

J. HÖILAND & K. J. HALLELAND.

SHEET METAL VESSEL.

APPLICATION FILED MAY 10, 1907.

917,741.

Patented Apr. 6, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

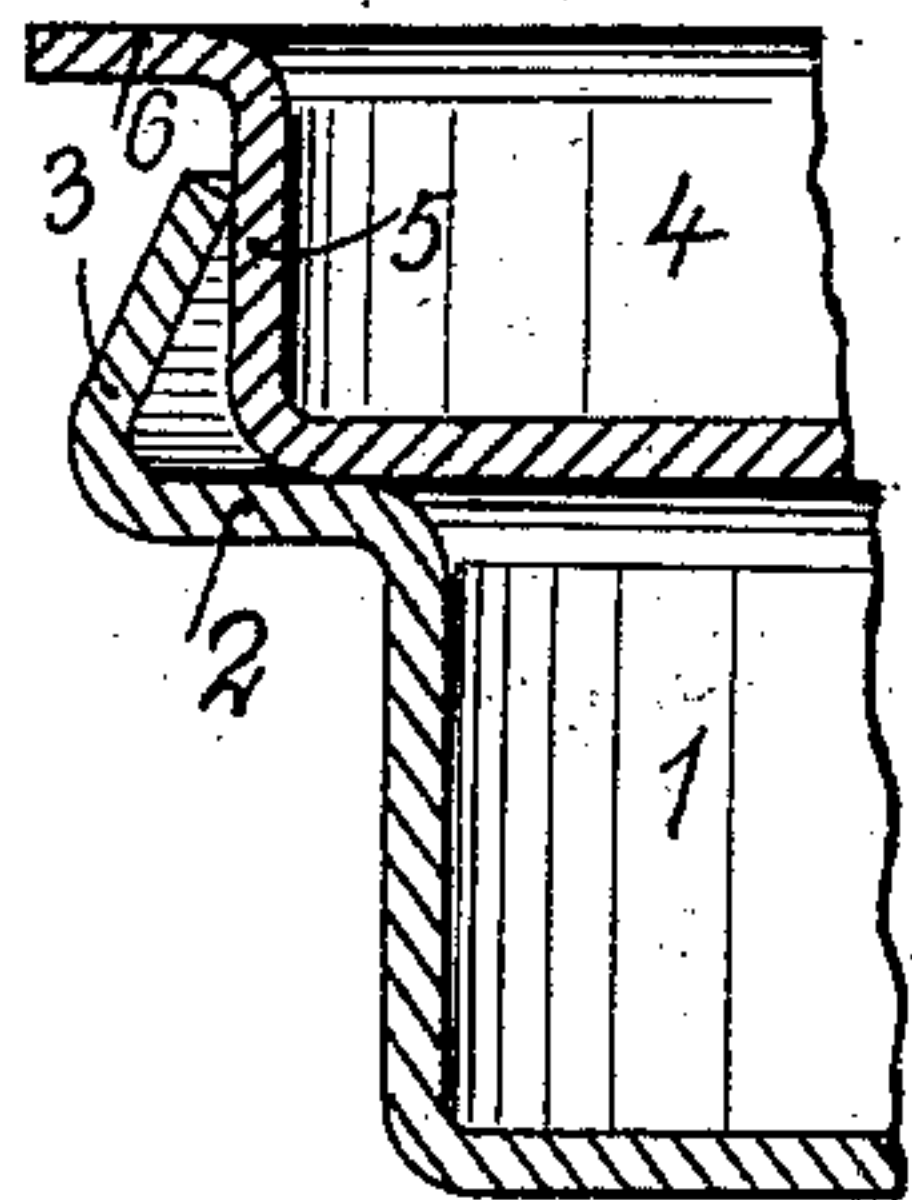


Fig. 4.

