O. H. HOLDRIDGE.

FOLDING BOX.

APPLICATION FILED APR. 22, 1911.

999,224.

Patented Aug. 1, 1911.

2 SHEETS—SHEET 1.

FIG. 1.

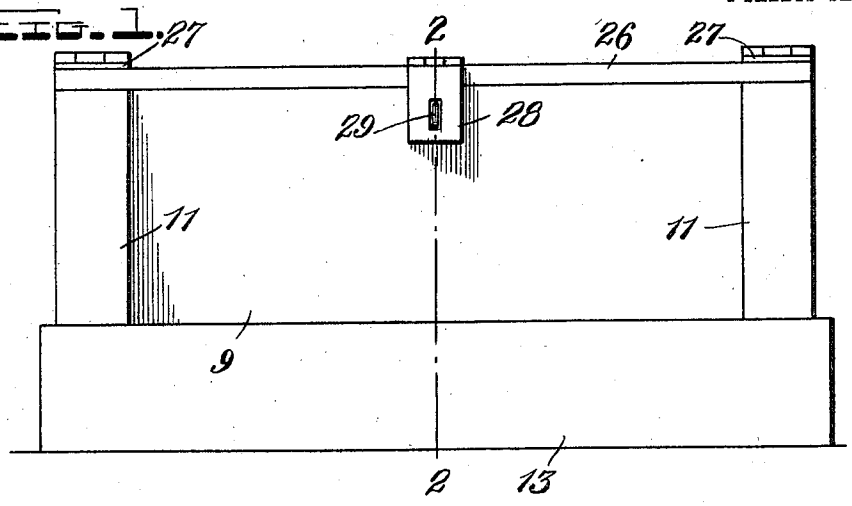


FIG. 2.

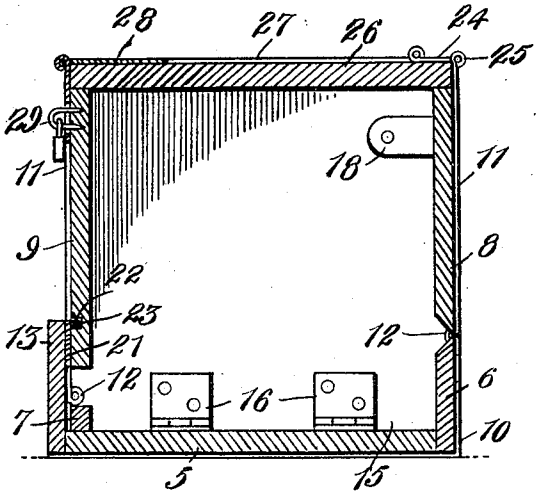
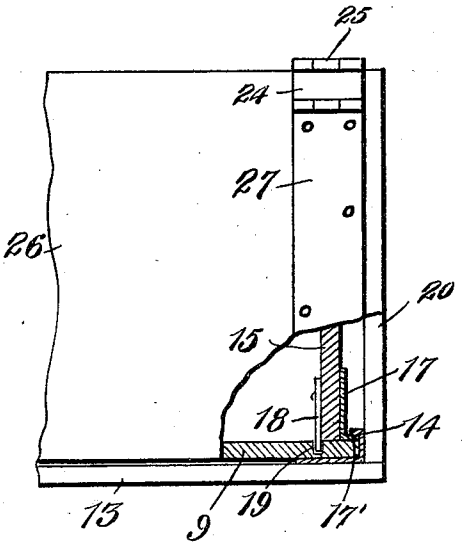


