G. S. G. Spence,

Fruit Jar,

No. 36,970. Patented Nov. 18, 1862.

Fig. 5.

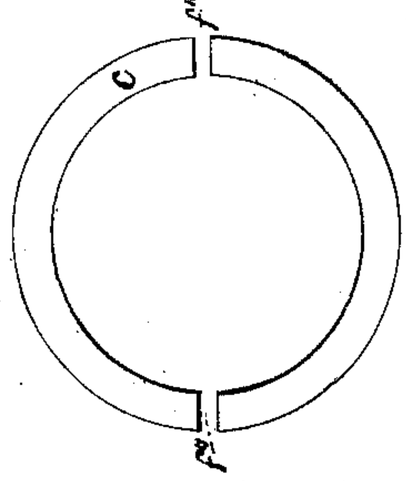


Fig. 4.

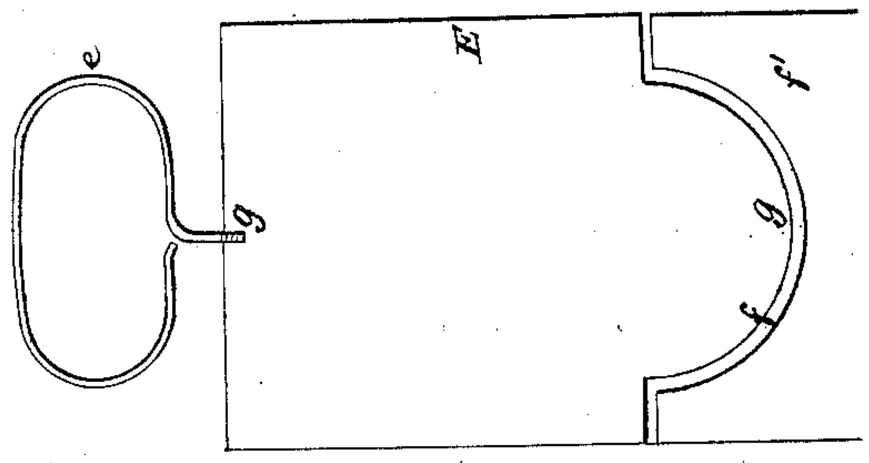


Fig. 7.

Fig. 3

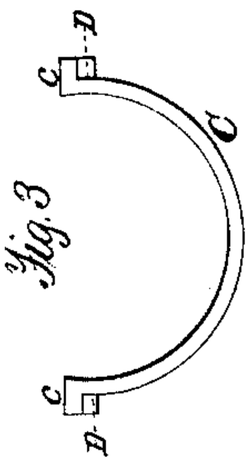


Fig. 2.

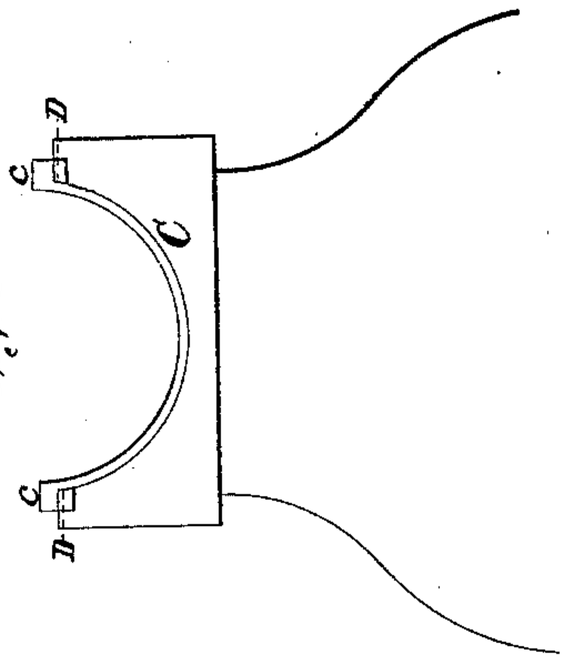


Fig. 6.

