No. 876,361. PATENTED JAN. 14, 1908.

H. P. KRAFT & M. C. SCHWEINERT.

PROCESS OP MAKING SOCKET MEMBERS FOR HOT WATER BOTTLES OR THE LIKE.

APPLICATION FILED APR. 12, 1907.

FIG. 1.

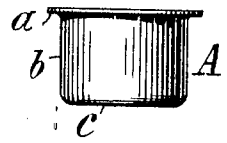


FIG. 2.

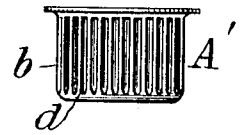


FIG. 3.

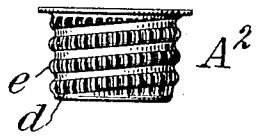
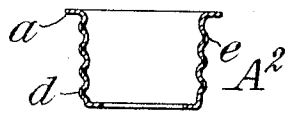


FIG. 4.



WITNESSES:

Fred White

René Muine

INVENTORS:

Henry P. Kraft and

Maximilian Charles Schweinert,

By Attorneys,

Munn & Bauer Mann

UNITED STATES PATENT OFFICE.

HENRY P. KRAFT, OF NEW YORK, N. Y., AND MAXIMILIAN CHARLES SCHWEINERT, OF WEST HOBOKEN, NEW JERSEY.

PROCESS OF MAKING SOCKET MEMBERS FOR HOT-WATER BOTTLES OR THE LIKE.

No. 876,361. Specification of Letters Patent. Patented Jan. 14, 1908.

Application filed April 12, 1907 Serial No. 367,852.

To all whom it may concern:

Be it known that we, HENRY P. KRAFT, residing in the borough of Brooklyn, county of Kings, city and State of New York, and MAXIMILIAN CHARLES SCHWEINERT, residing in West Hoboken, in the county of Hudson and State of New Jersey, both citizens of the United States, have jointly invented certain new and useful Improvements in Processes of Making Socket Members for Hot-Water Bottles or the Like, of which the following is a specification.

This invention relates to an improved process for the construction of socket members which are attached to the necks of hot water bottles for the reception of the stopper and other devices of a similar character. Such socket members are now usually formed of thin sheet metal having a screw-thread rolled into the cylindrical wall thereof, the rolling operation forming both an exterior thread and an interior thread, the latter being adapted to engage the stopper. The socket member is attached to the neck of the water bottle or other device by vulcanizing the rubber composition forming the latter around the exterior threaded portion of the socket member. During the operation of screwing in the stopper and unscrewing it, there is considerable strain placed upon the connection between the socket member and the neck of the bag. This strain is occasionally sufficient to loosen the connection between the parts, thus causing the bag to leak.

It has been proposed to provide the exterior thread of the socket member with a series of indentations or projections, so as to secure a firmer connection between the socket member and the neck of the bag, such projections being formed by cutting notches in the threads of the socket member.

Our invention provides an improved process of constructing such socket members which will be hereinafter referred to.

Referring to the drawings which illustrate our invention, Figure 1 is an elevation of the blank of a socket member after it has been drawn to shape, and before the screw-threading and nurling operations; Fig. 2 is a similar elevation showing the blank after the nurling operation; Fig. 3 is a similar elevation showing the complete blank; Fig. 4 is a vertical section of Fig. 3.

In carrying our invention into effect according to its preferred form, we first take a suitably shaped metal blank and by the use of proper tools shape it int the form shown in Fig. 1. In this figure the socket member which is indicated as a whole by the letter A is provided with a top flange *a*, plain cylindrical walls *b* and a bottom flange *c*. Heretofore the blank has been screwthreaded, and afterwards subjected to the operation of a die to produce the roughened effect, but we have found in practice that this tends to distort the metal and produce a considerable percentage of imperfect articles. According to our invention we first roughen the entire cylindrical wall *b* before the formation of the screw-threads. This is done by the use of any suitable nurling or roughening tool (preferably the former) which acts upon the exterior of the socket member, the knurled depressions being preferably extended lengthwise of the socket member so that they are disposed at right angles to the strain during screwing and unscrewing of the stopper. Another important advantage in performing the nurling or roughening operation before the screw-threading operation is that the device may be easily and quickly placed automatically upon a mandrel or expanding chuck, while if the nurling or other roughening operation were performed subsequently to the screw-threading operation, the blank would necessarily have to be placed upon a threaded mandrel in order that its screw-threads might be properly supported. This requires that each blank be screwed onto the mandrel and unscrewed therefrom thus wasting considerable time at each operation. After the nurling operation the blanks are fed into a suitable screw-threading machine which is adapted to roll a thread in the wall of the blank, thus completing the device.

We have found in practice that in the completed socket member the effect of the nurling tool does not extend materially to the interior wall of the member. Said wall is substantially as smooth as in an unknurled device. We have also found that the threading operation does not have any material effect upon the nurling on the exterior portions of the threads, leaving these substantially as rough as before the threading operation. The completed socket member is shown in elevation in Fig. 3 and in section in Fig. 4, the nurling being indicated by the letter *d* and the screw-threads by the letter *e*.

By constructing the socket member as indicated we are enabled to provide an extremely firm connection between the member and the rubber forming the neck of the bag, with little or no increase in cost over the present constructions.

It will be understood while we have described our invention in connection with a socket member for hot water bags, that it is applicable to any similar device which it is desirable to provide with a roughened exterior. It will also be understood while we have shown a construction in which all of the threads are knurled, that only part of such threads may be so roughened if desired. It will also be understood that instead of nurling the threads any other means of roughening the exterior surface of the device may be employed.

What we claim is:—

1. The process of making a screw-threaded socket member or the like, which consists in forming the member into appropriate shape, then roughening its walls, and finally screw-threading the roughened wall.

2. The process of making a screw-threaded socket member or the like, which consists in forming the member into appropriate shape, then roughening its wall, and finally screw-threading the roughened wall by bending the metal of such wall.

3. The process of making a screw-threaded socket member or the like, which consists in forming the member into appropriate shape, then nurling its wall, and finally screw-treading the knurled wall.

4. The process of making a screw-threaded socket member or the like, which consists in forming the member into appropriate shape, then nurling its wall, and finally screw-threading the knurled wall by bending the metal of such wall.

In witness whereof, we have hereunto signed our names in the presence of two subscribing witnesses.

HENRY P. KRAFT.
MAXIMILIAN CHARLES SCHWEINERT.

Witnesses:
EUGENE V. MYERS,
FRED WHITE.