V. C. HILLIKER.

LIFTING DEVICE.

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1,274,546. Patented Aug. 6, 1918.

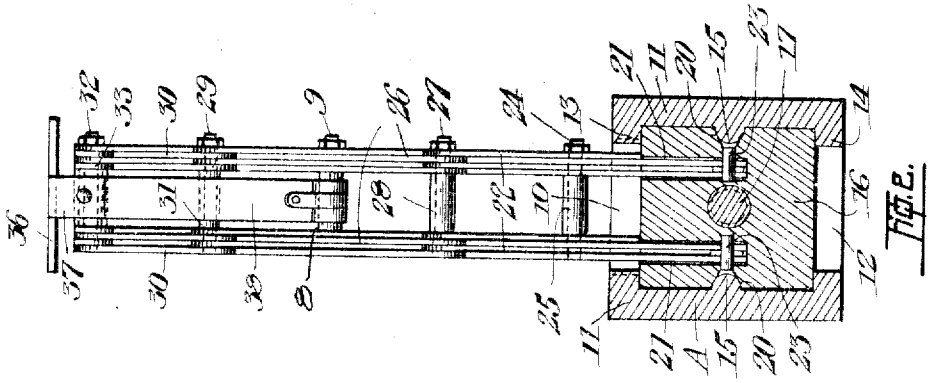


FIG. 2.

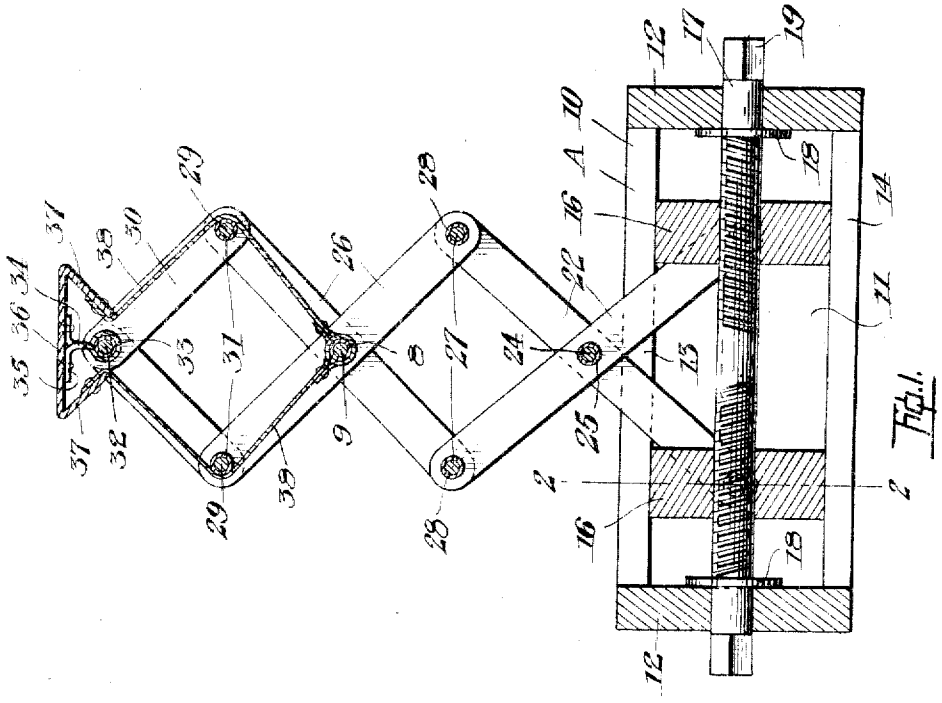


FIG. 1.

WITNESSES

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LIFTING DEVICE.

1,274,546. Specification of Letters Patent. Patented Aug. 6, 1918.

Application filed August 27, 1917. Serial No. 188,488.

To all whom it may concern:

Be it known that I, VERNER CHARLES HILLIKER, a subject of the King of Great Britain, and residing in the town of Calumet in the Province of Quebec and the Dominion of Canada, have invented certain new and useful Improvements in Lifting Devices, of which the following is a specification.

This invention relates to improvements in lifting devices, and the objects of the invention are to advantageously utilize power in lifting heavy objects, to permit of the several parts of the device being readily accessible for inspection, to increase the efficiency and generally to adapt the several parts of the device to better perform the functions required of them.

With the above and other objects in view the invention consists essentially of the improved construction particularly described and set forth in the following specification and accompanying drawings forming part of the same.

In the drawings:

Figure 1 is a sectional elevation of the improved lifting device.

Fig. 2 is a transverse section on the line 2—2 of Fig. 1.

Like characters of reference refer to like parts in the several figures.

Referring to the drawings A represents the lifting device comprising the frame 10, which is substantially rectangular in shape, consisting of two side members 11 operatively connected by the ends 12, the said side members being formed at their upper and lower edges with inwardly extending flanges 13 and 14 while intermediate of their height they are formed with a semi-circular beading 15, the object of which will be made clear hereafter.

