(No Model.)

W. LIVINGSTONE.

Box.

No: 233,265. Patented Oct. 12, 1880.

Fig. 1.

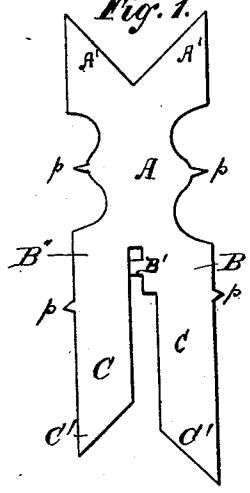


Fig. 2.

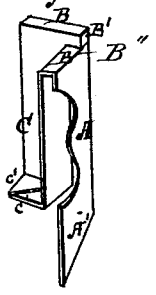


Fig. 3

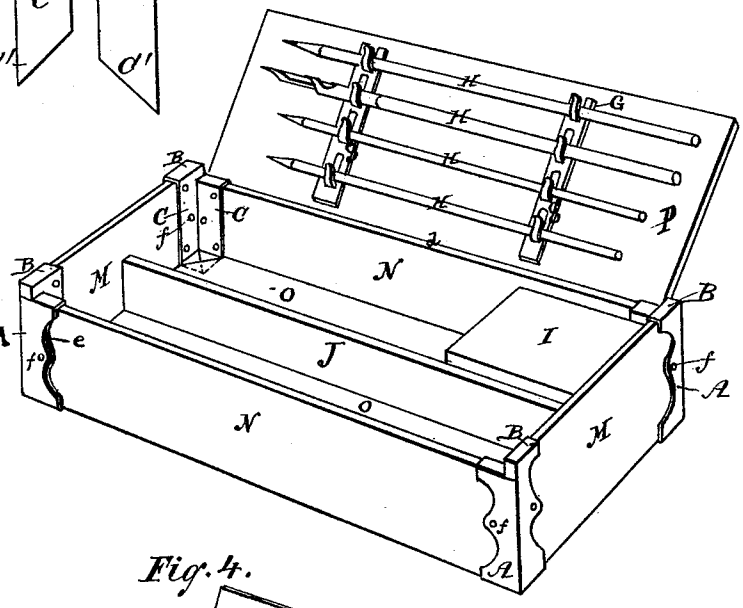


Fig. 5.

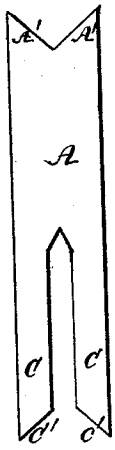
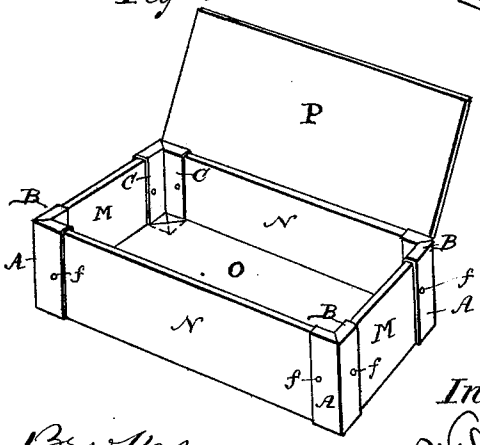


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM LIVINGSTONE, OF NEW-YORK, N. Y.

BOX.

SPECIFICATION forming part of Letters Patent No. 233,265, dated October 12, 1880.

Application filed April 6, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LIVINGSTONE, of New York city, in the State of New York, have invented certain new and useful Improvements relating to the Construction of Boxes, of which the following is a specification.

I finish and strengthen each corner by a corner-piece formed from a single piece of sheet metal applied both within and without, and guarding the whole height of the box. The end of the outer part is folded upon the exterior of the bottom, and the end of the inner part is similarly folded and applied upon the interior of the bottom.

My corner-pieces may be formed complete by machinery at a manufactory, and furnished to box-manufacturers for application at any subsequent time.

My metal corners are of some service as ornament and finish; but I esteem them principally for their strengthening qualities. They brace in all directions and afford an unusual stiffness and fastening.

The accompanying drawings form a part of this specification and represent what I consider the best means of carrying out the invention.

Figure 1 is a plan view of a blank of my improved corner-piece. Fig. 2 is a perspective view of the same with the parts which go inside the box folded as required. Fig. 3 represents a form of box with the corner-pieces applied and rack for pencils in place, in perspective. Fig. 4 is a perspective view of a box having a corner-piece applied; and Fig. 5 represents a blank for the simple form of corner-piece.

