No. 729,288. PATENTED MAY 26, 1903.

P. V. DAY.

BOX FASTENER.

APPLICATION FILED OCT. 11, 1902.

NO MODEL.

Fig. 1.

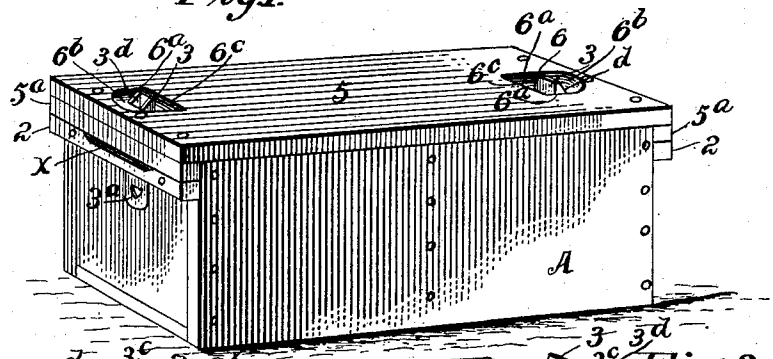


Fig. 2.

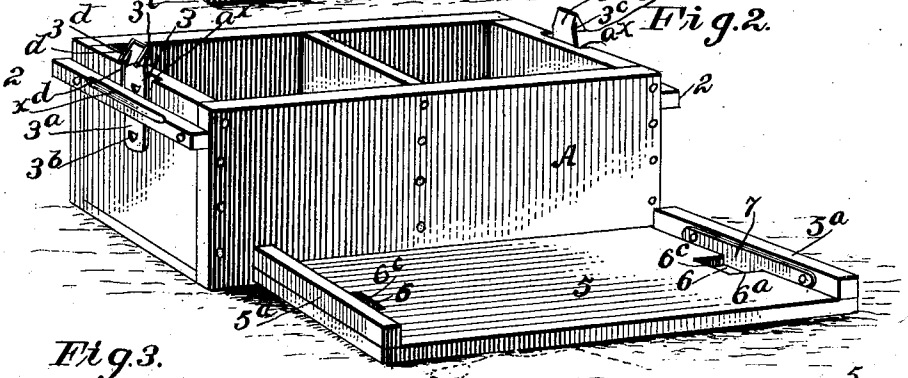


Fig. 3.

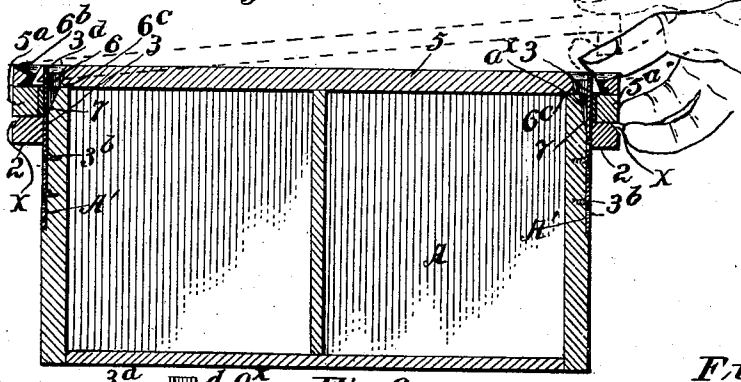


Fig. 4.

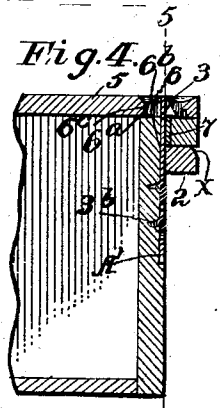


Fig. 6.

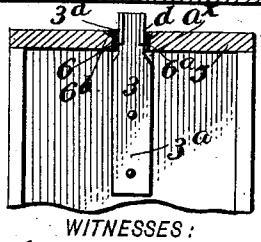


Fig. 5.

