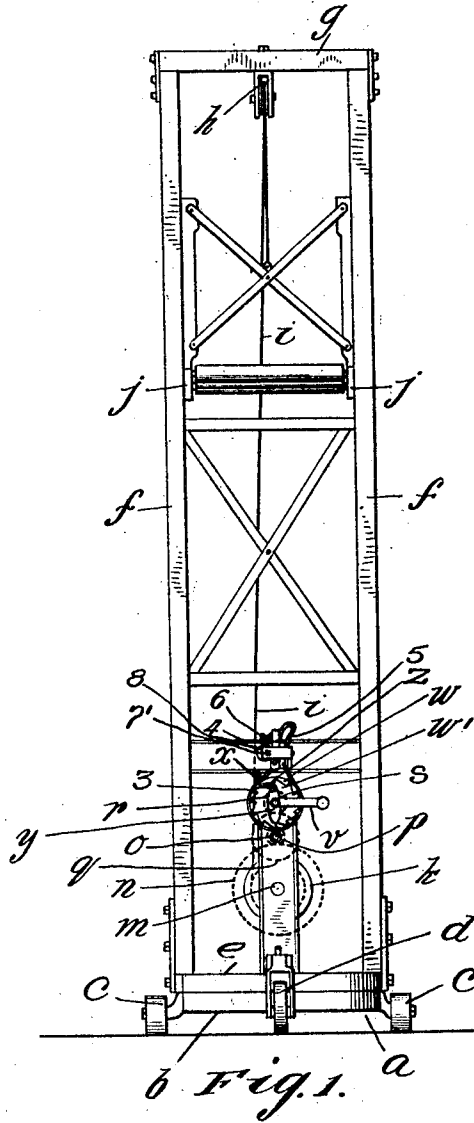
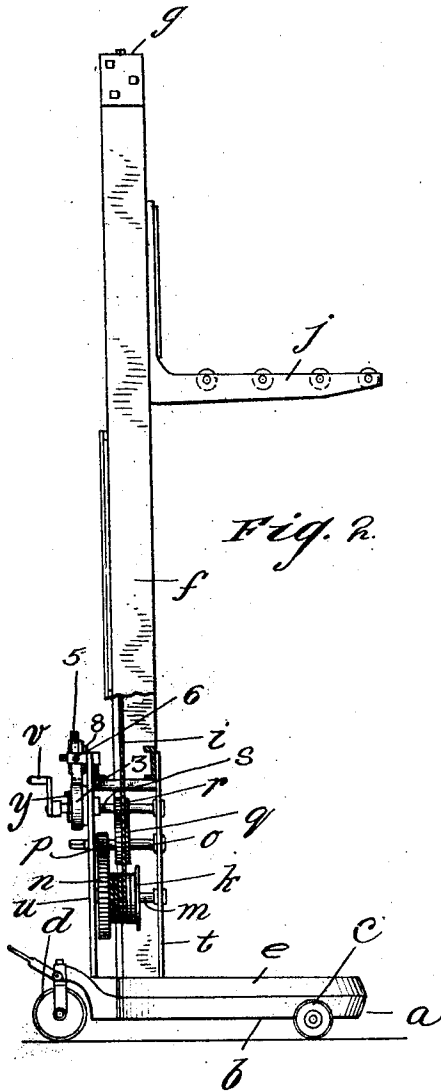


W. E. BOEHCK.
MANUALLY OPERATED WINDING DRUM MECHANISM.
APPLICATION FILED MAY 6, 1912.

1,044,008.

Patented Nov. 12, 1912.

2 SHEETS-SHEET 1.



WITNESSES
M. Reimer.
M. Hamilton.