Similar letters of reference indicate corresponding parts in all the figures.

M N O P indicate, respectively, the parts of a box, O being the bottom, P the top, N N the sides, and M M the ends. The ends M in Fig. 3 are a little higher than the sides corresponding to the thickness of the cover P, which applies between them and is guarded by these ends against lateral displacement. The cover is hinged to the back side by one or more hinges or proper turning-joint, *d*. I have shown it as a continuous joint of leather or cloth.

The parts M N O being secured strongly together by any suitable means—as nails, screws, glue, dovetailing, or the like—I proceed to strengthen the box at the corners by the addition of my peculiarly-formed corner-pieces of sheet metal, preferably hard brass.

Each entire corner-piece, outside and inside, is formed from a single piece of sheet metal. The outer part, A, is formed, by dies or otherwise, to apply on the exterior of a corner, and finished with tapered ends A′, formed by the same or different dies, ready, after their application to a box, to be folded at right angles to the part A, so that they fit closely together on the exterior of the bottom O.

The top part, B, is formed, by the same dies or otherwise, to apply across the upper edge of a portion of an end, M, and a portion of a side, N. When, as in the case represented, the end M is higher than the side N, the metal of the corner-pieces is correspondingly cut, as represented in Fig. 3, to allow therefor.

The inner parts, C, are formed to apply against the inner faces of the parts M N. They extend the whole height of the interior. The ends C′ are beveled and bent at right angles to the part C. Their edges apply together upon the interior of the bottom and fit closely.

The edges, both of the outer part, A, and of the inner part, C, are formed with projections *p*, which are bent at, or nearly at, right angle to the adjacent parts, and are, by machinery or otherwise, forced into the material M N O of the box, so as to take a firm hold and contribute to strengthen and complete the corners of the box. In addition to this means of fastening, or independently thereof, I apply a cementing material, *e*, having the necessary affinity for the metal and for the box material. I also indent both the exterior metal, A, and the interior, C, as indicated at *f*. These increase the force with which the corner-pieces take hold on the material of the box and strongly hold them in place.

The parts of the box M N O P may be cut and applied together in any approved manner.

My invention is adapted to apply with some success on boxes of wood and various other materials and on boxes of a wide range of sizes; but I esteem it is especially desirable for small boxes of pasteboard. With that material the sides N and ends M may be in one with

the bottom O, the joints being strongly glued.

The metal corner-pieces may be cut by dies. Fig. 5 shows the form for boxes having the sides and ends of equal height. Fig. 1 shows the form where the ends, as in the box I have shown, are higher than the sides. The peculiar contour given to the metal provides that when the metal is properly bent or formed, which may be done by dies or otherwise, both the outer part, A, and the inner part, C, shall be just sufficiently higher to provide for the increased height of the end, and that the metal on the interior of the box shall nicely cover all the parts at the corner. The small rectangular portion B′ is useful in this form of the device to form a finish. It is turned down and at right angles, and covers a small portion of the box end M, which would be otherwise left uncovered and appear unsightly.

One of the uses to which my invention is eminently adapted is to serve school-children.

G is a rack mounted on the interior of the cover P, and adapted to hold pens and pencils H H H H, as shown.

I is a metallic box, glued or otherwise secured in place, with a removable cover adapted to hold a sponge and prevent it from wetting adjacent parts.

J is a longitudinal partition in the box. All these parts may be varied.

Considerable modification may be made by any good mechanic in the forms and proportions of my corner-pieces and in the means of attachment. The metal corners may be made of various metals. Hard iron tinned may be used. A richly-nickeled surface may for some work be expedient. The joining-edges of the two parts C at the inner corner of the box may for some work be soldered together. The edges may be variously scalloped. A large part or the whole of the surface may be impressed with ornamental devices.

My corners will, in many cases, afford sufficient strength, so that there need be no other fastening of the several pieces M N O.

I claim as my invention—

1. The metallic corner-piece A, having the tapering ends A′ and long prongs C C, with tapered points C bent at the top and bottom of the box, for the purpose of lining and covering the inside and outside of bottom, top, and sides of a box-corner, as set forth.

2. The metallic corner-piece A B C, having also the small arm B′, in combination with a box having the ends M higher than the sides N, as and for the purposes specified.

In testimony whereof I have hereunto set my hand at New York city this 24th day of March, 1880, in the presence of two subscribing witnesses.

WM. LIVINGSTONE.

Witnesses:

THOMAS D. STETSON,

CHARLES C. STETSON.