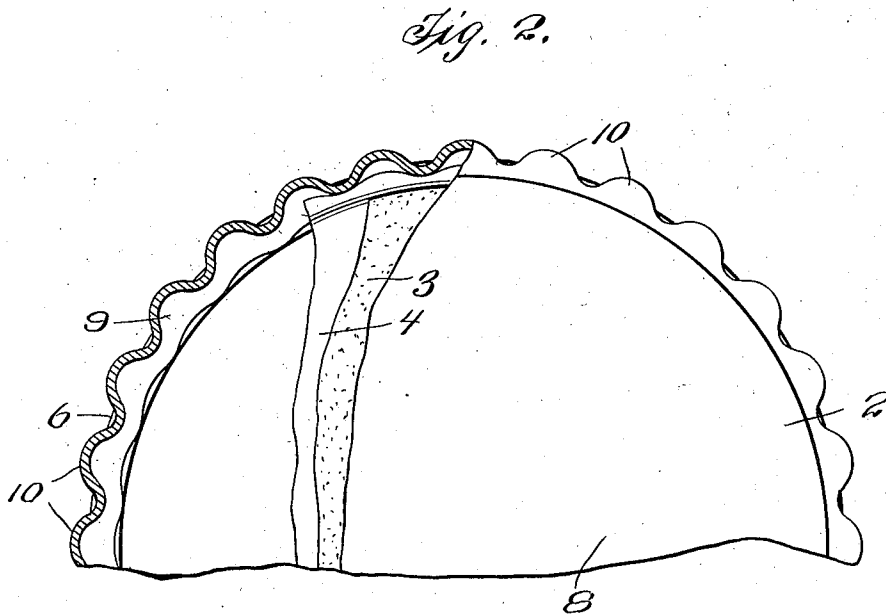
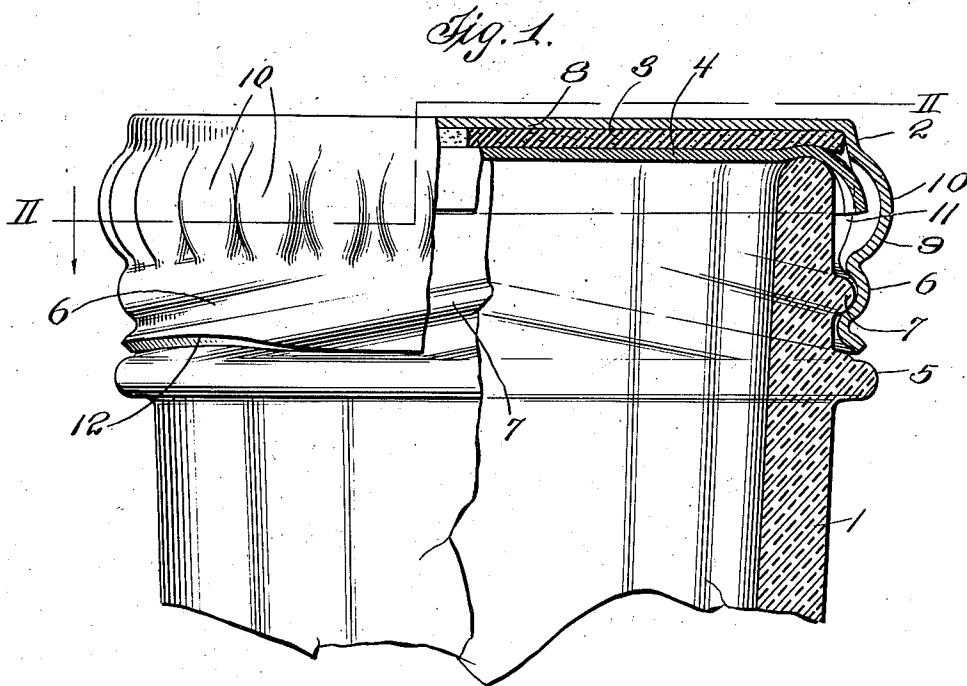


L. R. N. CARVALHO.
 JAR CLOSURE.
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1,066,078.

Patented July 1, 1913.



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JAR-CLOSURE.

1,066,078.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LESLIE R. N. CARVALHO, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Jar-Closures, of which the following is a specification.

