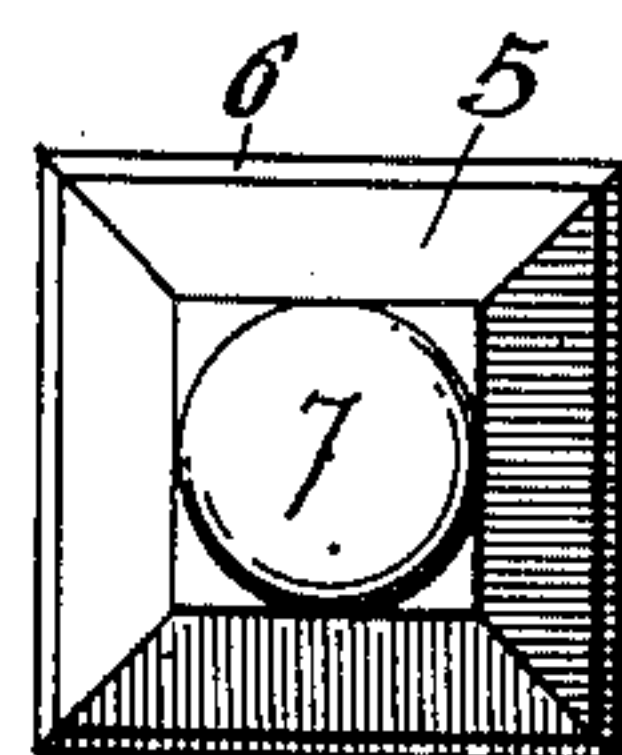
