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PATENTED JUNE 9, 1903.

E. GOLTSTEIN.

JAR CLOSURE.

APPLICATION FILED OCT. 15, 1902.

NO MODEL.

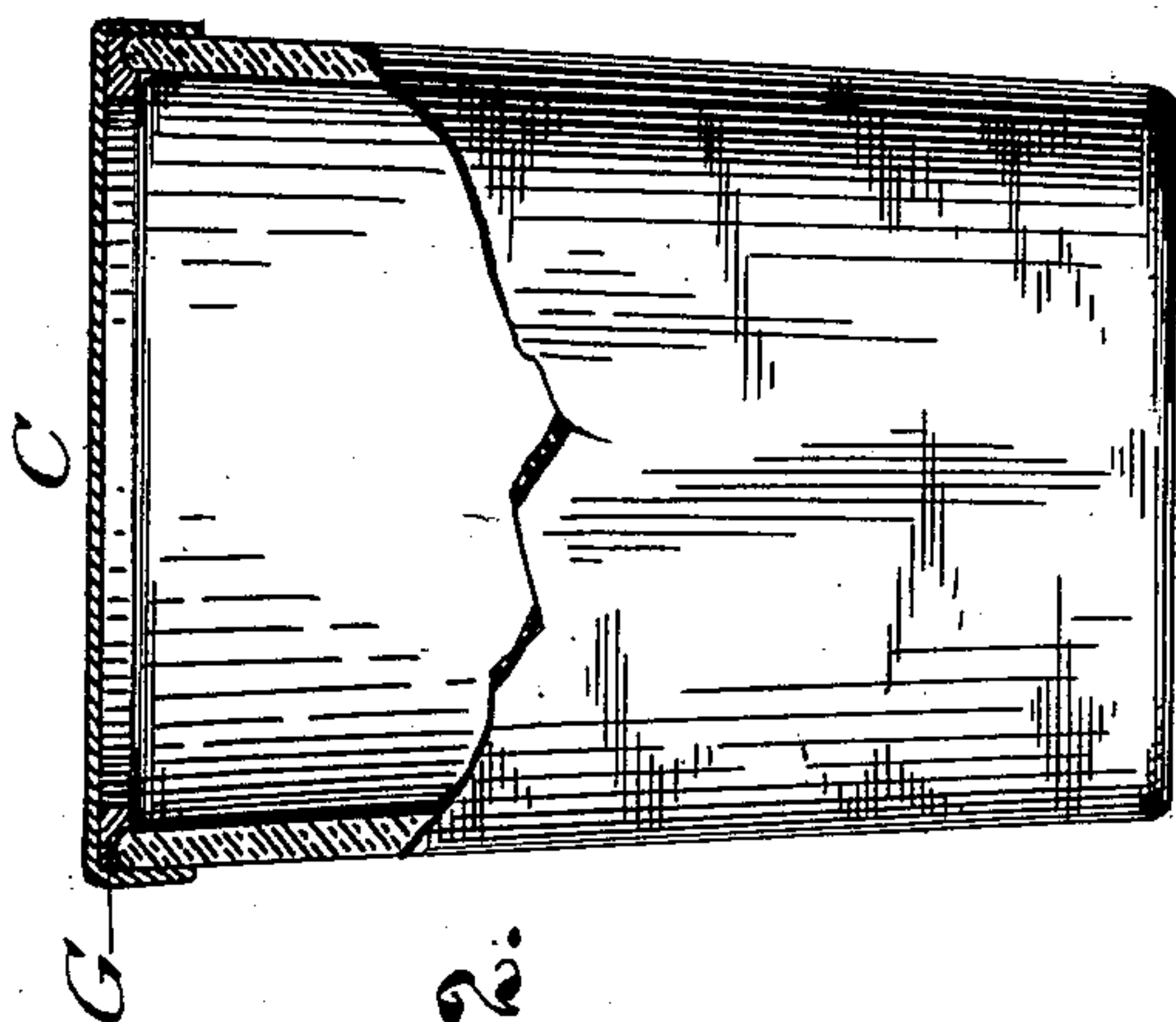


Fig. 2.

