W. J. BILLINGS & M. P. CAFFE.

COLLAPSIBLE OUTLET BOX.

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1,109,391.

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Fig. 1.

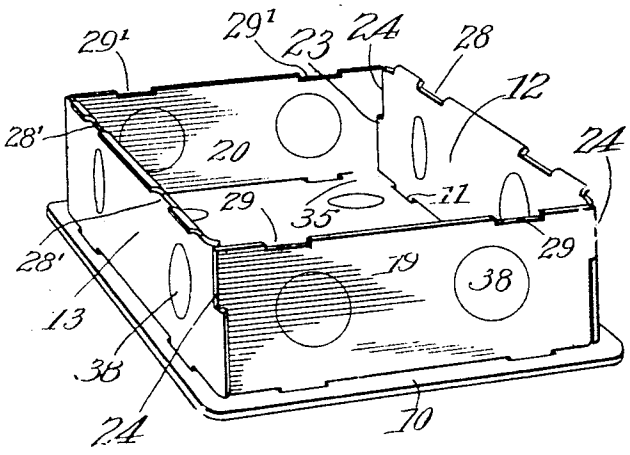


Fig. 2.

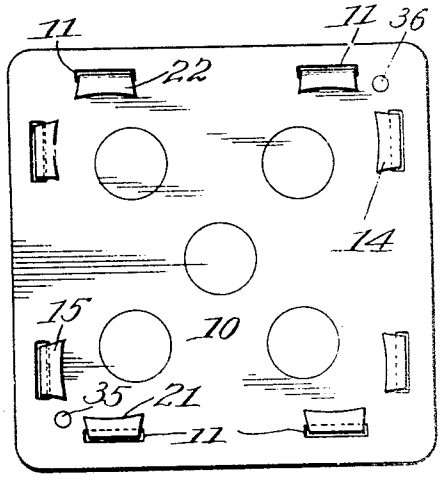


Fig. 3.

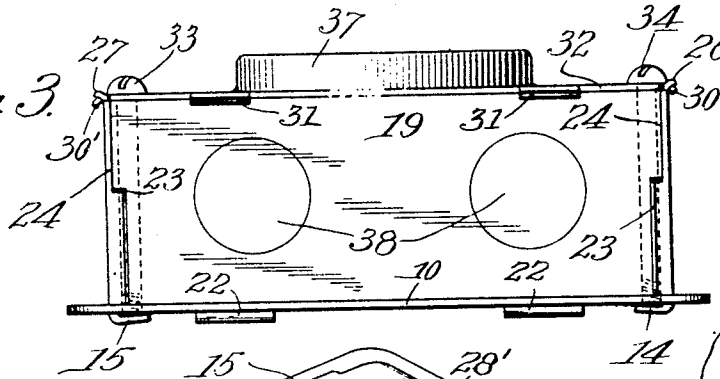


Fig. 5.

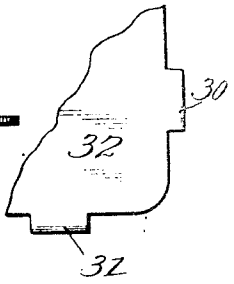
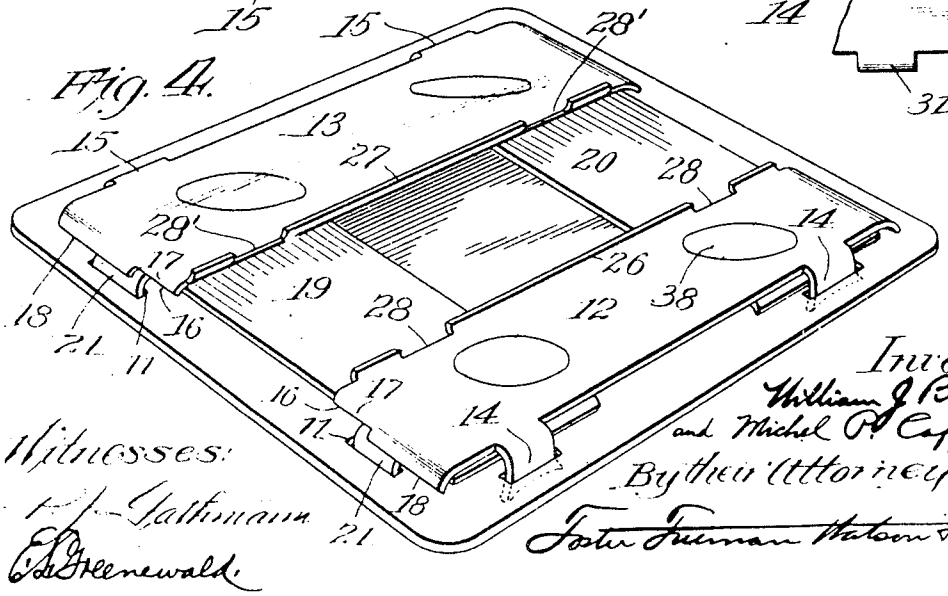


Fig. 4.



