

No. 649,845.

Patented May 15, 1900.

W. H. HONISS.  
CAP FOR HERMETICALLY SEALED JARS.

(Application filed Aug. 17, 1899.)

(No Model.)

Fig. 1

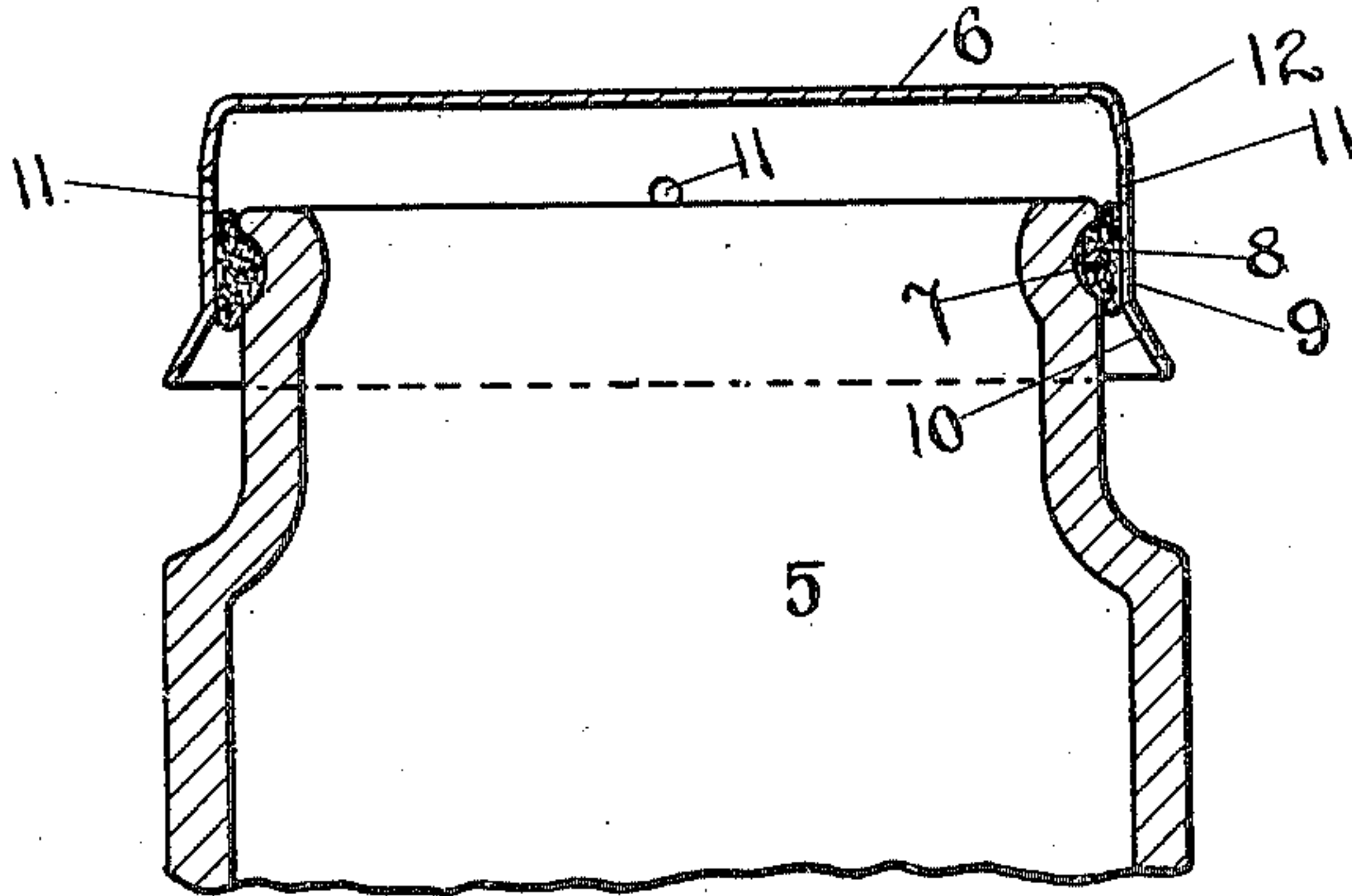


Fig. 2

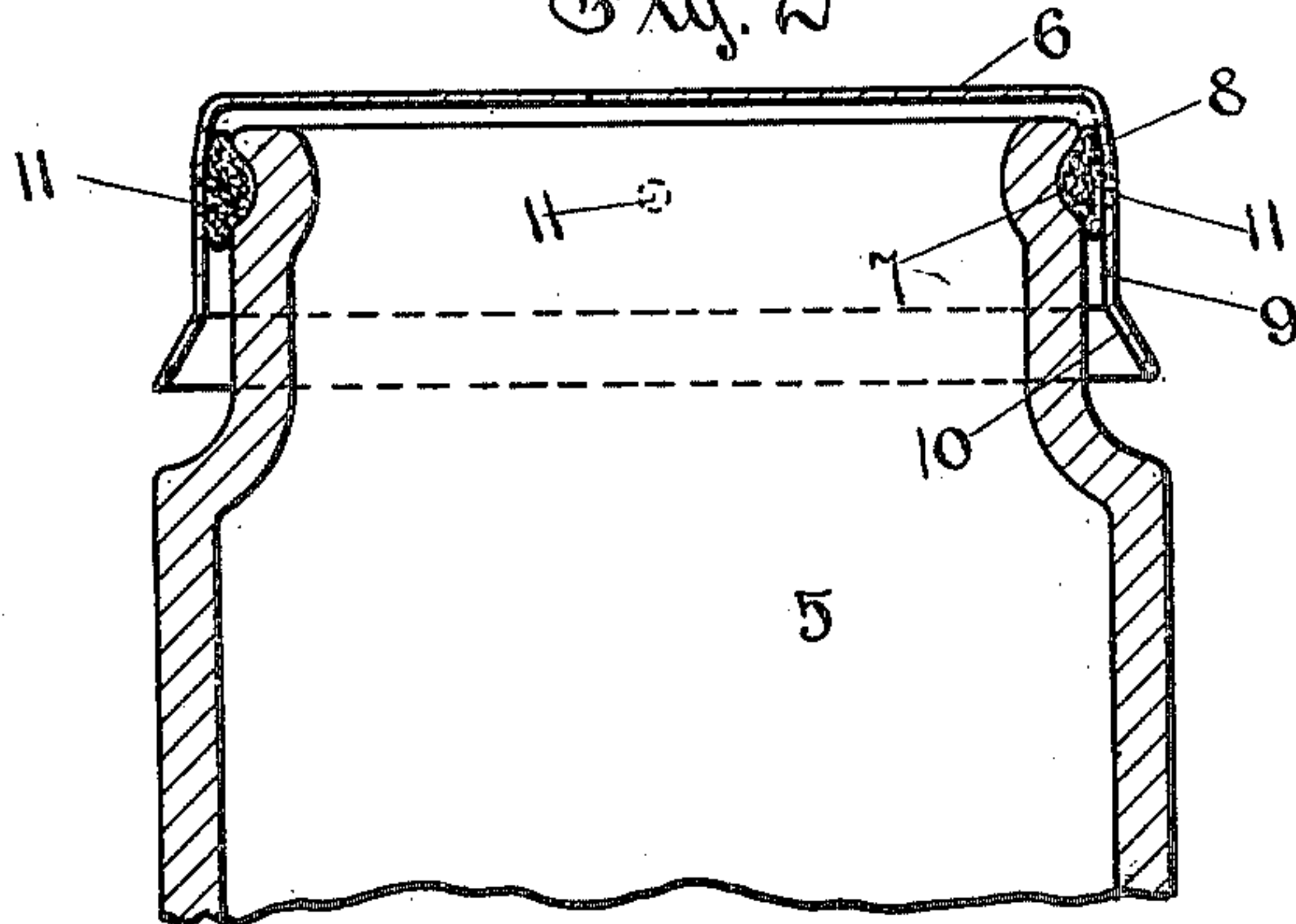


