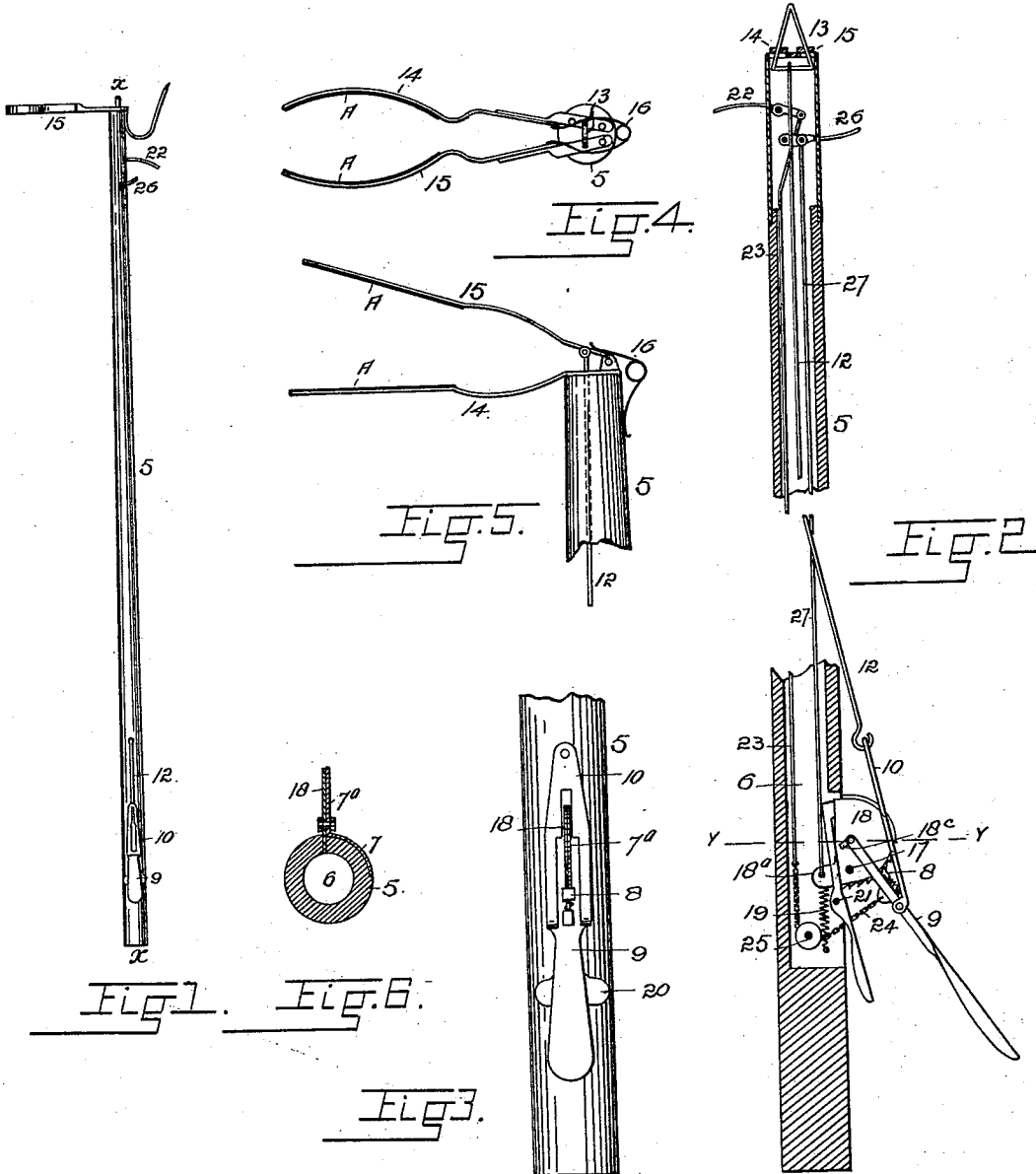


(No Model.)

C. A. ROHDER & P. J. BLOOM.
LIFTING DEVICE.

No. 543,814.

Patented July 30, 1895.



WITNESSES
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UNITED STATES PATENT OFFICE.

CARL A. ROHDER AND PETER J. BLOOM, OF DENVER, COLORADO, ASSIGNORS
OF ONE-FOURTH TO CHARLES J. DEWEY, OF SAME PLACE.

LIFTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 543,814, dated July 30, 1895.

