

No. 623,964.

Patented May 2, 1899.

W. G. AVERY.
TOTE BOX.

(Application filed Apr. 4, 1898.)

(No Model.)

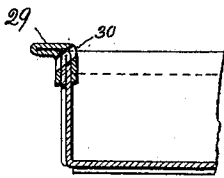
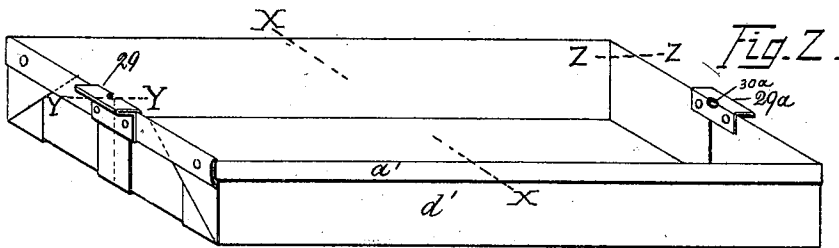
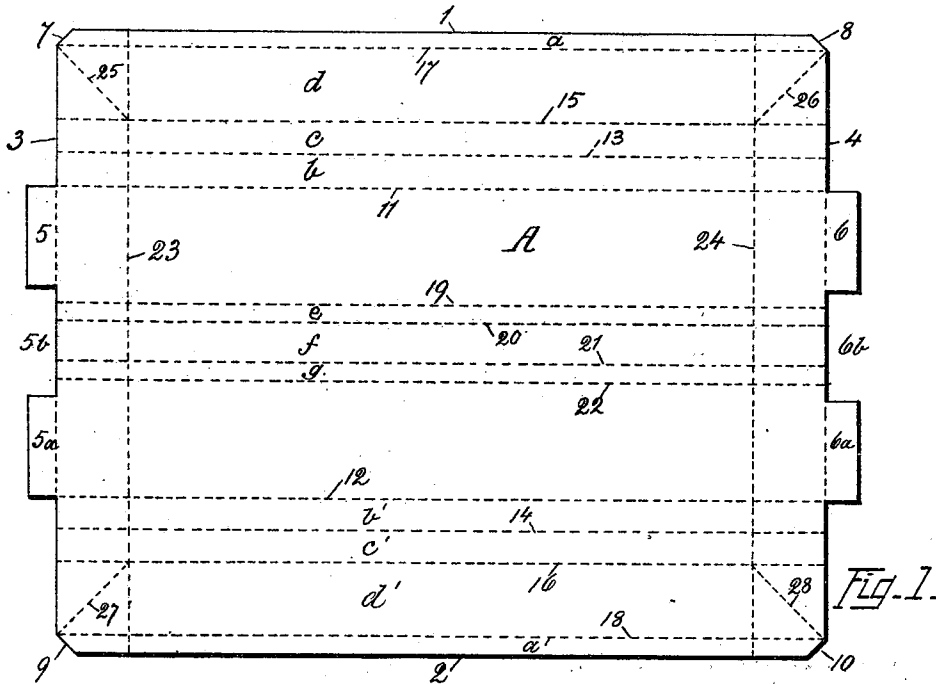


Fig. 3.

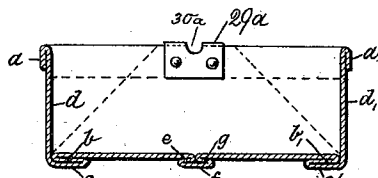


Fig. 4.

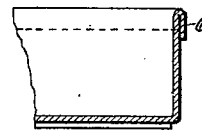


Fig. 5.

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UNITED STATES PATENT OFFICE.

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TOTE-BOX.

SPECIFICATION forming part of Letters Patent No. 623,964, dated May 2, 1899.

Application filed April 4, 1898. Serial No. 676,367. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. AVERY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Tote-Boxes, of which the following, with the accompanying drawings, is a full, clear, and exact specification.

My invention relates to metal boxes used in mills, factories, and stores for carrying various materials in the way of nails, bolts, nuts, screws, and other manufactured articles and also various kinds of materials from place to place. Heretofore these boxes when made of sheet metal have had plane bottoms, upon which they rest, or have had strips of metal riveted thereto, upon which the boxes rest. Neither of the constructions to which reference is made gives sufficient stiffness to the bottoms of the boxes unless made of sheet metal so thick that the weight of the boxes is a great detriment to their use, and in the case where metal strips are riveted to the bottoms the strips expose rough or sharply-cut edges when dragged about floors, and such reinforcing-strips when riveted on the bottoms of the boxes soon become loosened and a source of decided annoyance.

