No. 747,175. PATENTED DEC. 15, 1903.

D. L. HILL.

BOX HINGE.

APPLICATION FILED DEC. 5, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

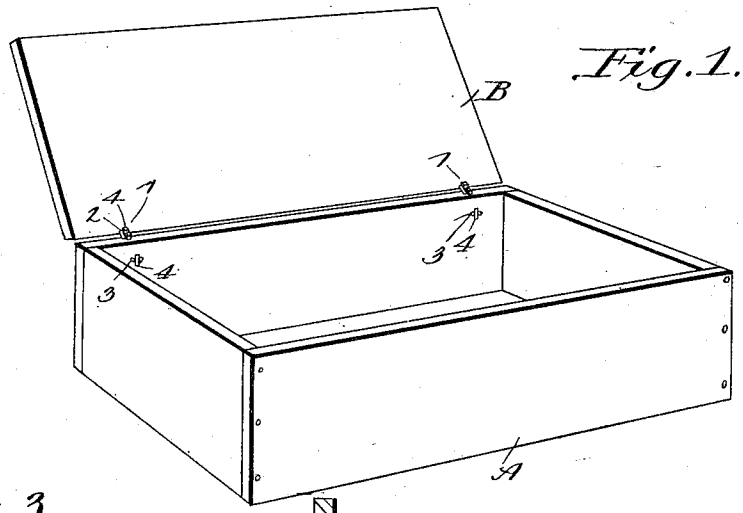


Fig. 3.

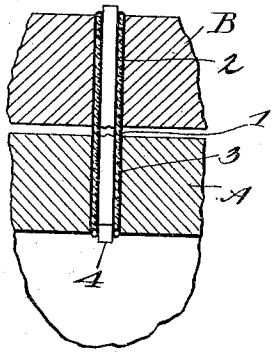


Fig. 4.

Fig. 2.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 5.

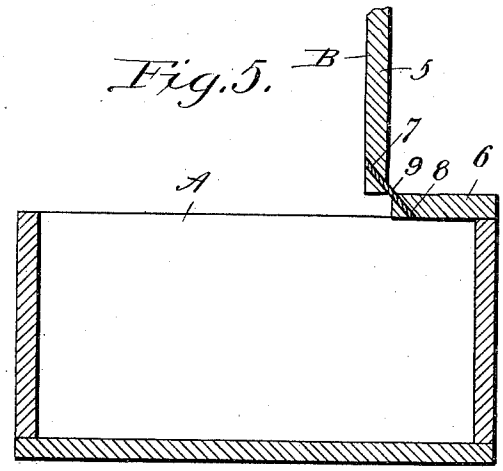


Fig. 6.

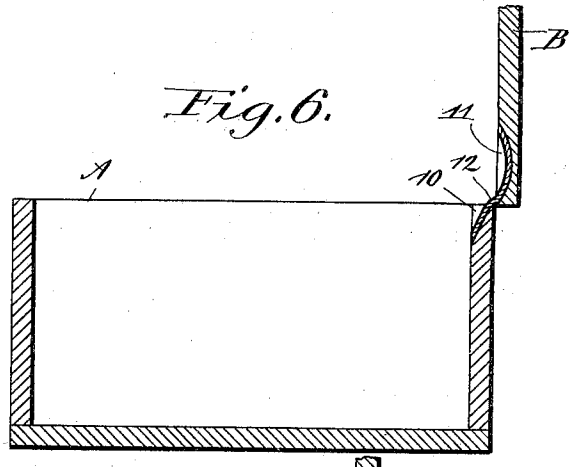
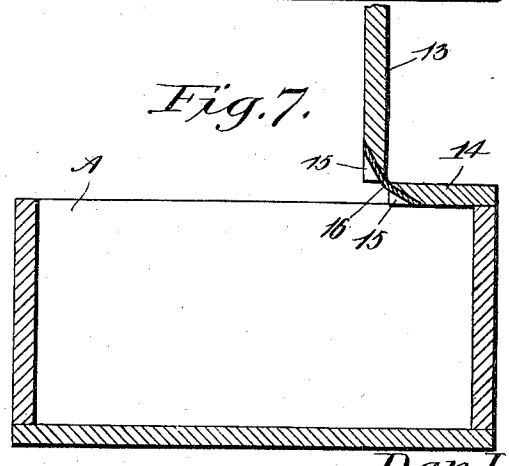


Fig. 7.



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No. 747,175. Patented December 15, 1903.

UNITED STATES PATENT OFFICE.

DAN L. HILL, OF KEENE, NEW HAMPSHIRE.

BOX-HINGE.

SPECIFICATION forming part of Letters Patent No. 747,175, dated December 15, 1903.

Application filed December 5, 1902. Serial No. 134,023. (No model.)

To all whom it may concern:

Be it known that I, DAN L. HILL, a citizen of the United States, residing at Keene, in the county of Cheshire and State of New Hampshire, have invented a new and useful Box-Hinge, of which the following is a specification.

This invention relates to box-hinges.

The object of the invention is in a cheap, simple, thoroughly feasible, and more practical manner than any previously employed to obviate the employment of metal hinges in holding a lid associated with a box and to secure all of the advantages inherent in an ordinary metallic hinge without any of its disadvantages and at a cost greatly below it.