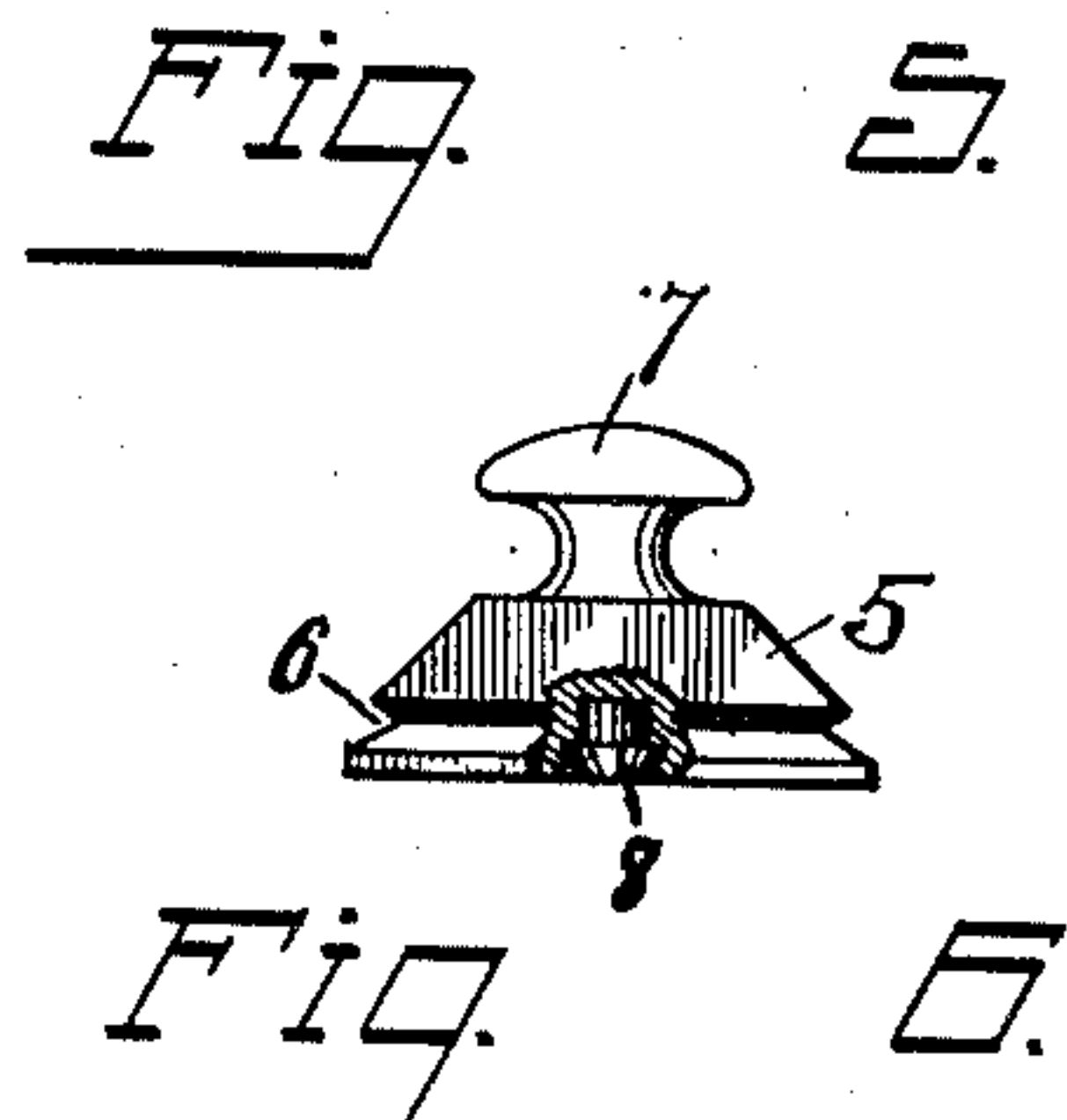