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UNITED STATES PATENT OFFICE.

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COLLAPSIBLE OUTLET-BOX.

1,109,391. Specification of Letters Patent. Patented Sept. 1, 1914.

Application filed August 15, 1912. Serial No. 715,288.

To all whom it may concern:

Be it known that we, WILLIAM J. BILLINGS and MICHEL P. CAFFE, citizens of the United States, and residents of New York, county and State of New York, have invented certain new and useful Improvements in Collapsible Outlet-Boxes, of which the following is a specification.

This invention relates to improvements in collapsible boxes and more particularly to a collapsible outlet box, junction box, or switch box in which electric wires are brought to a junction.

It is one of the objects of this invention to construct a simple and inexpensive outlet or junction box which may be folded flat after the parts comprising the bottom and sides are assembled, and without the necessity of detaching the parts.

A further object is to provide a construction which will be economical in material, readily assembled and require a minimum of time to set up for use.

The above and other objects will appear from the following construction taken in connection with the drawings in which—

Figure 1 is a perspective view of the box as set up, the cover being removed. Fig. 2 is a bottom view of the same. Fig. 3 is a side view of the same, with the cover in position. Fig. 4 is a perspective view of the box as it appears when folded. Fig. 5 is a view of a portion of the cover.

The several members comprising the box are formed from any suitable material, preferably resilient sheet metal. Referring to the drawing the rectangular bottom 10 is stamped or otherwise formed from a sheet of metal and two slots 11 are cut through the metal adjacent each of the edges of the bottom. The lower edges of the oppositely disposed side sections 12 and 13 are provided with lugs 14, 14 and 15, 15 which extend through slots 11 along opposite edges of the bottom 10. The lugs 14, 14 and 15, 15 are bent around intermediate their ends and the outer end portions thereof are disposed at right angles to the sides 12 and 13 respectively. At its opposite ends each side section 12 and 13 is curved inwardly and is recessed downwardly from the upper edge as at 16, leaving a slightly curved end portion 17 and a longer curved end portion 18. Other side sections 19 and 20 are also stamped from sheet metal and formed with lugs 21 and 22 depending from the lower edge thereof, and projecting into the other slots 11 along edges at right angles to sections 12 and 13. The lugs 21 and 22 are also bent to be disposed at right angles to the side sections to which they are attached, as in the case of sections 12 and 13. When the sides and bottom are assembled, the ends of the lugs are slightly broadened or enlarged as is shown, so that they will form interlocking hinges for pivotally connecting the side sections to the bottom. As is indicated the ends of the lugs are cutaway in a curved form and the pointed shanks are spread apart to form the enlarged ends and prevent release of the side members from the bottom. At its ends each of the sides 19 and 20 is recessed from the lower edge as at 23 leaving a projecting portion 24 at each end corresponding to the recess 16 in each side section 12 and 13. As far as recesses and projections are concerned the coöperating ends of the sides are counterparts and will register with one another when the box is set up.

When assembled and collapsed the box proper will appear as in Fig. 4. The slots 11 allow the free working of the hinges or lugs therein, but the enlarged ends of the latter prevent the removal or detachment of the plates comprising the sides. The side members 19 and 20 will lie flush with the bottom 10. The sides 12 and 13 are arranged at right angles to sections 19 and 20, and will overlie the ends of the latter and rest flush thereagainst.

To set the box up the sides 12 and 13 are raised to a vertical position with respect to the bottom 10. When said sections 12 and 13 are in a vertical position the ends of the lugs 14 and 15 will abut against the under side of the bottom 10 and prevent the movement of the side past a vertical position in one direction. The sides 12 and 13 are thus maintained against yielding outwardly only so much as the inherent resiliency of the metal plates will allow, and sides 19 and 20, which with the portions 24, 24 at their ends fit closely between the sides 12 and 13, may be raised and swung about their hinged connections 21 and 22 with slots 11. As soon as the sides 19 and 20 assume a nearly upright position the fit will become tighter on account of the curved portions at the ends of sides 12 and 13. By slight pressure, however, they may be forced outwardly, the sides 12 and 13 yielding slightly to permit them to pass, said sides 12 and 13 spring-