Fig. 3

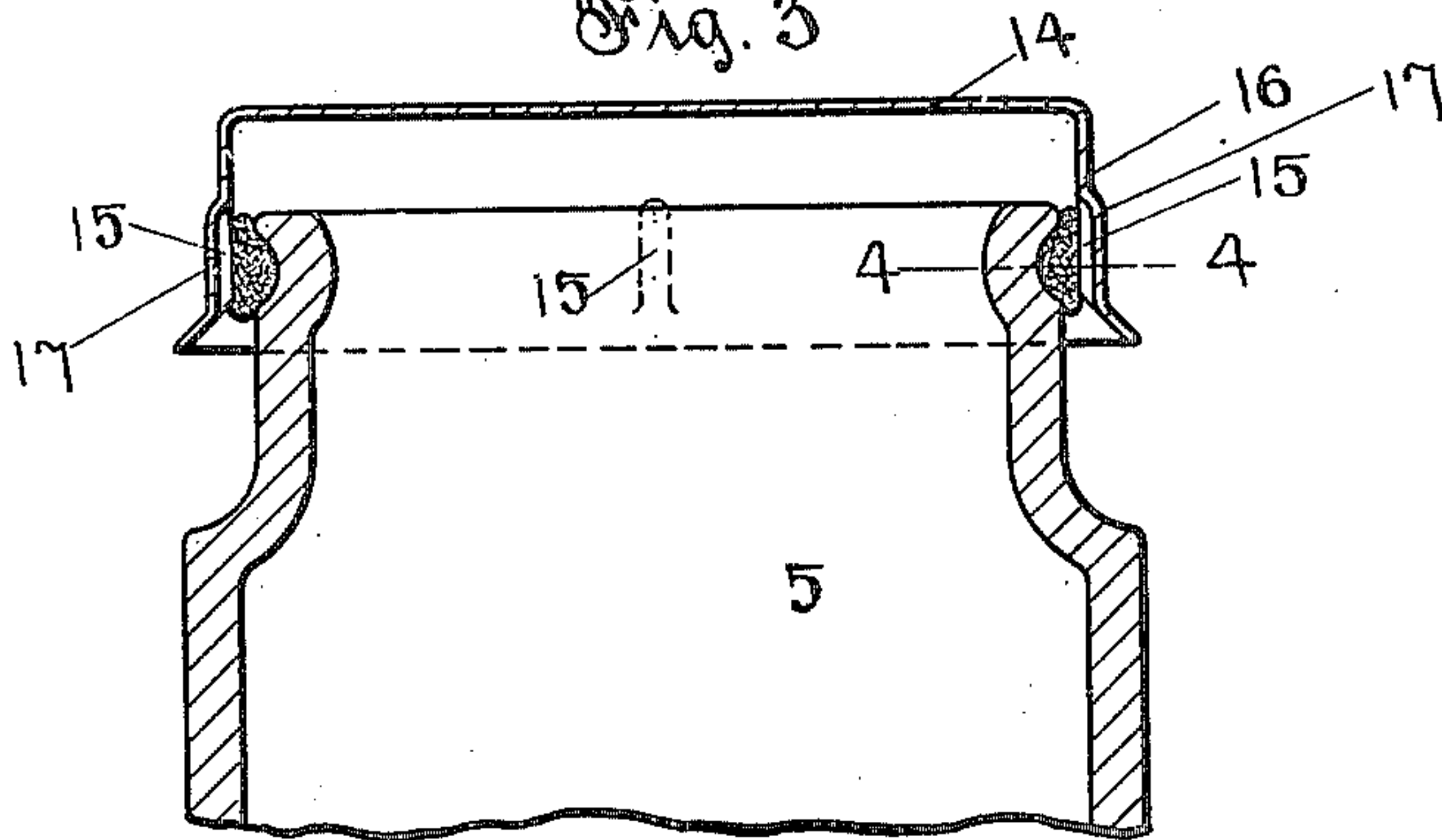
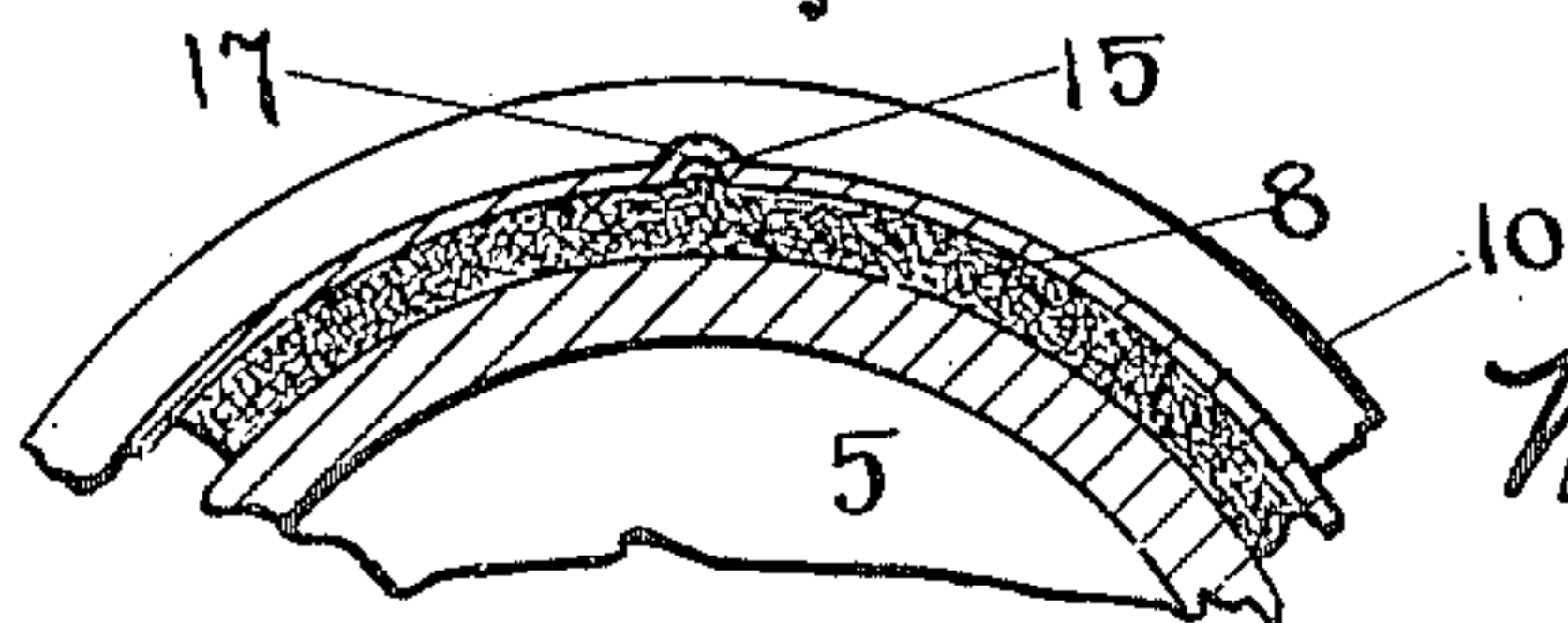