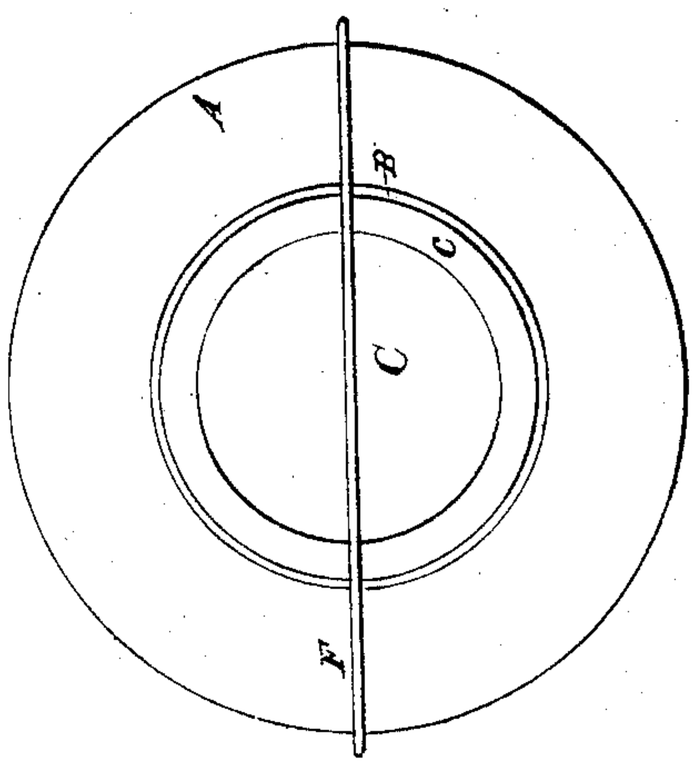
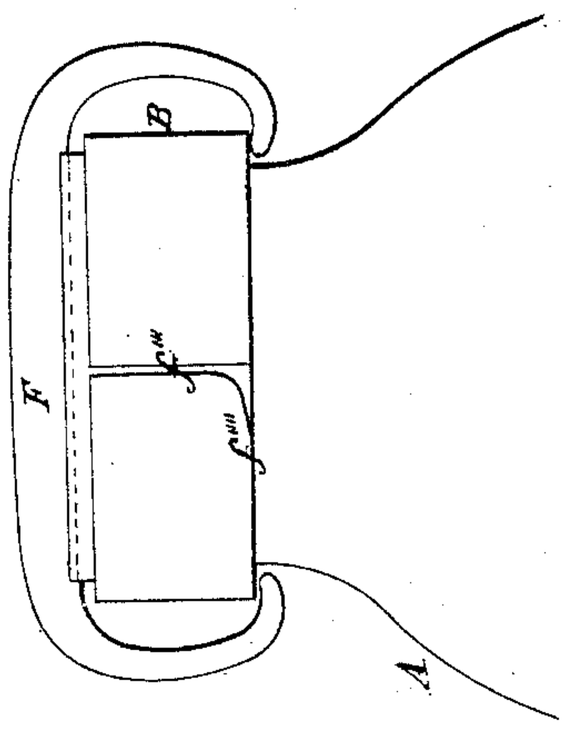


Fig. 1.



Witnesses:

John C. Hollingshead

L. O. Sale

Inventor:

Geo. S. G. Spence

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE S. G. SPENCE, OF SALEM, MASSACHUSETTS.

IMPROVEMENT IN PRESERVING JARS AND CANS.

Specification forming part of Letters Patent No. **36,970**, dated November 18, 1862.

To all whom it may concern:

Be it known that I, GEO. S. G. SPENCE, of the city of Salem, in the county of Essex and State of Massachusetts, have invented certain new and useful Devices for the Construction of Fruit Jars or Cans; and I hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings and references marked thereon.

Figure 1 represents an elevation of the upper part of the jar with its cap and the clamp in place; Fig. 2, a vertical section through the axis and parallel to it. Fig. 3 is a section through the axis of the concavo-convex cap or cover of the jar. Fig. 4 is the heating-iron for assisting in the sealing. Fig. 5 is a top view of the cap. Fig. 6 is a top view of the jar. Fig. 7 is a piece of wire to put under the side of the cover C.