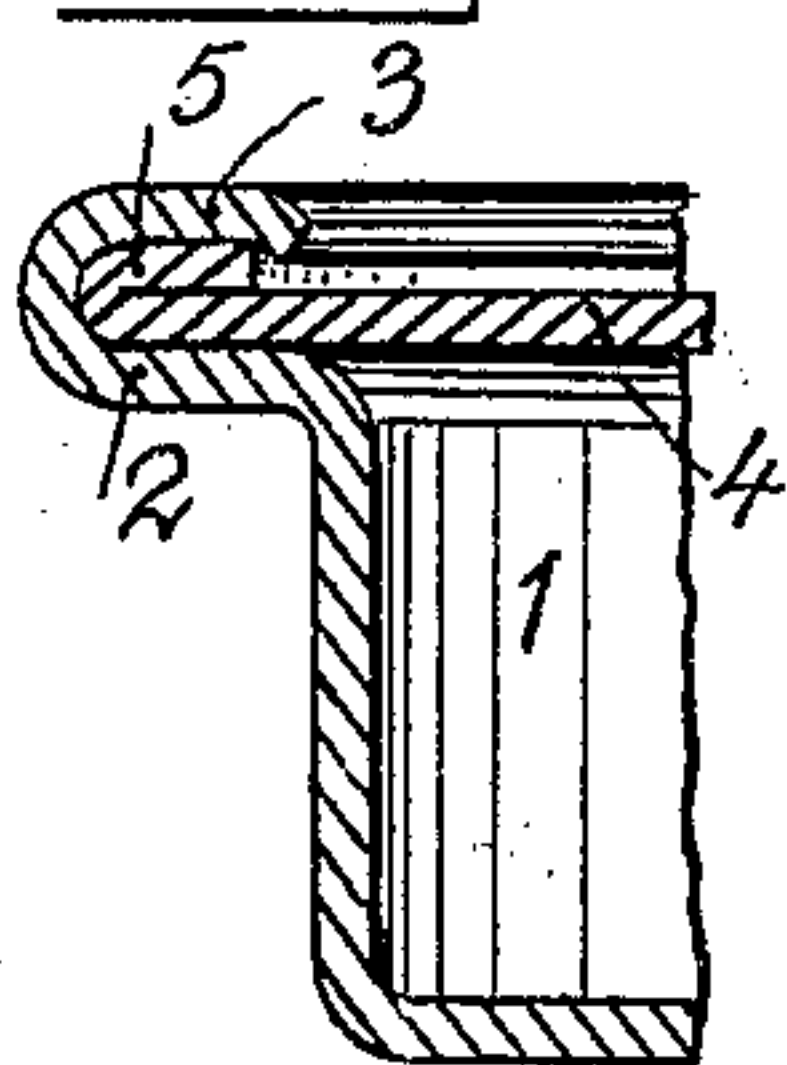


Fig. 2.

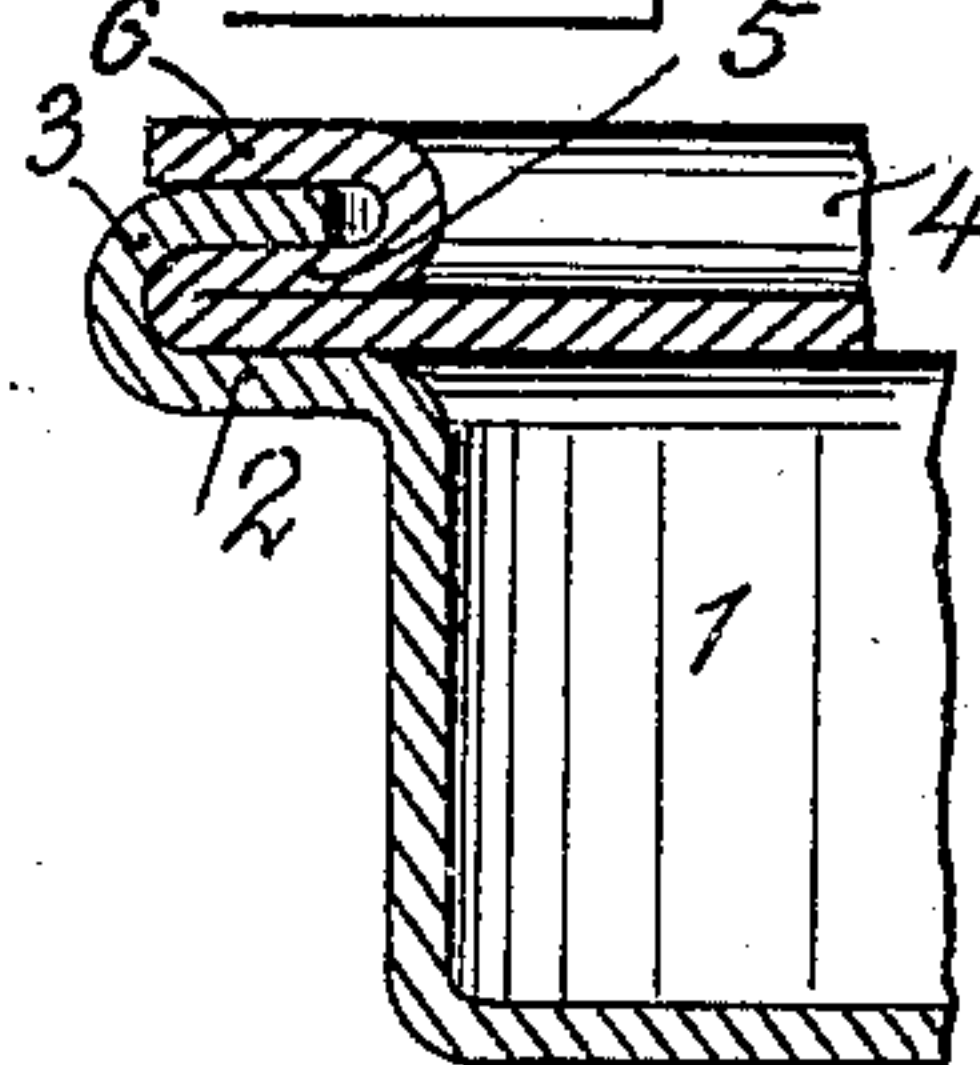


Fig. 3.

