T. EARLE & F. H. PERRY.

SELF-SEALING FRUIT-JARS.

No. 189,713. Patented April 17, 1877.

Fig. 1.

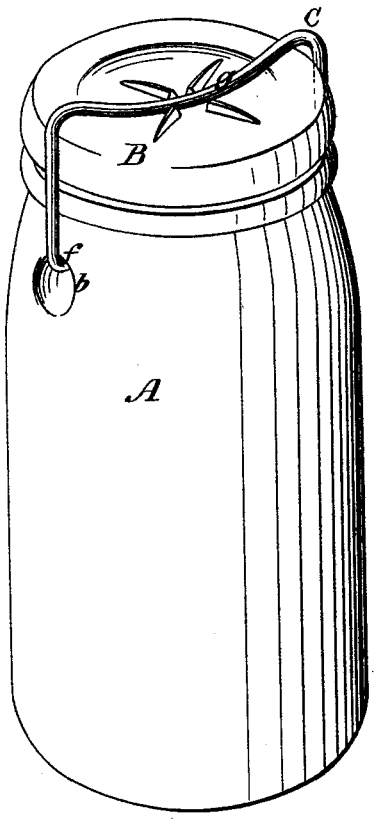


Fig. 2.

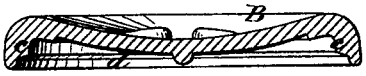


Fig. 3.

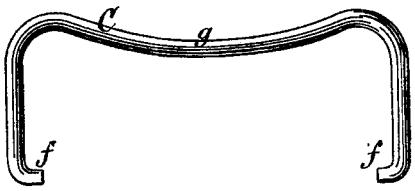


Fig. 4.

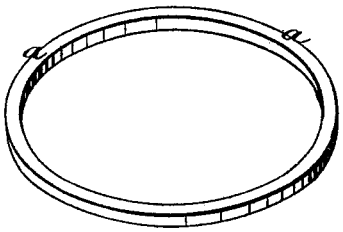
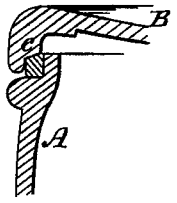


Fig. 5



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UNITED STATES PATENT OFFICE.

TIMOTHY EARLE, OF VALLEY FALLS, AND FRANCIS H. PERRY, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN SELF-SEALING FRUIT-JARS.

Specification forming part of Letters Patent No. **189,713**, dated April 17, 1877; application filed February 13, 1877.

To all whom it may concern:

Be it known that we, TIMOTHY EARLE, of Valley Falls, in the county of Providence and State of Rhode Island, and FRANCIS H. PERRY, of the city of Providence, in the county and State aforesaid, have invented certain new and useful Improvements in Self-Sealing Fruit-Jars; and we do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part of the same, is a clear, true, and complete description thereof.

Self-sealing jars have heretofore been made in great variety; but as a rule they have been devised with special reference to their use in families. Our improvements render our jars no less desirable for domestic use, but at the same time they are especially intended to more fully meet the varied requirements of packers and dealers in fancy canned goods than has heretofore been attained with any self-sealing jar of which we are cognizant.

These requirements, briefly stated, are, that the jar shall be of glass or other non-corrosive material, and comparatively inexpensive; capable of secure sealing; readily opened for sampling, and easily closed thereafter, with little or no liability of being imperfectly sealed at the hands of inexperienced persons; a thorough non-liability of becoming unsealed while being handled and in transit; and such a construction of jar, cover, and clamping device as will secure a maximum interior capacity with a minimum of exterior dimensions, so that there will be no unnecessary bulk in packing.

To these ends the main feature of our invention consists in the combination, with a jar having clamp-receiving recesses molded in the sides thereof, a suitable packing-ring, and a cover, of a non-pivotal inwardly-springing metallic locking-clamp, having a downwardly-curved top for engaging with the center of the cover, and inwardly-bent fingers at the sides for engaging with the recesses in the jar. This clamp, when applied to the covered jar, is capable of no movement, and the cover cannot be removed unless the clamp be disengaged from the recesses in the jar.

And, further, our invention consists in the combination, with a jar having an annular shoulder surrounding its neck, and a suitable packing-ring fitted thereto, of a cover provided with an annular rim, which encircles the packing-ring, and which has within the rim an annular shoulder, which is beveled upwardly and inwardly from the rim, for engaging with and pressing upon the top of the packing-ring, whereby pressure upon the cover forces the elastic packing-ring inward, and causes it to securely pack against the exterior of the neck of the jar.

To more particularly describe our invention we will refer to the accompanying drawings, in which—

Figure 1 represents, in perspective, a jar embodying our improvements. Fig. 2 represents, in diametrical section, the cover thereof. Fig. 3 represents, in side view, the clamp. Fig. 4 represents the usual elastic packing-ring. Fig. 5 represents a portion of the cover, packing-ring, and jar in vertical section.

The jar A is composed, preferably, of glass, molded with straight sides, and a neck reduced sufficiently in diameter to receive the packing-ring *a*, and afford a suitable shoulder therefor. The jar maintains its diameter to a point within about one inch of its top, and is provided near the top with two recesses, as at *b*, one on each side of the jar.

