No. 664,415. Patented Dec. 25, 1900.

H. C. KNOX.

BOX FASTENER.

(Application filed Sept. 6, 1900.)

(No Model.)

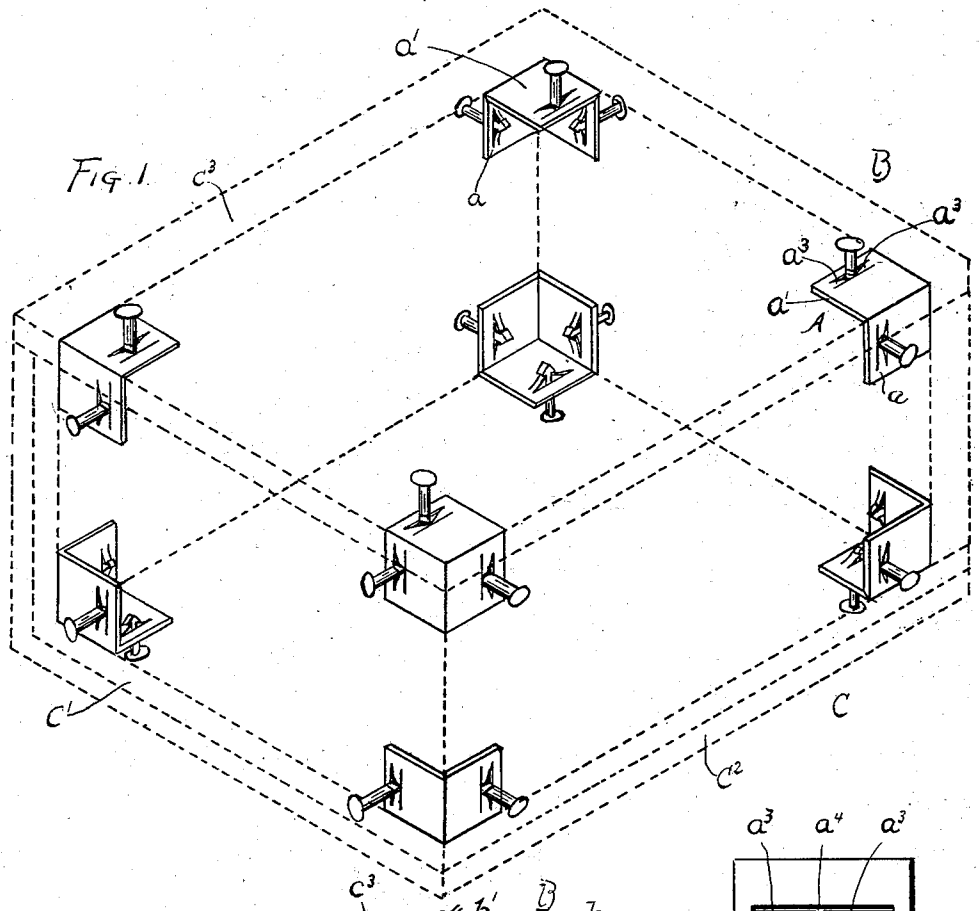

FIG. 1.

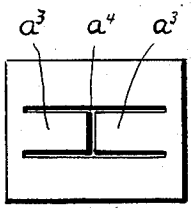

FIG. 3.

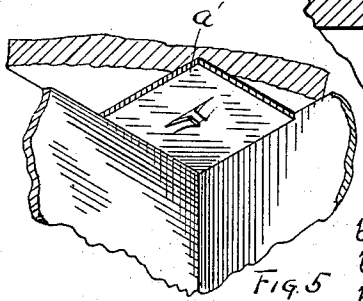

FIG. 5

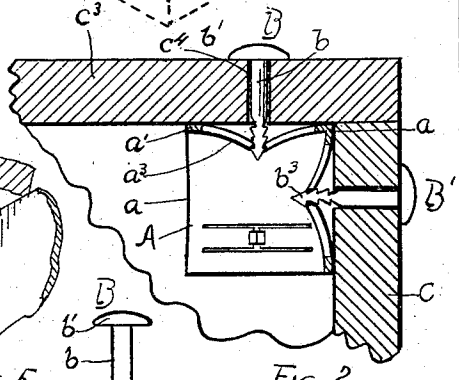

FIG. 2.

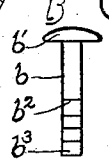

FIG. 4.

WITNESSES.

Leroy L. Perine.

Chas. H. Manning.

INVENTOR.

By Harry C. Knox

Richard H. Manning ATTY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HARRY C. KNOX, OF KANSAS CITY, MISSOURI.

BOX-FASTENER.

SPECIFICATION forming part of Letters Patent No. 664,415, dated December 25, 1900.

Application filed September 6, 1900. Serial No. 29,207. (No model.)

