E. N. HESCOCK AND E. F. SMITH.

PORTABLE ELEVATOR.

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1,356,281.

Patented Oct. 19, 1920.

FIG 1

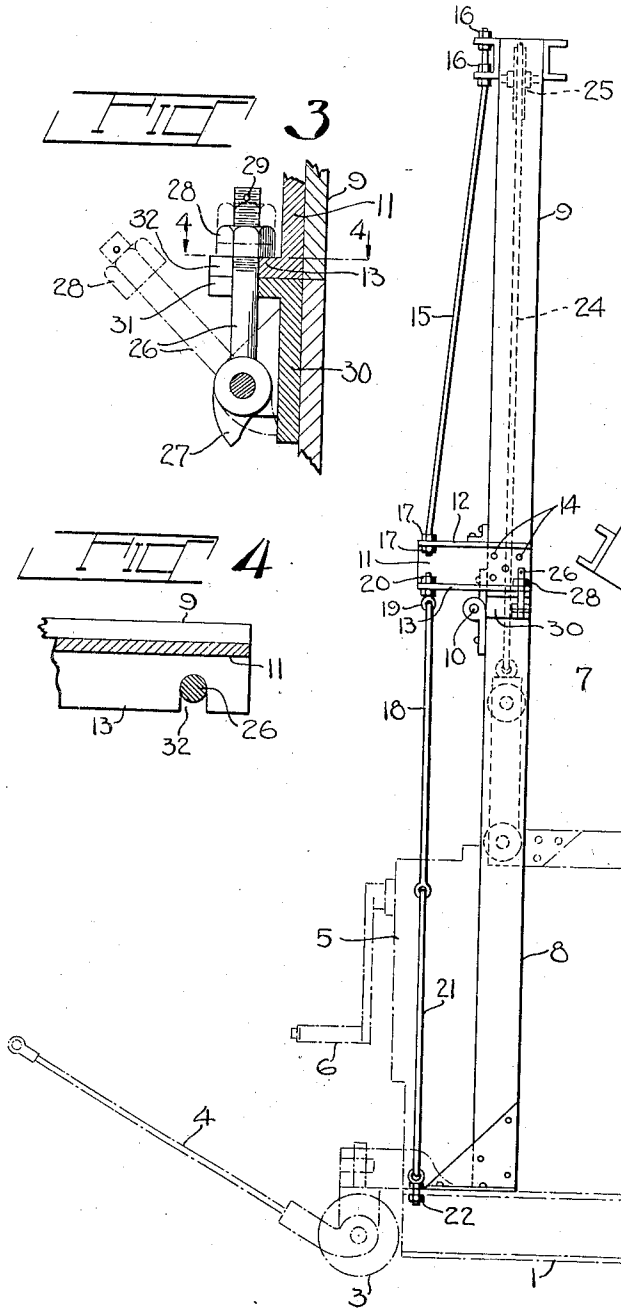


FIG 2

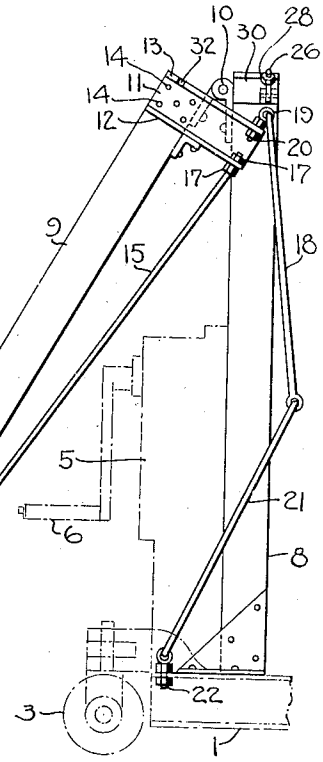


FIG 3

FIG 4

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ETHAN N. HESCOCK, OF WESTFIELD, NEW JERSEY, AND ERNEST F. SMITH, OF WOODHAVEN, NEW YORK, ASSIGNORS TO NEW JERSEY FOUNDRY & MACHINE COMPANY, A CORPORATION OF NEW JERSEY.

PORTABLE ELEVATOR.

1,356,281. Specification of Letters Patent. Patented Oct. 19, 1920.

Application filed November 7, 1919. Serial No. 336,369.

To all whom it may concern:

Be it known that we, ETHAN N. HESCOCK, a citizen of the United States, residing at Westfield, in the county of Union and State of New Jersey, and ERNEST F. SMITH, a resident of Woodhaven, in the county of Queens and State of New York, have invented certain new and useful Improvements in Portable Elevators, of which the following is a specification, taken in connection with the accompanying drawings.

Our invention relates to portable elevators and more particularly to the vertical upright or section which supports and guides the movable platform on which the articles to be stacked or lifted are placed. It relates particularly to the vertical upright of such a movable elevator in combination with a truss, the vertical upright being preferably a portion of the truss.

Our invention further relates to such a vertical upright which is formed of a plurality of sections, one or more of which are hinged so that the hinged section can be swung down to permit the movable elevator to readily pass through a door or other opening.

Our invention further relates to portable elevators having such a vertical section or upright which can be formed of comparatively lightweight material and yet one which will be stronger than those now on the market.

Our invention further relates to certain details of construction and combinations which will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings in which one embodiment of our invention is shown by way of example;—

Figure 1 is a side elevation of a portable elevator equipped with our invention;

Fig. 2 is a side elevation with the carriage partly broken away and showing the hinged section swung down so as to pass through a doorway or other opening;

Fig. 3 is a detail vertical section of the means that we preferably employ to lock the two sections together; and

Fig. 4 is a horizontal section substantially on the line 4—4 of Fig. 3.