The cover B is as heretofore constructed, with the exception of the shoulder at *c*, within the rim *d*. This shoulder, instead of being straight, as heretofore, and at right angles to the rim, is beveled upwardly and inwardly from the rim, as shown in Fig. 2. The packing-ring *e*, when in position, encircles the neck of the jar, and snugly engages therewith by reason of its elasticity. The shoulder on the jar beneath the ring is flat. The ring in section is rectangular in form, so that it engages flatly with the shoulder on the jar, and when the cover is in position, and is pressed downward, the beveled shoulder thereon not only forces the ring downward, so as to secure good packing contact with the cover and the shoulder on the jar, but also forces the ring inward against the neck of the jar, which secures as perfect sealing results as could

possibly be desired. The top of the cover is concave, and it is preferably provided with the four raised lugs, as shown, which radiate from an open center for the purpose of affording a central seat for the clamp.

The clamp C is preferably composed of heavy soft-iron wire, which will admit of the abrupt bending requisite for forming the rectangular fingers at *f*, on the lower end of each side, without liability of the metal being cracked or weakened. The fingers *f* must be so squarely bent that they can securely engage with the upper sides of the recesses *b*, which are molded with special reference to their receiving and retaining the fingers. The two sides of the clamp are preferably made parallel with each other, and its length is less than the diameter of the body of the jar. The sides of the clamp need seldom be more than one inch in length. The top of the clamp is bent downward, as at *g*, so that it engages with the top of the cover near the center of its concave recess. It will be seen that these fingers do not serve as pivots, because the clamp is incapable of any movement thereon. The bending of the soft wire to form the clamp hardens it sufficiently to secure the requisite springing capacity.

The jar is sealed as follows: The ring and cover are properly placed on the jar, and the clamp placed over the cover, with one of its fingers entered into its recess in the jar, the other finger being above its recess. Pressure is then applied to the cover, after which the clamp is forced downward. The inclined surface of the jar above the recess causes the side of the clamp to spring outward, and on entering the recess it springs inward, securely locking the cover to the jar. For opening the jar, one side of the clamp must be sprung outward sufficiently to release its finger from its recess, and the clamp wholly disengaged. The rigidity of a suitable clamp is such that, to effect this disengagement from the jar, it is necessary to insert between it and the jar, near the recess, a knife-blade, or other similar instrument, and to use it as a lever.

It will be seen that our jars are very simple and inexpensive; that they can be securely sealed; are easily opened, and as readily closed; and that the clamp cannot be engaged with its recesses unless the cover is properly adjusted and properly compressed upon its ring, which always results in a proper reseal-ing. This is not the case with any other self-sealing jar known to us. In the screw-neck jars, or those which embody the screw principle in any form, the cover may seem to be properly adjusted, and the screw-cover properly strained, and yet the jar will be imperfectly sealed.

In those jars which embody the spring-bail, which can be swung to and fro over the cover, it is possible for the bail to occupy its proper position, owing to its spring capacity, even while the cover is improperly adjusted on its ring, and with relation to the neck of the jar. The screw, however it may be constructed or applied, is liable to be gummed, and to seem to be well set when only imperfectly so, and a swinging spring bail or clamp, however constructed and applied, owing to its length and construction, is liable to weaken, and thus decrease the sealing effect. As compared with the swinging bail, or those which do not positively engage with the jar, it will be seen that ours is much more secure, and that it cannot possibly be displaced by its contact with another jar, or the sides of a packing-case, which is a comparatively frequent occurrence with the swinging bail.

It will be seen that the clamp and cover add but little to the length of the jar, and that they require only a slight reduction in the interior diameter of the body of the jar, without adding at all to its exterior diameter, and that these features render our jar of special value for packers in enabling them to secure a maximum of interior capacity in a jar coupled with a minimum of exterior dimensions.

We are aware that jars have heretofore been made with shoulders for engaging with clamps, and that swinging bails with fingers, which serve as pivots, have been employed for securing the cover, and also that non-pivotal spring-bails, without fingers or recesses in the jar, have been employed in the same connection, and we, therefore, make no specific claim to the separate elements employed by us.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination, with a jar having clamp-engaging recesses molded in the sides thereof, a suitable packing-ring, and a cover, of a non-pivotal inwardly-swinging metallic locking-clamp, having a downwardly-curved stop for engaging with the center of the cover, and inwardly-bent fingers for engaging with the recesses in the jar, for locking the cover and jar together, substantially as described.

2. The combination, with a jar having an annular shoulder surrounding its neck, and a suitable packing-ring fitted thereto, of a cover provided with an annular rim, which encircles the packing-ring, and with an annular shoulder within the rim, which is beveled upwardly and inwardly from the rim, and bears on the upper surface of the packing-ring, substantially as described, whereby, when the cover is forced upon the jar, the packing-ring is forced inwardly against the exterior of the neck of the jar, as set forth.

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FRANCIS H. PERRY.

Witnesses:
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H. S. BABCOCK.