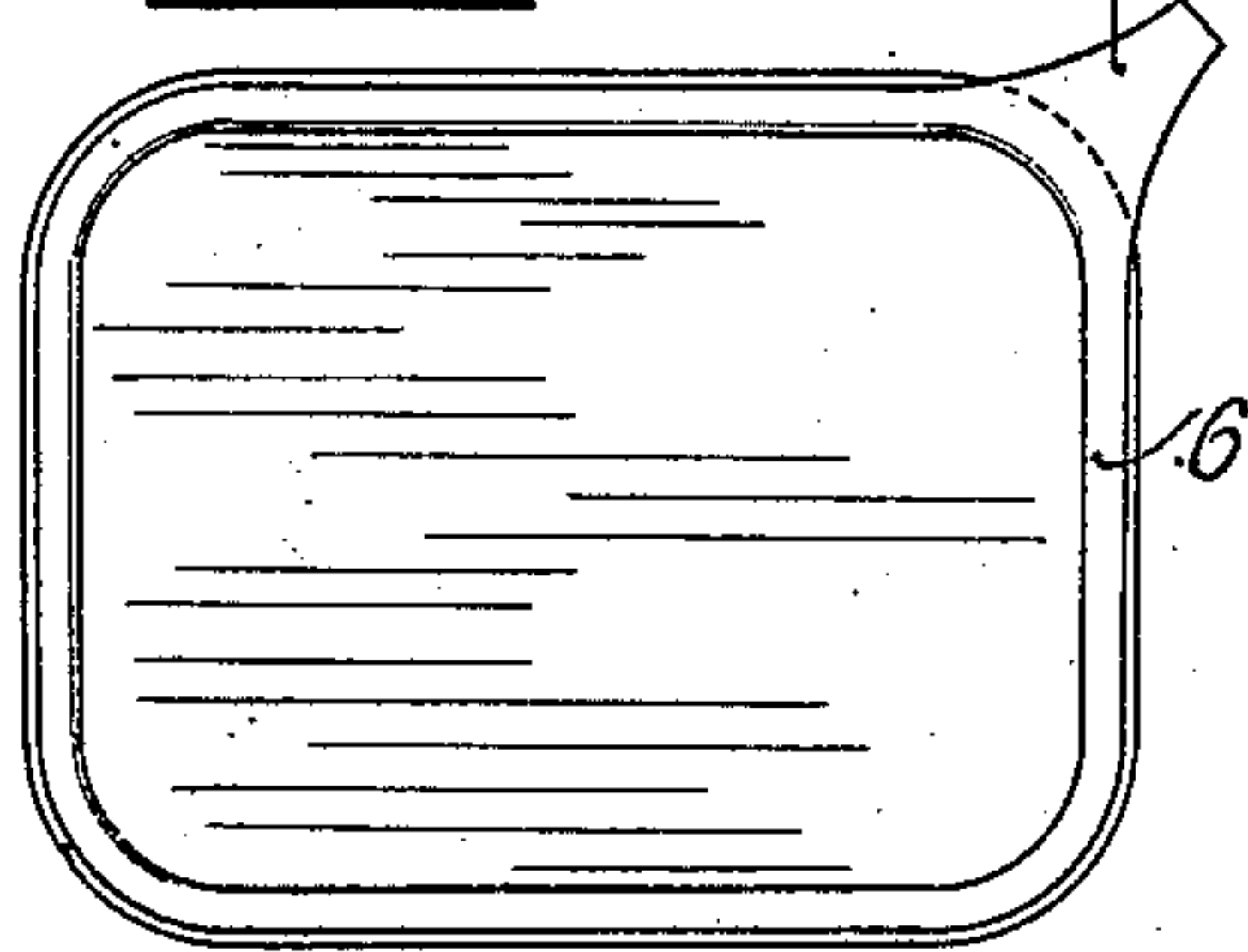


Fig. 5.

