

No. 637,295.

Patented Nov. 21, 1899.

J. A. STEWARD.  
METALLIC CLOSURE FOR RECEPTACLES.

(Application filed Mar. 21, 1899.)

(No Model.)

Fig. 1.

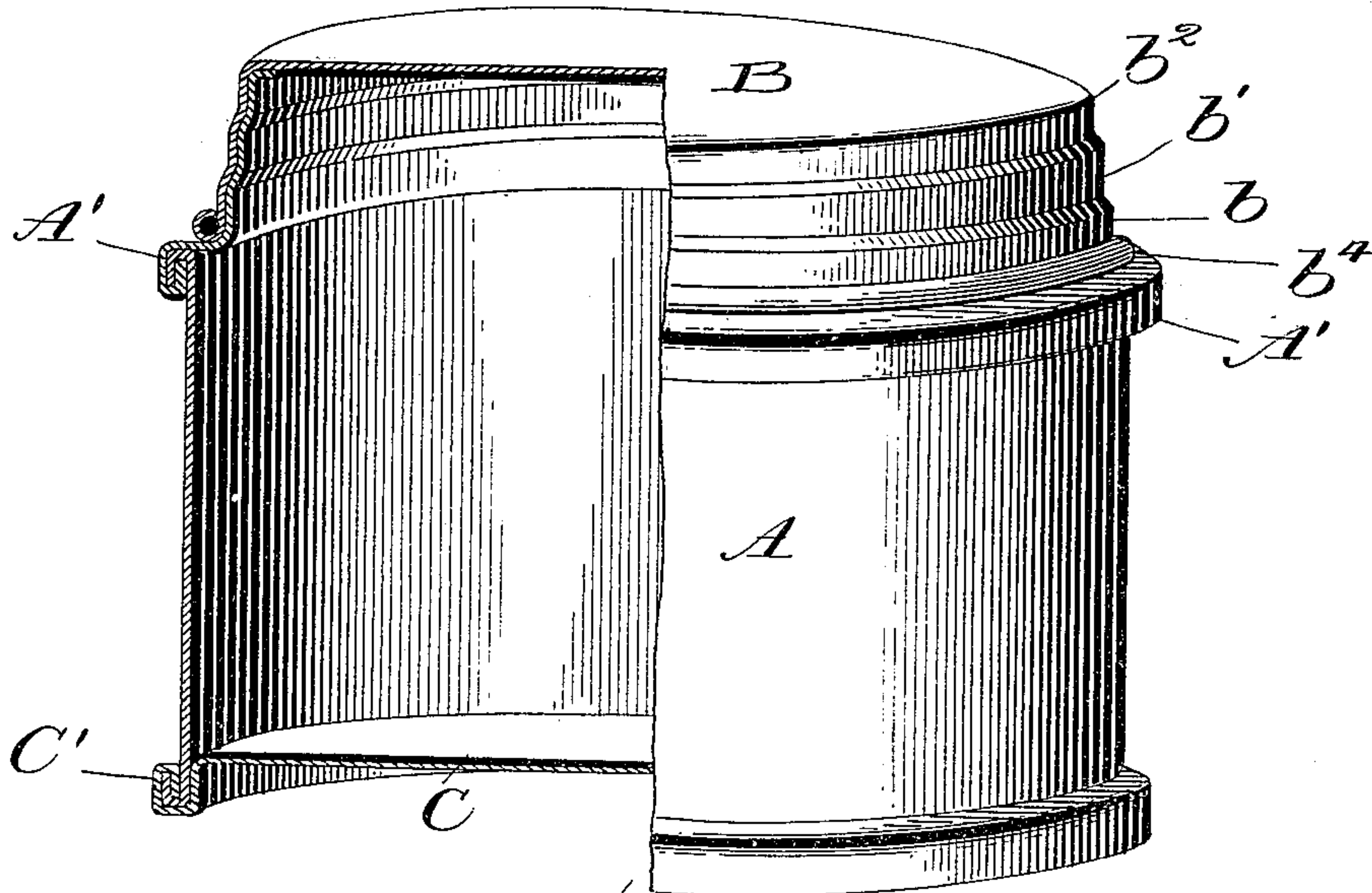


Fig. 2.

