E. S. MIX.

BOX.

APPLICATION FILED FEB. 25, 1919.

1,352,016. Patented Sept. 7, 1920.

Fig. 1

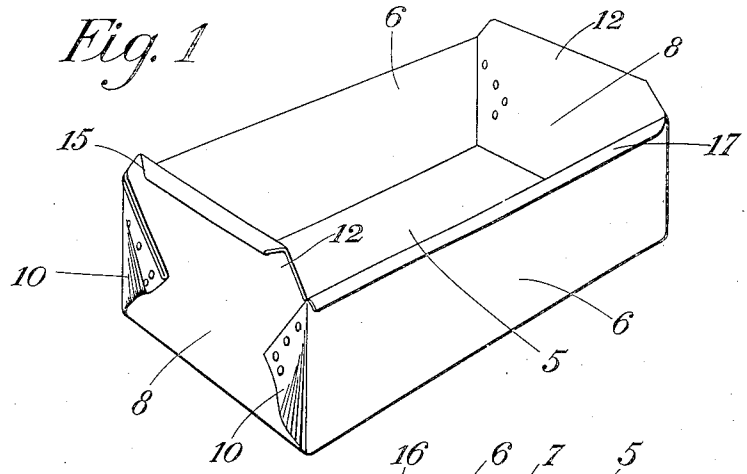


Fig. 2

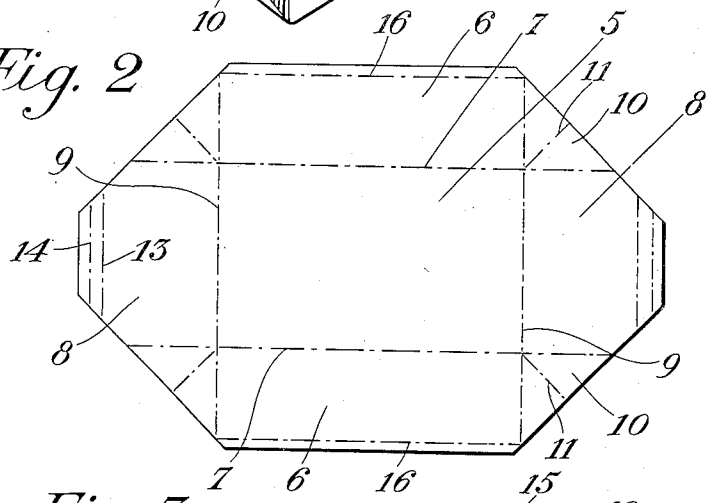
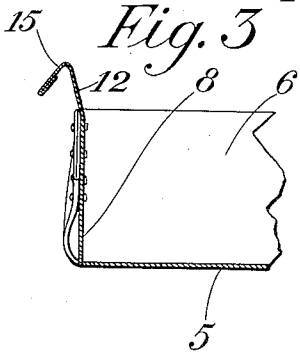


Fig. 3



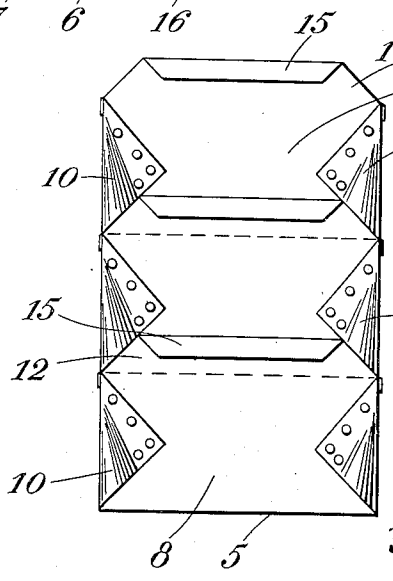


Fig. 4

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UNITED STATES PATENT OFFICE.

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BOX.

1,352,016. Specification of Letters Patent. Patented Sept. 7, 1920.

Application filed February 25, 1919. Serial No. 279,075.

To all whom it may concern:

Be it known that I, EDWIN S. MIX, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Boxes; 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.

This invention relates to boxes made of sheet-material, and it is particularly directed toward metal stock-boxes or tote-boxes, though applicable to various other uses.

One object of the invention is to produce a tote-box, or the like, in which all of the parts are formed, in a simple and inexpensive manner, of a single integral blank of sheet-metal.

Another object of the invention is to produce a box provided with means to facilitate stacking, these means being formed from integral portions of the blank from which the body of the box is produced.

To these ends the invention consists in the box hereinafter described, and illustrated in the accompanying drawings, as it is defined in the appended claim.

In the drawings, Figure 1 is a perspective view of a box embodying the present invention. Fig. 2 is a plan-view of the sheet-metal blank from which the box is formed. Fig. 3 is a vertical sectional view of one end of the box; and Fig. 4 is an end-elevation of a stack of boxes.

The invention is illustrated as embodied in a sheet-metal tote-box of the kind used in factories to carry stock from place to place. The illustrated box is formed from a single integral blank of sheet-metal, cut to the form shown in Fig. 2, this blank being bent at the points indicated by dot-and-dash lines. The rectangular middle-part 5 of the blank forms the bottom of the box. The metal is bent upwardly on the lines 7, 7, to form the sides 6, 6 of the box, and on the lines 9, 9, to form the ends 8, 8. These bending operations leave triangular portions 10 of surplus material at the corners of the box, and this material is allowed to project outwardly and is doubled on the lines 11, 11. It is then folded over against the ends of the box, and riveted in place, as shown in the drawings.

The end portions of the blank extend above the side-walls, thus providing parts 12 which assist in the stacking of the boxes. These parts 12 are bent outwardly, so as to receive between them the ends of a superposed box, and they prevent relative longitudinal movement of the stacked boxes. The extremities of the parts 12 are bent and folded on the lines 13 and 14, thus providing handles by which the box may be conveniently lifted.

A feature of the invention resides in the use made of the parts 10, 10. These parts are not pressed flat against the ends, but are shaped and secured in such a way that they have a slight outward bulge, as shown particularly in Fig. 3. In this way they are adapted to act as lugs coöperating, when the boxes are stacked, with the lateral edges of the parts 12, as shown in Fig. 4. By this coöperative engagement the boxes are retained against relative lateral movement, so that they stand securely when stacked.

The upper margins 17 of the sides 6 are doubled over on the lines 16 to stiffen the edges of the sides.

In previous boxes of the same character end-lugs have been provided to perform the function of the parts 10, but these lugs have been separate pieces of material riveted to the body of the box. In accordance with the present invention the lugs are formed from what would otherwise be waste material at the corners of the blank, and in this way the construction of the box is simplified and cheapened, while the lugs so formed are more substantial than those formed of separate pieces. The integral corner construction has the further advantage that it is fluid-tight, so that if oil or other liquid drains into the bottom of the box from the material with which the box is filled, this liquid will not leak out but will be retained in the box, thus promoting cleanliness in handling the stock.

The invention is not limited to the embodiment thereof hereinbefore described and

illustrated in the accompanying drawings, but it may be embodied in various other forms within the scope of the following claim.

The invention claimed is:

A box formed of an integral blank of sheet-material bent upwardly to produce sides and ends; the ends projecting upwardly beyond the sides; and the surplus material at the corners being bent outwardly, doubled in the middle, and folded and secured against the ends of the box, with a portion of said material bulging outwardly from the ends so as to provide abutments which cooperate with the upwardly-projecting end-portions of a similar box when the boxes are stacked.

EDWIN S. MIX.