Fig. 4



Witnesses:  
*Joe. Merritt.*  
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# UNITED STATES PATENT OFFICE.

WILLIAM H. HONISS, OF HARTFORD, CONNECTICUT, ASSIGNOR OF THREE-  
FOURTHS TO WILLIAM A. LORENZ, OF SAME PLACE, AND BARTLETT  
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## CAP FOR HERMETICALLY-SEALED JARS.

SPECIFICATION forming part of Letters Patent No. 649,845, dated May 15, 1900.

Application filed August 17, 1899. Serial No. 727,599. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. HONISS, a citizen of the United States of America, and a resident of Hartford, in the county of Hart-  
5 ford and State of Connecticut, have invented certain new and useful Improvements in Caps for Hermetically-Sealed Jars, of which the following is a specification.

This invention is an improved cap for her-  
10 metically sealing jars and cans of the class commonly employed for the preservation of food by the exclusion of air.

Figures 1 and 2 of the drawings are side views in section, taken through the longitudi-  
15 nal center of a jar, its gasket, and cap, Fig. 1 showing the latter in the position occupied by it during the air-expelling or exhausting operation, while Fig. 2 shows the cap pushed down to its sealing position. Fig. 3 is a similar sectional side view of a jar, its gasket, and  
20 cap, the latter being provided with a modified form of air-duct and being here shown in its exhausting position, similar to that of Fig. 1. Fig. 4 is a fragmentary plan view in section, taken on the line 4-4 of Fig. 3, showing  
25 this modified form of duct.

Jars of this class are commonly sealed by means of an annular gasket of rubber or similar yielding material, which is usually com-  
30 pressed against the outside of the neck of the jar by means of a metallic cap or else is expanded against the interior of the cap by the neck of the jar. In either case this compression or expansion of the gasket to completely  
35 seal the annular space between the cap and the jar is ordinarily deferred until the conclusion of the exhausting operation. In the customary procedure the caps and their gas-  
40 kets are placed more or less loosely upon their jars, and the latter are then transferred to a closed retort, from which the air is exhausted by means of a pump or similar appa-  
45 ratus, the gaskets being compressed or expanded to seal the jars at the completion of the exhausting operation and before the latter are removed from the retorts. In the application of the present invention this annular space is tightly sealed before placing the jars in the retorts, and this may therefore be  
50 done by hand or by any suitable apparatus

working in the full view of the operator, who is thereby enabled to detect any misfit or displacement of the gaskets or of the caps before subjecting the jars to the exhausting operation. At the conclusion of that operation  
55 it is then only necessary to seal the air-ducts by merely sliding the cap down over the compressed gasket far enough to carry the air-ducts into sealing contact therewith. The jars 5 shown in connection with these im-  
60 proved caps 6 are provided with an annular groove 7, deep enough to form a permanent seat for the gasket 8, adjacent to the mouth of the jar.