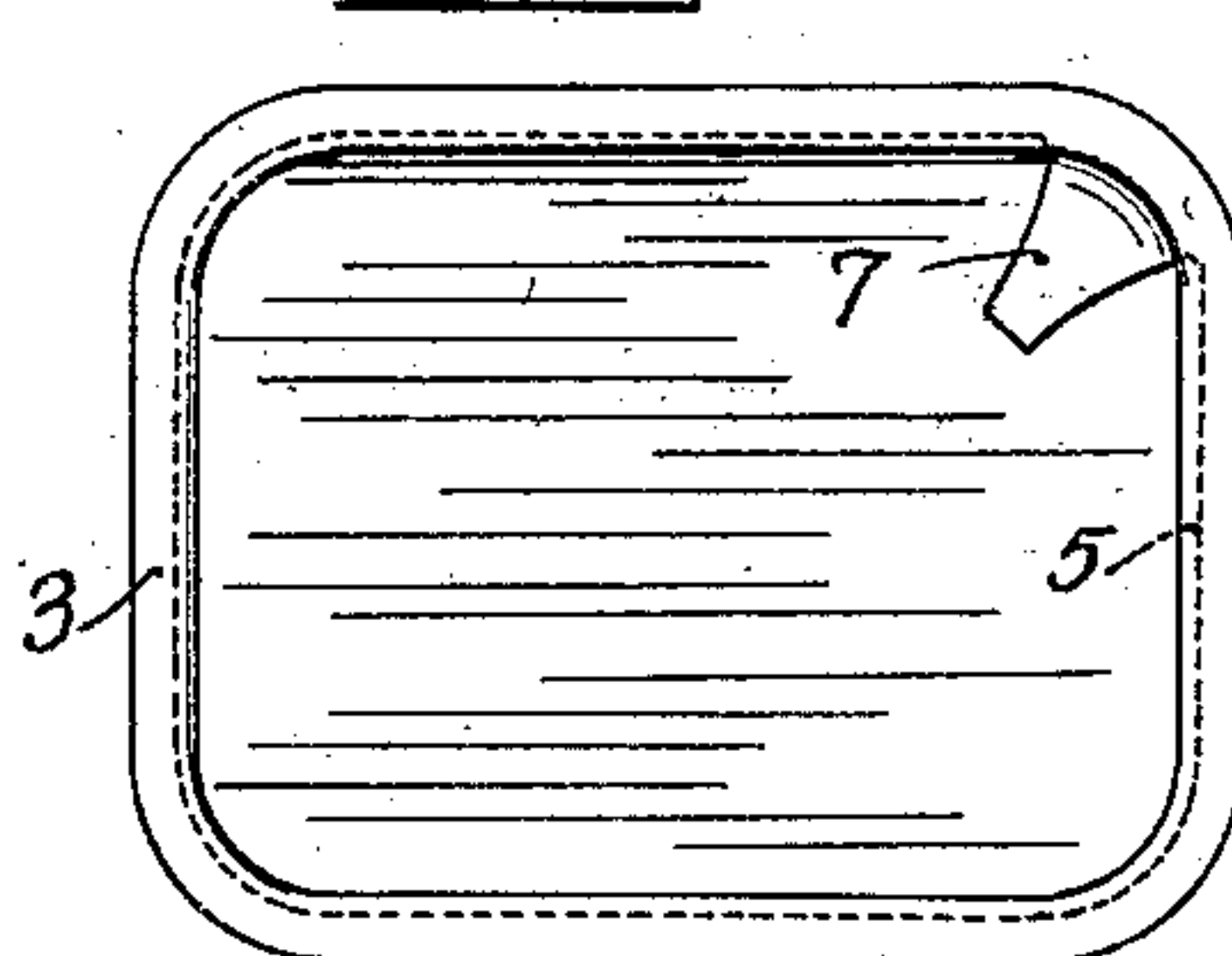
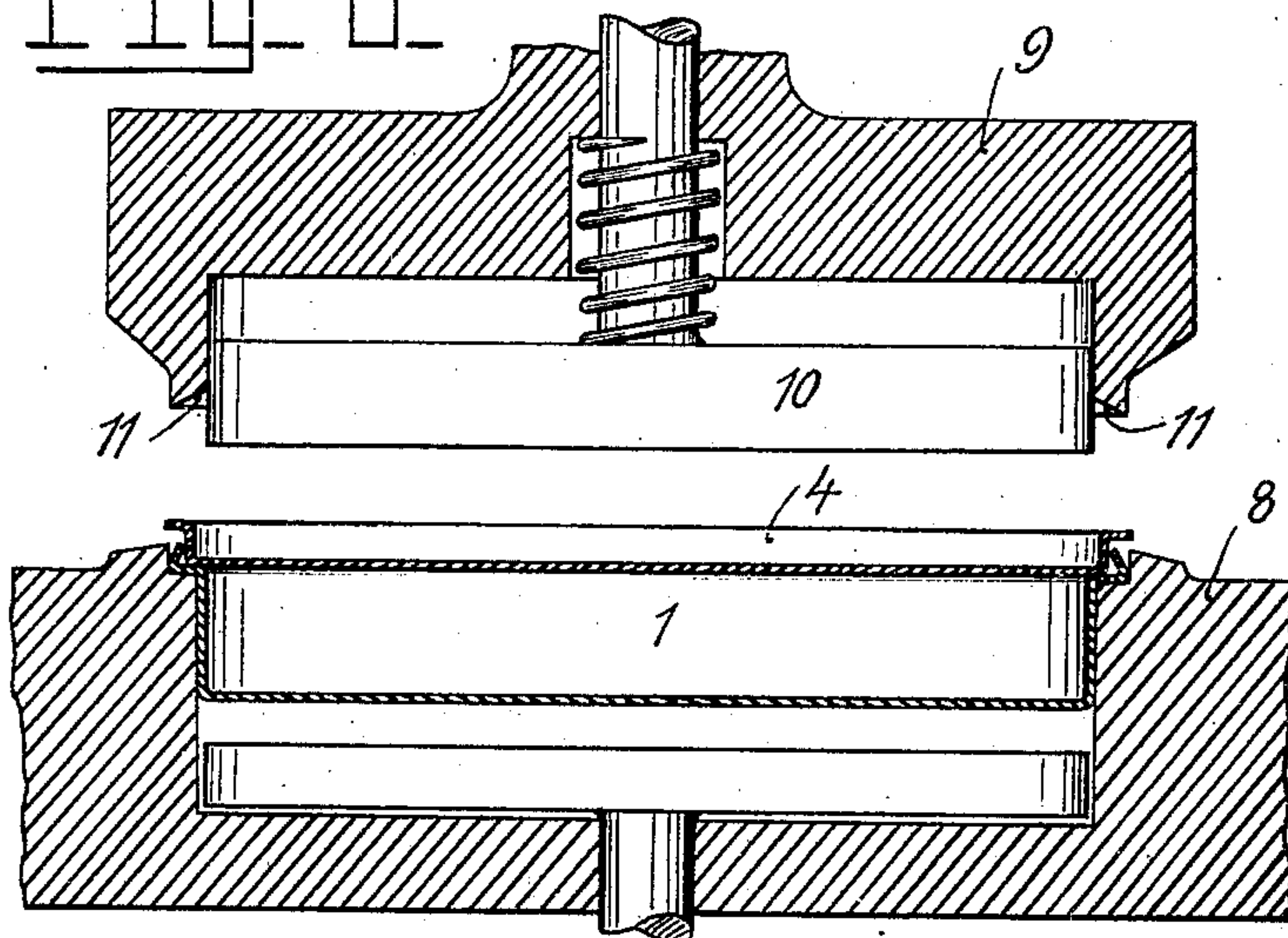


Fig. 6.



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2 SHEETS—SHEET 2.

Fig. 8.