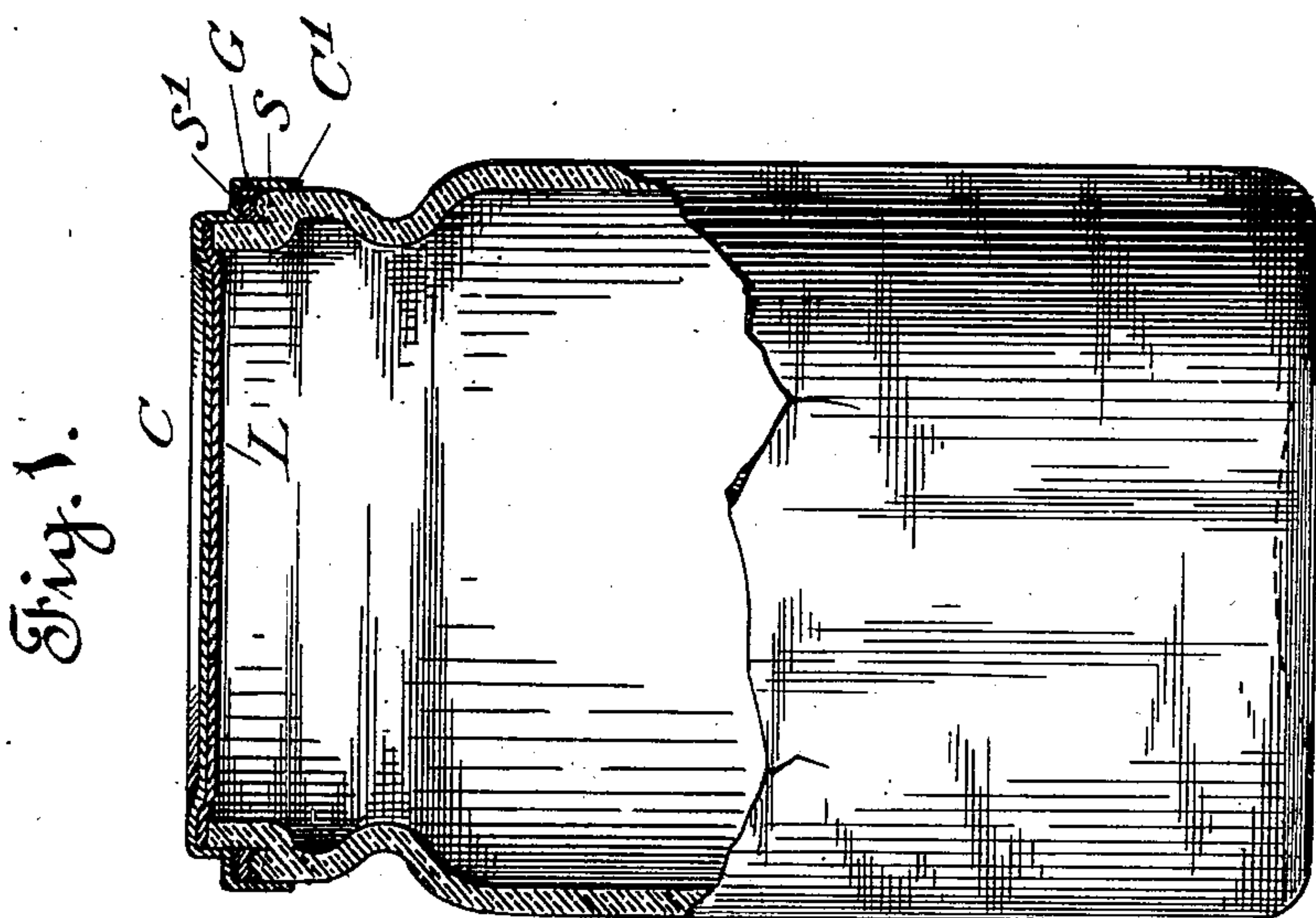


Fig. 1.