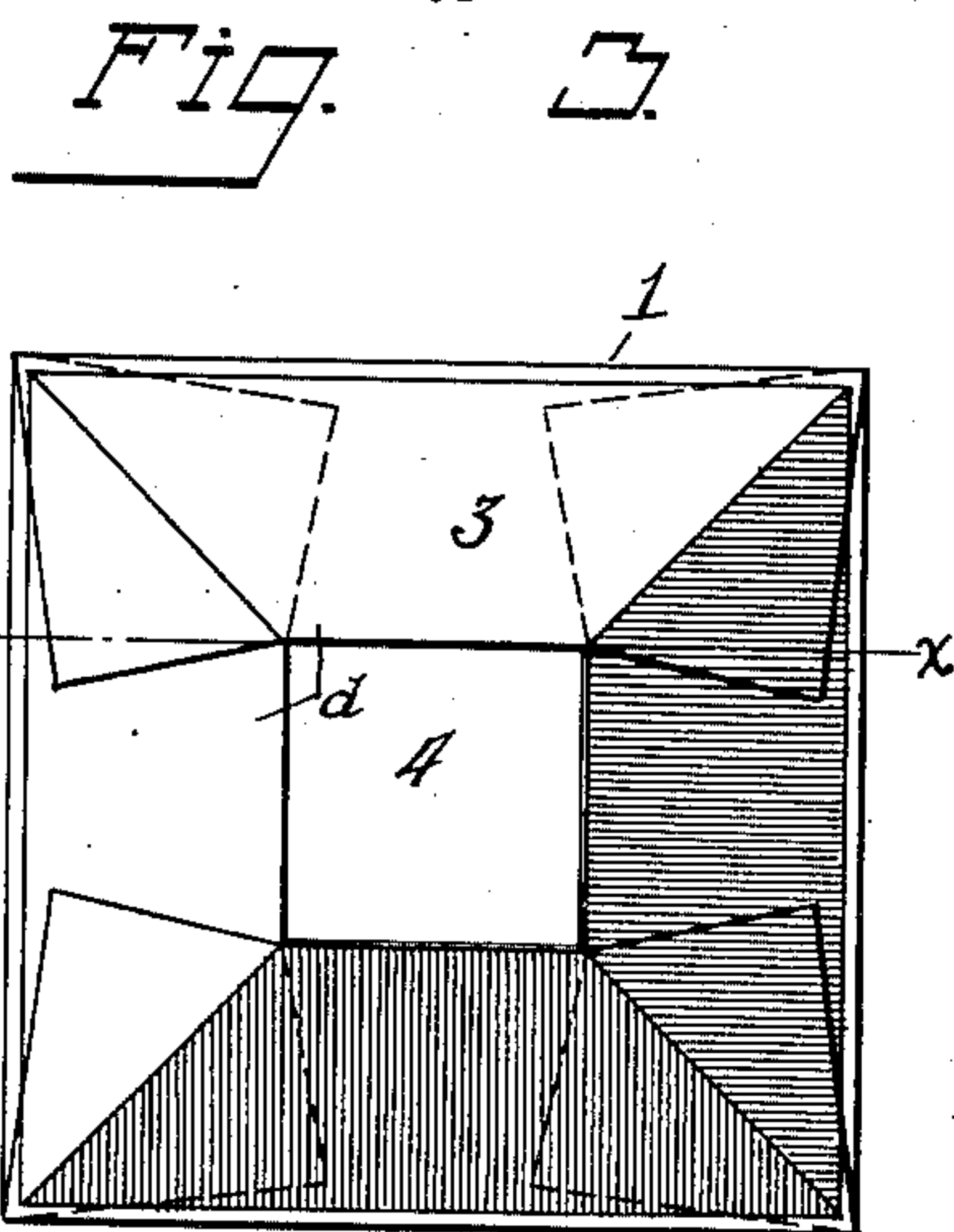
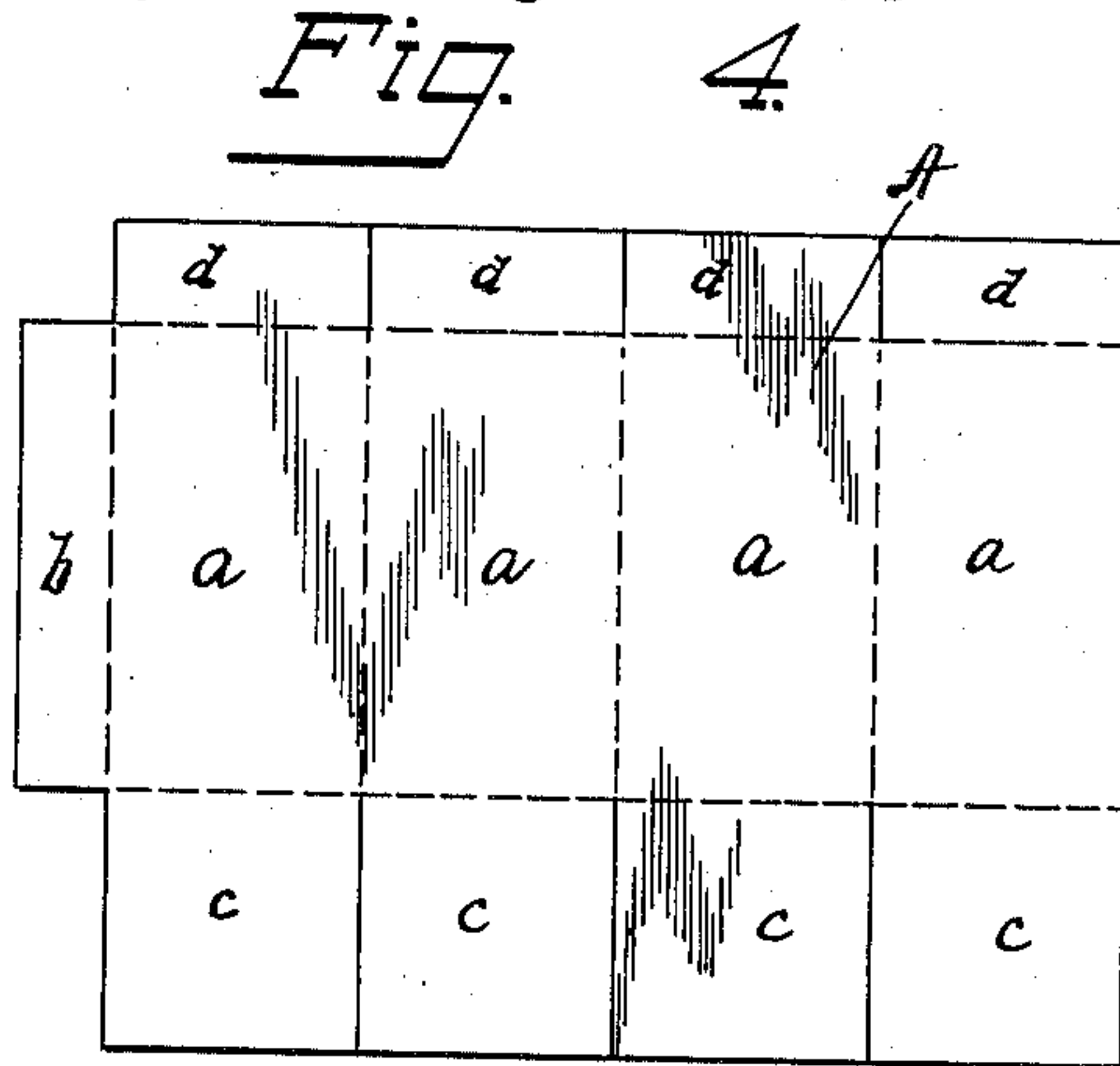