Application filed November 16, 1894. Serial No. 529,070. (No model.)

To all whom it may concern:

Be it known that we, CARL A. ROHDER and PETER J. BLOOM, citizens of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Lifting Devices; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in devices for lifting articles from or placing them upon shelves or supports too high to be reached by the arm without assistance. The device is for use in stores, warehouses, and establishments of every description where articles of merchandise are located too high to be reached by the arm.

The device is composed of a rod (preferably made of wood) to one extremity of which is attached a pair of jaws, one of which is movable, together with special mechanism for operating the movable jaw, whereby it may be opened and closed at will.

Our object is to provide an article of this class which shall be of simple and economical construction, easily operated, reliable, durable, and efficient in use; and to these ends the device consists of the features hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is an elevation of the device. Fig. 2 is a longitudinal section taken on the line xx , Fig. 1, the parts being shown on a larger scale. Fig. 3 is a fragmentary view illustrating the lower portion of the device. Fig. 4 is an end view of the upper extremity of the device. Fig. 5 is an elevation of the upper part of the device, showing a modified form of construction. Fig. 6 is a cross-section taken on the line yy , Fig. 2.

Similar reference characters indicate corresponding parts or elements in all the views.

Let the numeral 5 designate a rod, prefer-

ably made of such a size that it can be conveniently used in one hand. It is preferred to construct the rod of wood for reasons of economy in construction and convenience in use. It may, however, be constructed of any suitable or desirable material. It is provided with a longitudinal recess 6 formed in the center thereof and extending the greater portion of its length. To the outer surface of the rod, and located near its lower extremity, is secured a plate 7, which projects outward from the rod and has a toothed or ratchet edge. The part of the plate 7 engaging the rod is made to conform in shape to the surface of the rod, and has sufficient area or bearing-surface to permit of its being securely fastened to the rod. The projecting toothed part 7^a of this plate is segmental in shape. Its toothed or ratchet edge is engaged by a spring-actuated dog or detent 8, carried by a lever 9, and forked to straddle the ratchet-segment upon which it is pivoted.

To the lever 9 and at a suitable point intermediate its extremities is a link 10, which also straddles the segmental plate 7. The upper extremity of this link is apertured to receive the hooked extremity of a wire 12, which passes through an aperture in the casing of the rod, and thence through the longitudinal recess 6 to a triangular device 13, preferably formed of wire sufficiently rigid for the purpose. This device 13, as shown in the drawings, has the shape of an isosceles triangle, having the angle formed by its two equal sides or legs pointed outward. To the side opposite this angle, which side we will term the "base," is attached the wire 12. The pointed extremity opposite the base of this triangular device projects out of the upper extremity of the hollow rod 5 and is located intermediate the jaws 14 and 15. The jaw 14 is stationary and attached to the upper extremity of the rod. The other jaw is movable, its inner extremity being pivoted on the rod. This movable jaw is normally held in the open position by a suitable spring 16. These jaws 14 and 15 are apertured to receive the equal outwardly-projecting legs of the triangle. When the movable jaw is open the apex of the triangle is located at a suitable distance from the jaws. Now it is evident that if the lever 9 be

pressed or actuated in such a manner as to draw the wire 12 downward toward the lower extremity of the rod the triangle will be moved in a corresponding direction, whereby its apex is made to approach the jaws. As the distance between its equal legs gradually diminishes toward the apex as the latter point approaches the jaws, the movable jaw must be drawn toward the stationary jaw and made to clasp the neck of a bottle, or the bail of a bucket, or any other article which it may be necessary to lift, remove from, or replace upon an elevated shelf. As the lever 9 is actuated for the purpose just explained, the dog 8 engages the toothed edge of the segmental plate 7^a and locks the movable jaw in the closed position. Engaging the plate 7^a and eccentrically pivoted thereon at a suitable point 17 is a movable segmental plate 18, having a smooth edge. This last-named plate is so located normally that the toothed edge of the plate 7^a is exposed to engagement with the locking-dog 8. The plate 18 is normally held in place by a spring 19, connected with a lug 18^a formed on the plate 18 and projecting into the recess 6 of the hollow rod. The plate 18 is provided with a slot 18^c, through which passes the pin on which the lever 9 is fulcrumed. Suitably connected with the plate 18 is a lever 20 fulcrumed on the rod at 21. By pressing the outer extremity of this lever 20 the plate 18 is so shifted or actuated as to move outward and disengage the locking-dog 8 from the toothed edge of the segmental plate 7^a, thus releasing the lever 9, when the spring-actuated jaw 13 will open and force the apex of the triangle outward to its normal position, when it is again ready for use. The lever 9 may be actuated to close the movable jaw through the instrumentality of a small lever 22, fulcrumed on the rod 5 near its upper extremity and projecting into the recess 6. The inner extremity of this lever is attached to a wire 23, which leads to a cord or short chain 24, passing around a pulley 25, and having its opposite extremity connected with the lever 9. The releasing-plate 18 also may be actuated by a lever 26, fulcrumed near the upper extremity of the rod and connected with a wire 27 leading to the lug 18^a on the plate 18.