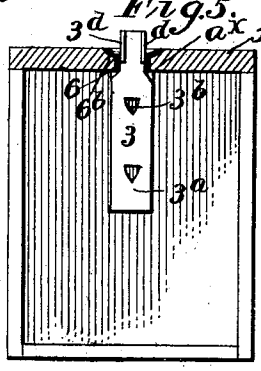
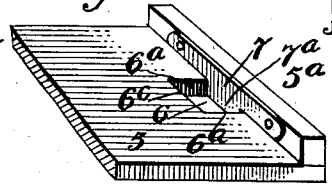


Fig. 7.



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No. 729,288. Patented May 26, 1903.

UNITED STATES PATENT OFFICE.

PETER VINCENT DAY, OF INDEPENDENCE, IOWA.

BOX-FASTENER.

SPECIFICATION forming part of Letters Patent No. 729,288, dated May 26, 1903.

Application filed October 11, 1902. Serial No. 126,818. (No model.)

To all whom it may concern:

Be it known that I, PETER VINCENT DAY, residing at Independence, in the county of Buchanan and State of Iowa, have invented a new and Improved Box-Fastener, of which the following is a specification.

This invention relates to that type of box-fasteners in which is included a detent or catch member on one or both of the cover or box ends arranged to coact with and interlock the member fixedly secured to the opposing portion of the box cover or end; and it primarily seeks to provide a box-fastening means of this kind of a simple and inexpensive nature which is specially arranged to permit of being quickly and conveniently lifted off the box lid or cover with the same motion or hand movement required to release the fastening means.

My invention also seeks to provide a simplified form of box-lid-fastening means in which the detent or fastener is protected from accidental displacement during the ordinary handling and shifting of the box, in which the detent or latch member is so disposed relatively to the cover or top so it can be readily shifted to its interlocking position without the necessity of having access to the end of the box, and which is also capable of such manipulation that the releasing of the latch at one end permits of freely lifting the other end of the box-cover over its fastener or latch device without a special manipulation of the latter.

Subordinately my invention embodies certain novel details of construction and peculiar combination of parts, all of which will hereinafter be fully described, and pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a shipping-box equipped with my improved fastener device. Fig. 2 is a perspective view of the box, the lid being shown removed and in an inverted position. Fig. 3 is a longitudinal section of the box and illustrates the manner in which the cover is manually released by finger tripping the catch at one end and shifting the cover to move its other end to disengage the fastener at said end. Fig. 4 is a longitudinal section of one end of the box, the cover being fastened. Fig. 5 is a cross-section taken on the line 5 5 of Fig. 4. Fig. 6 is a detail section of a modified form of spring-latch, and Fig. 7 is a detail view of one of the combined wear and lock plates.

In the drawings I have illustrated a shipping-box composed of solid ends, sides, bottom, and top; but I desire it understood the body A may be of crate or other form to suit the character of the goods for which the box or crate is provided, and the said box A may have one or more partitions, as shown.

In the preferred construction the box A has a cleat 2 at each end, which serve to add rigidity to the box or crate and also act as a protecting means for the spring latch or detent 3 3, one of which is used at each end of the box. The latches 3 are struck up from stout spring metal, and each has a flat body 3^a, provided with a number of inturned spurs 3^b, also stamped out, which penetrate the box ends, as shown in Fig. 3, and form a convenient means for holding the latches secure on the box ends without the aid of nails, screws, &c. The body 3^a seats in a recess A′ in the box end, which recess extends to the upper edge of the box, and near the upper end the said recess inclines inwardly, as at $a^\times$, to allow for the back bending of the members 3, as will presently be more fully explained. The upper end of the body portion of the latch member 3 in the blank form is slitted, as at 3^c, whereby to permit the opposite edges of the bodies being bent outward at right angles to form lock portions 3^d, and the outer edges of said portion 3^d are tapered upwardly and inwardly, as at *d*, the reason for which will hereinafter be explained.

By providing the body portion of the latch member 3 with inturned spurs the same serve to rigidly hold the latch in place, and the cross-cleats on the box ends prevent the said body portion from working loose or becoming detached from the said box ends. Where my improvements are used on boxes or crates having no cross-cleats, the spurs in the body portion of the latches 3 are dispensed with, and the said body portion is made fast by nails or screws, as shown in Fig. 6.

