

No. 711,219.

Patented Oct. 14, 1902.

W. A. LORENZ.
JAR SEALING APPARATUS.

(Application filed Jan. 5, 1901.)

(No Model.)

Fig. 1.

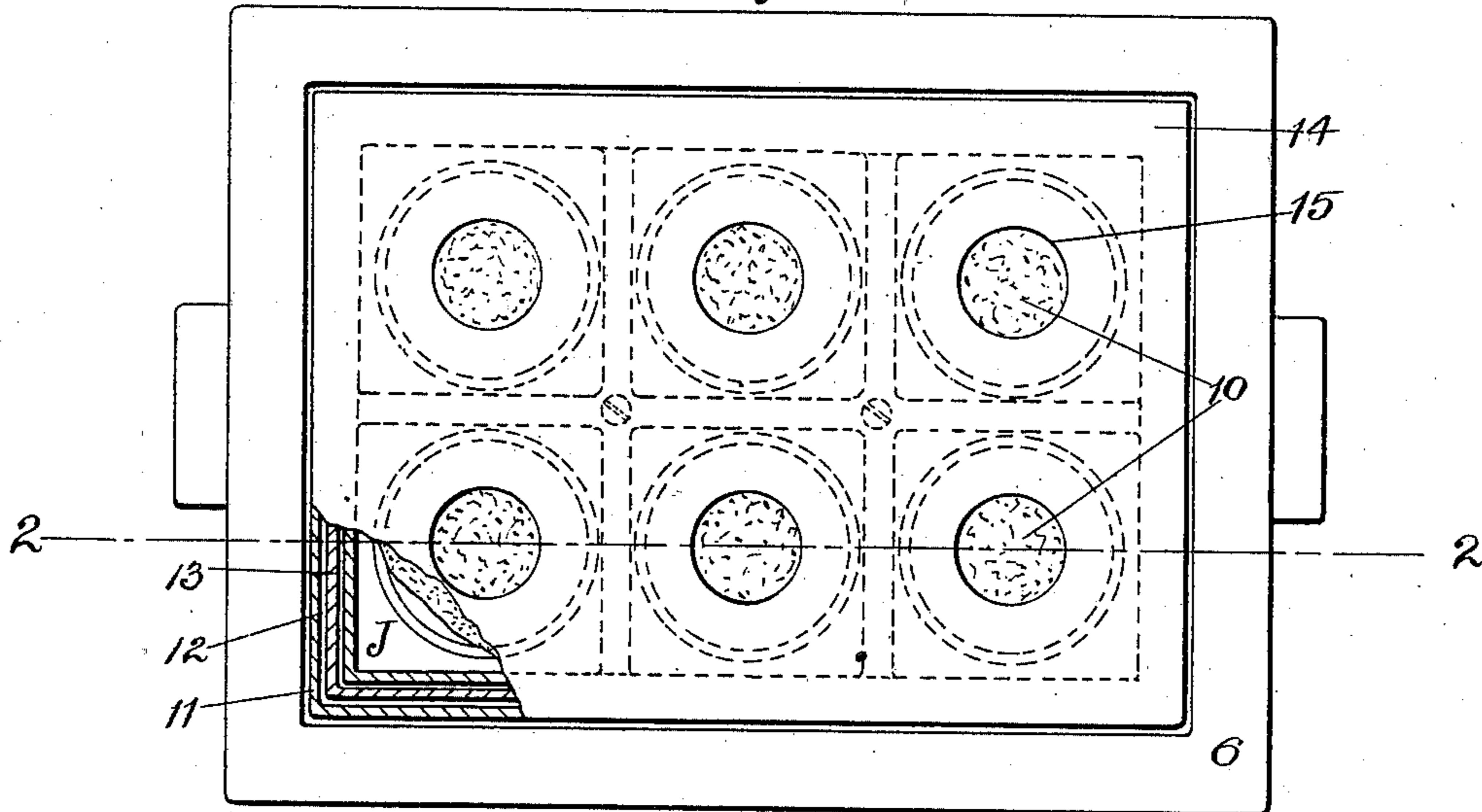


Fig. 2.

