M. BRAY.

PAINT-CAN.

No. 170,703. Patented Dec. 7, 1875.

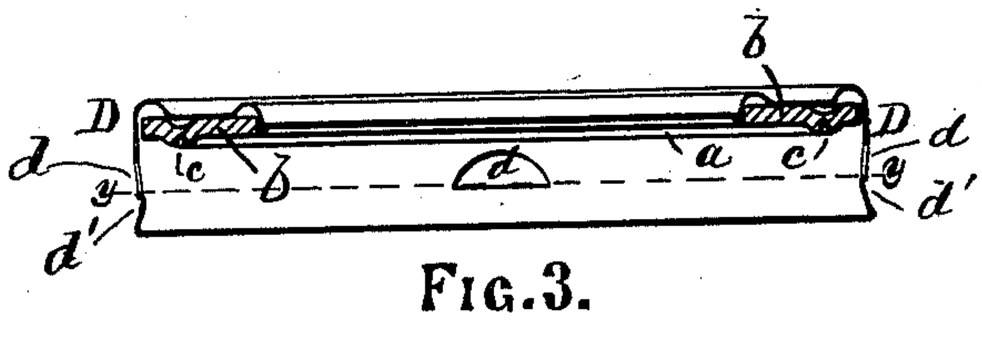

FIG. 3.

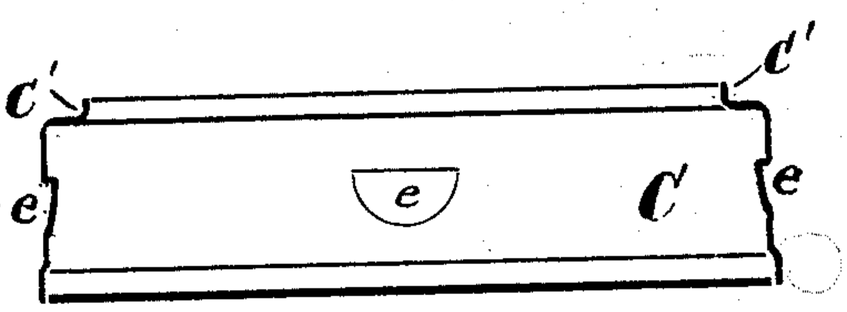

FIG. 4.

