

(No Model.)

E. BILLETTE DE VILLEROCHÉ & A. CHATELARD.

MANUFACTURE OF METAL CANS AND BOXES.

No. 342,503.

Patented May 25, 1886.

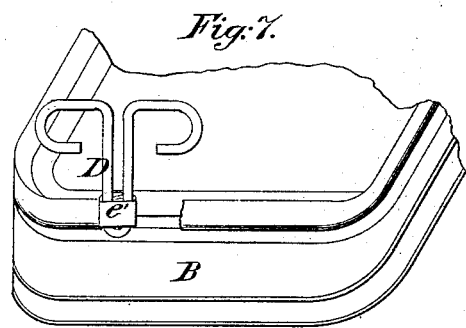
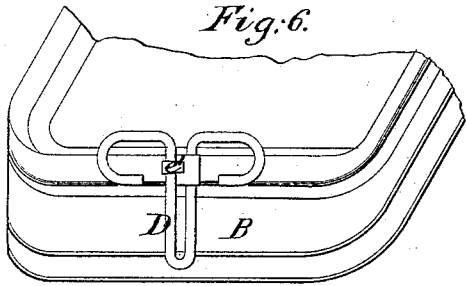
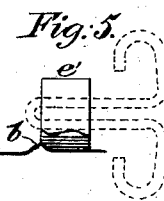
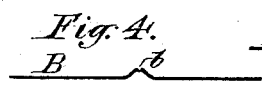
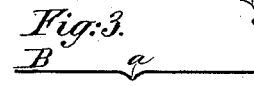
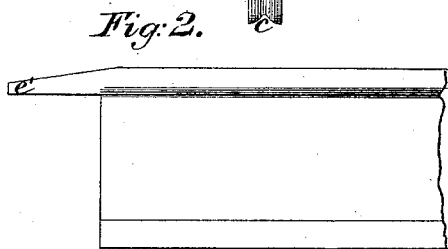
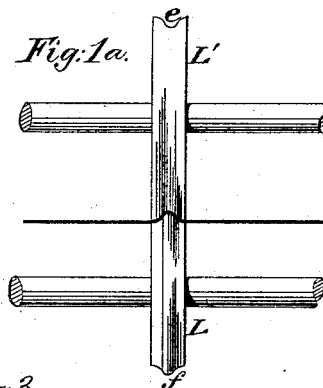
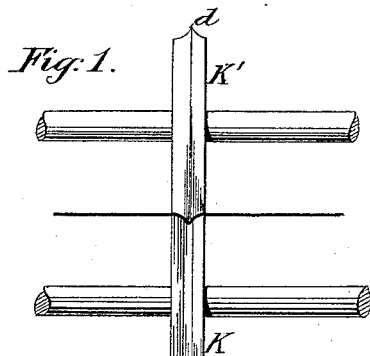


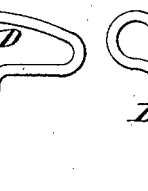
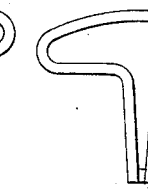
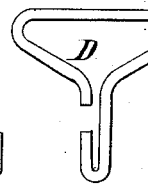
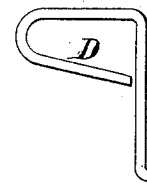
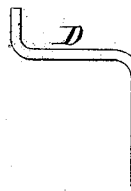
Fig. 8.

Fig. 9.

Fig. 10.

Fig. 11.

Fig. 12.

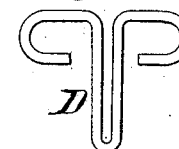


Witnesses.

Emil Better.

O. Sundgren

Fig. 13.



Inventors.

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Arthur Chatelard
by their attorneys
Rosen & Hall*

UNITED STATES PATENT OFFICE.

EMMA BILLETTE DE VILLEROCHÉ AND ARTHUR CHATELARD, OF CONCARNEAU, FRANCE.

MANUFACTURE OF METAL CANS AND BOXES.

SPECIFICATION forming part of Letters Patent No. 342,503, dated May 25, 1886.

Application filed March 30, 1886. Serial No. 197,205. (No model.) Patented in France July 25, 1884, No. 163,486, and in Portugal November 19, 1885.

To all whom it may concern:

Be it known that we, EMMA BILLETTE DE VILLEROCHÉ and ARTHUR CHATELARD, both citizens of the Republic of France, residing at Concarneau, in said Republic, have invented a new and useful Improvement in the Manufacture of Metal Cans and Boxes for Preserving Animal and Vegetable Substances, of which the following is a specification, reference being had to the accompanying drawings.

The object of our invention is to provide for the easy opening of metal cans and boxes.

