Aug. 14, 1928. 1,680,745

H. D. MORTON

BOX LOCKING DEVICE

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Fig. 1.

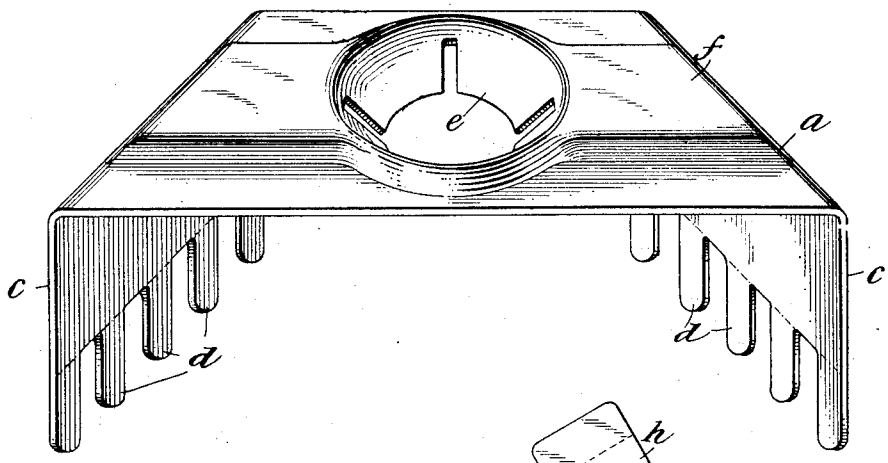


Fig. 2.

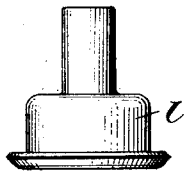


Fig. 3.

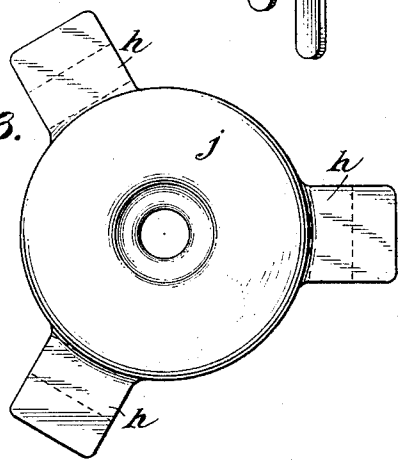
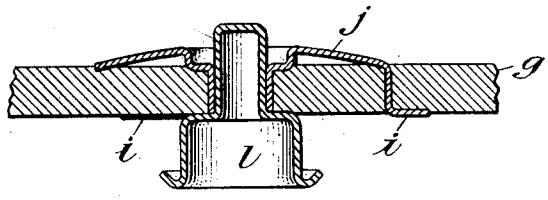


Fig. 4.



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BOX LOCKING DEVICE

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Fig. 5.

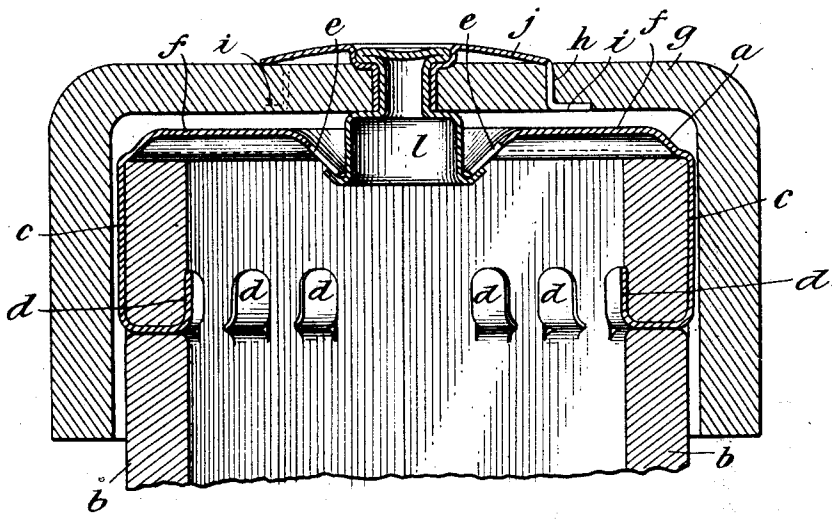
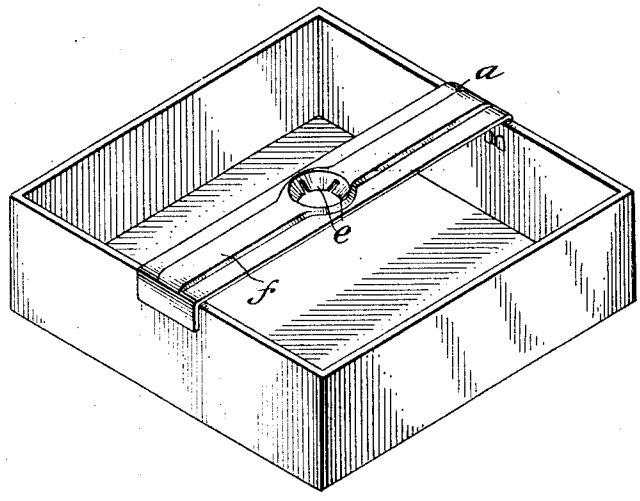