Witnesses.

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# UNITED STATES PATENT OFFICE.

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## JAR-CLOSURE.

SPECIFICATION forming part of Letters Patent No. 730,760, dated June 9, 1903.

Application filed October 15, 1902. Serial No. 127,383. (No model.)

*To all whom it may concern:*

Be it known that I, EWALD GOLTSTEIN, a subject of the Emperor of Germany, residing at Cologne, in the Kingdom of Prussia and Empire of Germany, have invented certain new and useful Improvements in Jar-Closures, of which the following is a specification.

My invention relates to the preservation of materials, articles, or substances of food—such as fruits, vegetables, &c.—in packages suitable for transportation and storage, such packages or receptacles being preferably of the class which are closed and hermetically sealed by the vacuum process, in which the air is exhausted from the interior of the receptacle after it has been filled and the closure applied and then held solely by atmospheric pressure and without any mechanical fastenings. In all packages closed in the manner referred to it has been found necessary to provide a packing at the joint between the receptacle and the closure. Heretofore rubber gaskets were placed by hand in a groove or on a shoulder specially provided for the purpose near the upper edge of the receptacle and the cover forced over such gasket by the pressure of the atmosphere. This method, however, is slow and often ineffective.

My invention comprises, generally speaking, a sheet-metal cover for vacuum-receptacles, having adhesively and permanently secured to it a compressible gasket, and which as a distinct article of manufacture is capable of being shipped, stored, fitted, and used without danger of displacing such gasket. The gasket is made of a composition or material which when cold has a considerable degree of solidity, but which softens sufficiently with the heat such as it is necessarily subjected to in ordinary processing or by filling the receptacle with hot fruit, &c., to permit it to mold or adapt itself to any roughness or irregularities of the sealing seat or shoulder of the receptacle, so as to form a perfect air-tight joint, and which with cooling returns to its original condition. Thus the receptacles to which my covers are applied do not have to be perfectly smooth and uniform at the joint, an essential feature of all vacuum-closures used heretofore. In

fact, my covers will seal perfectly and even hold faster on roughly-ground jars or otherwise imperfect surfaces, providing the same are not actually broken or badly chipped. One great value of this feature is that the jars used with my caps do not need to be so closely sorted in the manufacture, a fact that largely increases the cost of other vacuum-jars in consequence of the necessarily-reduced output, a large percentage being thrown out because of defects which would in no way affect the successful working of my closure. Separate rubber rings or gaskets being dispensed with, the labor and expense of placing the same on the jars are eliminated. This is an item of considerable importance to factories having a large output, as the greatest care must be exercised in placing the rubber rings by hand on the old-style vacuum-jars, for instance, for unless the rings are placed on the jars evenly and without being twisted a seal cannot be made. Moreover, the receptacles used in connection with my closure do not have to be specially grooved or finished to take a gasket, since such separate gaskets have been dispensed with. Ordinary drinking-tumblers, for example, may be used and hermetically sealed with perfect success.

In general my covers are more effective when applied, simpler and cheaper to manufacture, and easier and more economical to use than the various closures used for the same purpose heretofore.

My invention also comprises several special features of construction in harmony with its general principle, all of which are fully hereinafter described, as well as illustrated in the accompanying drawings, in which corresponding letters represent corresponding parts.

In the accompanying drawings, Figure 1 is a view of a jar, partly in section, with my invention in place thereon and in section. Fig. 2 is a similar view of a modification.

Fig. 1 is a glass jar having a peripheral seat or shoulder S adjacent and substantially at right angles to its rim to receive a corresponding seat S' of the cover C, to which is attached the compressible gasket G. The cover is formed with a body above the seat S', adapted to fit closely around the outside of the rim of the jar, and with a flange C' depending from



the said seat and fitting close to the side of the jar. Thus when the cover is placed on the jar the attached gasket is closely confined vertically between the seat of the cover and the shoulder of the jar and horizontally between the flange of the cover and the rim of the jar.