The object of my present invention is a simple construction of tote-boxes made of sheet metal, wherein the bottoms of such boxes are given great strength and rigidity without adding unduly to their weight, that will not expose rough or sharp edges of metal when dragged about, and that have no attached strips of metal to become loosened.

With this object in view my invention consists in the details of construction described herein and defined in the claim.

In the drawings, Figure 1 illustrates the form of blank from which my improved tote-box is made. Fig. 2 is a perspective view of my improved tote-box having strengthening and supporting ribs along the sides and center of the bottom. Fig. 3 is a cross-section on the line xx of a like box having such ribs along the sides and at the center of the bottom. Fig. 4 is a broken section on the dotted line yy , Fig. 2, with the longitudinal vertical center of the box; and Fig. 5 is a broken longitudinal vertical section on the line zz of Fig. 2.

Referring to the blank illustrated by Fig. 1, the side edges 1 and 2 are straight. The end edges 3 and 4 have extensions 5 and 5^a, 6 and 6^a, leaving cut-away places 5^b and 6^b between them. The four corners 7, 8, 9, and 10 are cut away to avoid sharp points on the completed box and to allow the blank to fold more easily. The blank, which is a single piece of sheet metal, is folded back upon itself along the dotted lines 11 and 12 and is then bent outwardly along the lines 13 and 14 and is then bent upwardly along the lines 15 and 16. The edges of the blank are also folded down on the lines 17 and 18 to form reinforcing-pieces $a a'$ along the sides of the upper edge of the box and to give to the upper edges a smooth instead of a cut surface. The spaces $b c$ and $b' c'$ between the lines 11 and 13, 13 and 15, and 12 and 14, 14 and 16, respectively, form the folds of the metal that constitute the strengthening and supporting ribs along the sides of the bottom of the box. The spaces $d d'$ make the upright sides of the box. A like rib may be formed along the center of the bottom of the box by folding the metal back upon the line 19, then forward on the line 20, then back again upon the line 21, and then upon the line 22. The spaces e, f , and g form the folds of metal that make the central rib. This central rib is made only in the larger sizes of boxes or in boxes used for toting unusually heavy materials or boxes put to specific uses that may require it. Ordinarily the boxes are made without the central rib. The blank having been bent, as described, to form the stiffening and supporting ribs, it is bent upwardly along the lines 23 and 24 to form the ends. The corners are folded on the lines 25, 26, 27, and 28 to make the metal fold flat on the corners of the box. The wings 5 5^a and 6 6^a are then folded down to give to the end upper edges of the box a smooth instead of a rough or cut surface.

The lines herein described upon which the sheet-metal blank is folded to form the sides of the box and the strengthening and supporting ribs along its bottom are parallel and longitudinal to the blank, and the lines 24 and 25, upon which the blank is bent to form the ends of the tote-box, are parallel and at right angles to the aforesaid lines, and the

lines 25 and 26, 27 and 28, upon which the blank is folded to form the corners of the tote-box, are at an angle of forty-five degrees from all of the aforesaid lines.

- 5 Handles 29 29^a, that consist of folded pieces of metal, as illustrated, are secured to the box by rivets.

10 The flanges that form the stiffening-pieces of the upper edges of the box are riveted down to prevent their becoming bent outwardly by accident or otherwise, and the folds in the bottom of the box that form the strengthening and supporting ribs are also riveted together.

- 15 Holes 30 and 30^a are made through the ends of the box to provide a means for attaching a hook of a chain or other device to drag the box.

20 It will be seen that a tote-box made of light weight of sheet metal when embodying my improvements possesses great strength and rigidity and that there are no exposed cut or

rough edges to the box and no straps on the bottom of the box to be torn loose. It will also be seen that my improvement is adapted 25 to sheet-metal boxes and pans for uses other than that described.

What I claim as my invention is—

As an improved article of manufacture, a box or pan of sheet metal having longitudinal 30 folds to form the sides of the box and to form strengthening and supporting ribs along its bottom, and having its ends bent up at right angles thereto, and its corners folded on lines at angles of forty-five degrees from 35 all of the aforesaid folds, to form the ends and corners of the said box or pan, as described.

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

WILLIAM G. AVERY.

Witnesses:

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