This invention relates to jar or bottle closures, and the particular object thereof is to provide, in combination with a usual screw thread formation on the jar, or bottle, a cap or closure, having a pendent annular flange formed with threads on the lower portion, and formed with means adapted to cooperate with parts of the jar or bottle structure, for protecting the hands of the operator against injury incident to contact with the sharp lower edge of the cap, said means also serving to retain the closure packing and sanitary moisture proof lining against displacement, and serving also as a hand grip, and, by its formation, serving also to facilitate the easy removal of the closure, by reducing the element of friction to a minimum.

It is well known that, in the formation of threads upon caps of thin metal, certain portions, at the lower edge of the flange, are turned at angles which present sharp corners, and that these sharp corners are the source of much annoyance and inconvenience to the operator. They, therefore, constitute a decidedly detrimental feature to caps or closures of the screw type. The sharp corners frequently mutilate the fingers of the operator. Since, however, the screw type of cap is one of the most desirable forms of closure for all general purposes, by reason of its easy operation and its adaptability to be used over and over, it is the purpose of this invention to overcome the objection to this sharp corner by providing, in combination with the screw cap, a portion which projects sufficiently beyond the sharp corner to effectually protect the fingers from objectionable contact with said corner. The construction illustrated also removes all parts of the cap away from contact with the material of the jar or bottle except where such contact is designedly placed, namely, in the threads. No friction is possible between the upper unthreaded portion of the jar or bottle and the inner surface of the cap. The structure also provides an ideally formed retaining pocket for the packing

and sanitary water proof lining of the cap, and forms an excellent hand grip.

Other objects and aims of the invention, more or less broad than those stated above, together with the advantages inherent, will be in part obvious and in part specifically referred to in the course of the following description; and the scope of protection contemplated will appear in the claims.

In the accompanying drawing, wherein is illustrated a merely preferred form of the invention: Figure 1 is a vertical, transverse, sectional view through a portion of a jar, bottle, or similar receptacle, having the closure hereof applied thereto, said view being shown partly in elevation; and Fig. 2 is a partial top plan view of the cap shown in Fig. 1, the receptacle being removed, a portion of said figure being shown in horizontal section on the plane of line II—II of Fig. 1.

Referring to the drawings by numerals, 1 indicates the jar, or other receptacle, which is usually of glass or similar material, and 2 indicates generally the closure having the packing 3 and the sanitary water proof lining 4 fitted thereinto. At a point spaced from its upper angular edge, the jar is formed with a flange or bead 5 projecting outwardly from the outer surface thereof for a distance slightly more than the outermost points of the threaded portion 6 of the closure so as to cooperate with other parts, to be specifically described, for protecting the lower sharp edge of said threaded portion.

Between the bead 5 and the upper angular edge of the jar, the outer annular surface thereof is formed with threads 7, said threads terminating at a point spaced from the upper edge of the jar, leaving a portion of the jar without threads, and relatively smooth. For convenience in manufacture and ease of operation, it is desirable that there be provided a plurality of distinct threads. The jar illustrated is provided with four such threads though more or less may obviously be used.

The closure 2 comprises the usual flat disk portion 8, having a pendent annular flange 9. The disk portion 8 may be of a slightly greater diameter than the upper annular portion of the jar to which the cap is designed to fit, so as to better accommodate the packing and lining. The lower portion only of the flange is formed with the threads

6, said threads obviously being formed to mate with those on the jar.

The upper portion of the flange 9 is formed with a plurality of vertically extending corrugations 10, starting at the approximate plane of the upper end of the threads and terminating just below the upper surface of the disk. The corrugations are preferably of a uniform size and shape and bulge radially considerably beyond the vertical plane of the outer surface of the threaded portion 6 below. Between each of the corrugations the material of the flange is bulged slightly, in consequence of the formation of the corrugations or otherwise, so as to remove all parts of the upper portion of the flange entirely out of frictional contact with the surface of the jar, and the pocket, or annular transversely corrugated recess 11, thus formed is admirably adapted to receive and retain the sanitary lining 4. This lining is preferably of a slightly greater diameter than the inner dimension of the cap, and its outer annular edge bends downwardly and fits within the recess or pocket 11, and is, naturally itself corrugated to a greater or lesser extent, by its engagement with the intermediate portions between the corrugations of the annular recess, and is thus firmly retained within the cap, regardless of whether the cap be applied to a jar or not. This downwardly bent annular portion obviously depends outside the material of the jar, and it thus serves to improve the sanitary qualities of the closure for the reason that any slight quantity of material from within the jar, which happens to squeeze beyond the point of contact between the jar and water proof lining, will be held away from contact with the metallic portion of the closure. The formation of the annular recess 11 so removes the inner surface of the flange from the outer surface of the jar as to provide ample free space for the annular edge portion of the lining which projects beyond the jar, so that there may be no crowding or folding of said edge portion as it is turned or bent downwardly about the jar. As the projecting annular edge portion bends and is corrugated by engagement with the ridges of the corrugations of the recess, its surplus material, sought to be displaced by such bending laterally of the plane of the central portion of the lining disk, goes into its corrugations, which action prevents any folding or lapping of the material, such as would naturally follow were the continuous annular edge bent without being corrugated, and the presence of which lapping or folded material would operate to present a multiple thickness of material at several distinct points around the mouth of the jar, and render efficient closure thereof practically impossible. The thicker, or folded portions,