In Fig. 1, L is a protection disk or liner, made of pulp-board, parchment-paper, or similar material, which is inserted in the top of the cover C and prevented from dropping out by the upper edge of the jar, which fits within the body of the cover. This liner is to prevent the contents of the jar from coming in contact with the metal of the cover. The sealing-seat S in Fig. 1 is made convex, so as to present initially a minimum point of contact. This, as has been shown, is not necessary, but is preferable for some special purposes—as, for example, in the packing of dry products, such as sliced bacon, which are placed in the receptacle cold and the closure applied by exhausting the air without the application of heat.

The form of construction shown in Fig. 1 is not essential, as the gasket can be permanently attached to a perfectly plain cap, as in Fig. 2, and the principle applied to an ordinary drinking-tumbler or similar receptacle. Everything considered, however, I find it to be the most practical and economical arrangement, principally because, inasmuch as the gasket is confined on all sides, it permits the use of a minimum-sized gasket with the greatest degree of efficiency.

The ring or gasket G is a solid composition washer made of a combination of ingredients which will soften somewhat when subjected to heat and harden again with cooling and which when softened will become adhesive to metal. When cold, the washer, being neither soft nor sticky, is compressible only under considerable pressure. A ring of this character is secured to the seat S', Fig. 1, or equivalent surface upon differently-shaped covers, and when so secured becomes a permanent part of such cover, inseparable from it by any handling, moving, or jarring to which it can be subjected and, in fact, irremovable without using an implement which would destroy it.

Any suitable apparatus can be used for attaching the washers to the covers—as, for example, a hollow mandrel—upon which the washers may be slipped and forced down upon the cover, which is heated from below, so as to soften the washer sufficiently to render it adhesive to the metal. This heating action is but for an instant, as it is only necessary to lightly fuse the surface of the washer in contact with the metal to form a perfect adhesion between the two.

The vacuum-receptacles to which my closure is applied may be processed in the usual

manner, a spring-clamp being employed to hold the cover firmly in place during the processing and until the contents are thoroughly cold, when the cap will be held tightly in place by the pressure of the atmosphere.

While my invention relates primarily to vacuum-receptacles and is especially valuable in this connection, the principle can also be applied advantageously to many of the various closures now in use which require mechanical fastening and from which the elimination of a separate gasket is a distinct advantage both as to economy and efficiency.

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

1. A sheet-metal cover for receptacles having permanently and adhesively secured to it a compressible washer or gasket.
2. A sheet-metal cover for receptacles having permanently fused to it a compressible washer or gasket.
3. A sheet-metal cover, having a plain substantially flat seat, in combination with a compressible washer adhesively secured to said seat, and forming a permanent part of said cover.
4. A sheet-metal cover for receptacles having secured to it a compressible gasket made of a composition that will soften with heating, and will return to its original condition with cooling.
5. A sheet-metal cover for receptacles having permanently secured to it a solid composition washer or gasket.
6. The combination with a receptacle, of a cover adapted to make a simple pressure-joint with said receptacle, and a composition washer in permanent adhesion to said cover.
7. The combination with a receptacle and cover, of a composition washer in permanent adhesion to said cover, and a protective liner between said receptacle and cover.
8. A cover for receptacles carrying a protective disk or lining, and a composition washer in adhesion to said cover and overlapping said lining.
9. The combination with a receptacle having a peripheral seat forming substantially a right angle with its rim, of a cover having a body fitting the outside of the rim, a shoulder above said seat, a flange depending from the shoulder and a compressible gasket adhesively secured beneath and to said shoulder so as to be confined vertically between the seat and shoulder, and horizontally between the rim and the flange of the cover.

In testimony whereof I have affixed my signature, in presence of two witnesses, this 19th day of September, 1902.

EWALD GOLTSTEIN.

Witnesses:

GUSTAV LINNHOLD,  
CARL SCHMITT.