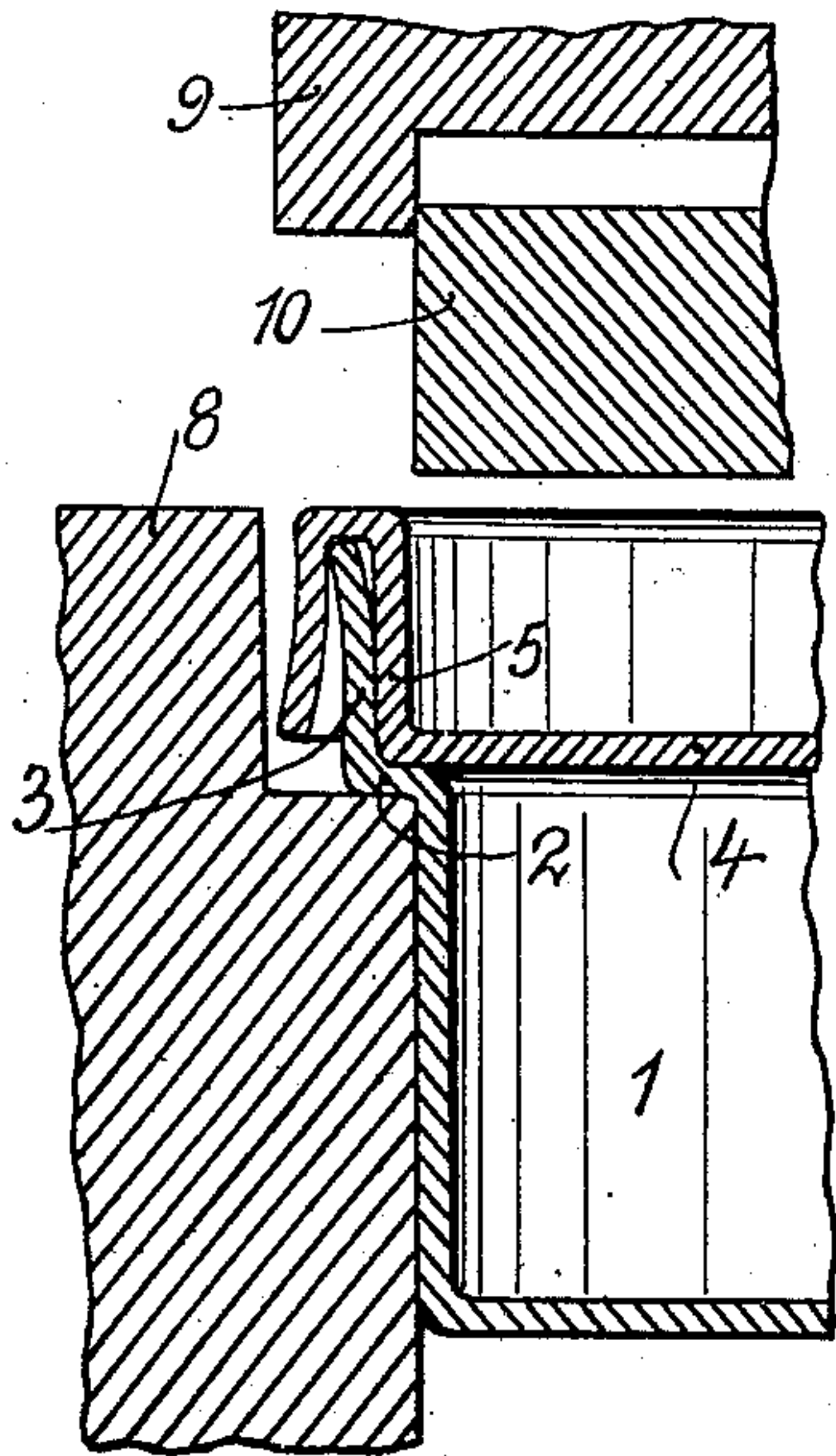


Fig. 7.