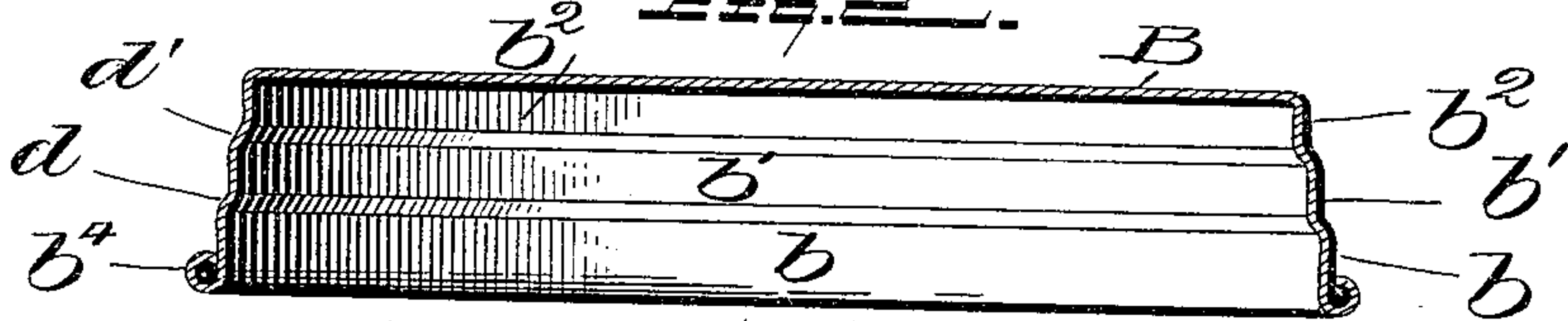


Fig. 3.