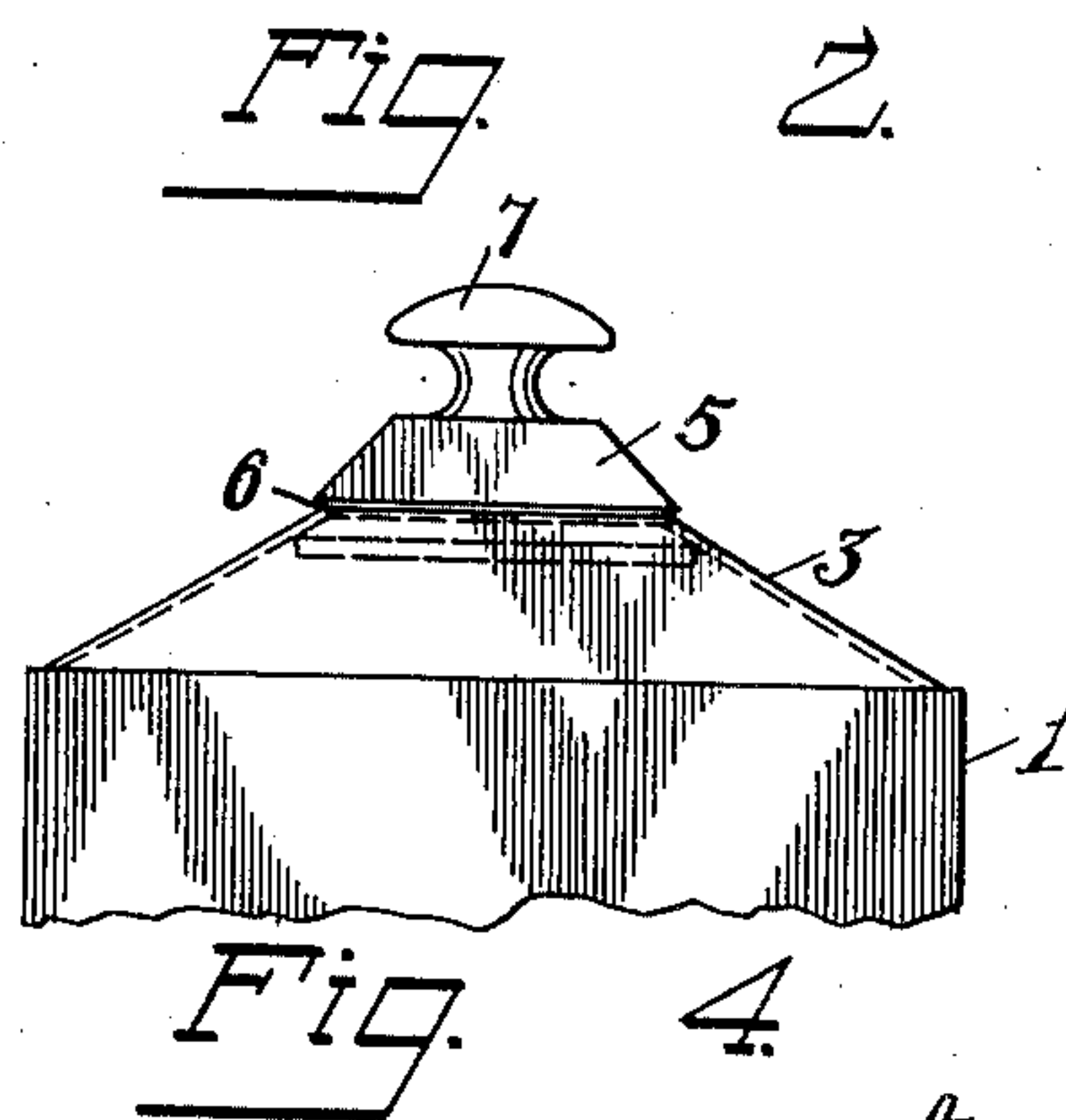