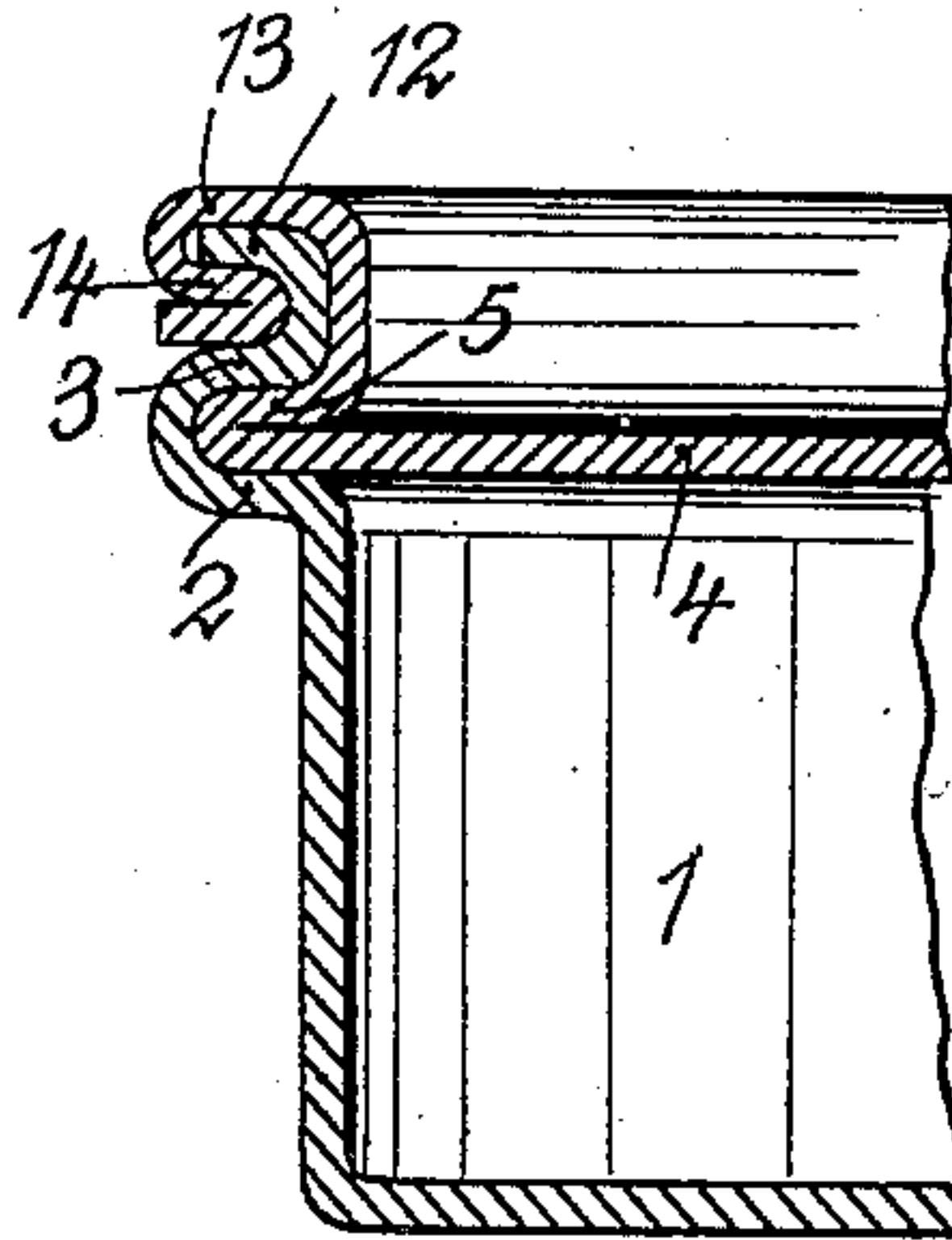


Fig. 10.