would bind, either between the cap and the upper edge of the jar, or between the inner surface of the flange and the outer surface of the jar, most probably the latter, or both, and prevent the normal portions from coming into sealing contact with the jar.

The packing 3 is placed within the cap between the lining and the inner surface of the disk 8, and is of a size to fit snugly without having its annular edge crimped or bent to any appreciable extent. It is firmly held in place by the water proof lining, and being without wrinkles or folds, has its packing qualities unimpaired.

The lower edge of the flange, where the threads 6 terminate, is disposed, particularly where such edge passes over the outermost portion of the threads, as at 12, in Fig. 1 of the drawings, at a decided angle, as will be apparent, and the outer corner of this angle is often-times sharp and ragged and, as caps of this class have been heretofore manufactured, will readily mutilate the fingers of the operator. It will be noted, particularly from Fig. 1, that this cutting edge or corner in the structure illustrated, stands at a point considerably within the plane of a line drawn from the outermost surface of the bead 5 to the outermost surface of the corrugations 10. A hand grasping the cap will thus be held, principally by the corrugations, but also by the bead, away from detrimental contact with the cutting edge. The corrugations incidentally provide a most effectual grip by which the cap may be rotated.

As numerous changes could be made in the details and proportions of the above construction, within the scope thereof, it is to be understood that the details disclosed herein and in the accompanying drawings shall be interpreted merely as illustrative and not in a limiting sense. It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which as a matter of language might be said to fall therebetween.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. The combination with a receptacle closure, having a corrugated inner surface portion, of a lining for said closure having its marginal portion bent diagonally to dispose its edge in contact with the corrugated surface portion of the closure, and said bent portion of the lining being itself corrugated by contact with the corrugations of the closure, the relatively raised parts of the corrugated edge portion of the lining fitting into the relatively depressed portions of the corrugations of the closure so as to provide

coöperative parts adapted to positively hold said lining against displacement from within the closure.

2. A receptacle closure comprising a disk
5 having an annular flange arranged to depend about a receptacle, said flange having a corrugated annular recess formed therein, a lining in said closure comprising a disk
10 of relatively greater diameter than the flange of said closure having its annular edge portion bent laterally and extended into said corrugated recess for forming a lining for said recess, said laterally bent
15 portion being itself corrugated by forced engagement with the corrugations of said recess, the relatively raised parts of the corrugated edge portion of the lining fitting
20 into the relatively depressed portions of the corrugations of the recess so as to avoid folds which would otherwise be incident to the lateral bending of the annular edge portion.

3. A receptacle closure comprising a disk
25 having an annular flange arranged to depend about a receptacle, said flange having a corrugated annular recess formed therein, a lining in said closure comprising a disk of relatively greater diameter than the flange of said closure having its annular

edge portion bent laterally and extended 30
into said corrugated recess for forming a lining for said recess, said laterally bent portion being itself corrugated by forced engagement with the corrugations of said
35 recess, the relatively raised parts of the corrugated edge portion of the lining fitting into the relatively depressed portions of the corrugations of the recess so as to avoid
40 folds which would otherwise be incident to the lateral bending of the annular edge portion, the engagement of the relatively raised parts of the edge portion of the lining with the relatively depressed portions of the corrugations of the recess, and the engagement
45 of the relatively raised parts of the corrugations of the recess with the relatively depressed parts of the corrugated edge of the lining, serving to provide coöperative formations adapted to positively hold the lining
50 against displacement when the closure is detached from the receptacle.

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

LESLIE R. N. CARVALHO.

Witnesses:

MORRIS BLAU,
LEO EISENBERG.