

No. 761,413.

PATENTED MAY 31, 1904.

H. SCHROER.
LIFTING JACK.

APPLICATION FILED APR. 1, 1903.

NO MODEL.

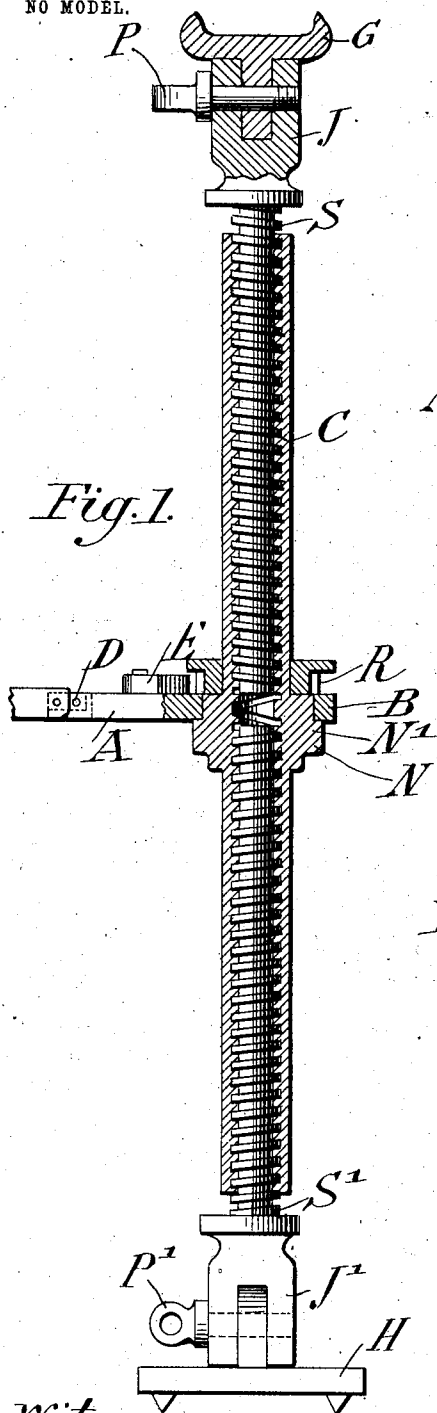


Fig. 1.

Fig. 3.

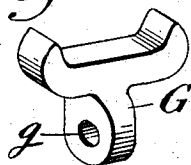


Fig. 2.

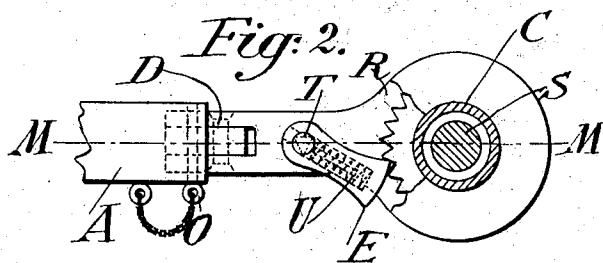


Fig. 6.

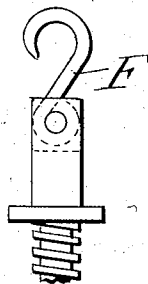


Fig. 4.

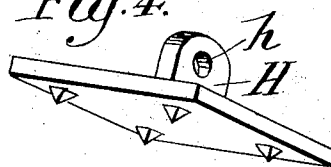
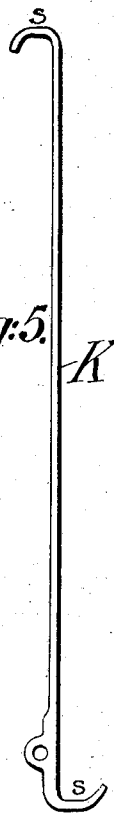


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

HERMANN SCHROER, OF MANNHEIM, GERMANY.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 761,413, dated May 31, 1904.

Application filed April 1, 1903. Serial No. 150,661. (No model.)

To all whom it may concern:

Be it known that I, HERMANN SCHROER, a citizen of the Empire of Germany, residing in Mannheim, in the Empire of Germany, have invented certain new and useful Improvements in Lifting-Jacks, of which the following is a specification.

This invention relates to improvements in lifting-jacks which differ from the ordinary jacks in that no wood is used in its construction and in which the parts are so related that the jack can be used as a lifting or supporting device or as a tension or drawing mechanism and that will perform these functions in a very desirable and effective manner; and for this purpose the invention consists of a lifting-jack comprising threaded spindles, one having a right-hand thread and the other being provided with a left-hand thread, said spindles having each a recessed end piece or keeper provided with means for connecting and holding the head-piece and the base-piece in their proper relation, a tubular socket or sleeve threaded on its interior portion in a manner corresponding to the said threaded spindles and a ratchet-wheel affixed to the exterior periphery of the said sleeve and concentric therewith, a lever held in place by a band encircling the sleeve and by a shoulder on said sleeve, a spring-pawl pivoted to said lever adjacent to the periphery of the ratchet-wheel and engaging in the teeth of said wheel, the said pawl being adapted to engage the ratchet-wheel for swinging it in one or the opposite direction for raising or lowering the lifting-jack, and also a grapple and an adjustable hook that may under certain circumstances be used with the improved jack.

