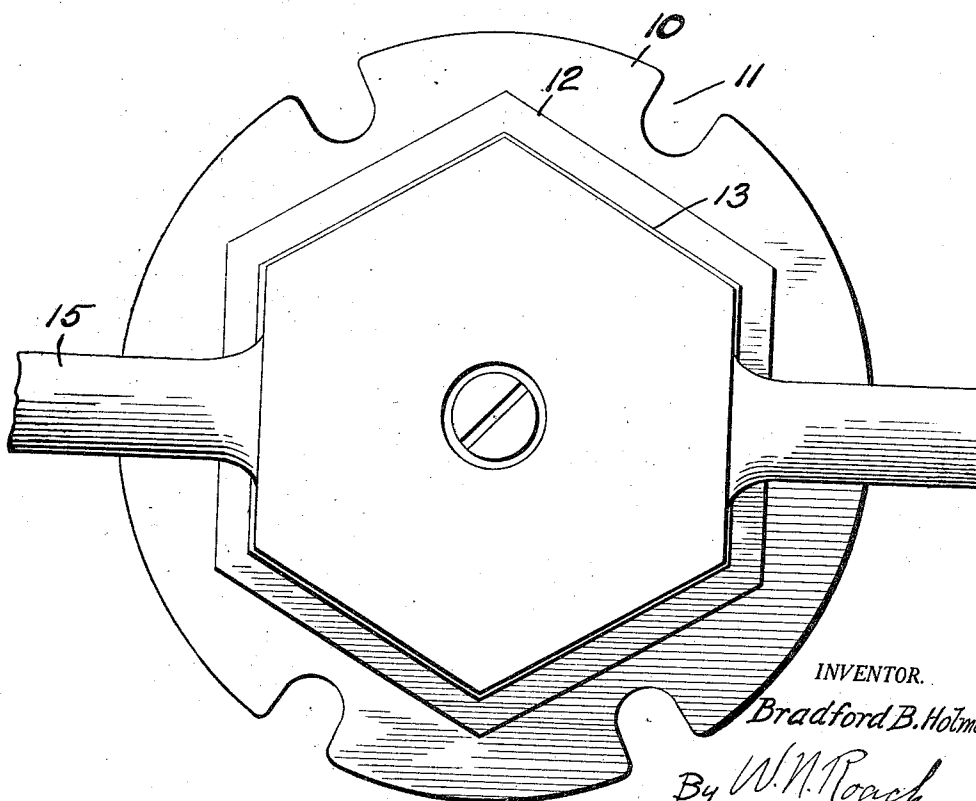


FIG. 2-



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Fig. 3.