The present invention is designed as an improvement upon a box-hinge for which I secured Letters Patent of the United States under date of October 28, 1902, No. 711,968. The hinge of this patent is constructed of a length of cord or other flexible material, which is seated in grooves in the ends of the box and lid or cover. While thoroughly efficient for the purposes designed, it has been found that there is danger of the hinges becoming damaged in the handling of the box owing to their exposed position, and the purpose of the present invention is to eliminate this objectionable feature and also to secure a more positive assemblage of the hinge with the box and the lid.

The invention consists in providing suitable hinge-receiving seats intermediate of the ends of the box and cover, thereby shielding them from contact with objects in being shipped or from any tendency of being cut or otherwise damaged when the boxes are stood on end and in providing improved means for fastening the hinges in said seats.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a box-hinge, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, there are illustrated five forms of embodiment of the invention, each capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the spirit thereof, and in these drawings—

Figure 1 is a view in perspective of one form of embodiment of the invention. Fig. 2 is a view in vertical transverse section, taken through one of the hinges. Fig. 3 is a view in longitudinal section, taken through one of the hinges, on the line 3 3 of Fig. 2. Figs. 4, 5, 6, and 7 are transverse sections through a box and cover, showing slightly-modified forms of hinges.

Referring to the drawings and to Figs. 1, 2, and 3 thereof, A designates the box, and B the lid or cover. These parts may be of the usual or any preferred construction, and therefore need no further description.

The hinge 1 is constructed of a length of flexible material, preferably of string or the like, and is disposed within seats 2 and 3, formed in the lid and the rear side of the box. In this form of embodiment of the invention the seats are ordinary orifices, made in any preferred manner by a drill or by being punched therein, and the hinge is firmly held within the seats by a wooden plug 4, which is driven into the seats while the lid is in the position shown in Fig. 2, and when the lid is closed the plug is broken, leaving the cord or the like to constitute the hinge. In securing the hinge within the seats the string or other material employed is dipped in a suitable adhesive, such as glue, and is placed across the seat in the outer side of the lid, and the plug is then placed on the string and driven home, carrying a double length of string with it and firmly binding it in the seat. The protruding ends of the plugs are then cut off flush with the outer face of the lid and the inner sides of the back of the box.

In the form of embodiment of invention shown in Fig. 4 the plug or wedge is dispensed with and the hinge is forced into the seats by a plunger operated mechanically or by hand. In positioning the hinges within the seats in this form of the invention the cord or other material employed is dipped or has applied to it a suitable adhesive and is then disposed across the openings on the outer side of the lid, and the plunger then forces a double

thickness of the cord within the seats, and when the plunger is withdrawn the protruding portions of the cord are cut off. In each of the forms so far described the seats are formed in the lid and in the back of the box, one end of the hinge being disposed on the outside of the lid and the other end on the inside of the box; but in the form of embodiment of the invention shown in Fig. 5 the ends of the hinge are both disposed on the under side of the lid. To effect this result, the lid is made in two parts 5 and 6, the latter being secured to the box, and the seats 7 and 8 are formed in the lower portion of the inner side of the section 5 and from the upper side of the section 6. The hinge 9 may be held within the seats by the employment of a wedge or plug, as described in connection with Figs. 1 to 3, or by being glued or otherwise cemented therein, as described in connection with Fig. 4.

In the form of embodiment of the invention shown in Fig. 6 the orifices in the lid and body are dispensed with and in lieu thereof the seats are formed by cutting a kerf or groove 10 in the back of the box and a curved or semicircular kerf or groove 11 in the under side of the lid, and into these kerfs or grooves the hinges 12 are seated, as by being forced therein, and are held by any suitable adhesive material.

In the form of embodiment of the invention shown in Fig. 7 the lid is made in two parts 13 and 14, and the meeting edges of these parts are provided with kerfs or grooves 15, in which the hinge 16 is seated and is held by a suitable adhesive.

In all of the structures shown the seats are disposed intermediate of the ends of the lid or box, preferably in about the same position as that occupied by ordinary metallic hinges. Under ordinary conditions two hinges will be all that will be necessary for an ordinary box; but if found necessary or desirable this number may be increased.

Under the manner shown of hinging the box when the lid is at right angles to the box the hinges will occupy practically a straight line, thereby providing sufficient slack to permit of the lid being closed without exerting draft upon the seated portions of the hinges, which would operate to loosen them.

While it is preferred to employ an adhesive for holding the hinges in the seats, it is to be understood that its employment is not absolutely necessary, as if the hinges be of greater diameters than their seats when forced therein they will by frictional engagement with the walls of the seats be held properly assembled therewith.

Having thus described the invention, what I claim is—

1. The combination with a box and cover each provided intermediate of its ends with hinge-seats adapted to protect hinges located therein, of hinges of flexible material secured within the seats.

2. The combination with a box and cover each provided intermediate of its ends with hinge-seats adapted to protect hinges located therein, of hinges of flexible material disposed within said seats, and separate means for positively securing the hinges within the seats.

3. The combination with a box and cover each provided with hinge-seats, of hinges of flexible material disposed therein, and wedges or plugs for securing the hinges within the seats.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

DAN L. HILL.

Witnesses:
L. W. HOLMES,
EARL G. B. HILL.