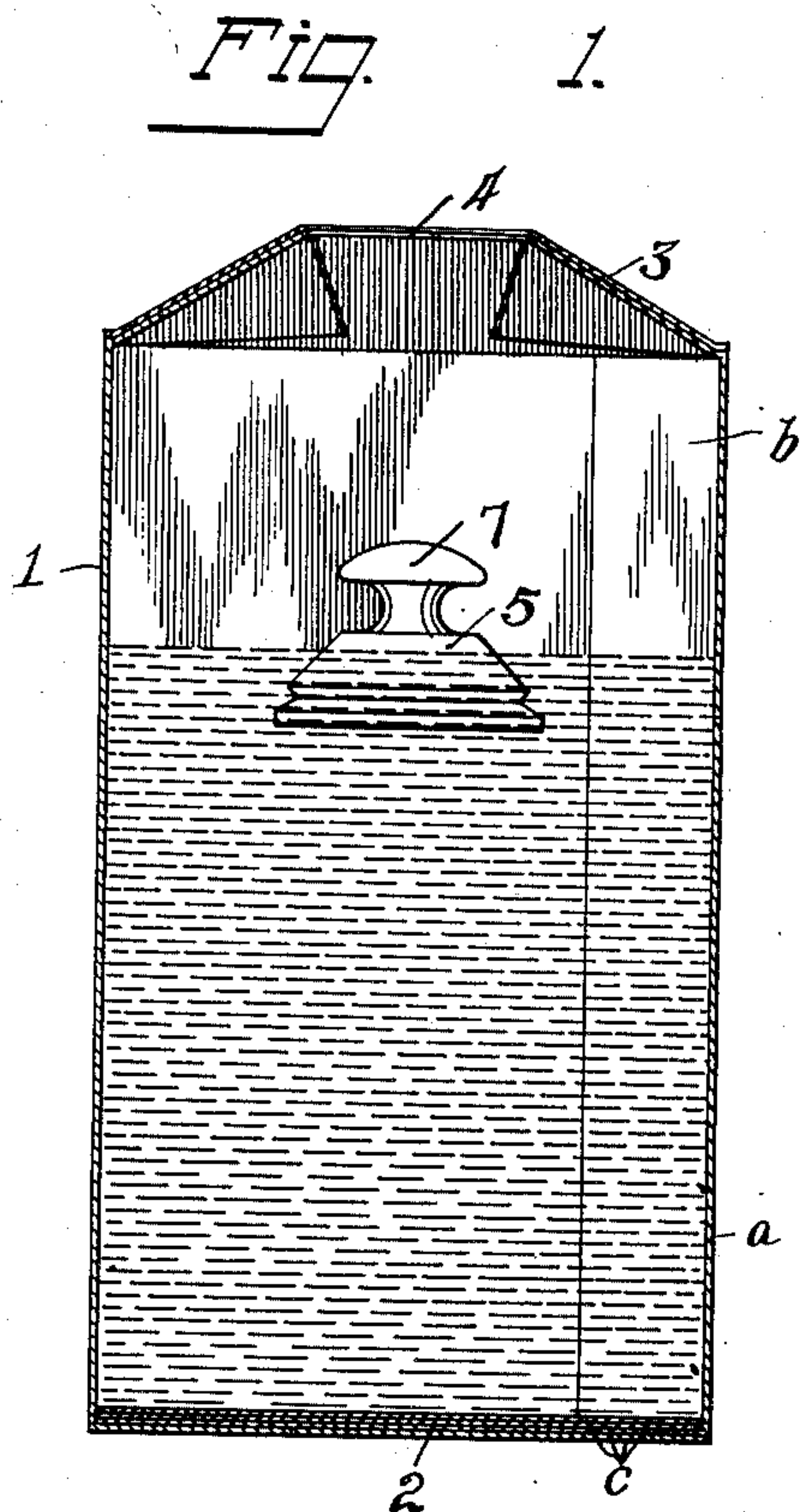


