NICHOLSON & SPRATT.

Hermetic Sealing.

No. 10,396. Patented Jan. 3, 1854.

Fig: 1.

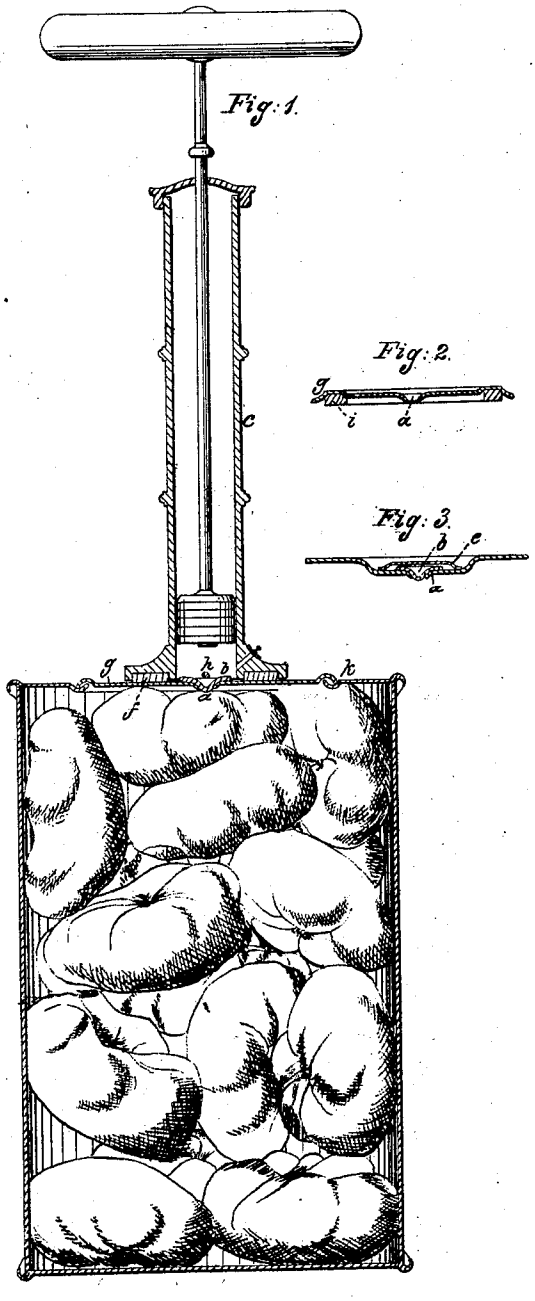

Fig: 2.

Fig: 3.

UNITED STATES PATENT OFFICE.

HENRY C. NICHOLSON AND JAMES SPRATT, OF CINCINNATI, OHIO.

IMPROVEMENT IN SEALING PRESERVE-CANS.

Specification forming part of Letters Patent No. 10,396, dated January 3, 1854.

To all whom it may concern:

Be it known that we, HENRY C. NICHOLSON and JAMES SPRATT, both of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and Improved Method of Hermetically Sealing Preserve-Cans; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawings, making part of this specification, and in which—

Figure 1 is a vertical section through the apparatus. Figs. 2 and 3 represent different forms of disks, &c.

We will premise with the remark that the extensive and increasing business of putting up provisions in sealed cans or vessels from which the air has been exhausted has given birth to many ingenious devices for closing or sealing the vessel without admitting any return of air thereto. The comparative complexity of structure and nicety of manipulation involved in these contrivances would seem to indicate that the very simple and entirely efficient plan here proposed has not been thought of. Our method consists, simply, in applying to the aperture *a* a small disk, *b*, of gum-elastic or other pliant and air-tight substance, which, being temporarily held down at one part, acts, on the application of an air-pump, *c*, or other exhauster, as a valve, and permits the extraction of air, but prevents its return to the vessel. The disk is held down to its place by a wire, *h*, stretched across the lower end of the pump or exhaust-tube. On the removal of the pump the disk remains adhering to the edges of the aperture by the force of atmospheric pressure, and the can may then be handled with impunity, and may even remain some time without the final process of soldering. We then take a disk, *e*, of tin, somewhat hollowed on one side to allow room beneath it for the gum-elastic, and placing it upon the top of the can, so as to cover both the aperture and the disk of gum-elastic. We solder the edges of said disk in the common way, and the operation is completed. Thus is avoided all arrangements for soldering in vacuum and the attendant expenses and difficulties of manipulation and loss of time.

This invention has more particular reference to the sealing of fresh or uncooked provisions—a more delicate and valuable art than where the evolution of steam is depended upon for the expulsion of the atmospheric contents.

f is a gasket of gum-elastic, to make a tight joint between the foot of the pump and the top of the can. Where the exhaust is effected by vacuum-chamber, the muzzle of the flexible tube through which the exhaust is made may have a wire stop, as described, for the pump. When we desire the stopper to serve as a permanent seal to the can, we previously coat the under side of the valve with a cement that will remain fluid long enough to permit the action of the valve; but soon after the latter has finally closed on the aperture, the cement, becoming indurated, makes without further care or trouble a fast and permanent joint between the valve and the can, and if adroitly performed, and with proper material, no further sealing is necessary; but for further security a coating of the same cement may be laid around the outside of the joint. The disk of tin *g*, which closes the aperture through which the provisions are inserted, may of itself be made to serve the purposes of a valve and stopper, and thus, by superseding altogether the exhaust-aperture, once soldering or sealing may serve for all. To effect this object we provide a ring or annular gasket, *i*, of gum-elastic, which being prepared, as well as the disk, by the quantity, a child having a supply of cement at hand can prepare several hundred in the course of a day by sticking the rings to the under sides of the disks just inside their margin. The foot of the pump being formed large enough to inclose this disk, it can evidently be made to serve all the purposes claimed above for the smaller valve. This feature is shown in Fig. 2. This valve *b* may be made applicable to the sealing of steamed provisions by simply applying the valve to its place over the aperture and weighting or cementing it to prevent its displacement. During the evolution of steam from the containing-vessels the vapor will pass freely out; but the instant that condensation takes place the valve will close tightly over the aperture, and may then be sealed or soldered at leisure. In order to facilitate and insure the soldering or sealing, a groove, *k*, may be sunk around the margin of the larger opening, and the disk having recurved edges, they will occupy the trough thus formed. This will not only make a more neat joint, but will receive the solder

better than where the disk lies flat on the top, presenting the rough exposed edge of the iron, which will not readily take the solder, and this is the cause of leakage of many preserve-cans. Within the recurved edge the disk may be depressed, so as to form a cup or cavity for the reception of a seal, which, covering over the india-rubber disk, and being protected by the more elevated sides of the disk, will permanently and securely close the smaller aperture. This feature is shown at Fig. 3.

This invention may be advantageously applied to the preservation of human remains, and all other cases where it is desirable to arrest decomposition.

We claim herein as our invention and desire to secure by Letters Patent—

The application to the aperture of a preserving-vessel of a disk, strip, or pellet of gum-elastic or other pliant and air-tight substance, in combination with a wire, as described, or its equivalent, at the foot of the pump or tube, through which the exhaust is made, whereby the said disk or pellet, being temporarily confined in its range of motion, performs the service of a valve during the exhaustion or escape of the atmospheric contents, and afterward that of a stopper, and this we claim whether applied or not in connection, as described, with cement on the under surface of the disk for the self-sealing thereof.

In testimony whereof we have hereunto set our hands before two subscribing witnesses.

H. C. NICHOLSON.
JAMES SPRATT.

Witnesses:
GEO. H. KNIGHT.
J. H. GETZENDANNER.