FIG. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

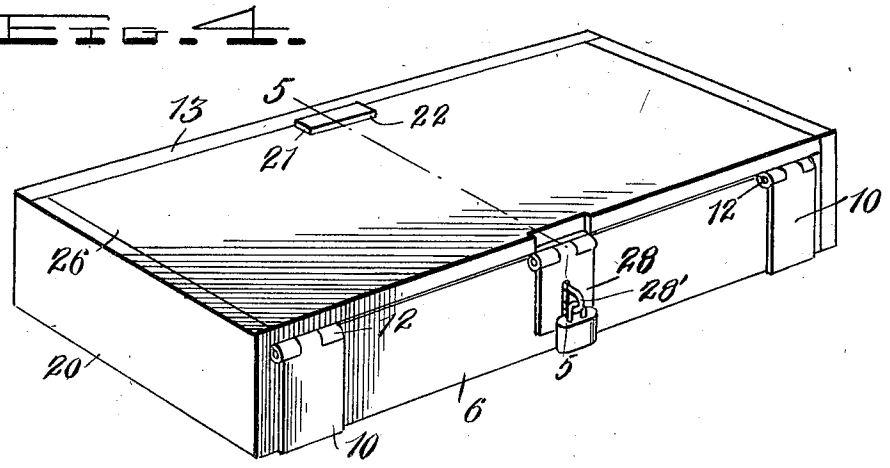


Fig. 5.

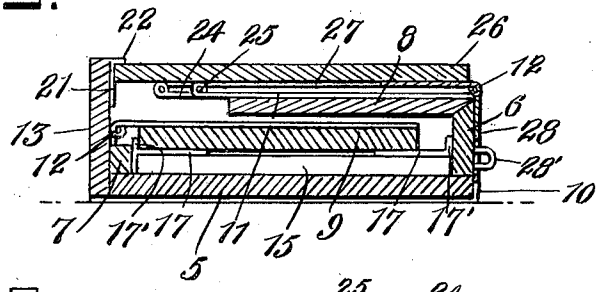
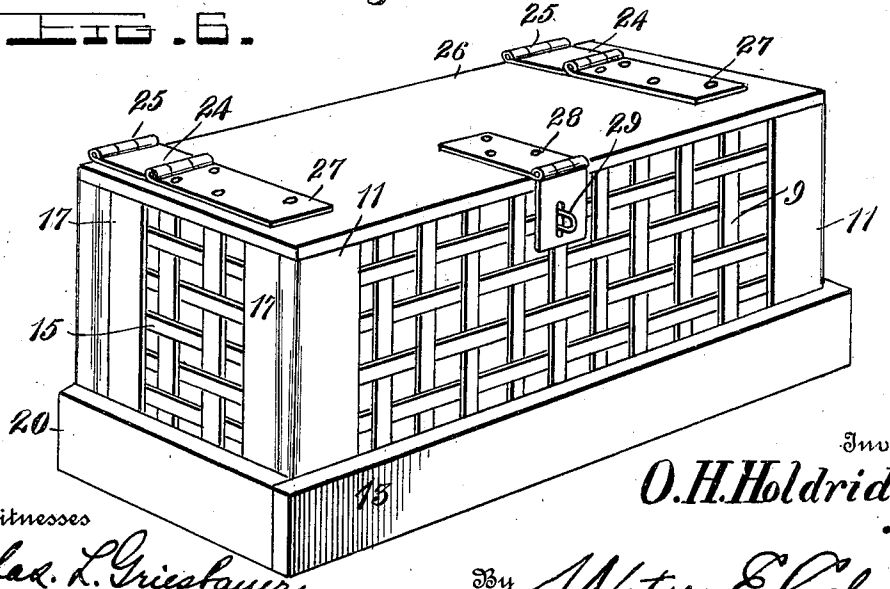


Fig. 6.



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UNITED STATES PATENT OFFICE.

ORRY H. HOLDRIDGE, OF TIDIOUTE, PENNSYLVANIA.

FOLDING BOX.

999,224. Specification of Letters Patent. Patented Aug. 1, 1911.

Application filed April 22, 1911. Serial No. 622,705.

To all whom it may concern:

Be it known that I, ORRY H. HOLDRIDGE, a citizen of the United States, residing at Tidioute, in the county of Warren and State of Pennsylvania, have invented certain new and useful Improvements in Folding Boxes, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to folding boxes or crates and has for its object to provide a device of this character of extremely simple construction which may be easily, quickly and compactly folded for convenience in transportation.

Another object of the invention resides in the provision of improved means for mounting the sides and ends of the box upon the bottom thereof, and means for rigidly connecting and supporting the same when the box or crate is set up.

