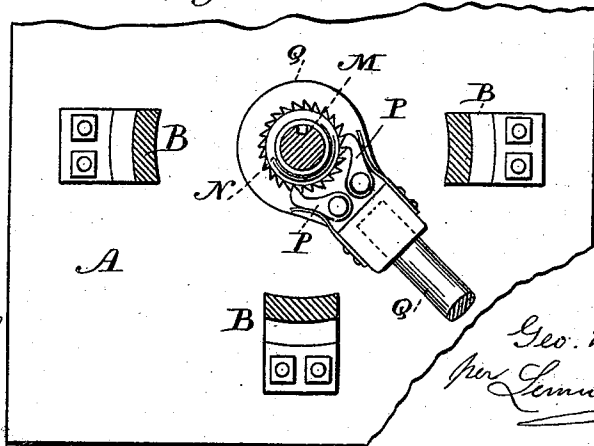
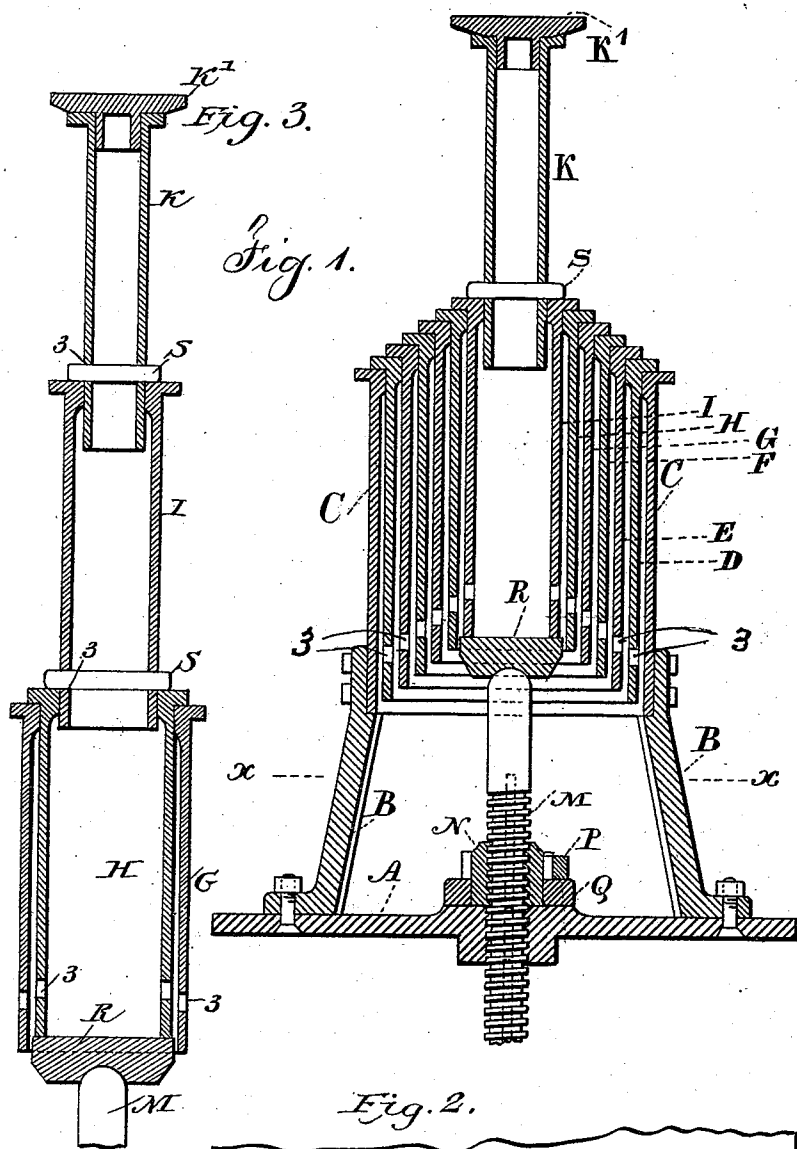


(No Model.)

G. W. LA BAW.  
LIFTING JACK.

No. 501,280.

Patented July 11, 1893.



Witnesses

Chas. A. Smith  
J. Staib

Inventor  
Geo. W. La Baw  
per Samuel W. Serrell  
Atty.

# UNITED STATES PATENT OFFICE.

GEORGE W. LA BAW, OF BAYONNE, NEW JERSEY.

## LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 501,280, dated July 11, 1893.

Application filed September 29, 1892. Serial No. 447,231. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. LA BAW, a citizen of the United States, residing at Bayonne, in the county of Hudson and State of New Jersey, have invented an Improvement in Lifting-Jacks, of which the following is a specification.

Hydraulic jacks and screw jacks have been made with one cylinder sliding within the other; and with screw jacks the outer tube formed the nut to the inner tube, and with hydraulic jacks and lifting devices packings were introduced between one cylinder and the next. In cases where a single hydraulic or screw lifting jack has been made use of, the range of motion has necessarily been limited to the length of the moving part.

My present improvement is for allowing an ordinary screw or hydraulic jack to be employed in giving a greater range of motion than has heretofore been possible, and it consists in the combination with a lifting jack of a range of tubes one within the other, constructed in such a manner that when one of the tubes has been moved to the extent of the lifting power, it is blocked or connected with the next of such lifting tubes for holding the article that has been raised or moved, and then the lifting power or jack is released and contracted and then applied to the second of the lifting tubes to move such tube and the first one, and so on a third or fourth tube may be moved successively without disturbing the supporting devices of the jack.

In the drawings Figure 1. is a vertical section representing the improvement with a screw jack, and Fig. 2. is a sectional plan below the line  $x, x$ , representing the ratchet connections. Fig. 3. is a section showing two of the lifting tubes in an elevated position.

The base A is provided with a suitable stand B, that is permanently connected to the outer tube C. and within this tube C. is a lifting tube D. I have shown lifting tubes E, F, G, H, I, and K, such lifting tubes being of successively decreasing diameters so that one will slide freely within the other, and in Fig. 1, the tube K is represented as in an elevated position and it is provided with any suitable head, block or platen K' to act against the article that is to be lifted or moved. The up-

per ends of these tubes are provided with flanges extending outwardly and resting upon the upper ends of the next larger lifting tubes. The stand B is open so as to allow for the introduction of any suitable lifting device, such for instance as an ordinary hydraulic jack, but I have shown a screw M to form such lifting device and a nut N resting upon the base A of the stand, and ratchet teeth around the nut with pawls P, upon a lever Q by which the nut is rotated progressively, so as to elevate the screw M, and between the screw M, and the lifting cylinder I. a head block R. is introduced and with the apparatus as many head blocks are provided as there are lifting tubes, and the diameters of such head blocks correspond to the exterior diameters of the respective lifting tubes, so that when the cylinder I, is to be lifted, the corresponding sized head block R. is inserted between the upper end of the screw M and the lower end of the cylinder I, and the jack is operated to elevate such cylinder I, and when the next cylinder is to be elevated the corresponding head block is to be introduced in its position to act upon the desired cylinder in raising the same.

In Fig. 1. the lifting cylinder K is shown in an elevated position, it having been acted upon by the jack with an intervening head block corresponding in size to the exterior of such cylinder K, and each cylinder as raised to the proper height is blocked upon the next cylinder by the insertion of one or more cross keys or bearers S, through openings 3 in the lower portion of such cylinder, so that the weight that has been raised is taken upon the lifting cylinder, with the top end of which the key or bearer S. comes in contact, so that the movement can be continued, after the jack has been run back, by acting upon the lower end of the next lifting cylinder, thereby moving the same and the previously moving lifting cylinder and the cross key thereof. The weight or pressure is taken upon the respective flanges that project at the ends of the lifting cylinder. In this manner the jack can be operated successively until motion has been given to the extent that the telescoping lifting cylinders can be forced out one above the other, and this improvement can be used

with lifting jacks already constructed and with those that may be made as specially adapted to the lifting cylinders aforesaid.

I claim as my invention—

- 5 1. The combination in a lifting jack, of a stand and a series of tubes slidable one within the other and having openings near the lower ends and cross keys or bearers to be inserted through the openings in such slidable tubes  
10 and to rest upon the ends of the adjacent surrounding tubes, substantially as set forth.
2. The combination in a lifting apparatus of a range of tubes, movable telescopically one

within the other and having openings near their lower ends, cross keys or bearers inserted through such openings, a lifting device and head blocks of different sizes adapted to act between such screw and the lower ends of the tubes, substantially as set forth. 15

Signed by me this 24th day of September, 20 1892.

GEO. W. LA BAW.

Witnesses:

GEO. T. PINCKNEY,  
WILLIAM G. MOTT.