

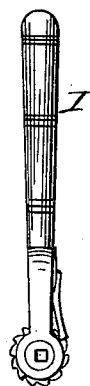
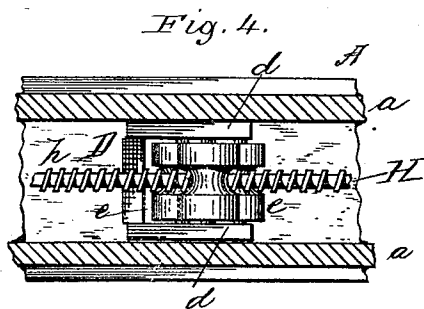
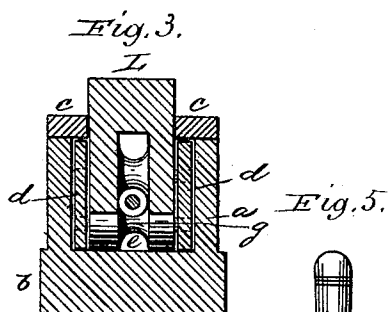
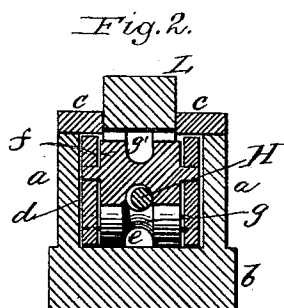
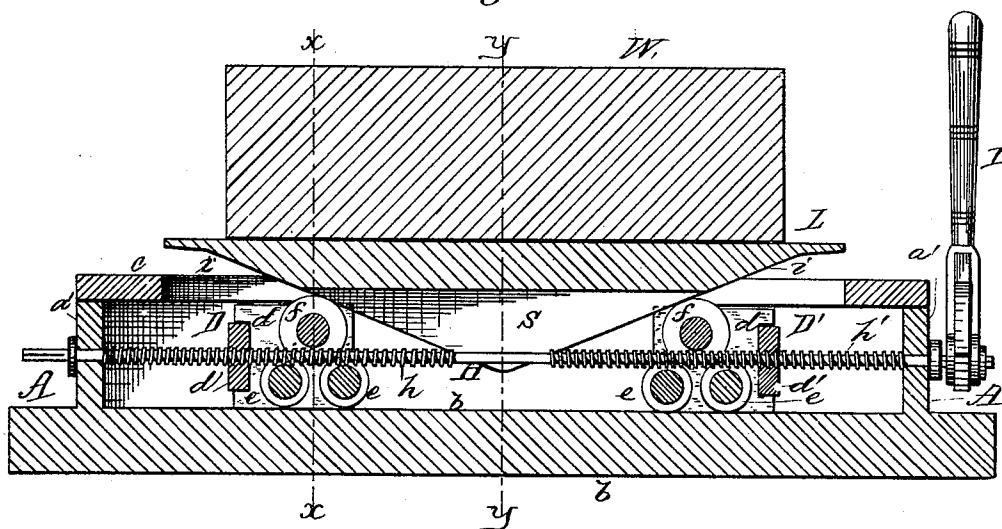
(No Model.)

B. F. REEVES.

JACK SCREW.

No. 273,894.

Fig. 1. Patented Mar. 13, 1883.



Inventor.

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Witnesses:

Edw. Johnson
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UNITED STATES PATENT OFFICE.

BENJAMIN F. REEVES, OF TUCKAHOE, NEW JERSEY.

JACK-SCREW.

SPECIFICATION forming part of Letters Patent No. 273,894, dated March 13, 1883.

Application filed February 1, 1883. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. REEVES, a citizen of the United States of America, residing at Tuckahoe, in the county of Cape May and State of New Jersey, have invented certain new and useful Improvements in Jack-Screws; and I do hereby 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 letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to an apparatus for lifting weights short distances or long distances by long steps, its object being to provide for this purpose a powerful and compact apparatus, which may be readily adjusted to its work and operated by a small expenditure of manual labor.

The invention consists in certain novel combinations of devices, which will be hereinafter particularly described, and pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of a lifting apparatus constructed according to my invention. Fig. 2 is a section on line *x x*, Fig. 1. Fig. 3 is a similar section on line *y y*, Fig. 1. Fig. 4 is a fragmentary longitudinal section taken on a horizontal plane above one of the carriages. Fig. 5 is a view of the ratchet-lever by which the operating-screw is turned.