A further object of the invention is to provide a box consisting of a bottom having side and end walls, movable side members mounted upon said side walls, and end members hinged to the bottom of the box, a top and a double hinge connecting the same to one of the side members, one of the side walls of the bottom of the box having a retaining plate secured thereto adapted to engage over the hinged edge of the top when the box is folded to retain the parts in their folded positions.

With the above and other objects in view, the invention consists of the novel features of construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the box showing the same set up in position for use; Fig. 2 is a section taken on the line 2—2 of Fig. 1; Fig. 3 is a fragmentary top plan view partly in section; Fig. 4 is a perspective view of the box folded; Fig. 5 is a section taken on the line 5—5 of Fig. 4; and Fig. 6 is a perspective view of a box having reticulated side and end walls.

Referring in detail to the drawings 5 designates the bottom of the box, to which at its longitudinal edges, the side strips or walls 6 and 7 are nailed, screwed, or otherwise rigidly secured. It will be noted that the strip 6 is of greater height than the other side strip 7 and upon the upper edges of these side strips, the side members 8 and 9 respectively are movably mounted. To this end the metallic straps 10 are secured to the under side of the bottom 5 of the box at each end thereof and have their ends vertically disposed upon the outer faces of the strips 6 and 7. The extremities of these straps project slightly above the upper edges of the side strips and have a hinge knuckle formed thereon which is adapted to be received between the opposed ends of spaced knuckles formed on the lower ends of the metal straps 11 which are secured to each end of the side members 8 and 9. Suitable pintles connect these knuckles thereby forming the hinges 12.

A short vertical longitudinal wall 13 is secured to the outer face of the side strip 7 and extends above the same. This wall is also of greater height than the side strip 6 and limits the outward movement of the side member 9. The metal straps 11 which are secured to the ends of the side members 8 and 9 have one of their longitudinal edges bent around the ends of said members and spaced from the inner faces thereof as indicated at 14. The end members 15 of the box are hinged to the bottom thereof as at 16 and fold inwardly upon said bottom. To the outer faces of these members at their opposite edges the plates 17 are secured and are provided with the flanges 17′ to engage between the spaced edges 14 of the plates 11 and the inner faces of the side members 8 and 9. Upon the inner faces of the end members 15 and at opposite side edges of the respective members, a latch plate 18 is pivoted. The free end of this latch plate is adapted to engage in a notch or recess 19 which is provided in the inner faces of the side members 8 and 9 at their opposite ends. By providing these latch plates, it will be obvious that when the box is set up, a very rigid and substantial structure is obtained. To the ends of the bottom 5 of the box the vertical end walls 20 are secured, said walls being of the same height as the side wall 13 above referred to. To this side wall intermediate of its ends and to the inner face thereof, a holding or retaining plate 21 is secured, said plate having a flange 22 formed on its upper end. This flange, when the box is set up engages in a longitudinal groove or recess 23 in the outer face of the side member 9. The particular purpose of this retaining plate will more fully appear from the following description.

The metal straps 11 project beyond the free edges of the side member 8 and to the same the short plates 24 are hingedly connected as indicated at 25. The other ends of said plates are hinged to the metal straps 27 secured to opposite ends of the top 26. By providing this double hinge connection with the top and the side member 8, the top 26 may be easily and quickly moved into its proper position when the box is folded.

To fold the box, the latch plates 18 on the ends thereof are disengaged from the side members and said end members are forced inwardly and downwardly upon the bottom of the box. The side member 9 is then folded inwardly upon the end members. It will be observed that the hinged edge of this side member is cut away or spaced sufficiently from the side strip 7 so that, when said member is folded the hinged edge thereof is disposed within the flanges 17′ of the plates 17 which are carried by the end members. The other of the side members 8 is now folded inwardly and downwardly, and the top 26 is folded outwardly and downwardly upon said side member at the hinge 25. The hinged edge of the top is now lifted and moved over and beneath the flange 22 on the retaining plate 21, the plates 24 permitting of such movement. It will be observed from reference to Fig. 4 that when so disposed the top 26 lies in a plane flush with the upper edge of the side wall 13. To the free edge of the top a suitable hasp plate 28 is hinged and is adapted to receive a staple 28′ fixed in the side strip 6 to which a padlock may be connected. In this manner, it will be seen that the parts are all very compactly folded and the box also presents a neat appearance. As the retaining plate 21 prevents the top from being lifted at its free edge, when the box is locked after being folded, it will be impossible to utilize the same for commercial purposes by parties without the proper authority. The side member 8 is also provided with a staple 29 adjacent to its upper edge to receive the hasp 27 when the box is set up. If partitions are used to divide the box into several compartments, these may be placed between the side members 8 and 9 when the box is folded, there being ample room to contain the same and still permit of the top being moved to a position beneath the flange of the retaining plate 21.

