(No Model.)

H. B. PLATEN & W. W. BENNETT.

BOX LIFTER.

No. 432,765. Patented July 22, 1890.

Fig: 1.

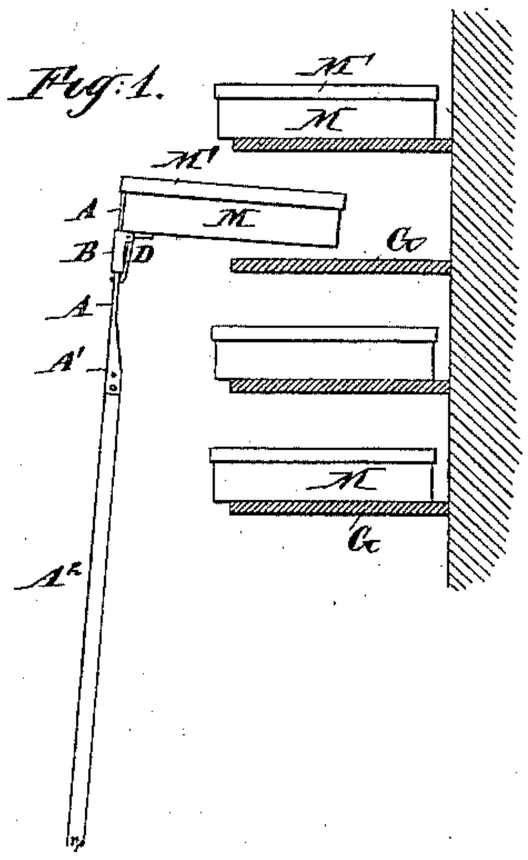


Fig: 2.

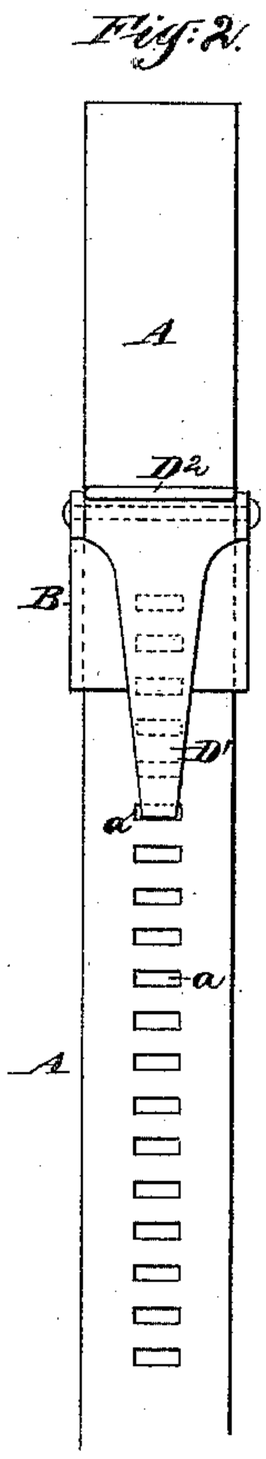


Fig: 3.