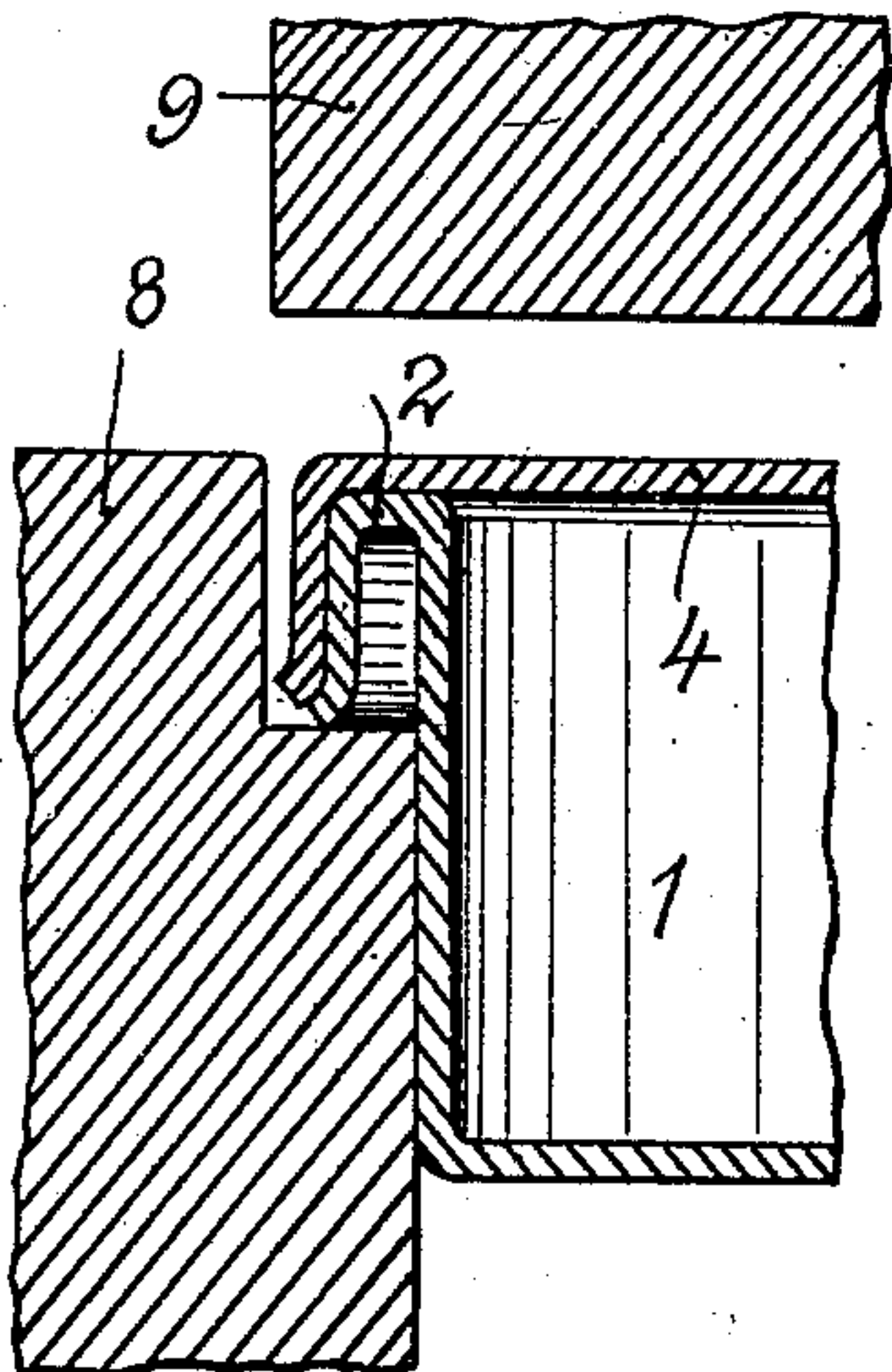
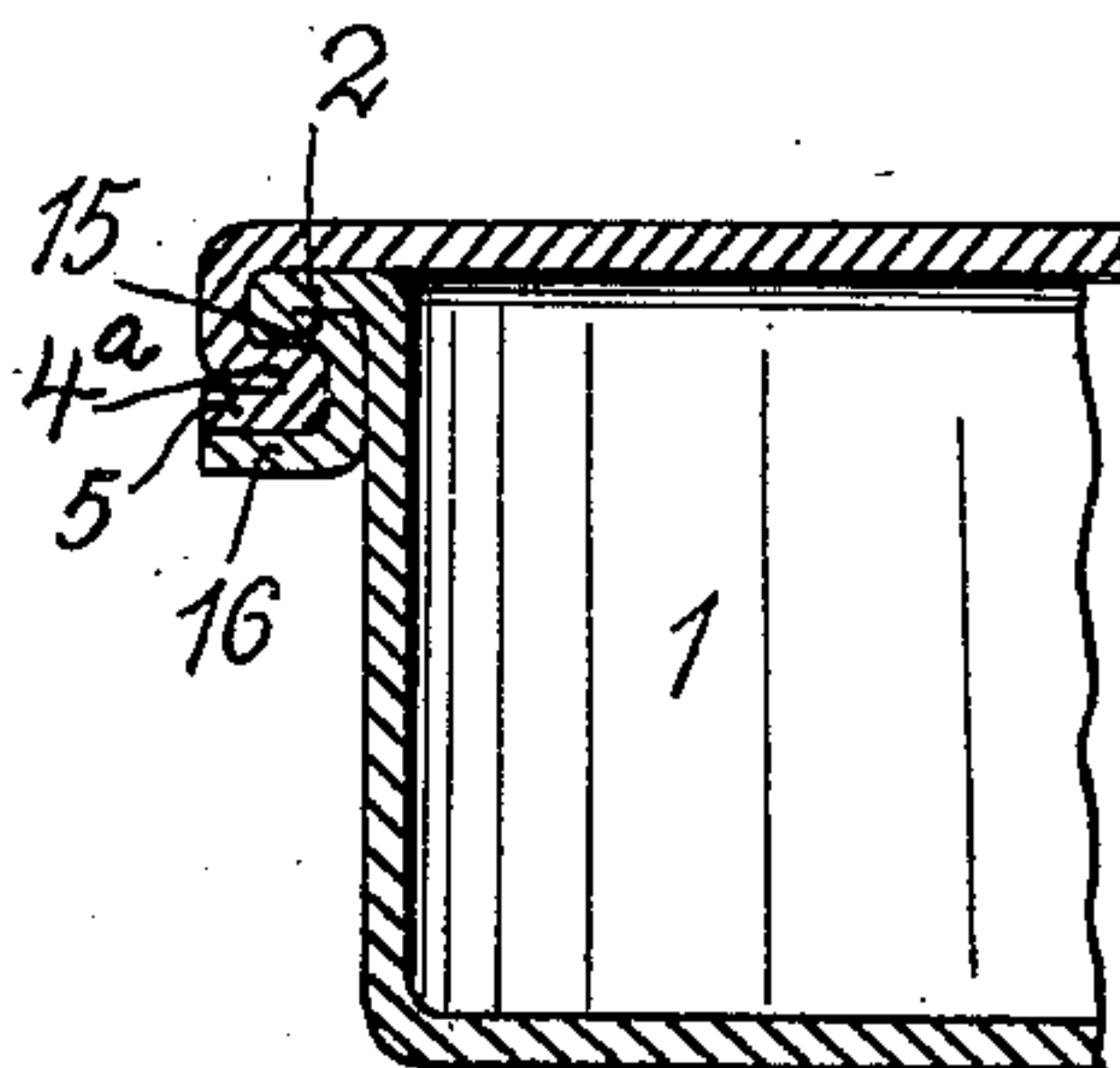


Fig. 9.



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UNITED STATES PATENT OFFICE.

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SHEET-METAL VESSEL.

No. 917,741.

Specification of Letters Patent.

Patented April 6, 1909.

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To all whom it may concern:

Be it known that we, JOHANNES HÖILAND and KARL J. HALLELAND, subjects of the King of Norway, and residents of Stavanger, Norway, have invented a new and Improved Sheet-Metal Vessel, of which the following is a full, clear, and exact description.

This invention is an improvement in sheet metal vessels more especially constructed for containing preserved foods, and has in view the provision of a seam between the can body and can head such that the can will be hermetically sealed without the use of solder and along which seam the can head and can body are readily separable. To this end we construct the can body and can head with edge flanges, the edge flange of the body having an outwardly projecting portion on which the head is seated, and with one of said flanges folded upon itself to provide two laterally extending layers, and the other flange folded to provide a subjacent and a superposed layer binding the layers of the first mentioned flange between them and forming in connection therewith a seam between the body and the head, with the extreme edge of the head flange accessible from without the seam. One of the flanges has a projecting tongue by which the head may be removed from the body by lifting its edge flange out of the groove formed by the edge flange of the body at successive points along the seam.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional view through the can body and can head preparatory to the seaming operation; Fig. 2 is a similar view showing the edge flanges of the can body and can head folded to complete the seam; Fig. 3 is a plan of the united body and head shown in Fig. 2; Fig. 4 is a view similar to Fig. 2, showing a slightly modified form of seam; Fig. 5 is a plan of the united body and head shown in Fig. 4; Fig. 6 is a sectional view through the dies of a press as is employed to form the seam shown in Fig. 2, and illustrating a can body and head in position preparatory to the seaming operation; Fig. 7 is a view similar to Figs. 2 and 4, showing a further modification of the seam; Fig. 8 is a fragmentary sectional view of the dies and the can body and can head therein for pro-

ducing the seam shown in Fig. 7; Fig. 9 is a still further modification of the same; and Fig. 10 is a sectional view through the dies and can members by which the seam in Fig. 9 is produced.