In the modified form of construction shown in Fig. 5 the jaws occupy a vertical position, or the movable jaw 15 is adapted to move in a vertical plane, while the stationary jaw 14 occupies a corresponding position. In this case the upper extremity of the wire 12 is attached directly to the movable jaw, which is therefore actuated without the interposition of the triangular device 13 employed when the jaw 15 moves in a horizontal plane.

The terms "vertical" and "horizontal" plane, employed in this specification to denote the positions of the jaws 14 and 15, are used on the assumption that the rod 5 of the device, when in use, occupies a vertical posi-

tion, and are believed sufficiently accurate, since the the device must be projected upward to lift articles from or replace them upon elevated positions.

In order to prevent the jaws 14 and 15 of the device from marring or scratching polished articles of merchandise, and also to cause them to hold articles more securely and obviate any tendency on the part of said articles to slip out of the grasp of the jaws, the latter are lined with some suitable material, preferably india rubber, which overcomes all difficulty of the nature suggested, and is designated by the reference-character A in the drawing.

Having thus described our invention, what we claim is—

1. In a lifting device of the character described, the combination, with the rod having the segmental ratchet plate, of the lever fulcrumed on said plate and carrying a spring-actuated dog adapted to engage the toothed edge of the plate, a spring-held releasing plate eccentrically pivoted on the toothed plate, means for actuating said releasing plate whereby the locking dog may be disengaged from the ratchet plate, a pair of jaws attached to the end of the rod more remote from the lever, one of said jaws being movable, and a suitable connection between the lever and the movable jaw whereby the movement of the former actuates the latter, substantially as described.

2. In a lifting device of the character described, the combination, with the rod having the segmental ratchet plate, of the lever pivoted on said rod and carrying a spring-held dog, jaws attached to the end of the rod more remote from the lever, one of them being movable and spring-actuated, a triangular device having its apex pointing outward and two of its legs engaging apertures formed in the jaws, and a suitable connection between the lever and said triangular device, substantially as described.

3. In a lifting device of the character described, the combination, with the rod having the segmental ratchet plate attached thereto, of the lever fulcrumed on said plate and carrying the spring-held dog, the spring held releasing plate eccentrically pivoted on the ratchet plate and adapted to disengage the locking dog, the jaws attached to the end of the rod more remote from the lever, the triangular device engaging the jaws, and a suitable connection between the lever and said triangular device, substantially as described.

4. In a device of the character described, the combination, of the hollow rod having the segmental ratchet plate, the lever carrying the spring-held detent, jaws attached to the end of the rod more remote from the lever, one of said jaws being movable, a suitable connection between the movable jaw and the lever, another lever fulcrumed on the rod

near the jaw end thereof and projecting into the opening therein, another connection between said last named lever and the first lever whereby the movable lever may be actuated by either lever, substantially as described.

5. In a lifting device of the character described, the combination, of the hollow rod provided with the segmental ratchet plate, a locking device pivoted on the segmental plate and carrying a spring-held dog, jaws attached to the extremity of the rod more remote from the locking device, one of said jaws being movable, a suitable connection between the movable jaw and the locking device, the spring-held releasing plate eccentrically pivoted on the ratchet plate, a lever located near the extremity of the rod remote from the locking device, and a suitable connection between

said lever and the releasing plate, substantially as described.

6. In a lifting device of the character described, the combination of the rod, a locking device attached thereto and comprising a lever, a segmental rack and a detent engaging the rack, jaws attached to the extremity of the rod remote from the locking device, one of said jaws being movable, and suitable means for connecting the lever with the movable jaw, substantially as described.

In testimony whereof we affix our signatures in the presence of two witnesses.

CARL A. ROHDER.
PETER J. BLOOM.

Witnesses:

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CHAS. E. DAWSON.