5 designates the box or crate top, which is shown as a solid member, but may be slatted, apertured, or otherwise formed. At each end the top 5 has a pending cross-cleat 5^a,

and the said cleats 5^a in practice are so disposed as to just lap over the ends of the box and oppose the cross-cleats screwed to the ends thereto. The cleats 5^a serve a twofold purpose—first, they hold the cover from endwise movement, and, secondly, they act as a protecting means for the spring-latches.

At each end the cover 5 has an aperture 6, the outer edges 6^a of which are in the vertical plane of the inner face of the cleats 5^a. (See Fig. 3.) The upper face of the cover adjacent the said aperture is recessed, and the said recesses each include an outer portion 6^b, that inclines down toward the aperture 6, to facilitate bringing the thumb into engagement with the upper end of the latch. (See Fig. 3.) The said recesses also include a rear wall 6^c, which forms a stop against which the upper end of the latch abuts when pushed to its released position.

7 designates a lock-plate, one of said plates being secured to the inner face of each of the cleats 5^a, which plate extends nearly the full length of the pendent cleat to produce a wearing-surface, and at a point with the aperture 6^a the plate 7 has a vertically-extended lip 7^a, which projects up into the said aperture and forms the lock member for coöperating with an opposing latch or detent 3. The opposing surfaces of the cross-cleats are cut out or beveled, as at x, to permit the fingers of the hand to firmly grip under the cross-cleats of the box-cover when it is desired to lift the same off the box.

From the foregoing description, taken in connection with the accompanying drawings, it is believed the advantages of my invention will be readily apparent.

I am aware that box-fasteners have heretofore been provided in which latch members are used at each end of the box adapted to snap into locked engagement when the lip or cover is closed down.

My invention, so far as I know, differentiates from what has heretofore been provided in this line in the peculiar correlation of the fastening devices with the box and cover members, whereby the act of releasing the latch at one end and lifting the cover at that end will effect the unlocking of the cover-lid at the other end.

Another advantage in my construction of fastener is the manner in which the lock devices are protected from danger of displacement and the peculiar formation of the locking-heads and the end apertures in the cover and the lock-plates on the cover-cleats, whereby the cover when closed down on the box will automatically move the detents or latches into a locking position.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A box-fastening means, comprising in combination with the box, and the cover, the latter having a pendent portion, and an aperture in each end in alinement with the inner face of the said pending portions; of a spring-latch mounted on the outer face of each end of the box, said latches each including a locking-head adapted to project through a coincident aperture in the top, and a latch-engaging lock member on the inner face of each of said pendent portions of the top, the aperture in the top being elongated whereby the said top has an endwise movement relatively to the latches when one end thereof is released from its corresponding latch for the purposes described.

2. The combination with the box A, and the removable cover, the latter having a pendent cleat at each end, and provided with an elongated aperture at each end, whose outer walls are in alinement with the inner face of the adjacent pendent cover-cleat, and a lock-plate on the inner face of said cleat, each of said lock-plates having a locking-lip projected up into the covered aperture coincident thereto; of a latch member for each end of the box, secured to the outer face of the said ends, each latch member comprising a body portion having means for fixedly engaging the box ends, and a spring-latch end at the upper end extended above the box and adapted to enter the aperture in the cover, said head having a locking portion for engaging the lip of the latter plate substantially as shown and for the purposes described.

3. The hereinbefore-described improvement in box-fasteners; comprising in combination with the box A, the ends of which have vertical seats in the outer face, the upper portion of said seats being inclined inwardly; a spring latch or detent mounted in each of said seats and each of said detents consisting of a body portion having inwardly-bent spurs and a head portion including outwardly-projecting bevel locking members, said head portion extending past the upper edge of the box cross-cleats on each end of the box and extended over the body portion of the latch members, a cover having a pendent cleat at each end for opposing the said cross-cleat on the box ends, said cover having an elongated aperture at each end the outer edges of which aline the inner faces of the pendent cleats when the cover is closed down, the portions surrounding the upper part of the said apertures including an outwardly-inclining surface, a lock-plate secured to the inner face of each cover-cleat having a locking-lip attached to project into the adjacent aperture in the cover for the purposes described.

PETER VINCENT DAY.

Witnesses:
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E. M. THOMPSON.