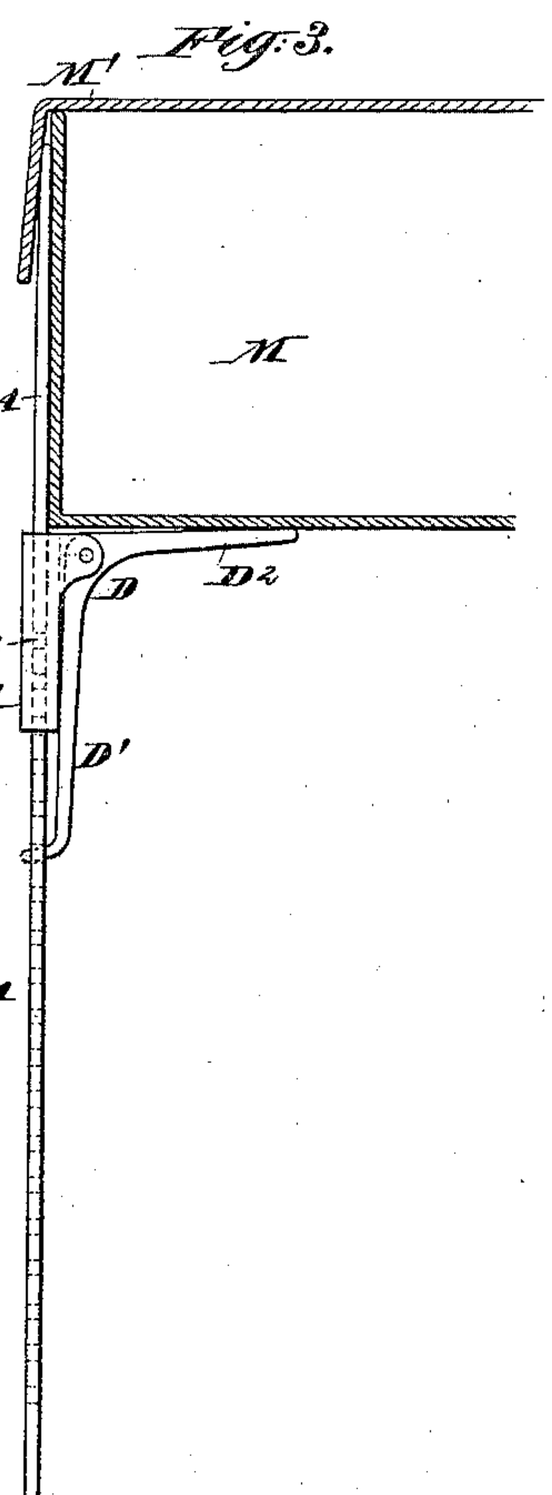


Fig: 4.

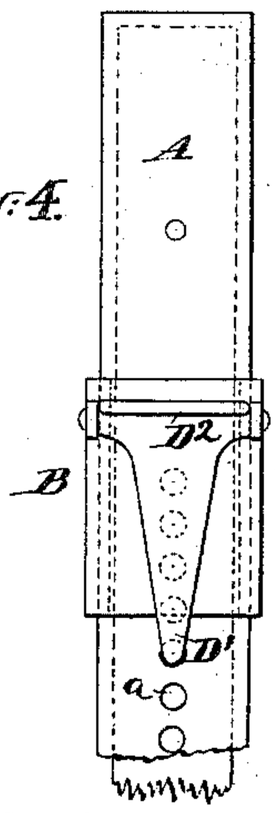


Fig: 6.

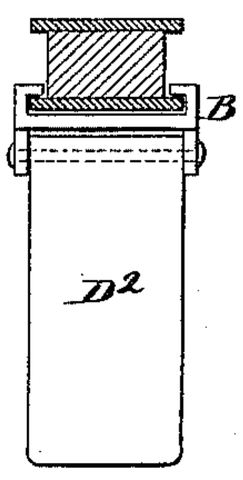
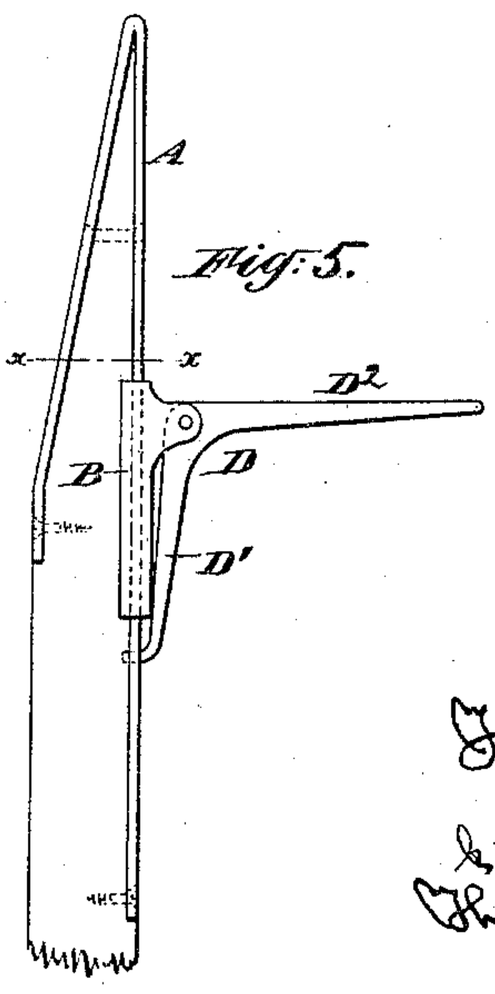