In Fig. 6 of the drawings I have illustrated a box having reticulated side and end members. These side and end members are preferably formed of metal straps of any desired width which may be interwoven or simply arranged upon each other in two angularly disposed series and riveted or otherwise secured together. The straps 11 and the plate 16 provide binding elements which are secured to the strips running in opposite directions. In this manner a mesh or open-work structure is provided so as to allow of the free entrance of air into the box, thereby maintaining a sanitary condition of the same.

From the foregoing it is believed that the construction and manner in which my improved box is adapted to be folded or set up into position for use, will be readily understood. The box is comparatively simple in construction, and as it may be readily folded into an extremely small compass, it will be obvious that a large number of boxes may be packed in a very restricted space thereby providing an article of great convenience in transportation. The box is also very strong rigid and durable when set up and in use. Owing to the very few elements employed in the construction it will further be seen that the cost of manufacture is comparatively small.

While I have shown and described the preferred construction and arrangement of the various parts, it will be understood that the invention is susceptible of considerable modification without departing from the essential feature or sacrificing any of the advantages of the invention.

Having thus described the invention what is claimed is:—

1. A folding box comprising a bottom member, side strips rigidly secured to the longitudinal edges of the bottom member, side members hingedly mounted upon said strips, end members hingedly mounted upon said bottom member and foldable inwardly upon the same, interlocking means upon said side and end members to rigidly connect the same when the box is set up, a longitudinal wall secured to one of said strips, walls secured to the bottom member, said side members being adapted to be folded inwardly upon the bottom members, a top member, a double hinge connecting said top member to one of the side members, a retaining plate secured to said longitudinal wall to engage the hinged edge of said top member, and means for securing the free edge of said top member to one of said side strips.

2. A folding box comprising a bottom, side strips secured to the longitudinal edges of said bottom, side members hingedly mounted upon the upper edges of said strips, end members hingedly mounted upon the bottom member and foldable inwardly thereon, plates secured to the ends of the side members and spaced from the inner faces thereof, one of said side members at its hinged edge being cut away and spaced from the longitudinal strip, said end members having flanged plates thereon to be received between the plates carried by the side members and the inner faces of said members, said side members being foldable inwardly and downwardly upon the end members, one of said side members being disposed between

the flanges of the plates carried by the end members, a top hingedly connected to the other of the side members and adapted to be disposed upon the outer surface thereof when said side member is folded, said top being adapted to be received between the end walls and lying flush therewith, and means secured to said side walls to engage the hinged edge of the top member and retain the same in its folded position.

3. A folding box comprising a bottom, side strips secured to the longitudinal edges of said bottom, side members hingedly mounted upon said strips, a longitudinal wall secured to one of said strips, end walls secured to the bottom member, end members hingedly mounted upon the bottom member within said walls and adapted to be folded upon the bottom member, said side members being foldable upon the end members, a top having plates hingedly secured thereto at its ends, said plates being hingedly connected at their other ends to one of the side members, said top being foldable upon the outer face of the side member when the box is folded, a retaining plate centrally secured in the longitudinal wall and having a flange on its upper end adapted to engage over the hinged edge of said top, and means for securing the top at its free edge to one of said longitudinal strips, said top lying flush with the upper edges of said side and end walls when the box is folded.

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

ORRY H. HOLDRIDGE.

Witnesses:
M. C. LYDDANE,
E. L. WHITE.