ing back when projections 24, 24 pass the inwardly curved portions 17 and register with the cutaway parts 16. The sides 19 and 20 are prevented from further movement outwardly by projections 18 against which they abut and also by reason of the fact that the right angled portions of hinges 21 and 22 engage against the lower face of the bottom section in a similar manner to hinges 14 and 15. The upper edges of the side sections 12 and 13 are turned outwardly as at 26 and 27, and recesses 28 and 28′ are cut into the said edges to receive downwardly depending lips 30 and 30′ formed integral with the top section 32. The upper edges of side sections 19 and 20 are provided with the recesses 29 and 29′ which receive lugs 31 and 31′ formed along opposite edges of the cover and extending downwardly therefrom at an angle of approximately 35°. Upon setting the cover on the box the lugs along the edges of the cover interlock with the recesses and act somewhat as a clutch, preventing the side sections from spreading outwardly and holding the cover in place. The top section 32 fits between the outwardly turned edges 26 and 27 and is held in place partly by the inter-engagement of lips 30 and 30′ with recesses 28 and 28′ and by screws 33 and 34, which pass through holes at the opposite corners of the cover and have their threaded ends engaging in corresponding screw-threaded holes 35 and 36 in the bottom 10. The cover has a central opening therein and a neck section 37 surrounding the same. It will be evident of course that other types of covers now in general use may be employed. The usual or any preferred form of outlets may be provided in the sides and bottom, as designated at 38.

It will be seen that a very simple outlet box has been provided, and one which will effect a considerable convenience and saving in storing, handling and shipping, as it takes up a minimum amount of room when collapsed. There is no waste of material in the construction of the same and with the interlocking arrangement as provided, the box is always assembled and ready to be set up in an instant as the parts cannot get out of order.

As numerous changes coming within the scope of the invention will suggest themselves we do not wish to be limited to the exact details as shown and described.

Having thus described the invention, what is claimed is:

1. A collapsible metal outlet box comprising in combination a bottom having slots therein and sides for the box having projections adjacent the lower edges thereof adapted to extend through the slots and formed to pivotally connect said sides with the bottom and prevent the movement of said sides outwardly past a vertical position.

2. A metallic collapsible outlet box having in combination a bottom section provided with a slot adjacent its edge, a side section and means for pivotally and interlockingly connecting the side section to the bottom section comprising a projection on the side section extending through the slot, said projection having the end thereof enlarged to prevent its withdrawal from the slot.

3. A collapsible metallic outlet box having in combination a bottom section provided with slots adjacent its perimeter, side sections and projections on said side sections extending through the slots, said projections being enlarged at their ends to prevent the detachment of the sides from the bottom and also being bent so that they will abut against the bottom section and prevent the outward movement of the side sections past a vertical position with relation to the bottom.

4. A collapsible outlet box having in combination a rectangular bottom section provided with slots along its edges, four side sections, means for pivotally and interlockingly connecting the side sections to the bottom section comprising integral projections on the side sections extending through the slots in the bottom, said projections being bent around to abut against the bottom section when the sides are upright and limit the outward movement thereof, said projections also being broadened at their ends to prevent their withdrawal through the slots, the ends of two oppositely disposed side sections being curved inwardly, the two remaining side sections being movable between said two oppositely disposed side sections and adapted to be forced past the inwardly curved ends of the latter, and means at the ends of each of the side sections adapted to releasably interlock the sides, said side sections being foldable inwardly to lie substantially parallel to the bottom.

5. A collapsible box comprising a bottom, side sections, projections connecting the side sections to the bottom, said projections being broadened at their ends to lock the parts together, a cover, and means for connecting the cover to the side sections.

6. In a collapsible box, the combination of a bottom part, a side part, and means for connecting the side part to the bottom part comprising a slot in one of said parts and a lug at the edge of the other part, said lug projecting through said slot and being broadened adjacent its end only to provide an interlocking connection between the parts.

7. The combination with a metal plate provided with a slot, of a second metal plate having a lug formed to pass through said slot and broadened at its end only to exceed

one of the dimensions of the slot, the lug being freely movable in the slot between said broadened end and its attached end.

8. A collapsible box comprising a bottom, side sections hinged to the bottom and foldable toward each other to lie flush thereagainst, other side sections, and hinged connections between the bottom and said other side sections constructed to permit the latter to fold toward each other and rise slightly and bodily so as to lie folded flush against said first mentioned side sections and still retain their connected relation to the bottom.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM J. BILLINGS.
MICHEL P. CAFFE.

Witnesses:
DAVID STRAUSS,
ABRAHAM SANDERS.