J. R. VAN WORMER.  
 PACKAGE FOR LIQUIDS.  
 APPLICATION FILED OCT. 22, 1910.

998,309.

Patented July 18, 1911.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN R. VAN WORMER, OF TOLEDO, OHIO, ASSIGNOR TO THE WEIS-VAN WORMER COMPANY, A CORPORATION OF MICHIGAN.

## PACKAGE FOR LIQUIDS.

998,309.

Specification of Letters Patent.

Patented July 18, 1911.

Application filed October 22, 1910. Serial No. 588,553.

*To all whom it may concern:*

Be it known that I, JOHN R. VAN WORMER, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Package for Liquids, etc.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to liquid receptacles, and has particular reference to paper receptacles adapted for use as milk bottles, or the like, but is not restricted to such use as it can be used for any purpose for which it may be adapted or appropriate.

The primary object of my invention is the provision of a milk bottle or receptacle, which is light, strong and durable in its construction, cheap of manufacture, capable of being packed in quantity in compact form for shipment, and which, above all, is strictly sanitary in its use and cannot be refilled without knowledge to such effect to the recipient or buyer of the contents.

The invention is fully described in the following specification, and while, in its broader aspect it is capable of embodiment in numerous forms, a preferred embodiment thereof is illustrated in the accompanying drawings, in which,—

Figure 1 is a vertical section on the line  $x-x$  in Fig. 3 of a package embodying the invention, partly filled with liquid. Fig. 2 is a side view of the top portion of the package with the stopper closing the opening thereof. Fig. 3 is a top plan view thereof with the stopper removed. Fig. 4 is a reduced plan of a preferred form of blank from which the package is formed, and Figs. 5 and 6 are details of the stopper.

The package 1 comprising my invention is made of a heavy grade of strong paper or other suitable material of light, strong and cheap character, and is preferably of rectangular shape in cross-section to facilitate a compact packing of the same in quantities, but may be of any other shape, as desired.

The bottom 2 of the package is closed to adapt it to cooperate with the side walls thereof to hold a liquid, and the top or up-

per end 3 of the package is provided with a centrally disposed opening 4 and preferably tapers from the edge of such opening toward the side walls of the package to provide, in the present instance, an outwardly projecting end of frusto-pyramidal form, due to the rectangular shape of the body in cross-section.

The opening 4 is closed by a stopper or plug 5, which in cross-section corresponds to the shape of such opening, as indicated. This stopper is shown as tapering inwardly from its bottom upwardly, being, in the present instance, of pyramidal form to suit the opening 4, and larger at its base than the size of the opening. A groove 6 is provided around the stopper preferably adjacent to its base and into this the edge of the opening wall is intended to spring and have a close fit when the stopper is drawn upwardly within the opening 4, as shown in Fig. 2. To cause a springing and close fitting of the edge of the opening wall within said groove, the cross-sectional size of the stopper immediately above the groove is larger than the size of the opening, and the base of the stopper below the groove 6 is of greater diameter than the said upper edge of the groove wall to prevent a complete pulling of the stopper through the opening 4 without breaking the walls of such opening. The stopper 5 is provided on its top or small end with a knob or finger-grip 7, which may be grasped in drawing the stopper to its seat within the opening 4.