The caps 6, which are preferably of metal, 65 as usual, are each provided with a cylindrical rim 9, which fits tightly upon the outside of the gasket to hold it in its compressed condition. The upper portion of this cylindrical rim is provided with one or more air-ducts, 70 which in the preferred construction shown in Figs. 1 and 2 consist of perforations extending through the metallic rim, so as to come above the gasket and communicate with the interior of the jar when the cap is in its ex-  
75 hausting position. (Shown in Fig. 1.)

The gasket may be compressed in its seat 7 upon the jar by any convenient extraneous means sufficient to enable the cylindrical rim 9 to be slipped over the gasket; but it is more  
80 convenient and expeditious to adapt the cap so that it may be employed to compress the gasket to the condition shown in Fig. 1. To this end the lower portion of the rim is provided with an outwardly-flaring zone 10, 85 which should be of an angle or taper suited to the size of the uncompressed gasket.

By reason of changes of temperature and for other causes operating during the lapse of time the gasket is liable to shrink away 90 from the cylindrical rim 9, and in order to enable the cap to follow up such a shrinkage and maintain the integrity of the seal the upper portion of its rim 12 is slightly tapered or flared, as shown in Figs. 1 and 2, so that  
95 any contraction of the mouth of the jar or shrinkage of the gasket will enable the cap to be pushed still farther down by external atmospheric pressure from the position shown in Fig. 2, thereby maintaining the seal. 100



The operation of exhausting and sealing jars provided with these improved caps is as follows: The gasket is placed in the seat 7 and the flaring compressing-zone 10 of the cap 5 is forced over the outside of the gasket to the position shown in Fig. 1, thereby completely sealing the annular space between the jar and cap, but leaving open the air duct or ducts 11. The jars thus prepared are placed 10 in a suitable exhausting-retort and subjected to the exhausting operation, at the conclusion of which the caps are pushed down to the position shown in Fig. 2, so as to seal the air-ducts, whereupon the jar may safely be 15 removed from the retort.

The modification of the invention represented in Figs. 3 and 4 resides merely in the form of air-duct, therein shown to consist of grooves 15, which may be made by forming 20 one or more outward corrugations 17 in the cap at the desired intervals. These corrugations extend across that portion of the sealing-zone 16 which rests in contact with the gasket 8, so as to communicate with the jar 25 interior when the cap is in the exhausting position shown in these figures. In all other respects the function and mode of operation of this form of cap are the same as those previously described.

30 The sealing-joint may be made upon the inside of a jar-neck by transferring the gasket-seat 7 to the inner side of the wall and by reversing or turning the caps 6 or 14 inside out and making them of correspondingly- 35 smaller diameter.

I claim as my invention—

1. A cap for hermetically-sealed jars, provided with a rim having a substantially-par-

allel cylindrical portion for sliding over and sealing a compressed gasket before and dur- 40 ing the exhausting operation, and with an air-duct located in the cylindrical portion of the rim for communicating with the interior of the jar when the cap is in its exhausting position, and adapted to be sealed by sliding 45 the cylindrical portion of the cap downwardly over the compressed gasket.

2. A jar-cap provided with a flaring rim for compressing the gasket, a cylindrical seat for the compressed gasket and an air-duct 50 located in the cylindrical seat and communicating with the interior of the jar above the gasket when the cap is in its exhausting position.

3. A jar-cap having an annular rim, com- 55 prising a flaring edge or zone for compressing the gasket, a cylindrical zone for sliding over the compressed gasket, and a conically-contracted zone for following up the shrinkage of the gasket. 60

4. In combination with a jar provided with an annular permanent seat for a gasket, a cap therefor, having a flaring rim for compressing the gasket, a cylindrical seat for receiving the compressed gasket from the flaring rim, and an air-duct located in the cylindrical seat, and communicating with the interior of the jar above the gasket when the cap is in its exhausting position. 65

Signed by me at Hartford, Connecticut, this 70 15th day of August, 1899.

WILLIAM H. HONISS.

Witnesses:

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JOS. MERRITT.