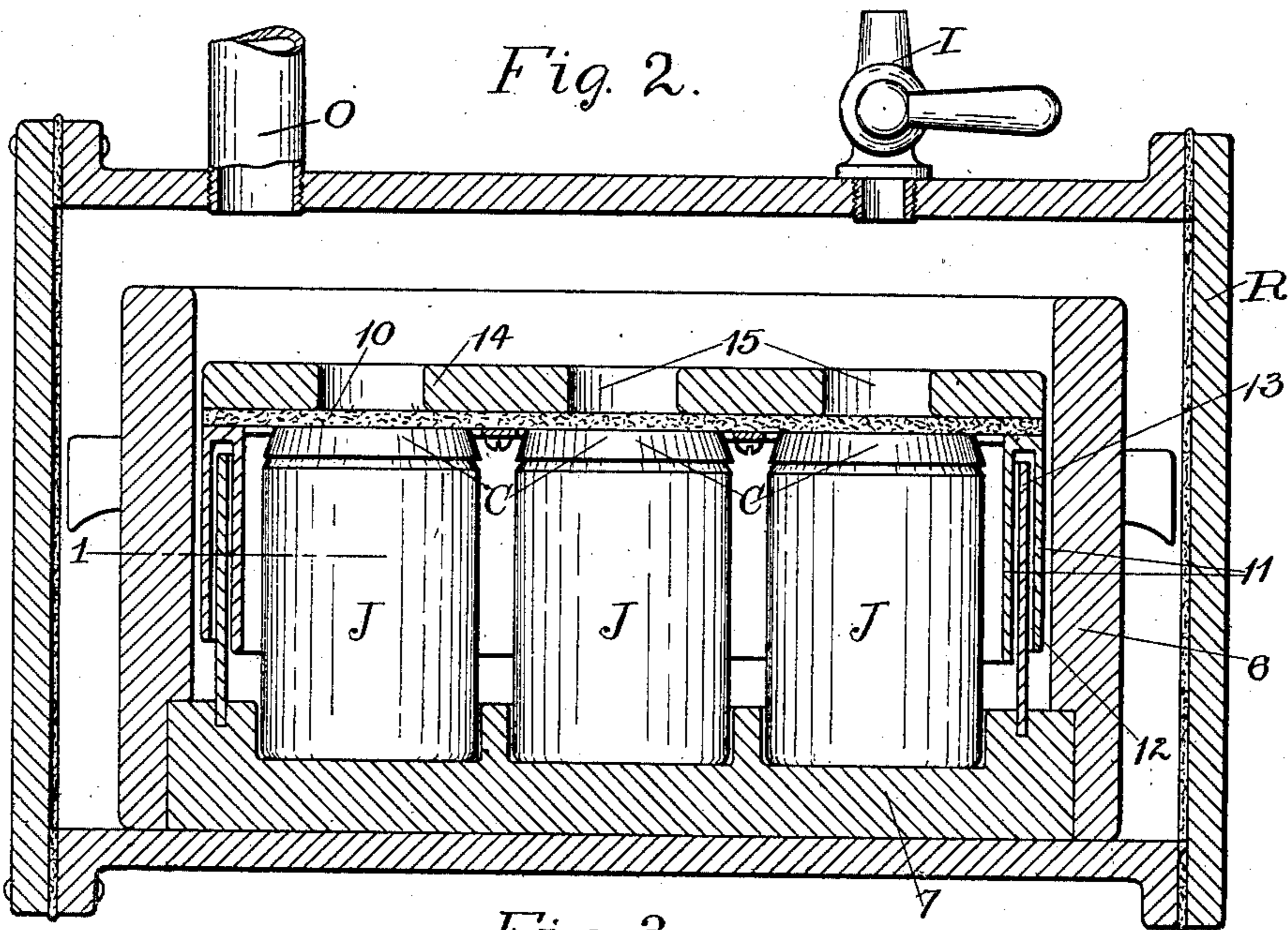
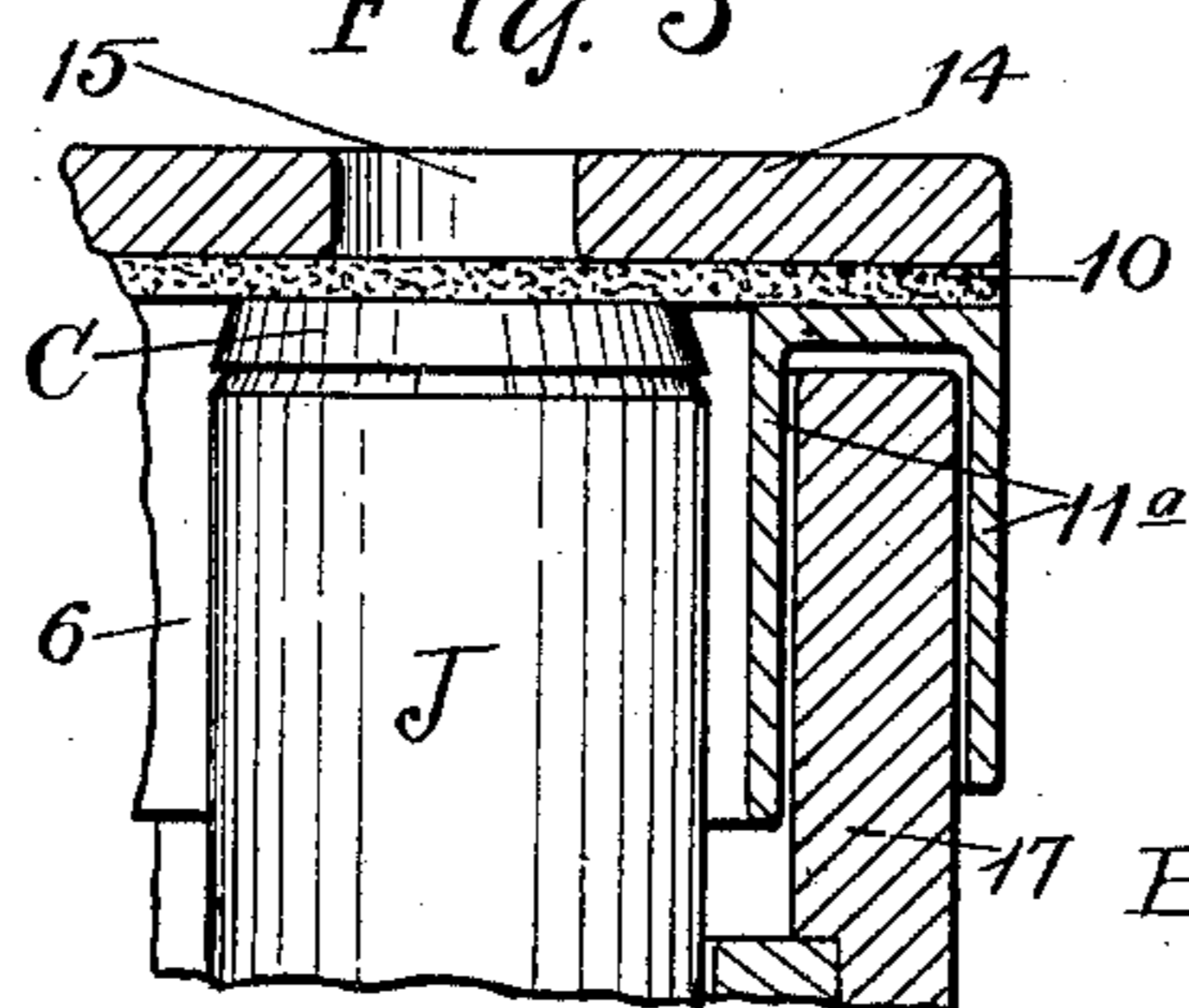