Slidably operating in the frame are a pair of blocks 16 with which the spindle 17 makes threaded engagement, and to facilitate moving these blocks simultaneously toward or from each other, the spindle 17 is provided with right and left hand threaded portions engaging with the said blocks.

The spindle 17 is rotatably supported in the end walls 12 of the frame 10 and to prevent longitudinal displacement of the spindle, I provide a pair of collars 18 located adjacent to the ends of the spindle and designed to engage with the inner face of the end walls 12.

The projecting ends of the spindle 17 are squared as shown at 19 so that a spanner or handle may be readily engaged with the spindle to manually transmit rotary motion thereto.

Each of the blocks 16 is provided intermediate of its height and on the lateral walls with recesses 20 adapted to engage with a beading 15, so that during the motion of the blocks 16 they cannot be moved out of alinement.

These blocks are also provided on the upper and inner faces with recesses 21 designed to embrace the lower ends of the levers 22 pivotally secured in position by the pins 23. The levers 22 are arranged in sets adjacent to each lateral wall of the blocks 16, and are preferably arranged in pairs diagonally disposed to each other and fulcrumed intermediate of their length by the bolt 24, which carries a distance piece 25 to properly space the sets of levers, so that the levers are at all times held in the desired position to assure the proper working of the device.

The upper ends of the levers 22 are connected to the lower ends of the levers 26, which are arranged in pairs diagonally to each other, and are in all respects similar to the levers 22, being fulcrumed intermediate of their length by the bolt 9 and spaced by the distance piece 8 carried by the said bolt.

The levers 22 and 26 are connected by bolts 27 which also carry distance pieces 28 to hold the levers 26 in the desired spaced position, while the upper ends of the levers 26 are connected by the bolts 29 to the lower ends of the links 30. The links 30 are spaced by the distance pieces 31 carried by the bolts 29 and the upper ends of the links are pivotally secured by the bolt 32 carrying a distance piece 33, on which the bracket 34 is pivotally mounted.

This bracket is provided with a pair of arms 35 carrying a platform 36 provided intermediate its breadth with a pair of angularly disposed arms 37, which are connected by the flexible members 38 passing around the distance pieces 31 to the distance piece 8 on the bolt 9.

It will thus be seen that the platform 36 is at all times held in a horizontal position by means of the flexible members 38 and there is no possibility of the object being lifted inadvertently slipping during this operation.

When this lifting device is in use the

spindle 17 is rotated and the blocks 16 are spaced apart to their fullest extent to permit of the platform 36 being placed under the object to be lifted. Rotary motion is now transmitted to the spindle 17 forcing the blocks 16 together, thereby actuating the lower ends of the levers 22, which move around the fulcrum bolt 24 tending to close up the levers and so elevate the upper ends thereof and thus motion is transmitted through the levers 26 to the links 30, and the upward force will now lift the object placed on the platform 36.

To lower the object it is only necessary to rotate the spindle 17 in the opposite direction to that of elevating, whereupon the lower ends of the levers 22 will be spaced further apart, rotating the levers around their fulcrum bolt 24 and tending to open the levers and lower the upper ends thereof, this motion being transmitted through the levers 26 to the links 30, thereby lowering the platform 36 and the object carried thereon.

From this description it will be seen that I have invented a lifting device which is of an extremely simple nature and in which a plurality of levers are utilized, so that the power given to the machine initially is multiplied to the desired extent to permit of heavy objects being lifted without inconvenience.

As many changes could be made in the above construction, and many apparently widely different embodiments of my invention, within the scope of the claims constructed without departing from the spirit or scope thereof, it is intended that all matter contained in the accompanying specification and drawings shall be interpreted as illustrative and not in a limiting sense.

What I claim as my invention is:

1. A lifting device comprising a plurality of pivoted levers arranged in pairs diagonally to each other, a platform carried by the levers, flexible means for retaining the platform in a horizontal plane, and means for actuating the levers.

2. A lifting device comprising a plurality of pivoted levers arranged in pairs diagonally to each other, a pivoted bracket having a pair of arms carried by the levers, a platform supported by the levers having angularly disposed depending arms, and means for moving the levers.

3. A lifting device comprising a frame having beadings on the side walls thereof, blocks having recesses in the lateral walls engaging the beadings, a plurality of pivoted levers carried by the blocks, load engaging means carried by the levers and means for actuating the blocks longitudinally of the frame, the beading preventing the blocks from twisting under stress.

4. The device of claim 3 with the addition of flanges carried by the side walls extending therefrom at right angles, the beading and flanges together preventing the blocks from twisting under stress.

5. A lifting device comprising a plurality of pivoted crossed levers, a pivoted bracket carried by the levers, a platform having angularly disposed depending arms carried by the bracket, flexible means engaging the depending arms for maintaining the platform in horizontal position, and means for actuating the levers.

VERNER CHARLES HILLIKER.