Similar figures and letters refer to same parts in the several drawings.

A represents the sides of the body of the jar in its upper part; B, the neck part of the jar; C, the concavo-convex cover; *c*, the flange or rim of cap; D, the india-rubber gasket. E is the heating-iron used in sealing the jar; *e*, the handle of heater; *f*, convex bottom adapted to the concavity of the cap, also that of stand *f'*; *g g*, the screw-holes for receiving the screw of handle *e*. F is the clamp; *f''*, the notches or depressions in the rim of the cap to receive clamp; *f'''*, notches or channels on the two sides of neck B; *f''''*, inclines or shoulders for receiving hooks of clamp; G, a piece of wire used to slip under the side of cover C, to allow the escape of air.

The nature of the invention consists in the construction of a peculiar cap of the jar, made concave on the upper surface and convex on the under surface, together with a peculiar form of heater adaptable thereto, as well as to plane caps.

With all the attention and ingenuity thus far expended on the fastenings of preserve cans or jars, and the construction made with reference thereto, there still remain considerable defects. There is a want of some contrivance to displace the air usually left between the cap and the fruit in the jar. There is also a want of some suitable means adapted to sealing jars that have become cold before sealing or such as have failed to be effectually sealed on the first attempt.

I profess to have made an invention that covers both of these points, and proceed to explain it.

In filling preserve-jars a space, more or less, is usually left between the surface of the liquid and the cover when placed on the jar. In order to exclude the air from this space, the usual mode is to place the jar in water and then raise the temperature of the water to the boiling-point. This method occasions delay and requires contrivances and vessels adapted to the size of the jar and appliances for heating water, and, in fine, much paraphernalia of apparatus and expense. To obviate the difficulties attending this method of working, I construct my jar-cover convex on the under side to dip down into the neck of the jar, and thus fills up the space usually filled with air. The upper side of the cover is concave, and has the same curve as the convex bottom *f* of the heater E, and is therefore adaptable to it.

If, now, the jar be nearly filled with the fruit and sirup, &c., and the convexo-concave cover C be dropped into its place, having its gasket D also in place, the heater, already suitably warmed, is set into the cover and soon warms it sufficiently to expel all the remaining air and fill said space with vapor arising from the surface of the liquid by means of the heater.

For facilitating the escape of air, a piece of wire, G, is slipped under one side of the rim *c* of the cover, so as to raise it slightly. When the air has been thus effectually expelled, the wire is withdrawn, the sealing-iron is removed, the clamp put on by entering it into the notches or slots in the rim *c*, and at the same time the hooks of the clamp into the channels *f'''* on the two sides of the neck B, and the clamp-hooks with the cover turned around against the under surface of the inclines *f''''* until the cover is firmly secured by a uniform pressure against the gasket. In this way jars or cans may be most effectually sealed, not only when the contents may be below the boiling-point, but even when the contents of the jar are actually cold. The heating up of the upper surface only of the contents of the jar is a part of the operation of which my apparatus is susceptible, and constitutes a valuable aid in fruit-preserving.

It must be obvious that the depressed cover secures a special advantage when the contents of the jars are put up more or less heated. In this case the jars may be filled, then placing

on the cover, the liquid in the jar is depressed and forced up the convex sides of the cover, driving out the air before it. In this way every particle of air may be excluded, so that not a single bubble will rise on inverting the jar. Consequently, as the contents cool and contract, the small space left under the cover will be free from air and a vacuum.

It will also be observed that the construction of the heater is such that being tapped at either end the handle may be unscrewed from its present position and screwed in at the convex end, and is adaptable as a heater to plane covers as well as to convex ones.

Having described the nature of the invention and the mode of using the same, what I claim as my invention, and desire to secure by Letters Patent, is—

1. Making the cover of fruit-jars with a bottom projecting downward into the neck of the jar, so as entirely to exclude the air therefrom, substantially in the manner and for the purpose set forth.

2. The sealing-iron constructed and used, substantially as set forth, to aid in expelling the air, as described.

GEO. S. G. SPENCE.

Witnesses:

L. D. GALE,

JOHN S. HOLLINGSHEAD.