Fig: 5.



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UNITED STATES PATENT OFFICE.

HUGO B. PLATEN AND WILLIAM WESLEY BENNETT, OF SAVANNAH, GEORGIA.

BOX-LIFTER.

SPECIFICATION forming part of Letters Patent No. 432,765, dated July 22, 1890.

Application filed July 17, 1889. Serial No. 317,818. (No model.)

To all whom it may concern:

Be it known that we, HUGO B. PLATEN and WILLIAM WESLEY BENNETT, citizens of the United States, residing in Savannah, in the county of Chatham, in the State of Georgia, have invented a certain new and useful Improvement in Box-Lifters, of which the following is a full and exact description.

The object of the invention is to provide convenient means for taking down and putting up boxes in stores and analogous situations without requiring a step-ladder. It is intended more especially for pasteboard boxes of considerable depth and containing light material, as ruffles, laces, and the like; but it may be used with success for handling boxes relatively shallow and heavily loaded. Our experiments have been mainly with deep boxes containing shoes. It is important that the boxes have covers which overlap the bodies and extend down a little, after the usual fashion of pasteboard boxes. We provide a rod, of wood or other material, of sufficient length and thickness and having one end flattened and adapted to be thrust upward from below into the space between the box and the cover. We equip such rod with a flat horizontal spur a sufficient distance below the upper end. Supposing the box of shoes or other articles to lie with its front end or side flush with the edge of a high shelf on which it rests, or, as is usually practiced, somewhat overhanging such shelf, the operator desiring to take it down reaches up our device and engages the flat upper end between the cover and the body and engages the horizontal spur under the bottom of the body. Now the rod being lifted and drawn forward brings the box, and it may be lowered and disengaged without difficulty, and when ready it may be returned by a reversion of the operation. To disengage our device after the box is again in place on the shelf, the lower end of our rod is moved forward or away from the tier of shelves or is moved to one side, or both these movements are combined, and the upper end being by one or both these movements disengaged from its hold under the edge of the cover, the device is free. If the box is thus liberated with its front too much overhanging beyond the front edge of the shelf, the device may be turned, its edge or back applied against the box and sufficient force applied to push the box back. So if when the box is to be taken down it is found to rest too far inward or back upon the shelf, the device may be applied in the reversed position, with its spur projecting idly forward, so as to be of no effect, and in this position the tip may be engaged under the overhanging edge of the cover and the device drawn forward, bringing the box forward with it. Now our device being reversed, the spur is brought to bear under the bottom, and in concert with the engagement of the tip under the cover lifts the box and allows it to be lowered or transported to any other shelf as required.

In what we esteem the most complete form of the invention we provide for easily shifting the position of what we have here called the "spur," meaning a short thin shelf extending out at about right angles to the rod, shifting it upward to adapt it to serve with shallow boxes and downward to adapt it to serve with deep boxes. We propose sometimes to make the upper end of the device and the spur entirely of metal, while the main rod is simply a square-sectioned rod of wood. We can furnish the metal parts ready to be applied on wooden rods of square or other sections.

The accompanying drawings form a part of this specification and represent several forms in which the invention may be carried out.