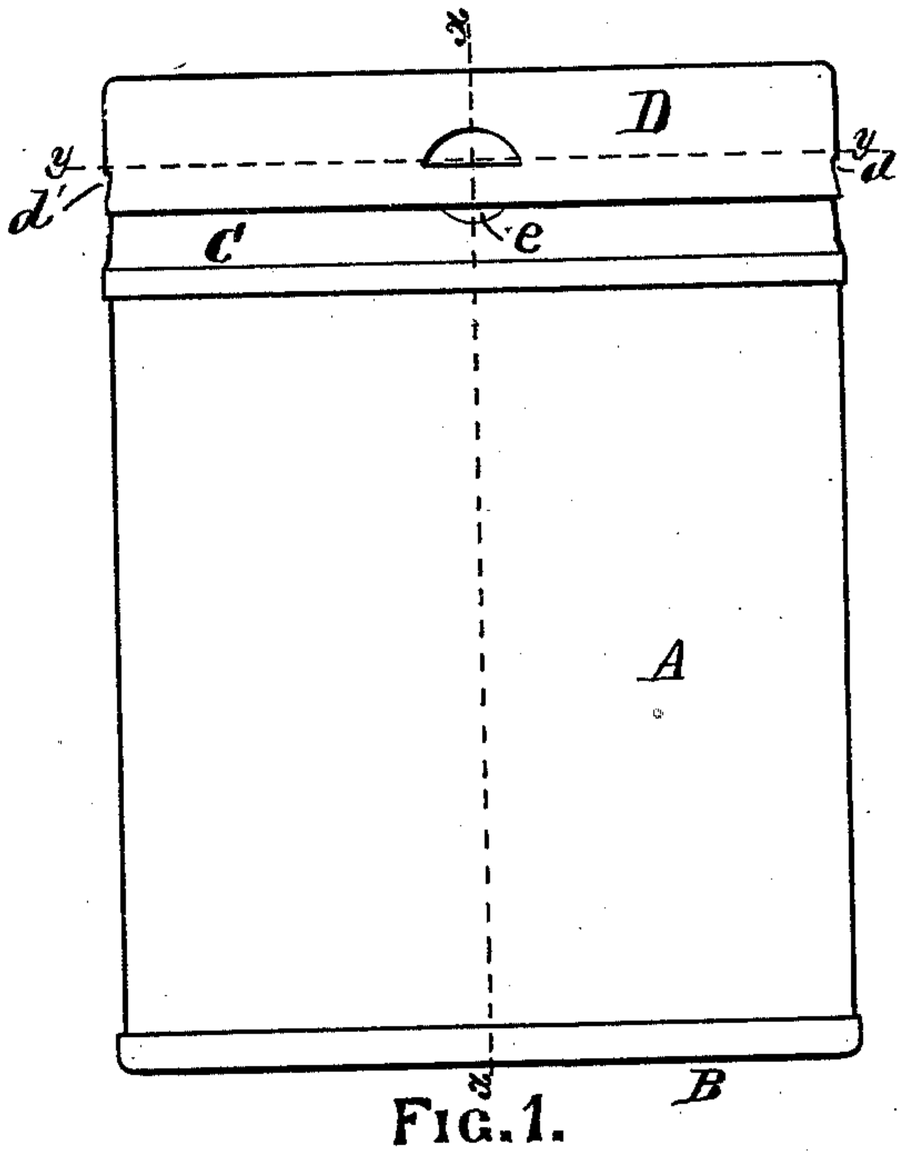

FIG. 1.

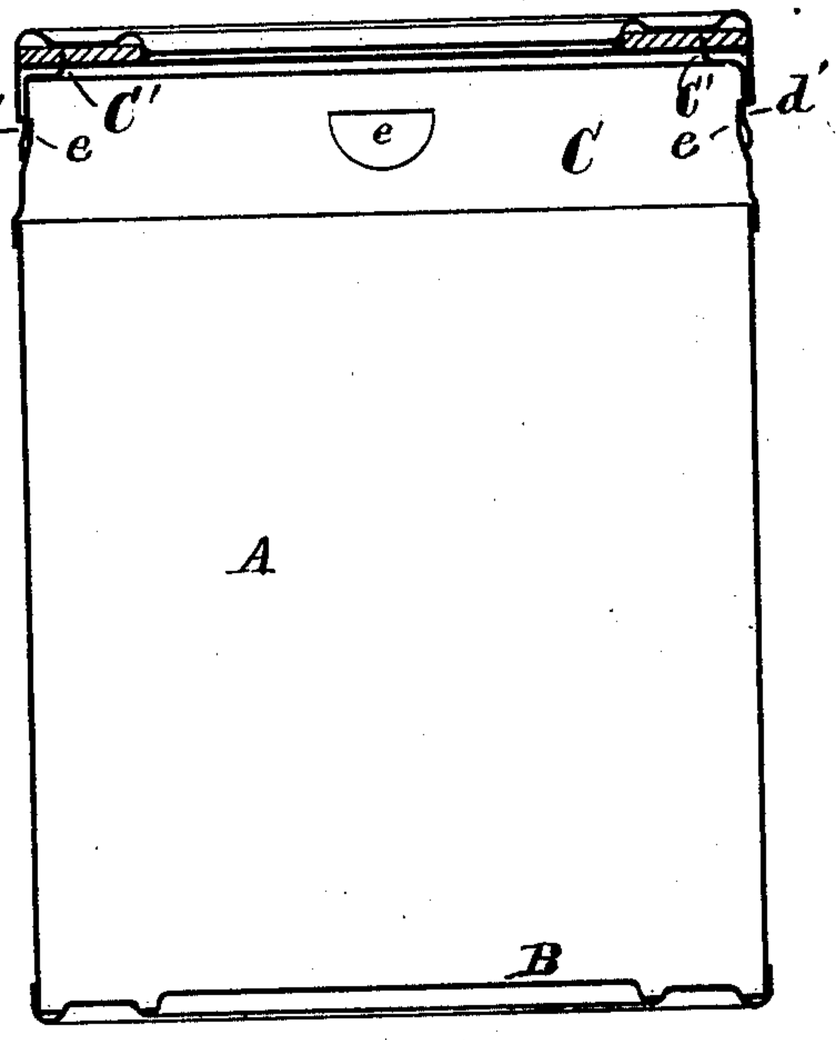

FIG. 2.