In the illustrative embodiment of our invention shown in the drawing, 1 is a movable carriage of the portable elevator having traction wheels 2 and 3 and a handle 4, with which to move it. All these elements may be of any improved construction as well as the hoisting mechanism 5 operated by the crank 6 as they form no part of our present invention.

In the form of our invention shown in the drawing the vertical upright 7 is formed of a section 8 rigidly secured to the carriage 1, and the section 9, which is pivoted to the section 7 by means of the hinge 10. On the lower end of the section 9 we mount a single arm 11 which preferably, though not necessarily, is a channel iron with flanges 12 and 13. This arm 11 is secured to the hinge section 9 in any suitable manner such as by the rivets 14, 14. At the other end of section 9 we secure in any suitable manner the tension rod 15 as by means of the nut 16, 16, the other end of the tension rod 15 being secured to the flange 12 of the arm 11 by nuts 17, 17.

To the flange 13 of the arm 11 we secure a tension rod 18 by means of the eyebolt 19 and nut 20. Another tension rod 21 is pivotally connected to the end of the rod 18 and is also pivotally connected by means of the eyebolt 22 to the carriage 1.

In the operative position of the parts shown in Fig. 1, when the crank 6 is turned the hoist mechanism 5 will raise or lower the movable platform 23 by means of the rope 24 passing over the pulley 25.

The two sections 8 and 9 are locked together in any suitable manner. We have shown for example one form wherein an eyebolt 26 is pivotally connected to the section 8, its downward movement being preferably limited by means of a shoulder 27. On this bolt is mounted a nut 28 whose outward movement is limited by a pin 29 so that the bolt and nut will not become separated or misplaced. The angle iron 30 is provided with a slot 31 to permit the eyebolt 26 to swing out as shown in Fig. 3. The flange 13 of the arm 11 is also provided with a slot 32 to receive the eyebolt 26.

When it is desired to transfer the movable elevator through a doorway or other opening which has not sufficient clearance, it is merely necessary in our invention to loosen the nut 28 on the eyebolt 26, swing out the eyebolt from engagement with flange 13 of the arm 11 and let the top section 9

swing down into the position shown in Fig. 2. In this position of the parts the tension members 18 and 21 are forced out of line or pivot upon each other. After passing through the doorway the parts can be again brought into their operative position by swinging the section 9 upon the pivot 10 and securing it by the eyebolt 26 as previously described.

It will be noted that the upright member formed of the hinge sections 8 and 9 together with the arm 11 and tension members 15, 18 and 21 form a truss in which a load upon the platform 23 places the members 8 and 9 under compression and the members 15, 11, 18 and 21 under tension. This truss arrangement serves to take substantially all strains and stresses from the pivot 10 and transfer them directly to the carriage 1. The shearing strains upon the rivets 14, 14 are also transmitted by the tension members 15, 18 and 21 to the carriage. It will also be noted that in our portable elevators there is only one arm 11 and this arm is entirely independent of the hinge. In our invention the truss does not interfere with the pivoting of the sections, one upon the other, for the truss is one which automatically assumes a knockdown or inoperative position, when one section is swung down as shown for example in Fig. 2 in which two sections are employed.

Also by our invention any give in the upright, formed of the sections 8 and 9, which would tend to make it assume other than a true vertical position, can be compensated for and adjusted by means of adjusting the nuts 16, 17, 20 and 22.

While we have shown our invention applied to a portable elevator having one section pivoted upon another it can be applied to a portable elevator in which the sections are not pivoted, but we preferably pivot one of the sections as shown in the drawings.

Having thus described this invention in connection with an illustrative embodiment thereof, to the details of which we do not desire to be limited, what is claimed as new and what is desired to be secured by Letters Patent is set forth in the appended claims.

What we claim is:—

1. In a movable elevator, the combination of an upright section, a section hinged thereto and tension members mounted at the rear thereof and adapted to be placed under tension by a load on the movable elevator.

2. In a movable elevator the combination of an upright section formed of a plurality of parts hinged together and tension members adapted to take most of the strains from the hinge.

3. In a movable elevator the combination of an upright section formed of a plurality of parts hinged together and knockdown tension members to take most of the strains from the hinge.

4. In a movable elevator the combination of an upright section formed of a plurality of parts hinged together, one of the hinged members having an arm extending therefrom, a rod extending from said arm and connected to the hinged member near its other end, a second rod connected to the arm at one end, its other end pivotally connected to a third rod, and a third rod pivotedly connected to the second rod and to a support.

5. In a movable elevator the combination of an upright formed of two members hinged together and adapted to be brought into alinement for their operative position and the upper section to be swung down to pass through doorways, and means to transfer the strains from the hinge when the sections are in alinement said means being rendered inoperative when the upper section is swung down to pass through a doorway.

6. In a movable elevator the combination of an upright section formed of a plurality of parts hinged together and adapted to be brought into alinement, and means to adjust the hinged members to insure perfect alinement.

7. In a movable elevator the combination of an upright section formed of a plurality of parts hinged together and adapted to be brought into alinement, and tension members provided with means to insure perfect alinement of the pivoted members.

8. In a movable elevator the combination of a carriage, an upright section formed of two separate members, the upper member provided with a single arm near its lower end, a hinge connecting the two members together said hinge being separate and distinct from the arm, and means connecting said arm to the upper end of one member and to the carriage.

9. In a movable elevator the combination of a vertical section formed of a plurality of pivoted sections said sections forming the compression member of a truss, and tension members forming the tension member of the truss.

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