The letter *A* indicates an oblong casing with vertical side walls, *a*, end walls, *a'*, and base *b*. The top of this casing is open, except for a narrow inwardly-projecting rim, *c*. Within the casing are two strongly-constructed carriages, *D* and *D'*, arranged to travel longitudinally in said casing. Each of these carriages is composed of two side plates, *d*, and an end plate, *d'*, and two traveling rollers, *e*, provided with journals having bearings in the opposite plates, *d d*, while their peripheries rest on the base *b*.

Above and preferably over the space between the two traveling rollers each carriage is provided with a lifting-roller, *f*, of greater diameter than the traveling rollers, and also journaled between the opposite plates, *d d*.

Both the traveling and lifting rollers are grooved circumferentially, as shown at *g* and *g'*, to permit the passage of a screw-shaft, *H*, the journals of which have their bearings in the opposite end walls, *a' a'*, of the casing, the projecting ends of said shaft being squared to receive the ratchet-wrench *I*, the construction of which will be readily understood by reference to Fig. 5.

The screw shaft *H* has two screw-threads, *h* and *h'*, on opposite sides of its middle portion, and these two screw-threads are pitched in opposite directions and play through correspondingly-threaded apertures in the end plates, *d'*, of the carriages *D* and *D'*, respectively, so that when the screw-shaft is turned in one direction the carriages will approach each other and recede from each other when it is turned in the opposite direction.

The letter *L* indicates the lifting-platform, the horizontal top of which is of a size and shape to fit in the space within the rim *c*, and its lower surface is formed by two downwardly and inwardly inclined faces, *i i*, which meet under the center of the top, thus giving the platform as a whole the shape of an obtuse isosceles triangle with its base turned upward. The inclined faces of the platform rest upon the lifting-rollers *f* of the carriages *D* and *D'*, respectively, and through the lower part of the platform is formed a longitudinal slot or passage, as indicated at *S*, the open ends of which coincide with the grooves in said rollers. The slot *S* divides the lower part of the platform into two portions, between which passes the screw-shaft *H*, this slot permitting a vertical play of the platform approximately equal to the weight of the casing without interference by the screw-shaft.

The letter *W* indicates a weight placed upon the platform as if to be raised thereby.

It is now obvious that if the screw-shaft *H* be turned in a direction to cause the carriages *D* and *D'* to approach each other, the inclined faces of the platform will ride upward on the lifting-rollers *f f* of said carriages, and the platform be thereby raised and lift the weight. If the upward stroke or play of the platform is not sufficient to lift the weight to the desired height, said weight may be blocked up, the platform lowered, and blocks placed upon it

under the weight, so that another upward movement of the platform will raise the weight still higher.

Having now described my invention and explained the operation thereof, I wish it to be understood that I do not confine myself to the precise construction and arrangement of parts shown in the drawings, but may vary the same in any desired manner without departing from the essential principles of the invention. For instance, I may use a lifting-carriage under only one of the inclined faces of the platform, and thus lift the platform at one end for prying up heavy weights, and I may mount one platform upon another, providing the upper platform with lifting-carriages which travel upon the lower, said platforms being raised successively. Again, I may provide the carriages with detachable clutches for engaging them with the screw-shaft, so that by disengaging said clutches from the shaft the carriages may be quickly run back to their starting-points without the loss of time which would be occasioned by running them back by means of screws.

What I claim is—

1. In a lifting apparatus, the combination, with a platform having one or more inclined under faces, of one or more traversing carriages provided with a roller or rollers arranged to bear against said inclined face or faces, and means for driving said carriage or carriages under and against said inclined face or faces for lifting the platform, substantially as described.

2. The combination, with the platform L,

having inclined under faces, *i i*, of the carriages D D', having the lifting-rollers *ff*, arranged to bear against said inclined faces, and mechanism for causing said carriages to approach and recede from each other, substantially as described.

3. The combination, with the platform L, having the inclined under faces, *i i*, and the carriages having the lifting-rollers *ff*, arranged to bear against said inclined faces, respectively, of the screw-shaft H, mounted in suitable bearings, and having the oppositely-pitched threads engaging with said carriages, respectively, substantially as described, and for the purpose set forth.

4. The combination, with the carriages D D', having the grooved traveling and lifting rollers, of the double screw-shaft H, in engagement with said carriages, and passing through the grooves in said rollers, substantially as described.

5. The combination, with the carriages D D' and the screw-shaft H, in engagement with and extending between said carriages, of the lifting-rollers *ff*, and the platform L, having the inclined under faces, *i i*, resting upon said rollers and slotted longitudinally to permit the passage of the screw-shaft, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

BENJAMIN FURNACE REEYES.

Witnesses:

JOSEPH C. MARSHALL,
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