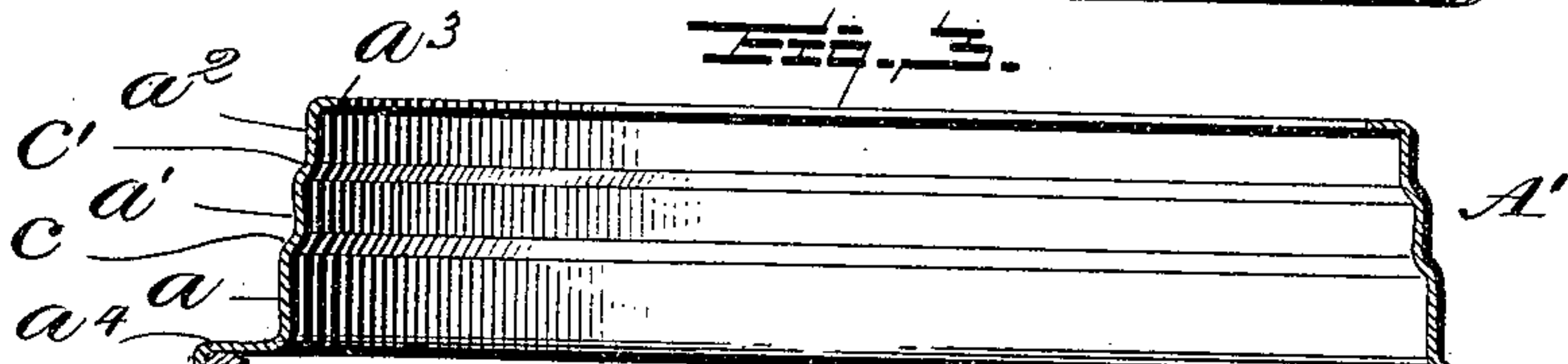
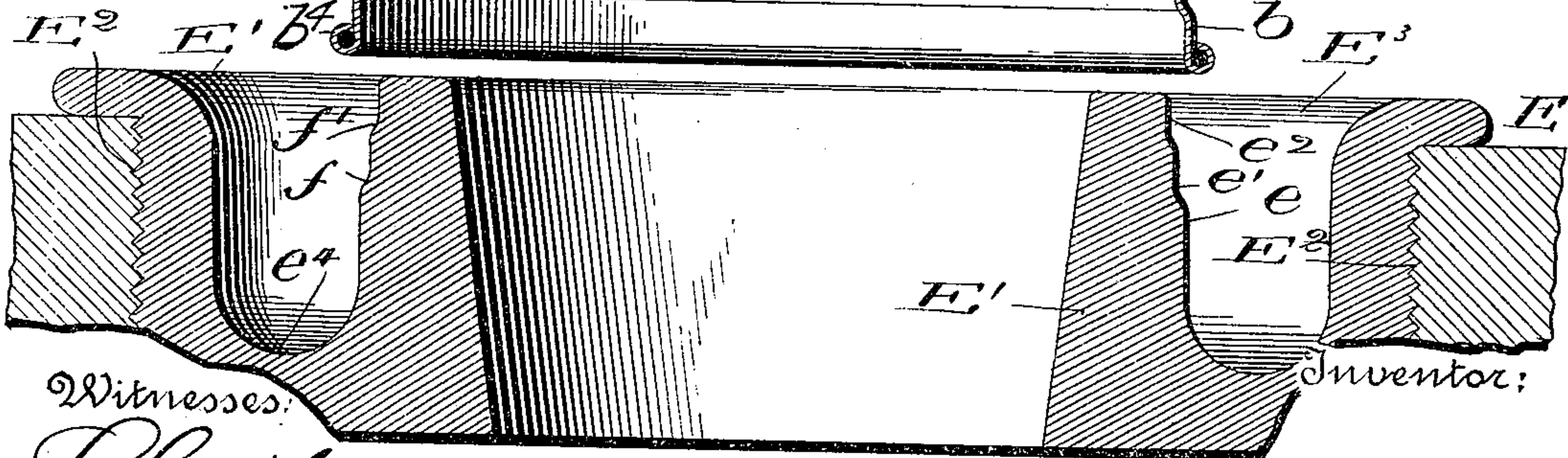
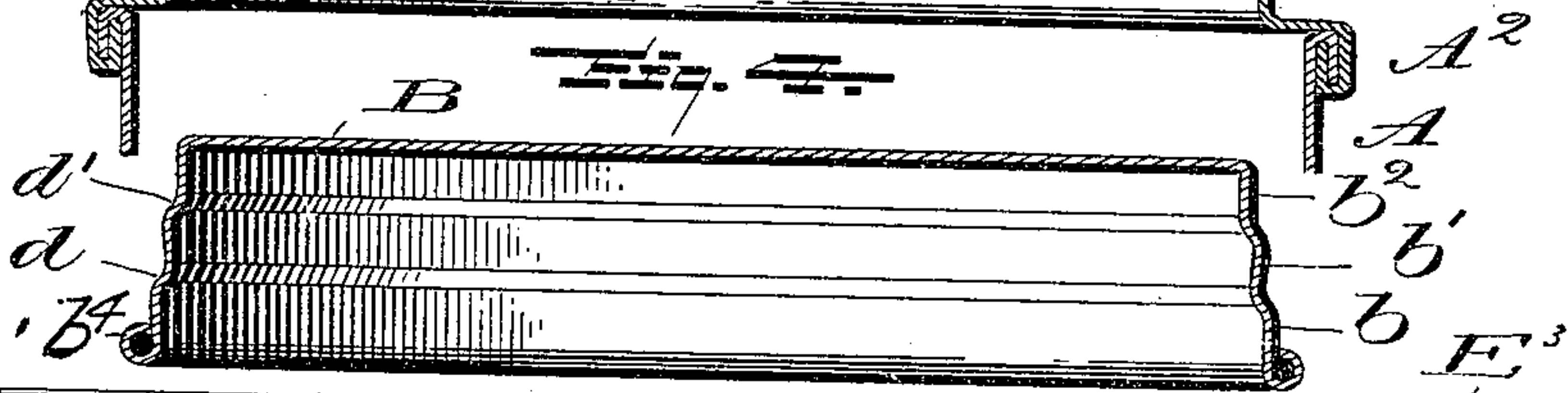


Fig. 4.



Witnesses:

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# UNITED STATES PATENT OFFICE.

JOHN A. STEWARD, OF CLARENDON, VERMONT.

## METALLIC CLOSURE FOR RECEPTACLES.

SPECIFICATION forming part of Letters Patent No. 637,295, dated November 21, 1899.

Application filed March 21, 1899. Serial No. 709,955. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN A. STEWARD, a citizen of the United States, residing at Clarendon, in the county of Rutland, State of Vermont, have invented certain new and useful Improvements in Metallic Closures for Receptacles, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to a metallic closure for receptacles, and particularly to a closure for cans, which will be frictionally held in place, and thereby capable of removal and displacement.

