A. E. GADLEY.

BOX LIFTING DEVICE.

APPLICATION FILED MAR. 21, 1913.

1,111,893. Patented Sept. 29, 1914.

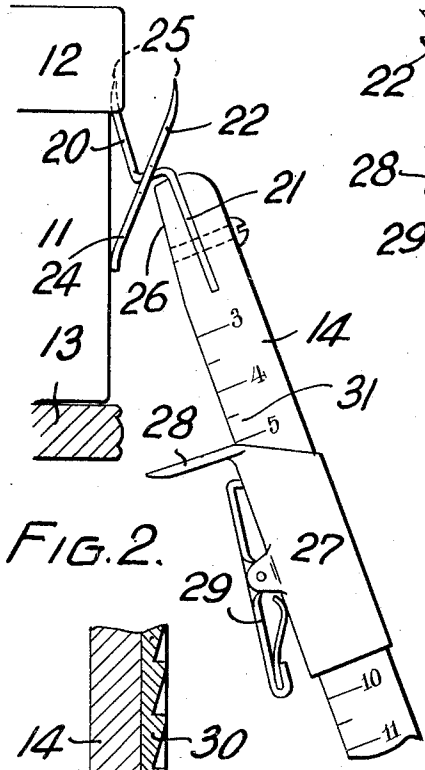


FIG. 2.

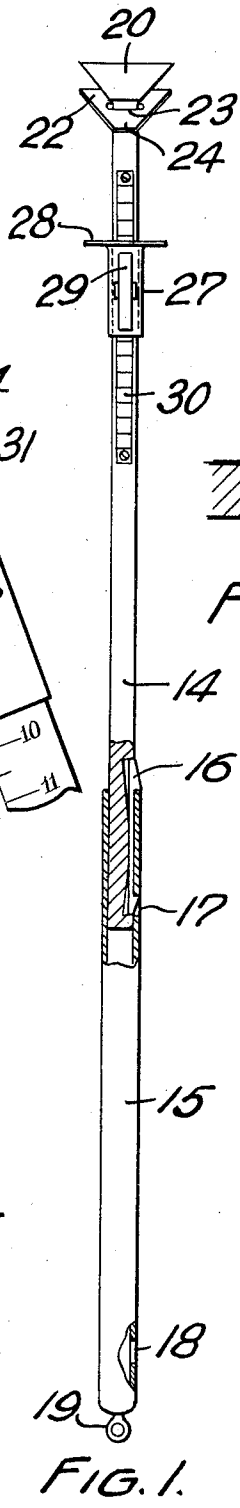


FIG. 1.

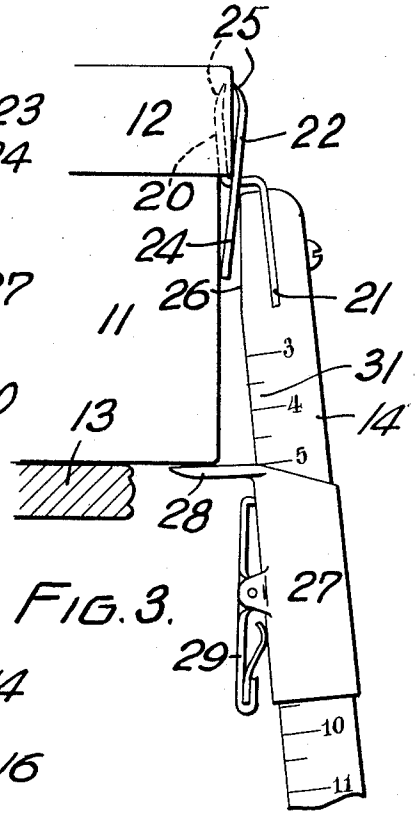


FIG. 3.

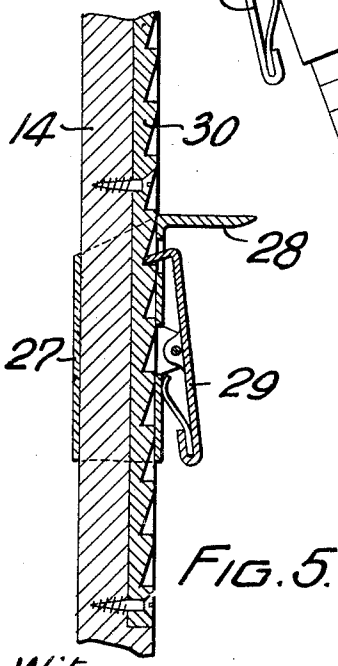


FIG. 5.

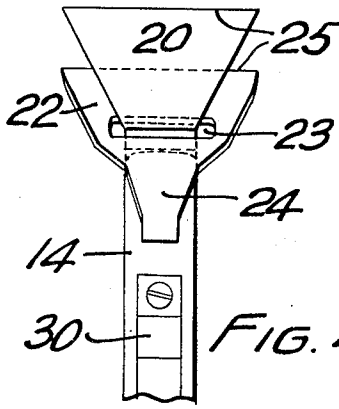


FIG. 4.

Witnesses

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BOX-LIFTING DEVICE.

1,111,893. Specification of Letters Patent. Patented Sept. 29, 1914.

Application filed March 21, 1913. Serial No. 755,954.

To all whom it may concern:

Be it known that I, ALFRED E. GADLEY, of the city of Montreal, in the Province of Quebec and Dominion of Canada, have invented certain new and useful Improvements in Box-Lifting Devices, of which the following is a full, clear, and exact description.

This invention relates to improvements in means for handling cardboard boxes or like packages, and the object is to provide a simple and reliable device by means of which a clerk may quickly and easily remove a cardboard box from a high shelf while standing on the floor.