In order to assure the folding or seaming together of the can body and head as shown in Fig. 2, the can body and can head 4 are provided with edge flanges 3 and 5, the edge flange of the body having a portion 2, projecting directly outwardly from the plane of the body, on which the head 4 is seated. The flange 5 is folded upon itself to provide two laterally-extending layers, and the other flange 3 is folded to provide a subjacent and a superposed layer binding the layers of the first mentioned flange between them, and forming in connection therewith a seam between the body and head. The flange 5 is further provided with an outwardly-turned layer 6, binding on the superposed layer of the flange 3.

To seam the edges of the head and body together, the die shown in Fig. 6 is preferably employed, the can being so placed in the lower die 8 of the press that the flanges of the body rest in its upper rabbeted edge. The head is seated on the body in the manner shown, and in view of the form of its edge flanges and the edge flanges of the can body, the head and body may freely move one within the other with the flanges in substantial contact. As the upper die 9 of the press descends, the spring-pressed piston 10 bears on the head and keeps it securely in position, and the flange 6 of the head is engaged by the upwardly and inwardly-inclined under surface 11 of the upper die and presses the flanges together as the piston 10 recedes. It is thus seen that this junction of the can body and can head is effected by a single movement of the dies of the press together. The seam thus completed assumes the form shown in Fig. 2, in which the double layers of the flange 5 of the cover of the head are jammed in between the superposed and subjacent layers 3 and 2 of the can body, the layers 2 and 3 of the body in effect forming a groove for the reception of the double layers 5 of the head. Moreover, the whole is covered by the outer flange 6 of the cover, which is turned outward, and increases the security of the seam.

Simultaneously with the folding together of the edges of the can body and head, an

opening device may be provided, if the edge of the head has at a convenient point an extension, as a tongue 7. By winding this tongue upon a key of known kind, the jammed-in double edge of the head is lifted from the groove formed by the folded layers 2 and 3 and the can is thereby opened. It is evident from Figs. 4 and 5 that the top layer 6 may be dispensed with, and the folds will then present the relations shown in Fig. 4, and the tongue 7 will form an inwardly-projecting part of the layer 5, as shown in Fig. 5. To make sure of the tightness of the joint, the fold may be doubled, as shown in Fig. 7, in which the head flange 6, as shown in Fig. 2, is replaced by a new fold providing double layers of the head at points one above the other which are jammed between the layers of the body. To assure the extra fold desired, the flange of the can body is extended upwardly, as shown in Fig. 8, between the inner and outer flanges of the cover.

The can body and head are made as shown in Fig. 8, and are placed upon each other in the lower die of the press, and the fold is formed as soon as the members 9 and 10, constituting the upper die, descend. The resulting seam has a layer 12 jammed in between the extended layers 13 and 14 of the layer 5.

In producing the seam shown in Fig. 9, the spring-pressed plunger of the press may be avoided and a solid male die 9 used. In this seam the double edge 4^a and 5 of the head is jammed in between the inner double layers 2 and 15 and the outer layer 16 of the folded edge of the can body. In this case the can body and head are formed with the edge flanges, as shown in Fig. 10, and the seam finished by the descent of the upper die 9 alone.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:

1. A sheet metal vessel comprising a body and a head, the body having an edge flange folded to provide subjacent and superposed layers, forming a groove, and the head having an edge flange folded upon itself, providing layers within said groove jammed between the layers of the body to form a seam, all of said layers being substantially parallel to said head and a tongue extending from the head for lifting the folded edge flange thereof

out of said groove in stripping the head from the body.

2. A sheet metal vessel comprising a body and a head having edge flanges, the edge flange of the body having a laterally-projecting portion on which the head is seated, and with the edge flange of the head folded upon itself to provide laterally-extending layers, and the edge flange of the body folded to provide a subjacent layer and a superposed layer binding the layers of the head flange between them and forming in connection therewith a seam between the body and head, with the margin of the head flange lying approximately parallel to the head, and with the extreme edge thereof accessible from without the seam at successive points along its length.

3. A can head and a can body folded together at the edges to form a seam, and a tongue secured to the can head for removing it from the can body wholly at the seam by a continued winding of the tongue.

4. A can body and a can head folded together at the edges to form a seam, with the edges of the body and head arranged in the seam to pull apart thereat in successive portions in winding off the head.

5. A can head and a can body folded together at the edges to form a seam, the can head being so shaped of sheet metal as to provide a tongue or projection for separating the can head from the can body at the seam after the tongue has been wound up to initially separate the head from the body and the winding of the head continued.

6. A can body and a can head of sheet metal folded together to form a seam, with the folds of the metal arranged in the seam to pull apart upon the continued winding of the head after the winding thereof is started.

7. A can body and a closure therefor folded together at the edges to form a seam, with the folds of said seam arranged to pull apart at successive points along the length of the seam in winding off the closure.

In testimony whereof, we have hereunto affixed our signatures this 24th day of April 1907, in the presence of two witnesses.

JOHANNES HÖILAND.

KARL JOHAN HALLELAND.

Witnesses:

J. C. TRUELAND,

RICHARD STOKKE.