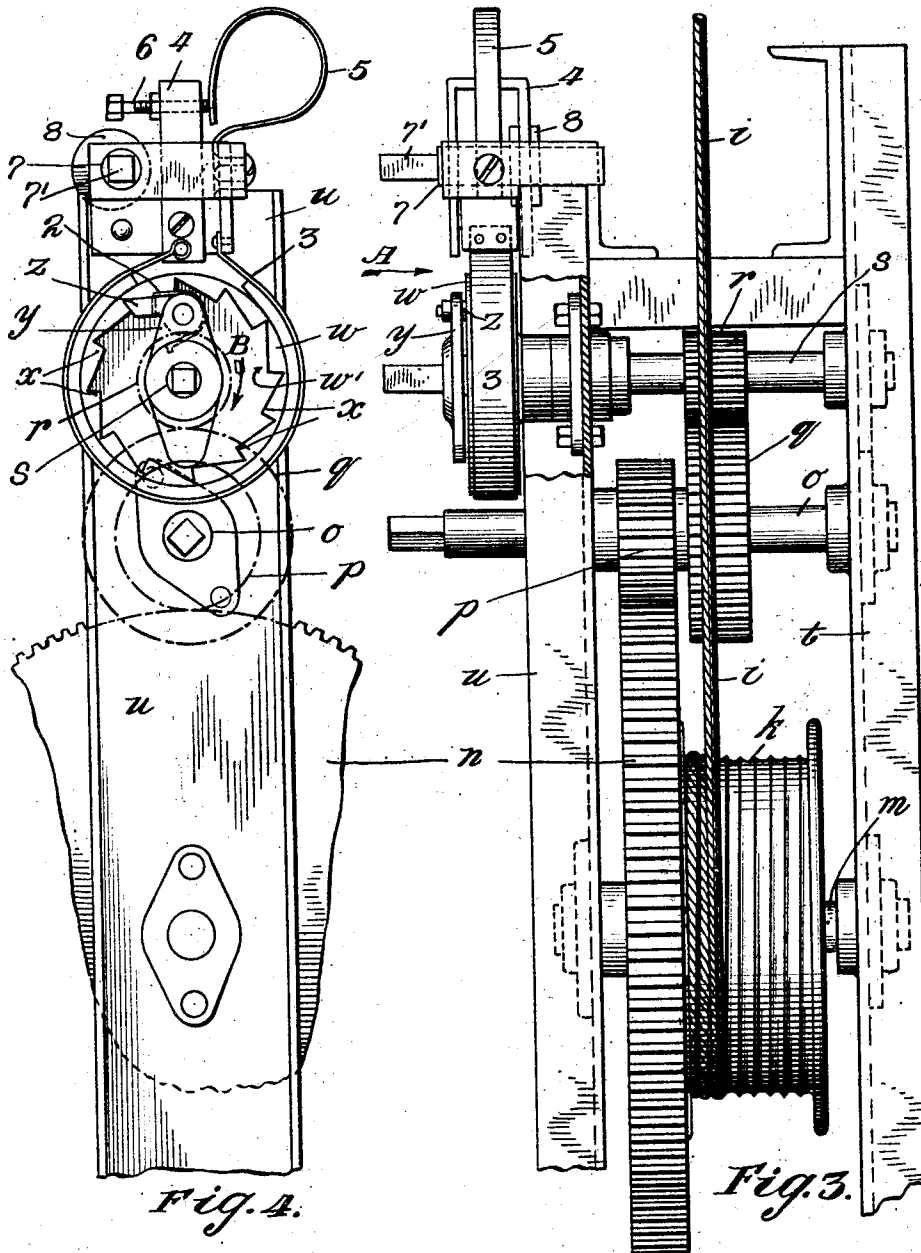
INVENTOR
William Edward Boehck
BY James Hamilton
ATTORNEY

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UNITED STATES PATENT OFFICE.

WILLIAM EDWARD BOEHCK, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO NEW YORK REVOLVING PORTABLE ELEVATOR COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

MANUALLY-OPERATED WINDING-DRUM MECHANISM.

1,044,008.

Specification of Letters Patent.

Patented Nov. 12, 1912.

Application filed May 6, 1912. Serial No. 695,423.

To all whom it may concern:

Be it known that I, WILLIAM EDWARD BOEHCK, a subject of the Emperor of Germany, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Manually-Operated Winding-Drum Mechanism, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in portable elevators or tiering machines in which the load-carrying platform is raised by manually-operated mechanism and falls by gravity, its downward movement being controlled by manually-operated mechanism; and an object of this invention is the provision in an apparatus of the character just referred to of manually-operated mechanism for controlling the upward and downward movement of the load-carrying platform which will be simple in construction and particularly safe and reliable in operation and use and which will safeguard the operator from accident due to the backward rotation of the crank by which is actuated the mechanism for raising the platform.

In the drawings illustrating the principle of this invention and the best mode now known to me of applying that principle, Figure 1 is a rear elevation of a portable elevator equipped with an embodiment of this invention; Fig. 2 is a side elevation of what is shown in Fig. 1; Fig. 3 is a detail showing in side elevation the mechanism for raising and lowering the platform; and Fig. 4 is a detail view looking in the direction of the arrow A of Fig. 3.