Fig. 6.



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BOX LOCKING DEVICE

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Fig. 7.

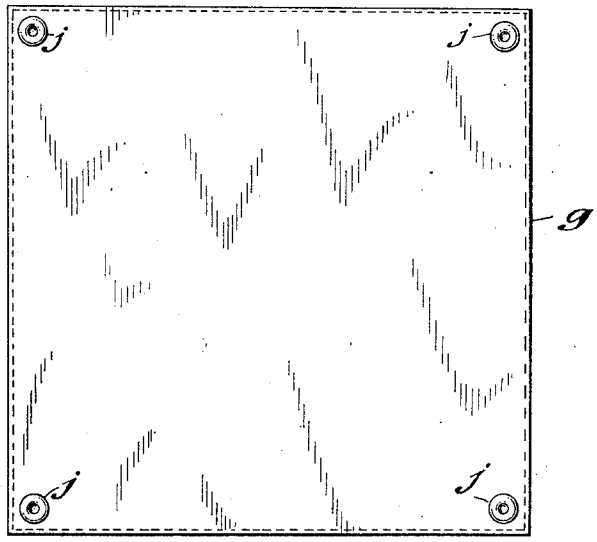
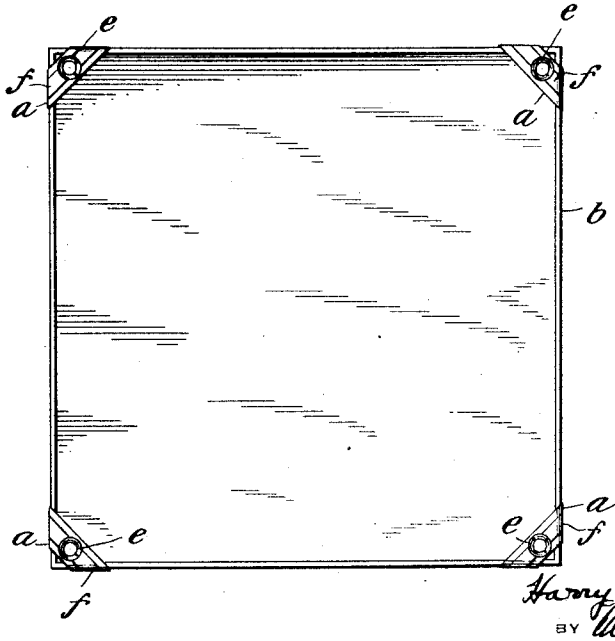


Fig. 8.



INVENTOR.
Harry D. Morton.
BY W. B. Swearton,
His ATTORNEY.

Patented Aug. 14, 1928. 1,680,745

UNITED STATES PATENT OFFICE.

HARRY D. MORTON, OF NEW YORK, N. Y.

BOX-LOCKING DEVICE.

Application filed June 13, 1924. Serial No. 719,764.