Figure 1 is an outline showing on a small scale the manner of using our lifter in connection with a set of shelves. The remaining figures are on a larger scale. Fig. 2 is a face view, and Fig. 3 an edge view, of the upper end of our lifter, and Fig. 4 is a face view, Fig. 5 an edge view, and Fig. 6 a cross-section on the line $x\,x$, of a modification.

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

A is a flat rod of steel, having a row of holes $a\,a$ and a socket A′, the latter adapted to receive a rod of wood A^2, with which it is securely engaged by screws in an obvious manner.

B is a slide of iron or other strong material,

having lips B′, which loosely embrace the edges of the rod A, with liberty to be moved up and down thereon.

D is a bell-crank lever hinged to the slide B, its lower arm D′ having a tip which is turned squarely inward and adapted to engage in any one of the holes in the series *a*. The upper arm of this lever (marked D^2) serves as the spur above referred to, being, by its form and position when adjusted for use, adapted to be thrust under the body of a box and to support it vertically, while the top of the rod A stands just within the cover and holds the box against being tilted. The two together hold the box stiffly by one edge and allow it to be lifted and drawn out from its place on a shelf and lowered and raised as required.

To engage our device with a box, the top is thrust up into the narrow space between the hanging rim of the cover and the top of the box-body. If the joint is not sufficiently open, the material of the body or of the cover, or of both, can always yield to make room for the thin flat top of the rod A, and the spur D^2 is thrust under the box-body, between such body and the shelf on which it rests. In case the box overhangs beyond the front edge of the shelf this spur is set in position without effort. In any case it is not difficult. Now the box is lifted, drawn forward, lowered, disengaged, opened, and used as required, and when it is to be replaced it is returned to the shelf by a reversion of the movements.

To adapt the device to handle deeper boxes it is important to lower the spur D^2 relatively to the rod A. This is done at pleasure by simply turning the bell-crank lever D by raising the spur D^2 so much as will detach the arm D′ from its hole *a*. Then the slide B and its attached lever D may be lowered, and the bent end of the arm D′ is engaged in the next lower hole *a*, or in any of the holes *a* which may be preferred, correspondingly changing the height at which the spur D^2 stands adjusted on the rod A. The adjustment is easy and instantaneous.

Figs. 4, 5, and 6 show a modification in which there is less metal. In this a rod of ash or other suitable wood is provided of sufficient length with its upper end tapered wedgewise. One of the faces of this wedge part is faced with an iron plate which is wider than the rod and projects on each side. This plate is folded upon itself and extends over the top and down the back and is secured by rivets or screws. The front part being wider than the rod presents its edges to serve as means for engaging with the slide. The slide may be held by any other efficient means.

The box to be lifted by our device is marked M. The shelf is marked G, and the box-cover M′.

Further modifications may be made without departing from the principle or sacrificing the advantages of the invention.

We propose to prepare the metal parts as an article of trade adapted for convenient shipment and allow the purchaser to add as long or short a pole or rod A^2 as may be required for the special situation in which it is to be used. Obviously the rod A^2 may be made in lengths applied together, like the sections of a fishing-pole, and thus shipped with the metal parts, if preferred. It is well to locate the holes *a a* to exactly match the several depths of the usual sizes of boxes; but this is not material.

Two or more boxes lying one upon another may be taken down or put up together by applying our device to the lowest.

We claim as our invention—

1. The thin-ended rod A, combined with a slide B, sleeved on said rod, and a bell-crank lever D, carried by the said slide, with its lower end constructed to engage holding means of the rod, substantially as specified.

2. The thin-ended rod A, apertured, as shown, combined with the slide B, sleeved on said rod, and a bell-crank lever fulcrumed at its elbow on said slide, with the end of its lower arm bent square inward and constructed to engage the apertures in the rod A, substantially as shown and described.

In testimony whereof we have hereunto set our hands, at Savannah, Georgia, this 12th day of June, 1889, in the presence of two subscribing witnesses.

HUGO B. PLATEN.
WILLIAM WESLEY BENNETT.

Witnesses:
H. F. MOLINA,
EMILE A. GRADOT.