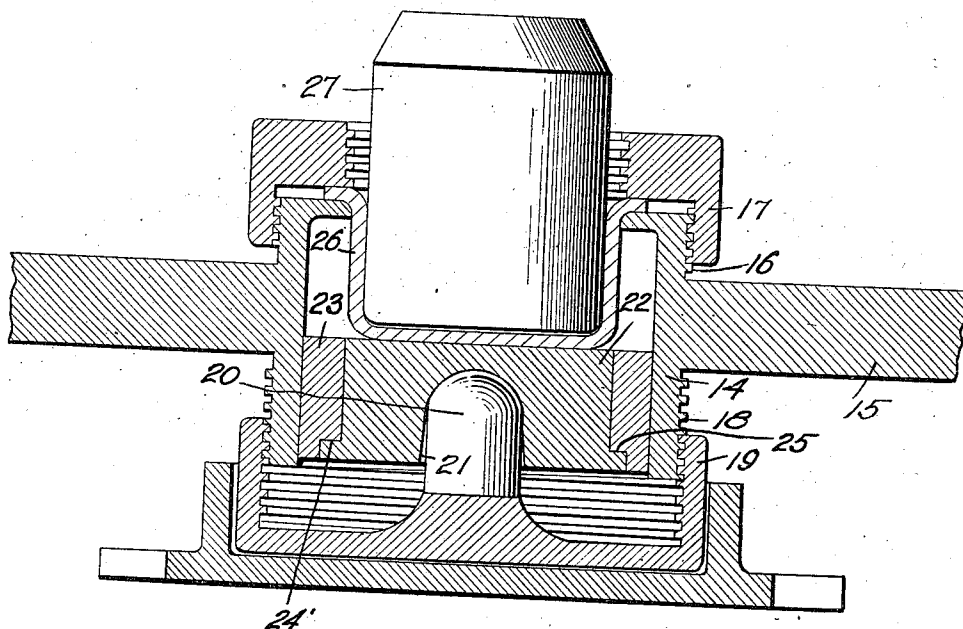
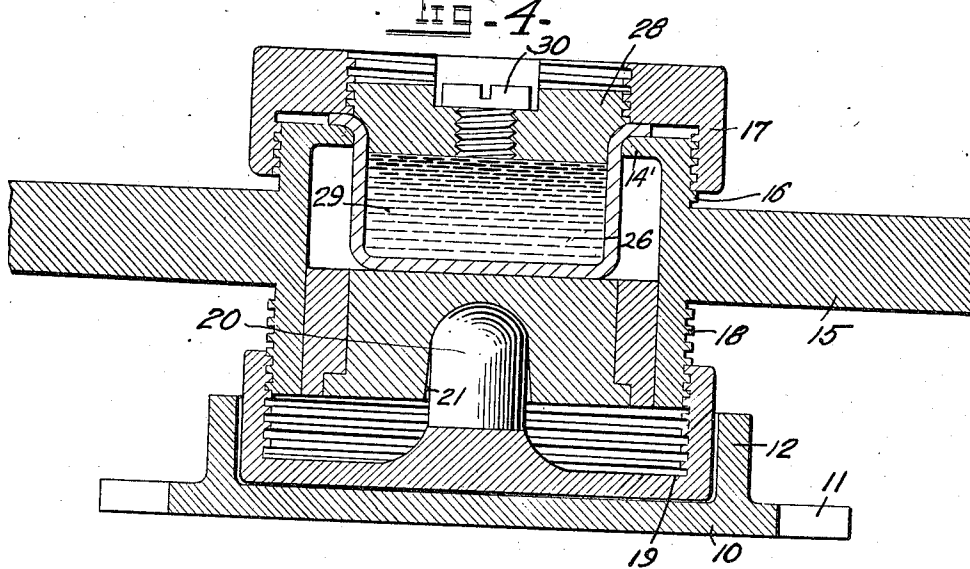


Fig. 4.