15 The invention has for its object to frictionally hold the cover by means of a series of beads, each of a different diameter, which are frictionally engaged by a series of beads formed in or carried by the cover, which correspond in diameter with the beads at the upper portion of the receptacle. The cover is thus held by a series of frictional surfaces, so that the same can be forced into position to form a hermetically-sealed joint and can be removed by suitable pressure applied beneath the edge of the cover.

25 Other objects and advantages of the invention will hereinafter appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

30 In the drawings, Figure 1 represents a perspective of a can with parts in section. Fig. 2 is a cross-section through the cover removed. Fig. 3 is a similar view through the top of the can, and Fig. 4 is a similar view of a modified application of the closure.

40 Like letters of reference indicate like parts throughout the several figures of the drawings.

45 The receptacle or can A is provided at its upper portion with a top A', which may be of any desired material or configuration and can be formed integral with the body of the receptacle or separate therefrom and joined together, for instance, by means of a double-seamed joint A<sup>2</sup>. This top or neck portion is usually constructed to form the discharge-opening for the can. The lower portion of the can is provided with any suitable form of bottom—for instance, as shown at C—which

may be connected with the body A by a double-seamed joint C'.

50 In the form of closure shown in Figs. 1, 2, and 3 the neck A' is stamped or otherwise provided with a series of beads  $a$   $a'$   $a^2$ , each of a less diameter than the preceding one. This forms a neck of the smallest diameter at the top, at which point an inwardly-turned bearing or flange  $a^3$  is provided which will form a scraping edge at the open neck of the can and also provide a flat surface which will assist in making a tight closure. The decreasing diameter of the beads  $a$  and  $a'$  forms a shoulder  $c$ , while a similar shoulder  $c'$  is provided between the beads  $a'$  and  $a^2$ . A horizontal bearing or contact surface  $a^4$  is also provided immediately over the upper edge of the body, so as to properly transmit any pressure which may be applied to the neck upon the body of the can. This neck A' is adapted to cooperate with a cover B, which is provided with a series of beads of substantially the same corresponding diameter as the beads upon the neck. For instance, the beads  $b$   $b'$   $b^2$  correspond substantially with the beads  $a$   $a'$   $a^2$ . It may here be stated that if the metal be of sufficiently light character to expand slightly under pressure these beads are of almost identical diameter; but if the metal be slightly stiff the beads of the cover are sufficiently larger than the beads of the neck to permit the same to start or begin to pass over the corresponding beads on the neck. Ordinarily sheet-metal cans have sufficient elasticity to permit the beads to pass over each other and establish firm frictional contact to form a tight joint. Between the beads  $b$  and  $b'$  a shoulder  $d$  is provided and between the beads  $b'$  and  $b^2$  a similar shoulder  $d'$ . These shoulders correspond with the shoulders  $c$  and  $c'$  on the neck and seat thereon when the cover is in place, as shown in Fig. 1. The upper portion or top of the cover is provided with a flattened inner surface, as shown at  $b^3$ , which rests upon the flange  $a^3$  and provides an additional closure to form a hermetical seal. The lower or open end of the cover is provided with an enlarged edge  $b^4$ , which rests upon the portion  $a^4$  of the cover, making contact therewith, and provides a bearing-surface beneath



which a tool may be applied for prying or raising the cover to open the receptacle.

In Figs. 1, 2, and 3 the cover B has been shown as applied to a sheet-metal top or neck A'; but this cover may also be applied to other receptacles not having a sheet-metal neck—such, for instance, as illustrated in Fig. 4, wherein the top E of any suitable receptacle may be provided with a neck E', formed integral therewith or separate and secured by any desired means—such, for instance, as screw-threads E<sup>2</sup>. The material of which this neck is formed may be and usually is rigid, as the frictional engagement with the cover is satisfactorily secured if one member of the closure be of a yielding character. The modified form of neck may be provided with an annular recess E<sup>3</sup>, within which the cover B will rest, and the inner wall of this recess is provided with a series of substantially vertical beads *e e' e<sup>2</sup>*, substantially identical in all particulars with the similar beads shown at *a a' a<sup>2</sup>* of Fig. 3. A bearing *e<sup>3</sup>* is also provided above the bead *e<sup>2</sup>* and a contact-surface *e<sup>4</sup>* at the base of the bead *e*. These bearing-surfaces correspond with similar surfaces *a<sup>3</sup>* and *a<sup>4</sup>*, (shown in Fig. 3,) and between the beads *e* and *e'* a shoulder *f* is provided, while a similar shoulder *f'* is provided between the beads *e'* and *e<sup>2</sup>*. It will be understood that when the cover B is applied to the neck shown in Fig. 4 the shoulders *d* and *d'* of the cover will correspond with the shoulders *f* and *f'* of the neck and seat thereon, while the beads and other portions of the cover will frictionally engage the corresponding parts, as previously described in connection with Figs. 1, 2, and 3.