To all whom it may concern:

Be it known that I, HARRY C. KNOX, a citizen of the United States of America, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Box-Fasteners; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

The object of the present invention is to enable the securing device within the box which automatically engages the bolt in a box-fastener to increase the resistance to the power applied to withdraw the bolt.

The invention consists in the novel construction and combination of parts, such as will be first fully described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a view in perspective, showing the novel box-fastener applied to a box, the parts of which box are in dotted lines. Fig 2 is a sectional view of a portion of the top and side and narrow end of the box, showing one of the corner-brackets and the non-rotating fastening-bolts to the top, sides, and ends of the box. Fig. 3 is a plan view of the top of the bracket, and Fig. 4 is a detail view of the bolt. Fig. 5 is a broken detail view of the end of the box, showing the top of the bracket forming an integral part thereof.

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

Referring to the drawings, A represents the bracket which is employed in the fastening of the parts of the box together and which consists of the side plates $a\,a$, rectangular in form and extending at right angles to each other, and a top plate a', also rectangular in form and extending from one side a to the other side, with which sides the top is rigidly connected. In the top plate a' are separate bolt-fastening catches or clips $a^3\,a^3$, which are integral with the said plate. Said catches are formed by the separation of a narrow strip from the top a' of the bracket, which is accomplished by cutting through said top a' in two parallel lines a short distance apart. The strip is then cut or separated transversely at the point a^4, intermediate its length, so as to form two catches or short strips $a^3\,a^3$, which are depressed by the bolt and the free ends of said strips inclined or beveled to an edge. In the sides $a\,a$ of the bracket are clips $a^3\,a^3$, which are formed in the same manner as in the top a'.

B represents the non-rotating fastening-bolt, consisting of the shank b and head b'. In the lower end of the shank and b upon opposite sides are ratchet-teeth b^2, extending in a transverse direction thereto and the width of the shank. At the extreme lower end of the bolt the sides of the bolt are wedge-shaped or inclined downwardly to a point, as at b^3.

C represents the box, which consists of the sides $c\,c$, ends $c'\,c'$, bottom c^2, and top or cover c^3. In the cover c^3 of the box in a vertical line with the point of separation a^4 of the catches $a^3\,a^3$ of the corner-bracket A is an opening or perforation c^4, adapted to receive the shank b of the bolt B. In the ends and sides of the box and extending toward the catches $a^3\,a^3$ are similar openings, as described, of the perforations or opening c^4.

In the assemblage of the parts of a box the brackets A are placed within each angle formed by the sides and ends, those employed in the bottom of the box being reversed in position. The shanks b of the bolts B are then inserted within the perforations or openings in the sides and ends, and the wedge-shaped ends b^3, coming into contact with the catches $a^3\,a^3$, force the said catches inwardly in position, the heads of the bolts being brought close against the outer side of the ends and sides of the box and the ends of the catches or clips $a^3\,a^3$ engaging with the teeth or serrations b^2 on the shank of the bolt, thus preventing the withdrawal of the bolt. The top and bottom of the box are then secured to the brackets with bolts B in like manner, thus making the contents of the box inaccessible without breaking the top or sides, and thus preventing unauthorized tampering with the contents of the box. With the novel box-fastener the contents of a box remain sealed, and any power applied to the head of the bolt will be resisted by the clips $a^3\,a^3$, the power tending to draw the clips more firmly against the sides of the bolt.

The fastening device may be applied to any

box and for the securing of boxes with hinged covers.

The top a' of the bracket may be employed without the sides, in which case the top of the bracket may be formed, especially in boxes with metal sides, from an integral part of the sides. The catches a^3 a^3 may be tempered, so as to recoil when bent downwardly in position by the fastening-bolt.

Having fully described my invention, what I now claim as new, and desire to secure by Letters Patent, is—

1. A box having suitable perforations and corner-plates within the box, non-rotating bolts each having a head and a shank provided with ratchet-teeth, and longitudinally-extended spring lips or catches upon said plates, having their free ends inclined to an edge and adapted to engage with the ratchet-teeth upon the shanks of said bolt.

2. A box having suitable perforations and a corner-bracket having a top and a non-rotating bolt having a head, and a shank provided with ratchet-teeth upon opposite sides thereof, said top of the bracket having longitudinally-extended spring lips or catches forming an integral part thereof and the free ends of said strips inclined to an edge.

3. A box having suitable perforations and a corner-bracket having a top and sides extended at right angles to each other and adapted to secure the parts of a box together, non-rotating fastening-bolts each having a head and a shank provided with ratchet-teeth upon opposite sides, and a wedge-shaped lower end, and separate lips or catches integral with the top and sides of said bracket, the free edges of which are inclined to an edge and engage with the teeth on the shanks of said bolts.

HARRY C. KNOX.

Witnesses:
JOHN L. WHEELER,
O. M. VAN DORSTON.