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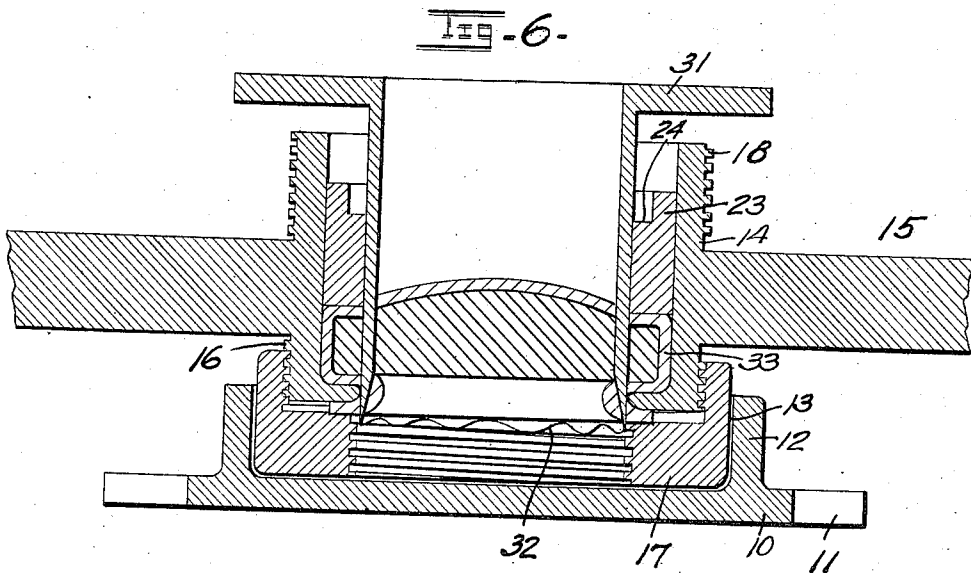
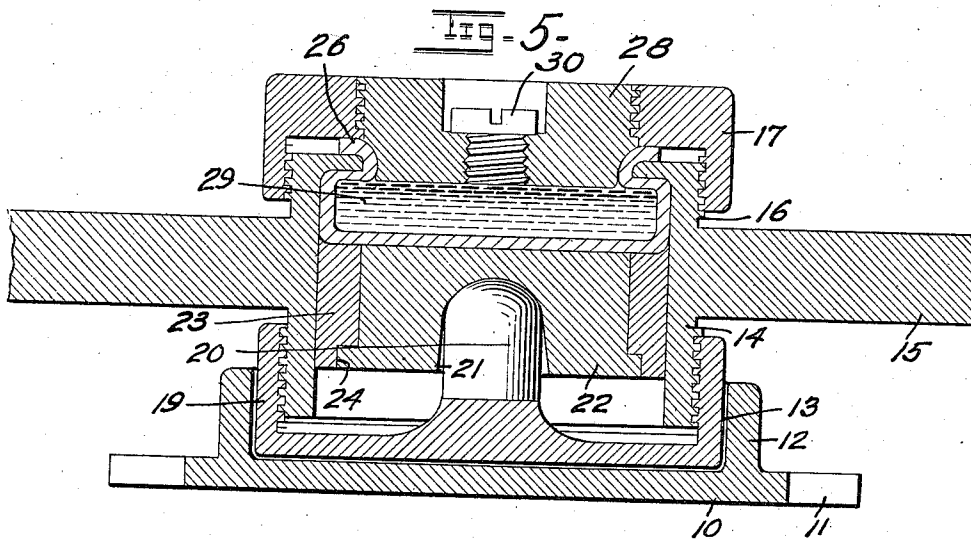
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3 Sheets-Sheet 3



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Patented July 17, 1923.

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UNITED STATES PATENT OFFICE.

BRADFORD B. HOLMES, OF NEW YORK, N. Y., ASSIGNOR TO JOHN W. WEEKS, SECRETARY OF WAR OF THE UNITED STATES OF AMERICA, TRUSTEE.

LEATHER GASKET.

Application filed April 19, 1922. Serial No. 555,599.

(FILED UNDER THE ACT OF MARCH 3, 1883, 22 STAT. L., 625.)

To all whom it may concern:

Be it known that I, BRADFORD B. HOLMES, a citizen of the United States, and a resident of New York city, county of New York, and State of New York, have invented an Improvement in Leather Gaskets, of which the following is a specification.

The invention described herein may be used by the Government, or any of its officers or employees in prosecution of work for the Government, or by any other person in the United States, without payment to me of any royalty thereon.

My invention relates to a method and apparatus for making packing rings of substantially cross sectional U-shape.

In forming a U-shape packing ring the leather is usually puckered and this puckering has to be eliminated by baking or other means, which requires considerable time together with extra handling of the article.

The present invention has been devised with a view to forming a U-shape gasket without puckering the leather and without handling the leather after it has been placed in the forming mold until it is ready for removal therefrom as a completed gasket.

I carry out my invention by first pressing the leather blank into a cup, then stretching the cup to substantially the form of a shallow flat bottom bowl, and finally cutting the gasket from the leather so stretched.

A practical structure for carrying out my process is illustrated in the accompanying drawings, wherein:

Fig. 1 is a view in side elevation of a mold for forming the gaskets.

Fig. 2 is a plan view of the same;

Fig. 3 is a central vertical section through the device, showing the parts in the position assumed at the end of the first operation;

Fig. 4 is a similar view showing the device ready for the second operation;

Fig. 5 is a similar view at the end of the second operation.

Fig. 6 is a similar view illustrating the final or cutting operation.

Referring to the drawings, wherein like reference numerals indicate similar parts; 10 indicates a base plate having recesses 11 for the reception of bolts or screws, by means of which the base may be secured to a work bench, and formed with an annular up-

standing flange 12 defining a socket 13 for the reception of the mold.