The cover is applied by simply exerting direct pressure upon the same, which forces the several beads upon the cover into tight frictional contact with the beads of corresponding diameter upon the top or neck. At the same time the corresponding shoulders will engage each other and limit the downward movement of the cover, while the top bearing will form a tight joint against the under side of the top of the cover, and the enlarged edge *b<sup>4</sup>* of the cover rests upon the horizontal base-bearing of the neck. When the parts are in this position, a thoroughly-tight hermetical joint is formed without the necessity of applying any soldering or sealing means, as the frictional contact and elasticity of the sheet metal forming either the cover or the receptacle are sufficient to provide the joint when either of the corresponding parts are stamped from dies which are exact in their proportions. To open the can, a tool of any suitable character is applied beneath the enlarged edge *b<sup>4</sup>*, and by leverage against the horizontal base-bearing surface at the top of the can the cover may be raised and removed. It will be obvious that if only a portion of the contents of the can is used the cover can be replaced in position and the contents preserved for future use. Likewise

the cans are particularly adapted for use in household preserving, as they may be used from year to year without injury to their sealing properties. It may be stated that the body of the can may be formed of any suitable material and configuration and that the neck may be integral therewith and applied thereto by any suitable means. Likewise either the cover or neck may be formed of non-yielding material, it being essential that only one member should be flexible or yielding to insure contact. Further, it is not essential that the beads be of the exact conformation illustrated and described, and the number of the same may be varied.

The beads hereinbefore mentioned consist, essentially, of a series of substantially vertical contact-surfaces connected by shoulders lying in a different plane. The location of the shoulders prevents any injury to one of the contact-surfaces from extending to an adjacent one and also stiffens the structure. In repeatedly using the receptacle the tool used to raise the cover is liable to indent and injure the beads or vertical faces, and the provision of the independent faces prevents this injury from extending to the other joints. Furthermore, if the lower surface does not fit tightly within the cap through any imperfections of manufacture or injury to the cover the remaining surfaces will firmly contact when the parts are forced together.

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

1. A closure for receptacles comprising a neck or top having a series of substantially vertical contact-surfaces of successive different diameters and connected by shoulders, and a cover provided with a series of substantially vertical contact-surfaces of successive different diameters and connected by shoulders, the contact-surfaces of one of said members being of sheet or yielding material, and said cover being adapted to fit upon the surfaces of said neck and form a series of sealing-joints; substantially as specified.

2. A closure for receptacles comprising a top or neck member provided with a series of substantially vertical contact-surfaces of successive different diameters and connected by shoulders, and bearing-surfaces at the upper and lower extremities of said series of contact-surfaces, and a cover member provided with a series of substantially vertical contact-surfaces of successive different diameters and connected by shoulders, the contact-surfaces of one of said members being of sheet or yielding material, and portions upon said cover adapted to cooperate with said bearing-surfaces; substantially as specified.

3. A closure for receptacles comprising a rigid neck provided with an annular recess, the inner wall thereof having upon its outer face a series of substantially vertical contact-surfaces of successive different diameters connected by shoulders, and a cover of sheet ma-



terial provided with a series of substantially  
vertical contact-surfaces of successive differ-  
ent diameters and connected by shoulders,  
the contact-surfaces of said cover being adapt-  
5 ed to fit upon the surfaces of said neck and  
form series of sealing-joints; substantially as  
specified.

In testimony whereof I affix my signature  
in presence of two witnesses.

JOHN A. STEWARD.

Witnesses:

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WAYNE BAILEY.