No. 672,862. Patented Apr. 23, 1901.

F. H. SMITH.

CLOSURE.

(No Model.) (Application filed Nov. 28, 1900.)

Fig. 1.

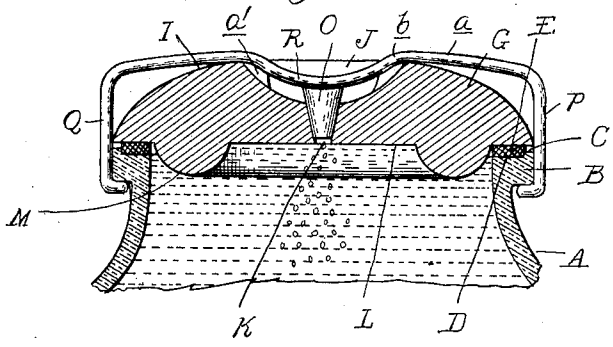


Fig. 3.

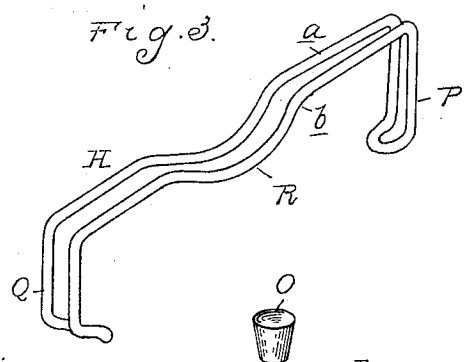
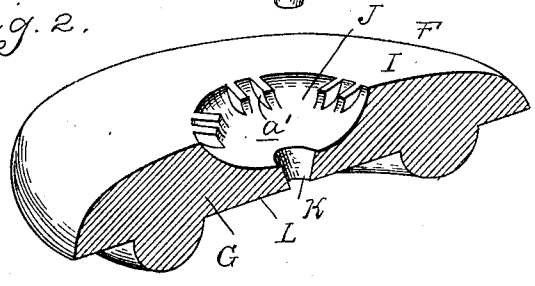


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

FRANK H. SMITH, OF DETROIT, MICHIGAN.

CLOSURE.

SPECIFICATION forming part of Letters Patent No. 672,862, dated April 23, 1901.

Application filed November 28, 1900. Serial No. 38,068. (No model.)

To all whom it may concern:

Be it known that I, FRANK H. SMITH, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Closures, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention has reference generally to fruit jars or cans, and relates particularly to means for sealing the same.

Closures of various types for jars or cans of the kind referred to have been heretofore produced, but have not given satisfaction, either because the expense of production has been too great to permit of their being practically used or for the reason that the closures when capable of being manufactured at slight cost have failed to properly seal the jar.

The object of the present invention is to produce a closure free from the objections mentioned, which in addition to sealing the jar, so as to prevent the spoilage of the jar contents, will be of such simple and inexpensive construction as will permit of its practical use by large packers or dealers in canned goods.

With this object in view, therefore, my invention consists in the novel construction of a jar-closure, and particularly in the peculiar formation of the clamping member thereof.

Figure 1 is a vertical central section through the upper portion of a jar or can and my improved closure therefor. Fig. 2 is a sectional perspective view of the cover, and Fig. 3 is a detached perspective view of the spring-clamp.

In the drawings thus briefly referred to the reference-letter A designates a jar or can having an annular squared flange B surrounding the upper portion or neck thereof. The upper face C of this flange has an annular recess D formed therein, which receives the usual gasket or can-ring E.

F designates the jar-closure, comprising the cover G, adapted to be supported upon the flange, and a spring-clamp H, constructed to hold the cover in place over the mouth of the jar. The upper face or top I of the cover is preferably convex, as shown in Fig. 1, and has formed therein the concave recess J and the conical vent-aperture K, extending centrally from the recess through the cap, as shown. The lower face L of the cap is flat, as illustrated, and is provided with an annular rib M, which extends within the neck of the jar or can.

O designates a check-valve in the form of a conical plug, located within the aperture and held to its seat by the spring-clamp, the pressure exerted upon the clamp being sufficient to allow the steam from the interior of the jar to escape, but effectively preventing the ingress of air.

The clamping member of the closure is of peculiar formation, being so fashioned that while formed in one piece it constitutes two spring-arms, which clamp the cover upon the flange, and is provided with a portion adapted to bear constantly against the valve, holding the latter normally against its seat. In the construction of the spring-clamp referred to a single strand of wire is preferably employed, which is bent at or near its center and folded upon itself to form the clamp-body *a*. The end portions of the body thus formed are bent at right angles to the latter, and the extreme body ends are turned inwardly parallel with the body, forming two oppositely-extending complementary arms P and Q, each L-shaped in configuration. Inclined shoulders *b b* are then formed at the upper inwardly-extending arm ends by depressing the central portion of the body in the plane of the arms. The depressed portion R thus formed bears normally against the valve, as indicated and for the purpose set forth. The cover being placed upon the jar and the check-valve arranged within the vent-aperture, the spring-clamp is arranged in place, the portion R engaging the valve, as described, and the inclined shoulders bearing against the edge of the recess. The sealing of the jar is effected by engaging the arms beneath the jar-flange B in the manner indicated in Fig. 1.

It will be obvious from the construction of the closure as set forth that the clamping member thereof bears against the cover at only two points upon opposite sides of the center, the points being substantially midway from the center to the periphery. Thus a leverage is obtained superior to that where the clamping member bears against the cap centrally or substantially at the center, and as the clamping-arms are entirely out of con-

tact with the cap, except at the point referred to, the full spring effect of the arms is obtained in clamping the cover to its seat.

While it is not essential to the construction of the closure, I may, and preferably do, provide guides on the cover for the clamping member to prevent the disengagement of the latter. These guides are formed by means of lugs a', formed upon the cover and extending within the recess, as shown, the lugs being spaced and diametrically arranged in pairs, as plainly shown in Fig. 2. The clamping member of the closure is thus capable of being placed upon the cover in different positions, as may be found most convenient, the member being arranged between the lugs of each pair, as shown.

What I claim as my invention is—

1. The combination with a jar or can, having a squared flange surrounding its top, of a cover supported upon said flange having formed centrally therein a concave recess and a conical aperture extending centrally from the recess through the cover, a check-valve in the form of a conical plug fitting within the aperture, and a spring-clamp for the cover comprising two complementary L-shaped arm members engaging beneath the flange and extending over and out of contact with the cover to the recess thereon, and a concave connecting member for the arms extending within the recess into contact with the valve, and forming at the upper inwardly-extending arm ends inclined shoulders adapted to bear against the edge of the recess, upon opposite sides of the center, substantially as described.

2. The combination with a jar or can provided with a cover-support arranged about its top, of a cover mounted upon the support having a central depression formed therein, and a spring-clamp for holding the cover to its seat formed from a single strand of wire, comprising a body formed by bending the strand at or near its middle and folding the bent portions one upon the other, oppositely-extending and substantially L-shaped arm members formed by bending the end portions of the body downwardly and the extreme body ends inwardly in the plane of the body, each arm member engaging beneath the cover-support and extending over and out of contact with the cover to the depression therein, and inclined shoulders upon the arms bearing against the edge of the depression formed by depressing the central portion of the body in the plane of the arms, substantially as described.

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

FRANK H. SMITH.

Witnesses:
WILLIAM H. SULLIVAN,
EVA R. SMITH.