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM A. LORENZ, OF HARTFORD, CONNECTICUT, ASSIGNOR OF THREE-FOURTHS TO BEECH-NUT PACKING COMPANY, OF CANAJOHARIE, NEW YORK, A CORPORATION OF NEW YORK, AND WILLIAM H. HONISS, OF HARTFORD, CONNECTICUT.

JAR-SEALING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 711,219, dated October 14, 1902.

Application filed January 5, 1901. Serial No. 42,173. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. LORENZ, a citizen of the United States of America, and a resident of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Jar-Sealing Apparatus, of which the following is a specification.

This invention relates to improved apparatus for exhausting and hermetically sealing jars, cans, and similar receptacles.

Figure 1 of the drawings is a plan view of the apparatus, one corner being in section on the line 1 of Fig. 2 to show the interior arrangement. Fig. 2 is a side view in section, taken along the line 2 2 of Fig. 1, showing the apparatus within an air-tight receiver ready for the exhausting operation. Fig. 3 is a fragmentary side view in section, showing modified details of the apparatus.

These jars are commonly closed by means of caps C, the joint between the cap and jar being hermetically closed by means of a compressible annular gasket of rubber or similar material. During the exhausting operation the caps are preferably allowed to rest lightly upon their gaskets in order to allow free exit for the air within the jar. On account of irregularities and inequalities in the jars, the gaskets, or the caps it frequently happens that the latter do not entirely close the annular space between them and the gaskets, but rest upon the higher portions, leaving passages through which more or less air is liable to return to the interior of the jar when it is readmitted to the receiver at the conclusion of the exhausting operation.

It is the object of this invention to provide means which while allowing the caps thus to rest lightly upon their gaskets to facilitate the exhausting operation will automatically force the caps down and seal the jars when the air is readmitted to the receiver and before any of the readmitted air can find its way to the interior of the jars.