The bed *b* of the truck *a* is supported upon a pair of truck wheels *c* and a steering wheel *d*. Pivotally mounted upon the truck bed *b* is the base *e* of the elevator frame; and from this base *e* there rises a pair of side standards or columns *f* the upper ends of which are connected by a top cross-girder or cap-beam *g* from which is suspended a centrally-disposed sheave *h*. Over the latter passes a cable *i* one end of which is attached to the elevator platform *j* which slides up and down along the side standards or columns *f*. The other end of the cable *i* is fastened to a winding drum *k* which turns with the lowermost shaft *m* driven by the cog-wheel or spur-gear *n*. Upon an intermedi-

ate shaft *o* there are mounted a pinion *p* and a spur-gear *q*. The pinion *p* meshes with the spur-gear *n* and the spur-gear *q* meshes with a pinion *r* mounted fast upon the uppermost shaft *s*. The shafts *m*, *o* are journaled in a pair of upright shaft-supporting plates or brackets *t*, *u* arranged between the side standards *f*. The rear ends of the uppermost and intermediate shafts *o*, *s* project rearwardly beyond the rear plate *u* and are faced or squared so as to fit in the socket of a crank *v* by which these shafts may be turned. Upon the projecting squared end of the uppermost shaft *s* there is mounted loose or idle thereon a brake-disk *w* in the rear face of which is formed a recess *w'* the side wall of which is cylindrical and is formed with inwardly-projecting ratchet teeth *x*. Fastened upon the projecting end of this uppermost shaft *s* is a pawl-carrier *y* which turns with the latter and carries a pivotally-mounted pawl *z* that is controlled by a leaf spring *2* and the free end or toe of which rubs over the ratchet-teeth *x*, when the shaft *s* is turned to wind up the cable *i* and thereby raise the load-carrying platform (that is, when the shaft is turned in the direction of the arrow B in Fig. 4). Around the rim-face of the brake-disk *w* is passed a brake-band or strap *3* one end of which is fastened to the upper end of the plate *u* and the other end of which is fastened to the lower end of an inverted U-shaped brake-lever *4* pivotally mounted on the upper end of the plate *u*. One end of a curved leaf spring *5* is fastened to the top of the plate *u* while its other or free end bears against a screw *6* carried by the upper end of the brake-lever *4*.

It is obvious that by turning the screw *6* the tension of the brake-spring *5* may be adjusted. The brake-spring *5* bears against the upper end of the brake-lever *4* and swings the latter so that the brake-band *3* will be held tightly against the brake-disk *w*, whereby retrograde movement of the uppermost gear-shaft *s* is prevented. To release the brake a rotatable cam-shaft *7* is arranged in the upper end of the rear plate *u* and is provided with a cam *8* which by turning the cam-shaft may be made to bear against one leg of the brake-lever *4* and thereby to swing the latter on its pivot so as to slacken the brake-strap *3* (Fig. 4). The cam-shaft *7* is formed with a project-

ing squared or faced end 7' which is of the same shape as the projecting end of the uppermost gear-shaft *s*.

After the load-carrying platform has been raised by turning the gear-shaft *s* (or the gear-shaft *o*), it will be held in its elevated position by means of the brake mechanism hereinbefore described. In order to allow the platform to fall under the influence of gravity or by its own weight, it is necessary to release the brake; and to do this the operator is required to remove his crank *v* from the end of the shaft *s* and engage it with the end 7' of the cam-shaft 7 so as to turn the latter to bring the cam 8 against the brake-lever 4 as just described. The operator is thus relieved from danger due to the backward throw of the crank *v* inadvertently left on the winding-up shaft *s*, since such inadvertence is made impossible by the requirement that the same crank be used to turn the cam-shaft 7. In short, the arrangement has the merit of being what is called colloquially "fool-proof." It has the further advantage that the lowering of the platform may by it be absolutely controlled and made smooth and steady and without shock at the end.

I claim:

1. A manually-operated winding-drum mechanism having a shaft for driving said mechanism, said shaft being provided with a non-circular end for engaging a crank; pawl-and-ratchet mechanism mounted on said shaft; a brake for controlling said pawl-and-ratchet mechanism when said shaft is being turned to raise the load; and means for releasing said brake to permit

the load to fall by gravity, said means being provided with a non-circular end similar to the non-circular end of said shaft.

2. A manually-operated winding-drum mechanism having a shaft for driving said mechanism, said shaft being provided with a non-circular end for engaging a crank; a brake drum mounted on said shaft and formed with ratchet teeth; a pawl carried by said shaft and arranged to engage said teeth when the load falls; a brake-band for said brake-drum; and means for disengaging said brake-band from said brake-drum to permit the load to fall by gravity, said means being provided with a non-circular end similar to the non-circular end of said shaft.

3. A manually-operated winding-drum mechanism having a shaft for driving said mechanism, said shaft being provided with a non-circular end for engaging a crank; pawl-and-ratchet mechanism mounted on said shaft; a brake for controlling said pawl-and-ratchet mechanism when said shaft is being turned to raise the load; and a cam-shaft for releasing said brake to permit the load to fall by gravity, said cam-shaft being provided with a non-circular end similar to the non-circular end of the first shaft.

Signed at Jersey City, New Jersey, this second day of May, A. D., 1912, in the presence of the two undersigned witnesses.

WILLIAM EDWARD BOEHCK.

Witnesses:

H. S. GERMOND, Jr.,

W. C. COLLINS.