The following is a description of a box locking device embodying my invention in the form and manner at present preferred by me; but it will be understood that various modifications and changes may be made without departing from the spirit of my invention and without exceeding the scope of my claims.

My invention will best be understood by reference to the accompanying drawings, in which I have illustrated the preferred form of device embodying my invention, and in which Fig. 1 shows in perspective the female locking portion of the device; Fig. 2 shows in elevation the male locking portion of the device; Fig. 3 is a plan view of a member for attaching the male locking member to a box cover; Fig. 4 is a cross section of a portion of a box cover showing the attaching device installed ready for connecting to the male locking member; Fig. 5 is a vertical cross sectional view of one corner of a box body, a box cover, and the three parts of the device in cross section, the male locking member being permanently connected to the attaching member and being interlocked with the female locking member; Fig. 6 shows in perspective a modified form of the device attached to a small box; Fig. 7 is a top plan view of a telescoping box employing my invention and Fig. 8 is a similar view with the cover of said box removed.

Like reference characters indicate like parts throughout the drawings.

Referring to the drawings, female locking member *a* is mounted near the corner of the telescopic body of box *b* in such a manner as to bridge or span a portion of said corner at the top of the box body. The ends respectively of said female locking member are bent downwardly to contact with the side walls *b*—*b* of the box body—the prongs *d*—*d* being bent inwardly at an angle to the sides, whereby they are adapted to be inserted in cuts or slots through the sides *b*—*b* and clinched inside the box body. Formed in the bridge portion of female locking member *a* are a plurality of spring members *e* converging toward the bottom of box body *b*. In order to add strength and rigidity to the bridge or spanning portion of female locking member *a*, I preferably form in the surface thereof ribs or depressions *f*—*f* of suitable size and shape.

The top wall of cover *g* for the box body is pierced near its corners with a plurality of cuts or slots *h*, so positioned with reference to female locking member *a* that the several parts will register properly. Prongs *i*—*i* of the attaching member *j* are designed and adapted to be inserted in slots *h* and to pass through the top wall of cover *g* and be clinched on the inner side thereof. With the attaching member so positioned, the smaller cylindrical portion of male locking member *l* is inserted in the tubular portion of attaching member *j*, the parts being then spun or riveted together in a manner well known to those skilled in the art. The male locking member *l* is thereby firmly attached to the inner side of box cover *g*. The various parts of the device may be formed of sheet metal.

On large boxes I preferably mount a locking device at each of the four corners. On small boxes the female locking member *a* may be so mounted as to bridge the full width of the body of the box, being located midway between the ends of the box body. In this case, the male locking member *l* is positioned at the geometrical center of the top of cover *g*.

With the locking members attached, the cover is placed in telescopic relation to the box body, in the usual manner. In the course of the downward movement of the cover the male locking member *l* enters the depression in the bridge portion of female locking member *a*, and, near the end of said downward movement, a slight pressure causes the re-entrant portion of said male locking member to outwardly press the spring members *e*—*e* of the female locking member. Further slight pressure carries said re-entrant portion sufficiently below the lower ends of said spring members respectively to permit them to return to their orignal position, thereby effectually locking the box cover to the box body. It will be understood that instead of forming the spring members in the depression of the bridge portion of female locking member *a*, this conical depression may be left unslotted, and the male locking member *l* may be slotted, in which case the spring required to permit the re-entrant portion of the male locking member to pass through the conical depression in the female locking member may be in the prongs of the tubular portion of the

male locking member. It will also be apparent that the spring may be both in such prongs and in the members *e—e*.

In the making of the several parts, I prefer to employ metal which, when formed, will possess considerable strength, such, for example, as sheet steel about .016″ in thickness. The locking device thereby becomes so strong that it is impossible to open the box without extensive mutilation thereof. The invention being intended primarily for use on boxes employed in the shipment of merchandise, the extensive mutilation necessary to permit of opening the box in transit in order to purloin its contents would be at once noticeable—amounting, as it would, to the practical destruction of the box body or cover. Additionally, the bridging of portions of the box body with the metal strip comprising the female locking member *a*, greatly strengthens the container, and thereby further discourages attempts at theft of its contents.