This apparatus consists of an open-sided jar-receptacle 6 for partially inclosing the jars J, resting upon a base 7, which may be in-

tegral with the side of the receptacle 6; as here shown, or may be a part of the receiver R, in which the apparatus is employed. A jar-presser 10 is placed over the tops of the jars and is provided with a depending rim 11, which laps and preferably interlaps with suitable coöperating means for deflecting the readmitted air from returning directly to the exterior of the closure-joint. In the preferred arrangement here shown the depending rim interlaps with the deflector 13, the interlapping being arranged to form an extended passage or port, which becomes the sole means of communication between the interior and the exterior of the receptacle and without in any way interfering with the downward or closing movement of the presser against the jars. The presser 10 is preferably a flexible plate or sheet of rubber or similar elastic material which yields readily to suit the inequalities in the height of the jars, thereby enabling the readmitted pressure to bear with equal force upon all of the jars, even though they may vary considerably in height. The presser 10 is also preferably attached to or supported by a frame 14, having apertures 15 located approximately over the centers of the jar-caps, which aid in directing the pressure to those centers, thereby tending to avoid the tilting of the caps as they are pressed down.

In the practical operation of this apparatus the filled jars are placed in the receptacle and the caps are placed upon the gaskets. Then the presser 10 is applied over the tops of the caps and the apparatus is placed in a receiver R, of any suitable construction, having an outlet or exhaust pipe O and an inlet-valve I. During the comparatively slow exhaustion of the air from the interior of the apparatus the air in the jars has ample time to pass freely out between the caps and the gaskets and between the interlapping leaves or plates of the presser 10 and the receptacle 6, so that the vacuum in the jars is substantially uniform with that produced in the receiver R. When a suitable vacuum has been produced, the atmospheric pressure is readmitted through the inlet-valve I, which on

account of the described construction first takes effect upon the outer side of the presser 10 and forces it down at once, thus quickly closing whatever passages may have theretofore existed between the gaskets and their caps due to the irregularities hereinbefore mentioned. This closing action takes effect before the readmitted air can make its way to those openings through the extended, narrow, and more or less tortuous passages formed by the lapping and deflecting members of the apparatus. This lapping construction may be modified in many ways, one of which is shown in Fig. 3, in which the depending rim 11^a of the presser laps the side wall 17 of the receptacle 6. The number of these lapping and deflecting members and the depth to which they lap or interlap may be modified to any required extent, so as to correspondingly vary the length of the passage through which the readmitted air must pass before reaching the jars.

The construction and arrangement of this apparatus may be modified in many other ways which will be obvious to those skilled in the art to suit the number and kind of jars employed or to suit different conditions. The jars are herein shown to be in an upright position, with the presser applied on the tops of the caps; but this is obviously non-essential, since whenever the nature of the contents permits the jars may be inverted or laid upon their sides. The presser may be applied either to the caps or to the bottoms of the jars or in any way that may be convenient so long as it serves, by means of the readmitted air, to press the jars and caps together. Likewise the construction and arrangement of the lapping or interlapping members of the presser and the jar-supporting or jar-inclosing members of the apparatus may be modified in many obvious ways.

I claim as my invention—

1. In a jar-sealing apparatus, the combination of an exhausting-receiver, a jar-receptacle, a jar-presser lapping with the receptacle, means for exhausting the air from the receiver and from both sides of the presser, means for readmitting the air-pressure and directing it against the outer side of the presser, whereby that pressure automatically forces the jars and their caps together before the air can enter the jars.

2. In a jar-sealing apparatus the combination of an exhausting-receiver, an open-sided jar-receptacle, a jar-presser interlapping with the receptacle and substantially closing the open side thereof, means for exhausting the air from the receiver and from both sides of the presser, and means for readmitting the air-pressure and directing it against the outer side of the presser, whereby that pressure automatically forces the jars and their caps together before the air can enter the jars.

3. In a jar-sealing apparatus the combination of an exhausting-receiver, a jar-receptacle, a jar-presser interlapping with the receptacle and having a flexible diaphragm, means for exhausting the air from the receiver and from both sides of the presser, and means for readmitting the air-pressure and directing it against the outer side of the presser, whereby that pressure is distributed over all the jars with substantial uniformity by the flexibility of the diaphragm, and automatically forces the jars and their caps together before the air can enter the jars.

Signed at Hartford, Connecticut, this 29th day of December, 1900.

WILLIAM A. LORENZ.

Witnesses:

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