In the accompanying drawings, Figure 1 is an elevation of my improved jack, showing a partial vertical section through the head-piece and sleeve and ratchet-wheel. Fig. 2 is a plan view, partly in horizontal section, of the jack, showing the lever with its hinged portion, the spring-pawl, and ratchet-wheel. Fig. 3 is a perspective view of the detachable head-piece of the jack. Fig. 4 is a perspective view of a detachable foot or base piece. Fig. 5 is an elevation of an adjustable grapple used in connection with the jack, and Fig. 6 is a side

view of a hook and its connection with the spindle.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, S and S' represent the threaded spindles of my improved jack, said threaded spindles being made of iron, steel, or other suitable material, one spindle having a left-hand screw-thread and the other a right-hand screw-thread and being provided each at opposite ends with transversely-recessed keepers J and J', adapted to connect with and hold, by means of the pins P and P', the head-piece G and the foot or base piece H. The head-piece G and the foot-piece H are detachable from the said end keepers of the spindles S S', as shown in Fig. 1.

Engaging the screw-threaded spindles S and S' and adapted to be turned thereon is a tubular socket or sleeve C, which is interiorly threaded in a manner corresponding to the said threaded spindles S and S'. The tubular socket or sleeve C has an annular enlargement N, provided with a shoulder N', on which is supported the band or ring B of a lever-arm A, to which is pivoted a spring-pawl E in such a manner as to engage the teeth of a ratchet-wheel R, which is affixed to the exterior periphery of the tubular socket or sleeve C, said ratchet-wheel R resting with its lower face against the upper surfaces of the enlargement N and the encircling ring at the end of the lever-arm.

The spring-pawl E is so placed and pivoted to the lever A that it can engage the said ratchet-wheel R on one side or the other of median line M M of Fig. 2, and by means of the spring U and the triangular end of the pivot T it may be retained in either position, as desired. When the spring-pawl is shifted from one side to the other of the median line, the action of the lever and pawl on the ratchet-wheel produce the turning of the sleeve in one or the other direction, and thereby the movement of the spindles in outward or inward direction.

The lever-arm A is jointed at D, as shown in Fig. 2, so that it may be swung down toward the body of the lifting-jack or removed by detaching the pin O and disconnecting the outer

portion of the lever-arm. The head-piece G is made of any suitable material and form, preferably of the T-shaped form, as shown in Fig. 3, having an eye-shank *g* for being attached by the pin P to the head-piece of the spindle S.

The foot or base piece H is made of any suitable material and form, preferably in the shape of a plate, as shown in Fig. 4, having an eye-shank *h* for engagement by the pin P' with the recessed lower end piece of the spindle S'.

The grapple K may be made of any suitable shape and material, but is preferably constructed in the form shown in Fig. 5, having a hook *s* on each end, said hooks being extended to opposite sides of the grapple, said grapple having an eye or lug near its lower end hook for connection with the sleeve of the jack when used for lifting articles located below the head-piece G, on which the upper hook of the grapple is supported. A hook F (shown in Fig. 6) may be used in place of the head-piece G and attached thereto by the pin P whenever a draw action is to be exerted by the jack.

The method of operating my improved jack is very simple and satisfactory. When it is desired to lift any object, the head and base pieces G and H of the jack are extended by giving the lever A an alternating motion around the axis of the spindles S and S', while the spring-pawl E is properly engaged with the teeth of the ratchet-wheel R, thus turning the sleeve C upon the said spindles S S', which are kept from rotating by the pressure of the body to be lifted and moved outwardly in line with the axis of the sleeve.

When objects to be lifted are so placed that they will not permit the placing of the jack thereunder, the grapple K may be used by hooking the top end of the same over the angular ridge of the head-piece G and engaging

the object to be lifted by the lower end of the grapple and operating the lever in the required manner.

The hook F may be inserted between one of the jaws J or J' and be conveniently used for the purpose of withstanding tension when the jack is used as a drawing mechanism. When the motion of the jack is to be reversed, the pawl is swung over so as to engage the ratchet-wheel at the opposite side of the median line of the lever-arm, so that by the oscillation of the lever the sleeve is moved in opposite direction to its former motion, and thereby the spindles drawn inwardly into the sleeve ready for the next lifting action of the jack.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

In a lifting-jack, the combination of threaded spindles, one having a right-hand thread and the other a left-hand thread, a recessed end piece on each spindle, a head or foot piece on each end piece, a tubular sleeve threaded on its interior portion in a manner corresponding to the threaded spindles, an enlargement having a shoulder on said sleeve, a ratchet-wheel affixed to the exterior periphery of said sleeve, a lever provided with a ring or band encircling said shoulder, and a spring-pawl pivoted to said lever adjacent to the ratchet-wheel and engaging with the teeth of the ratchet-wheel, the said pawl being adapted to be placed in engagement with the ratchet-wheel at one side or the other of the axis of the lever for turning the sleeve in one or the opposite direction, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

HERMANN SCHROER.

Witnesses:

JACOB ADRIAN,
CARL MUNBECK.