By affecting the interlocking inside the box and at some distance from the edges of the box body and cover, the device becomes safe from tampering, as it is thereby rendered inaccessible with any implement which might be inserted between the body and the cover. Clinching the prongs of female member *a* inside the box body protects this portion of the device from attack; and the attaching member *j* is similarly protected by being clinched inside the box cover. As appears from the drawings, while the male locking member easily engages with the female locking member, it is practically impossible to separate these members once the interlocking has taken place.

The device is simple and inexpensive, and a box equipped with it does not require to be wrapped and tied for shipping, thereby avoiding the expense of paper and twine. Further, because of the fact that the box can be quickly and easily closed and permanently locked, a very considerable saving is effected in labor cost.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A self-locking telescoping box, comprising a body member and a cover member, locking means projecting inwardly from the cover member and co-acting locking means attached to said body member, a portion of the latter locking means spanning two edges of the body member and extending across a portion of adjacent walls thereof and over a portion of the intervening space therebetween.

2. A self-locking telescoping box, comprising a body member and a cover member, locking means projecting inwardly from the cover member and co-acting locking means attached to said body member, a portion of the latter locking means spanning an edge of the body member and extending across a portion of adjacent walls thereof and over a portion of the intervening space therebetween and then extending through said walls into the interior of said body member.

3. A self-locking telescoping box, comprising a body member and a cover member, locking means projecting inwardly from the cover member and co-acting locking means attached to the walls of the body member and spanning the space between adjacent edges of said body member, said locking means being adapted to interlock inside of said box by spring action.

4. A self-locking telescoping box, comprising a body member and a cover member, locking means projecting inwardly from the cover member and co-acting locking means spanning the edges of two walls of the body member, extending along one face of each of said walls, through each of said walls and along the opposite face of each of said walls.

5. A self-locking telescoping box, comprising a body member and a cover member, locking means projecting inwardly from the cover member and co-acting locking means clinched to two walls of the body member and extending over a portion of the intervening space therebetween.

6. A self-locking telescoping box, comprising a body member and a cover member, locking means projecting inwardly from the cover member and co-acting locking means supported by and intermediate adjacent walls of the body member and extending over a portion of the intervening space therebetween in proximity to the corners of said box body.

7. The sub-combination comprising a disc-like member provided with marginal fastening means and a central aperture, a hollow rivet-like member mounted in said central aperture and secured to the first member, said rivet-like member having an obliquely extending flange forming a re-entrant angle with the stem of said rivet-like member, an elongated plate-like member having a central aperture conforming to an inverted truncated-cone, the walls of said cone being yieldable and constructed of spring material and fastening means on the respective ends of said plate-like member.

8. In a self-locking box, the combination comprising a body of polygonal shape, a telescoping cover therefor and a plurality of coacting locking members, one of said members projecting through said cover and the other being secured to said body and spanning a portion of the space between two adjoining walls thereof adjacent the juncture thereof, said last mentioned member having a central aperture and the marginal walls around said aperture being yieldable.

9. The sub-combination comprising a disc-like member provided with marginal fas-

tening means and a central aperture, a hollow rivet-like member mounted in said central aperture and secured to the first member, said rivet-like member having an obliquely extending flange forming a re-entrant angle with the stem of said rivet-like member, an elongated plate-like member having a central aperture conforming to an inverted truncated cone, the walls of said cone being yieldable and constructed of spring material and fastening means on the respective ends of said plate-like member.

10. In a self-locking box, the combination comprising a body of polygonal shape, a telescoping cover therefor and a plurality of coacting locking members, one of said members being secured to said cover and the other being secured to said body and spanning two adjoining walls thereof adjacent the juncture thereof.

11. In a box locking device, a member clinched to a box cover, an intermediate member attached thereto on the inner side of said cover and constructed and arranged to coact with a third member mounted upon a box body, whereby said cover and body are interlocked at a distance from their side walls.

Signed at New York, in the county and State of New York, this 11th day of June, 1924.

HARRY D. MORTON.