

W. E. DONNELLY.
TOTE BOX.
APPLICATION FILED OCT. 19, 1905.

903,848.

Patented Nov. 17, 1908.

Fig. 1.

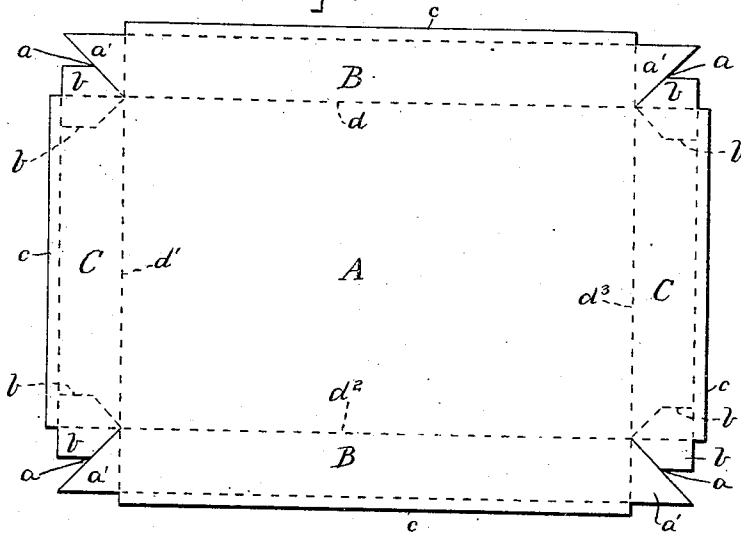


Fig. 2.

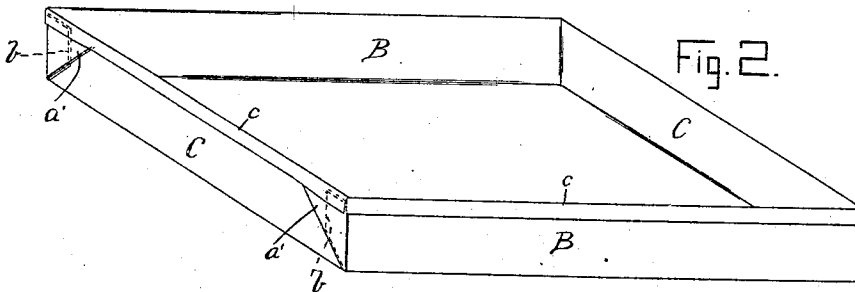


Fig. 3.

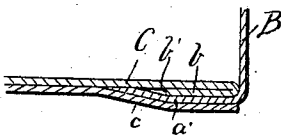
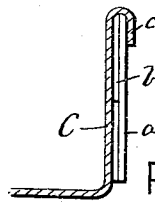


Fig. 4.



Inventor

Witnesses

E. H. Reichenbach
M. E. Lowry

William E. Donnelly

UNITED STATES PATENT OFFICE.

WILLIAM E. DONNELLY, OF CLEVELAND, OHIO.

TOTE-BOX.

No. 903,848.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM E. DONNELLY, citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Tote-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 pertains to make and use the same.

My invention relates to metallic boxes, more especially adapted for use in mills, factories and like places, for receiving metallic articles, such as nails, bolts, nuts and other small articles and carrying them from place to place.

My invention however has relation to metallic boxes, generally such as are made of an integral piece of metal, and are joined together when formed into shape at the corners, by interlocking and overlapping parts provided for this purpose at said corners.

The object of my invention is to provide an economical box, one which is easy of manufacture, and one which utilizes a blank without material waste from same, inasmuch as the cut away portions are very small.

Another object of my invention is to provide a box, the corners of which are strengthened and interlocked, as will be hereinafter fully set forth in such a manner that it is impossible for the corners to become loosened or to tear apart.

My invention consists in the peculiar construction of the blank whereby the above objects are attained, all of which will be hereinafter fully set forth and specifically pointed out in the claim.

In the drawings Figure I is a view in plan formed according to my invention, the dotted lines showing the places in which the metal is turned upon itself in forming the box, and in forming locks at the corners of the same. Fig. II is an isometrical view showing the box after it has been formed and the corners interlocked. Fig. III is a longitudinal sectional view taken through the hem at the upper portion of the box and illustrates the manner in which the several parts of the metal are turned upon themselves and the manner of interlocking the parts together. Fig. IV is a vertical sectional view taken through the corner at one end of the box, showing the hem turned

over and the manner in which the hem engages the interlocking pieces at the corners.

A represents a blank of metal, preferably of sheet or plate metal. At the corner of the blank A a diagonal cut *a* is made the depth of which determines the depth of the box, thus leaving triangular pieces *a'*, at the ends of the side pieces B, B, and trapezoidal pieces *b*, which extend from the ends C, C. The triangular pieces *a'* and the trapezoidal pieces *b*, are formed shorter or narrower than the pieces B and C, leaving marginal pieces *c*, *c*, *c*, *c*, around the edges of the sides and ends which form the upper hem of the box by turning the metal downward upon itself as illustrated in Figs. II IV.

In forming the box, the ends and sides are turned up along the lines *d'*, *d*, *d*², *d*³ and the trapezoidal pieces *b* are turned outward and upon the end pieces C, C, the angular pieces *a'* are then turned around the end pieces C, as illustrated in Figs. II and III and overlapping the trapezoidal pieces *b* as illustrated more clearly in Fig. III of the drawings. The hem *c* is then turned down tightly upon the corner pieces *a'* and *b* in such a manner as to clamp the angular pieces *a'* over and along the pieces *b*, at the corners, and being firmly pressed in this condition, the corner pieces are interlocked and the corners strengthened, inasmuch as by forming the piece *b* in the shape set forth, the outer end of the tri-angular piece *a'* overlaps it and the edge *b'* forms a shoulder beyond which the triangular pieces *a'* project.

I am aware that boxes have been formed in which the corners are bent upon themselves and the ends are bent outward and are then overlapped to either side or end and secured in position, but this manner of forming the box is more expensive, and the metal at the corners is more liable to become cracked during the forming of the box, or subsequently, due to straining the metal in forming the corners. I have also found that when the metal is thus bent at the corners to form the box, that the corners are more easily distorted, especially when the box contains a heavy load, and is grasped by the tote hooks at the corners as is often the case. But inasmuch as the corners of the box constituting my invention are formed of severed portions *a'* and *b* with the parts *a'* bent around and over the shoulder *b'* of the

part 6, it is impossible to distort the corners of the separate parts at this point, at the same time, by forming the blank in the manner set forth and assembling the parts as hereinabove stated and as illustrated in Figs. 5 II, III, and IV, the boxes can be made quicker, cheaper, and at the same time more strong.

10 I have illustrated and described the metallic box as a tote box, but I do not wish to limit myself to this type of box inasmuch as the invention is applicable to boxes of other types and designed for other usages.

What I claim is.

15 A box formed of a metal sheet having recesses cut into the corners and with a cleft extending diagonally inwardly from each of said recessed corners, said sheet adapted to

be folded into pan shape with one of each of the tongue-like portions released by said 20 diagonal clefts reduced in length and lapped over the adjacent sides of the pan structure, and the other tongue lapped over the shortened tongue and against the adjacent sides 25 of the pan in advance of the shortened tongue, and with the sides of the pan in advance of the notched corners foldable over upon the sides of the pan and of the overlapping tongues.

Signed at Cleveland in the county of 30 Cuyahoga and State of Ohio, this 20 day of September 1905.

WILLIAM E. DONNELLY.

Witnesses:

LEONORE C. MARBACH,
E. B. DONNELLY.