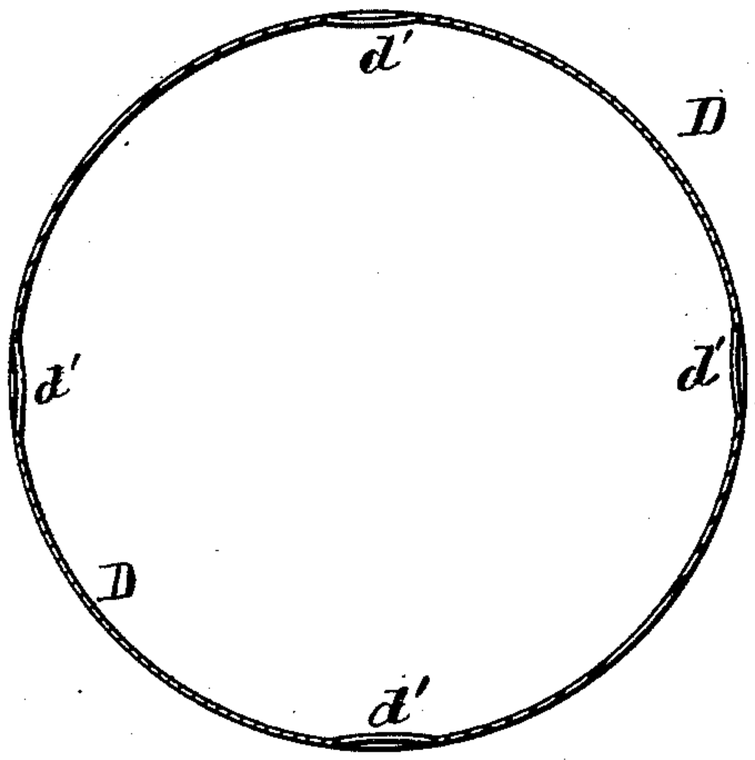

FIG. 6.

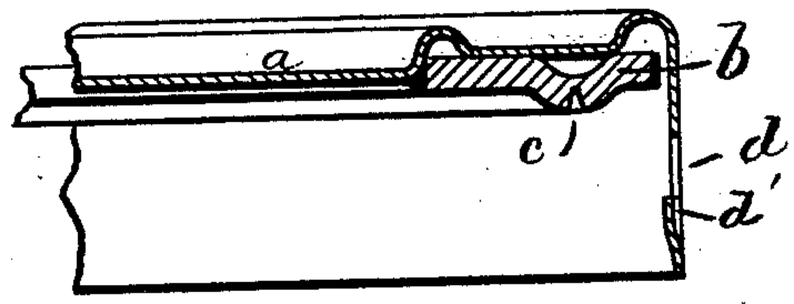

FIG. 5.

WITNESSES.

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UNITED STATES PATENT OFFICE.

MELLEN BRAY, OF NEWTON, MASSACHUSETTS.

IMPROVEMENT IN PAINT-CANS.

Specification forming part of Letters Patent No. **170,703**, dated December 7, 1875; application filed October 15, 1875.

To all whom it may concern:

Be it known that I, MELLEN BRAY, of Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Cans for Paints and other purposes, of which the following, taken in connection with the accompanying drawings, is a specification:

My invention relates to a self-sealing can; and it consists, first, in the use of a packing-ring, made of flexible material, having an annular slit or cut formed by means of a sharp-edged ring or other knife, in one of its sides, and extending from one-half to two-thirds through the packing-ring, which is then embossed or struck up in a die, so as to form an annular concave groove upon the side opposite to the annular slit or cut just described, and a corresponding annular convex surface upon the other side, with the slit in the center thereof, which, by the act of forming the annular concavo-convex surface, is spread open for a purpose to be hereafter described, in combination with the top edge of a can-body, so constructed that its upper edge, which forms the seat for the packing, shall be the thin edge of the tin or other sheet metal of which the can is made, presented vertically, and adapted to enter the annular slit formed in the flexible packing when the cover, in which is secured said packing, is forced into the can with sufficient force to flatten out the embossed packing, and cause the two sides of the slit in the packing to close upon the edge of the metal of the body of the can.

My invention further consists in forming, in the outer vertical walls of the can-body, two or more indentations, by means of suitable dies, adapted to upset or stretch the metal without cutting it, the upper sides of said indentations being made at right angles, or nearly so, to the vertical side of the can, in combination with two or more spring-catches, formed upon the cover by cutting openings through the vertical wall of the cover, which fits over the body of the can a short distance above its lower edge, and forcing the upper edge of the stock just below said openings inward, as will be described, so that the cover may be driven onto the can by a blow or pressure, with the spring-catches in the same vertical plane with the indentations in the wall of the body of the can, until the upper edges of the spring-catches have descended to a level with the upper edges of the indentations, when said spring-catches will spring into said indentations and engage therewith to hold the cover on.

My invention further consists in forming the upper portion of the body of the can without seam, by striking it up out of a flat sheet of tin by means of suitable dies, when said upper portion is made in the form of a short cylinder, having a portion of its upper end covered by an annular flange turned inward therefrom, the inner edge of which is turned upward again, so as to form thereon a short annular rib or lip, parallel to the main cylindrical portion of said ring, and the body of the can of which it is to form a part.