The invention consists in making in the metal, in the line in which it is to be torn or ripped open, a crease and an incision partly through the metal at the bottom of this crease, and afterward reversing or throwing outward the crease formed in the metal by this operation in such manner as to open the incision, and to strain the adjacent part of the metal not reached by the incision, and by this means assuring the easy tearing open of the box in a well-defined line without producing ragged edges on the torn part or parts of the metal.

The crease and incision in the metal, when made upon the body of the box or can, may be effected by means of wheels or rotary devices between which the metallic band forming the part of the box or can to be torn open may be passed, such machine being or not the same by which the moldings may be produced on the can or box; or the crease and incision, if applied to the cover, may be produced by means of matrixes and punches and cutters operating by direct pressure.

Figure 1 of the drawings represents a peripheral view of a pair of wheels by which the primary creasing and incising of the metal are produced. Fig. 1^a represents a similar view of a pair of wheels by which the crease is reversed or thrown outward. Fig. 2 is a face view of a portion of a metallic band prepared according to our invention. Figs. 3, 4, and 5 represent transverse sections of the band, indicating, respectively, the successive operations of the primary creasing and partial incising of the band, the reversing of the crease, opening of the incision, and the tearing open of the metal in the line of the incision. Figs.

6 and 7 are perspective views of one end of a sardine-box, illustrating the method of tearing open the same. Figs. 8, 9, 10, 11, 12, and 13 show different forms of a key which may be employed for tearing open the box.

Of the wheels K K' (shown in Fig. 1) the lower wheel, K, contains a groove, *c*, the profile of which corresponds in form with the salient curve of the transverse section of the primary crease to be produced in the band, and the upper one, K', is provided with a sharp-edged flange, *d*, the profile of which corresponds with the re-entrant profile of the crease, the edge of the said flange being sufficiently sharp to produce an incision partly through the metal.

Of the wheels L L' the lower one, L, has on its periphery a flange, *f*, and the upper one has in its periphery a corresponding groove, *e*, for the purpose of reversing or throwing outward the crease produced in the metal.

The shafts of the several wheels K K' L L' may be mounted in bearings in any suitable frame-work, and have rotary motion imparted to them by any suitable means. By these wheels we perform on the metallic band intended to form the body of the box the operations necessary to sufficiently weaken the metal in any desired line by submitting it to a series of successive creasings without entirely cutting through it, to sufficiently weaken it to enable it to be easily torn open in that line.

Figs. 3, 4, and 5 show clearly the succession of operations performed by these wheels. Fig. 3 represents the band after passing between the wheels K K'—that is to say, having a crease at the bottom of which is a slight incision, *a*, extending only partly through the thickness. Fig. 4 shows this band B after its passage between the wheels L L', which have reversed or turned completely outward the crease formed by the wheels K K', and have thereby opened the incision *a* to make it take the form indicated at *b*. Fig. 5 represents the effect of tearing the band B in the line of the incision *b*, by rolling up a portion of the said band B on the key D, the band being for that purpose provided at one extremity with a tongue, *e'*, which is coiled or made into a loop and left project-

ing from the box, as shown in Fig. 6, for the reception of said key D. The kind of key which we employ to effect this operation may be made of a simple piece of wire of suitable length, conveniently bent in any suitable form—as, for instance, any of those indicated in Figs. 8 to 13, but preferably of the form shown in Fig. 13. By inserting the bit or shank of this key in the loop of the tongue *e'* and taking hold of the head of the key by the thumb and fingers and turning the key, the portion of the band B between the incision *b* and the nearest edge of the said band which is soldered to the adjacent head of the box, may be torn away in the line of the said incision and rolled upon the key, the tearing being effected in a clean and well-defined line without ragged edges, owing to the partial incision of the metal of the band and the weakening of a part of the metal adjacent to the said incision consequent upon the working of the metal and consequent fatiguing produced by the repetition of the creasing in opposite directions.

When a box is constructed in such manner as to be opened by the cover, it will, like the band B, be cut partly through and creased, and reversely recreasing in a line in which it

is desired to tear it open, and the portions to be torn away may be furnished, in any suitable manner, with a tongue, like *e'*, for the reception of the key by which the said portion may be stripped away.

What we claim as our invention, and desire to secure by Letters Patent, is—

The improvement in the art of manufacturing cans and metal boxes consisting in preparing the metal in the line in which it is to be opened by making a crease in the metal and an incision partly through it in the bottom of the crease, and afterward turning outward or reversing the crease, and thereby throwing out and widening the incision and weakening the adjacent metal, for the purpose of enabling it to be torn definitely in the line of said incision, substantially as herein described.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

EMMA BILLETTE DE VILLEROCHÉ.
ARTHUR CHATELARD.

Witnesses:
SAURDOTTAIRE,
C. LE JROMER.