The mold may consist of a cylindrical body 14 having an inwardly projecting annular flange 14' at one end thereof and handles 15 extending diametrically opposite positions on the body, through means of which the body may be rotated.

The flange end of the body 14, which acts as a rest for the leather to be treated, is threaded exteriorly, as at 16, for threaded engagement with a centrally apertured screw cap 17, which serves to clamp the work in place.

The opposite end of the body is likewise threaded, as at 18, for threaded engagement with screw cap 19 from the head of which projects inwardly a centrally disposed boss 20 adapted to seat in a recess 21 formed in an element 22 of a plunger, the other element of which is a ring 23 which encircles the element 22 and is formed with an annular shoulder 24' adapted to rest on an annular flange 25 extending from the base of the element 22.

When a gasket is to be formed, the device hereinbefore described is assembled by placing the plunger in its end of the body 14 and screwing on the cap 19 to bring the parts to the desired positions. This operation may be performed by placing the cap in the base and bringing the body 14 with the plunger therein to proper position and then rotating the body through means of the handles 15.

A piece of leather, brought to the proper thickness and softened with neat's-foot oil, is cut to the proper size and placed on the flanged end of the body 14 and positioned concentric therewith. A plunger 27, shown most clearly in Fig. 3, is then forced down through the opening in the head of body 14 drawing the leather with it into the form of a cup, as shown in said figure. The screw cap 17 is then screwed on upsetting the protruding rim of the cup and clamping the same between the cap and flange 14'. The plunger 27 is then withdrawn and a screw plug 28, properly preheated, preferably by immersion in boiling water, is screwed into the threaded aperture of the cap 17. This plug 28 is formed with a central opening through which hot tallow or paraffin 29 is introduced and the aperture closed, conven-

iently by a screw 30. The body 14 is then rotated through the handles 15 to thread the body into the cap 19, thereby forcing the plunger upwardly against the leather cup into the position shown in Fig. 5, thus subjecting the leather to a stretching action.

The parts are then allowed to cool until the paraffin or tallow becomes set; the body 14 unscrewed from the cap 19; the plug removed; the body inverted; the plunger element removed; and a tubular knife 31, preferably formed with a corrugated cutting edge 32, pressed lightly against the leather and rotated to cut the same, as shown in Fig. 6.

The parts are then removed; the tallow or paraffin scraped out of the gasket 33 and a perfectly formed gasket without puckers is the result.

While I have described herein a specific device designed to perform the various steps in the process, it is not my intention to limit this invention to the exact structure herein shown as many other means for performing the process will readily occur to those skilled in the art.

I claim:

1. A method of forming gaskets of substantially cross sectional U-shape, including bringing a sheet of leather to the proper thickness, softening the leather by the application of oil, cutting the leather to form a disc of the desired size, drawing the disc to a cup, stretching the cup to a substantially shallow bowl shape and severing the rim and a portion of the bottom from the bowl.

2. The method of forming gaskets of sub-

stantially U-shape, including cutting a piece of material to form a disc of the desired size, drawing the disc to a cup, stretching the cup to substantially a shallow bowl shape and then severing the rim and a portion of the bottom from the bowl.

3. The method of forming gaskets of substantially U-shape, including cutting the material to form a disc of the desired size, drawing the disc to a cup, partially filling the cup with a hot substance which solidifies when cool, applying pressure to the cup with the hot substance therein to stretch the cup to a substantially shallow bowl shape, allowing the hot material to cool and solidify, then severing the rim and a portion of the bottom from the bowl and removing the solidified material from the gasket so formed.

4. A method of forming a gasket of substantially cross sectional U-shape, including drawing a disc of the material to form a cup, partially filling the cup with a hot substance, which solidifies when cool, sealing the cup, stretching the cup to the desired shape, allowing the material to cool and solidify, severing the cup to form a gasket and then removing the solidified material from the gasket.

5. A method of forming a gasket of substantially cross-sectional U-shape, the sides of the U lying in planes parallel with the plane of the gasket, including drawing a disc to form a shallow bowl then severing the sides of the bowl from the rim and bottom.

BRADFORD B. HOLMES.