My invention further consists in soldering the inner edge of the flexible packing-ring, when made of soft metal, to the cover of the can.

Figure 1 of the drawings is an exterior elevation of the can. Fig. 2 is a vertical longitudinal section on line *x x* on Fig. 1. Fig. 3 is a vertical section of the cover, showing the flexible packing as it appears before the cover is applied to the can. Fig. 4 is a vertical section of the ring which forms the upper portion of the body of the can. Fig. 5 is a partial section of the cover, drawn to an enlarged scale; and Fig. 6 is a horizontal section of the cover on line *y y* on Figs. 1 and 3.

In the drawings, A is the main portion of the body of the can, made by rolling up a sheet of tin or other sheet metal, and uniting its two edges by a vertical seam, in a well-known manner. B is the can bottom, secured to the cylinder A in any well-known manner. C is a ring, made without seam by striking it up from a flat sheet of metal into the form shown in Fig. 4, and soldered to the upper end of cylinder A, which it incloses, as shown in Fig. 2. The ring C is provided with the annular rib or lip C′, turned up from its inner edge into a vertical position, parallel to the walls of the cylinder A, and surrounding the mouth of the can. D is the can-cover, struck up from a flat sheet of metal without seam, and having thrown down in the center of its top a shallow

recess, whereby is formed a projecting hub, *a*, to the outer circumference of which is fitted and secured the inner edge of an annular ring, *b*, of any flexible material susceptible of being molded to form. The ring of packing *b*, before being placed in and secured to the cover D, has cut in one of its sides the annular crease *c*, and is then swaged or embossed into the concavo-convex form in cross-section, as seen in Figs. 3 and 5, so as to open the annular crease *c* for the reception of the edge of the lip C′, which is made of the same diameter as the crease *c*. The vertical cylindrical portion of the cover D has cut through it two or more openings, *d*, the lower sides of which are parallel with, and a short distance above, the lower edge of said cylindrical portion of the cover; and the stock *d′*, immediately beneath said openings, has its upper edge bent inward and set by means of dies or other suitable tools, as shown in Figs. 5 and 6, so as to form spring-catches, to engage with an equal number of recesses or indentations, *e*, formed in the outside of the vertical cylindrical portions of the ring C, to hold the cover on. The recesses *e* are formed by upsetting or stretching the metal by dies, and are formed, as shown, with their upper sides parallel to the top and bottom of the can, and at right angles, or nearly so, to the vertical side of the can.

The operation of my improvement is as follows: The can being filled, the cover D, with the packing secured thereto, as shown and described, is placed over the top of the can, with the spring-catches on the cover directly over the recesses *e e* in the ring C. The cover D is then forced downward in a direct line without turning it about its axis, the spring-catches *d′* in the cover yielding to allow of the movement of the cover, and the edge of the lip C′ entering the crease *c* till it strikes the bottom, when the flexible packing-ring *b* will be pressed out flat, and the packing upon either side of the crease *c* will be made thereby to press hard against the lip C′, making a perfectly tight joint. When this has been effected, and the flexible packing has assumed the shape shown in Fig. 2, the catches *d′* spring into the recesses *e e*, and, engaging with the upper sides thereof, effectually lock the cover on. When it is desired to open the can for use, it is only necessary to give the cover D a partial rotation, so as to remove the catches *d′* from the recesses *e*, when the cover may be removed without hinderance.

The packing-ring *b* may be made of lead, leather, or other flexible material capable of being molded to form, and should be so fitted to the cover that when it is pressed out flat its outer edge shall press hard against the vertical wall of the cover.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The flexible packing-ring *b*, constructed as set forth, and adapted to receive and engage with the top edge of the body of the can, as and for the purpose described.

2. A can-cover provided with two or more spring-catches, *d′*, formed by cutting two or more openings through the vertical flange of the cover, and bending the upper edges of the stock below said openings inward, as set forth, in combination with a can having two or more recesses, *e e*, formed in its vertical sides, and adapted to engage with said spring-catches to lock the cover on, substantially as described.

3. The ring C, struck up from a flat sheet without seam, and provided with the vertical rib or lip C′, in combination with the cylinder A, to which it is soldered, and the cover D, provided with the packing-ring *b*, all arranged and adapted to operate as and for the purposes described.

4. A soft-metal packing-ring, *b*, formed as set forth, fitted and soldered at its inner edge to the hub *a* of the cover D, substantially as described.

Executed at Boston this 12th day of October, 1875.

MELLEN BRAY.

Witnesses:
WM. P. EDWARDS,
E. A. HEMMENWAY.