A further object is to provide a device of this character which will firmly grip the box or package, and prevent the same slipping from the apparatus when removed from the shelf.

A still further object is to provide a device of this character with adjusting means, so that it may be readily adapted to different sizes of packages.

It is becoming the general practice in stores to carry the shelving right up to the ceiling, so that goods stored on the upper shelves cannot be gotten out without the use of a ladder or means for lifting down the packages. The time consumed in adjusting ladders and going up and down the same amounts in a year to many hours, which are obviously wasted. Also, going up and down a ladder many times a day produces a more or less severe strain, which detracts from the clerks' efficiency, so that further loss is entailed. Various means have been provided for lifting down packages from high shelves, but these devices have been defective in various ways. In general, these devices consist of a handle carrying a prong insertable under the cover flange of the box and also a small rest movable under the bottom of the box. Considerable skill is required in the use of such a device, as the unsupported portion of the box tends to drop and lift the cover flange away from the engaging prong so that the box falls.

The present invention aims to overcome this disadvantage by providing in place of the usual prong a pair of wide nosed tongs, which operate automatically and grip the cover flange, so that the leverage of the unsupported box end will not disengage the cover. The invention also includes improved adjusting means for box support and an extensible handle.

In the drawings which illustrate the invention: Figure 1 is a front elevation partly in section of the device complete. Fig. 2 is an enlarged view of the upper part of the device showing the first step of the removal of a box. Fig. 3 is a view similar to Fig. 2 but showing the box completely engaged by the device and ready for removal from the shelf. Fig. 4 is an enlarged front elevation of the upper part of the device. Fig. 5 is a vertical sectional view through the handle from front to back.

Referring more particularly to the drawings, 11 designates a cardboard box such as used for containing shoes and the like, having a flanged cover 12, and 13 indicates a shelf upon which the box is supported.

The lifting device forming the subject of this invention comprises a handle preferably telescopic, comprising an upper section 14 and lower hollow section 15 within which the upper section slides. Any suitable means may be provided for holding the handle in extended and contracted position, such as the double ended spring latch 16 carried by the handle section 14, the upper end of which latch engages the upper end of the handle section 15 to hold the handle extended, while its lower end engages in a notch 17 to prevent the separation of the two handle members. The lower end of this latch may also engage in an aperture 18 to hold the handle in telescoped position. An eye 19 may be provided on the handle section 15 by which to hang up the device when not in use.

The upper end of the handle section 14 is preferably slightly beveled and is provided with a pair of tongs, adapted to grip the flange of the box cover 12. These tongs consists of a broad fixed jaw 20, rigidly secured to the handle in opposite relation by means of a bent shank 21, and a similarly shaped broad movable jaw 22. The other jaw 22 of the tongs is shaped at its upper portion similarly to the jaw 20, and is provided with a comparatively large aperture 23 through which the bent portion of the shank 21 passes. Below the aperture 23, the jaw 22 is provided with a tail 24 of reduced size. The upper edges 25 of these jaws 20 and 22 are bent toward each other, as clearly shown in Figs. 2 and 3. The side

of the handle under the jaw 20 may be suitably beveled and flattened, as shown at 26, to form clearance for the tail 24.

A sleeve 27 is slidably mounted on the handle section 14 and is provided with a box rest 28, projecting from the handle on the same side as the jaw 20. This rest also extends to each side of the handle, so as to prevent considerable supporting surface. In order to hold the sleeve at any desired point on the handle, a spring pressed latch 29 is provided preferably under the rest 28 coöperating with a ratchet toothed rack 30 set into the handle. The teeth of this rack are so formed as to hold the sleeve against downward movement on the handles unless the latch is lifted.

The operation of the device is extremely simple. The balance of the movable jaw 22 is such that it is normally separated from the fixed jaw 20, as clearly seen in Fig. 2. To remove a box from a high shelf, the handle is held in inclined position and the fixed jaw 20 inserted under the box cover flange, the commencement of such inserting operations being shown in Fig. 2. When this fixed jaw has been inserted as far under the flange as it will go, the handle is moved to approximately vertical position. This movement brings the tail 24 of the movable jaw 22 against the box end, thus closing up the jaw 22 on the outside cover flange, as shown in Fig. 3. The shifting of the handle to its vertical position is preferably an oscillatory movement, the operator's hand being the center of oscillation. This movement, therefore, tends to draw the box forward simultaneously with the closing of the tongs so that the front end of the box bottom slides from the shelf on to the rest 28 carried by the previously adjusted sleeve 27. The box may be now withdrawn entirely from the shelf and lowered. The box as supported by the device is fulcrumed over the free edge of the rest 28, so that the unsupported end of the box acted upon by the force of gravity tends to pull the cover flange upwardly away from the tongs. The weight of the box is, however, operating on the movable jaw 22 to maintain the grip of the tongs on the box cover flange, so that the upward movement of the cover flange away from the tongs is restrained. By moving the handle slightly past the vertical in withdrawing the box from the shelf and thus inclining the box, the center of support may be shifted to coincide more nearly with the center of gravity of the box in the well known manner. For convenience in adjusting the support 28 for different sizes of boxes, a suitable scale of measurement indicated at 31 may be provided on the handle. Numerous minor alterations may be made in the device which do not depart from the spirit of the invention, and such alterations will therefore be covered by the following claims.

Having thus described my invention, what I claim is:—

A device of the character described comprising a handle, a pair of tongs at one end thereof having one jaw rigidly connected to the handle and offset therefrom, and the other jaw being apertured to receive said fixed jaw and pivotally and slidably mounted on said fixed jaw at the offset thereof, and a support slidably mounted on said handle.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

ALFRED E. GADLEY.

Witnesses:

STUART R. W. ALLEN,

G. M. MORELAND.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."