When the package 1 is made the stopper 5 is placed therein so that when liquid is placed within the package the stopper, being of a nature adapting it to float, will rise to the top of the receptacle with the liquid. As the stopper in rising strikes against the inclined walls of the top 3 it will be guided into register with the opening 4. The size of a package and the length of a stopper are preferably so proportioned that when a predetermined quantity of liquid, for instance a pint or a quart, has been placed within the package the knob of the stopper will rise into position to be grasped. When the stopper has risen to such position the operator grasps the knob 7 and draws the stopper up within the opening 4 until the edge of the opening wall springs within the stopper-groove 6. It is thus apparent that the stopper in addition to serving as a means for



closing the opening 4 of the package also serves as a gage to determine the quantity of liquid within a package whereby to guard against short measures. To insure the stopper standing in upright position when floating it is weighted on its bottom, as at 8, Fig. 5.

The package is shown, in the present instance, as being formed from a blank A, Fig. 4, which blank comprises the connected panels *a, a, a, a*, which are folded in rectangular form so that each forms a side of the package. A tongue *b* is provided at the outer side of one of the outer panels *a* to serve as a pasting strip for attaching the outer ends of the outer panels as is apparent. Each of the panels *a* is preferably provided at its lower end with a panel or wing *c*, which is substantially the size of the cross-sectional area of the package. The panels *c* are intended to be folded one over the other to form a four-ply bottom, as indicated in Fig. 1. The upper end of each panel is provided with a wing *d*, which is intended to fold inwardly and to cooperate with the other wings *d* to form the tapered top 3 and opening 4 of the package. The corners of the wings *d*, when folded to form the package top, lap over each other, as indicated in Figs. 1 and 3, thus materially reinforcing the top at the corners thereof. When the package is formed it is preferably coated with paraffin or other suitable substance to make it impervious to moisture.

It is apparent that my invention provides a package which is especially adapted to the needs of dairymen for bottling and transporting milk, and that it provides a bottle or package which is exceedingly cheap in its construction and of a nature to prevent a refilling thereof without detection. It also insures full measures, as the stopper does not rise into position to be grasped to pull it within the opening 4 until the desired amount of liquid has been placed within the package. When the stopper is seated within the package opening it is impossible to remove the contents without damaging the package either by punching a hole in the same or by breaking the walls of the stopper opening by removing the stopper therefrom.

I wish it understood that my invention is not limited to any specific construction or arrangement of the parts except in so far as such limitations are specified in the claims.

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

1. A package made of pliable material and having wings at one end which are folded to provide a tapered end having an opening therein, and a stopper having a groove in which the opening wall springs when the stopper is drawn therein, said stopper being incapable of removal from the opening without tearing the wall thereof.

2. A package of pliable material having an end tapered and provided with an opening, a tapered stopper for such opening having a surrounding groove intermediate its ends for the opening wall to seat in, the opening wall being adapted to yield to permit the drawing of the stopper therein and to spring within the stopper groove when in register therewith, said stopper being incapable of withdrawal from the opening without perceptibly damaging the wall thereof and being adapted when pressed inwardly to exert stress against the opening wall in substantially the plane of taper of the portion of the opening wall in contact therewith.

3. A package having an opening in an end thereof, and a stopper for such opening disposed within the package and adapted to be raised into position to be grasped and drawn to its seat in said opening by liquid placed in the package, said stopper being of tapered form and having a groove which interlocks with the walls of the opening when the stopper is drawn therein to prevent movement of the stopper in either direction without tearing the opening walls.

4. In combination, a package of pliable material having an end provided with an opening and tapering from such opening on all sides thereof to provide an outwardly bulged end part, a stopper disposed within the receptacle and gradually enlarging from its upper end toward its base, said stopper being adapted to be drawn within said opening and having a groove in which the walls of the opening seat when the stopper is drawn therein, the stopper being larger above and below the groove than the opening to require force to be applied to the stopper to draw it to its seat within the opening and to prevent a removal of the stopper from the opening without perceptibly injuring the walls of the opening.

In testimony whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

JOHN R. VAN WORMER.

Witnesses:

C. W. OWEN,  
E. E. THOMAS.