

(No Model.)

H. CLARK.

APPARATUS FOR RAISING OR LOWERING WEIGHTS.

No. 561,490.

Patented June 2, 1896.

Fig-3-

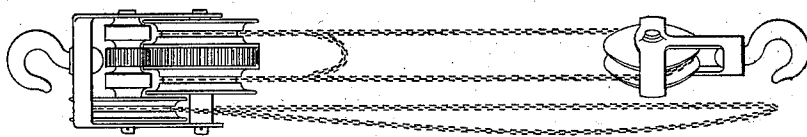


Fig-1-

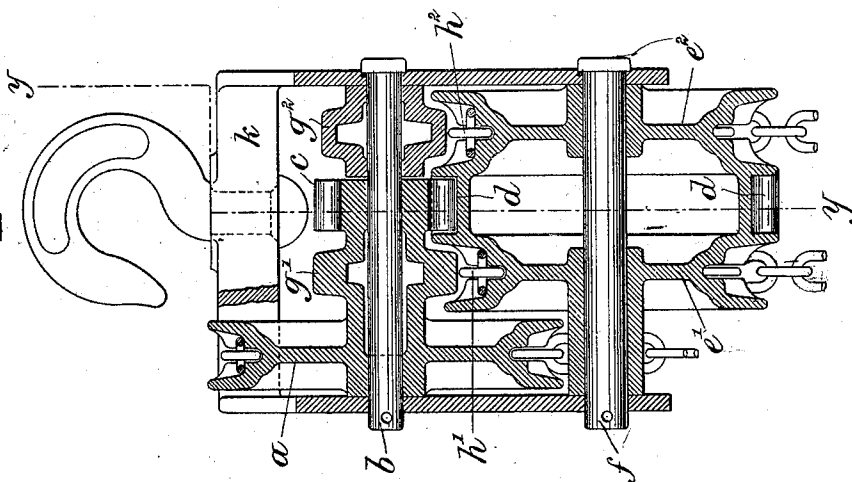
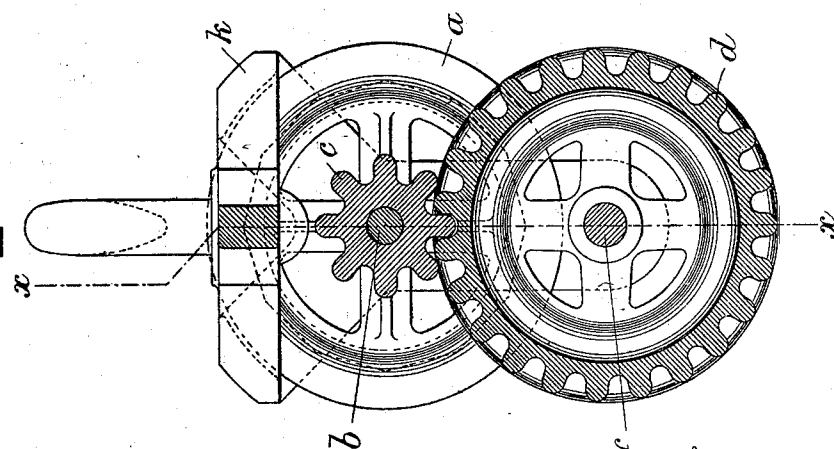


Fig-2-



Witnesses  
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# UNITED STATES PATENT OFFICE.

HENRY CLARK, OF STOCKTON-ON-TEES, ENGLAND.

## APPARATUS FOR RAISING OR LOWERING WEIGHTS.

SPECIFICATION forming part of Letters Patent No. 561,490, dated June 2, 1896.

Application filed December 30, 1895. Serial No. 573,732. (No model.) Patented in England August 23, 1894, No. 16,046; in France May 18, 1895, No. 247,501, and in Belgium May 25, 1895, No. 115,801.

*To all whom it may concern:*

Be it known that I, HENRY CLARK, a subject of the Queen of Great Britain and Ireland, residing at Stockton-on-Tees, in the county of Durham, England, have invented certain new and useful Improvements in Apparatus for Raising or Lowering Weights, (for which I have obtained patents in the following countries: Great Britain, No. 16,046, dated August 23, 1894; France, No. 247,501, dated May 18, 1895, and Belgium, No. 115,801, dated May 25, 1895;) 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.

My invention relates to improvements in apparatus for raising weights; and it consists of certain novel features hereinafter described and claimed.

Reference is had to the accompanying drawings, in which the same parts are indicated by the same letters throughout the several views.

Figure 1 is a sectional view of a pulley-block constructed according to my invention and taken on line  $xx$  of Fig. 2, which is a sectional view taken on line  $yy$  of Fig. 1; and Fig. 3 illustrates to a smaller scale my improved pulley-block fitted up in readiness for use.

In the figures,  $a$  is the hand-chain or operating wheel mounted on the spindle  $b$  as its axis and having attached thereto the pinion  $c$ , either in one casting, as shown, or otherwise, which pinion gears externally into the spur-wheel  $d$ , secured to and shown as forming one casting with the burden-chain sprocket-wheels  $e' e^2$ , mounted on the spindle  $f$  as their axis. As the hand-chain wheel  $a$ , with the pinion  $c$  attached thereto, is free to rotate as one body on the spindle  $b$ , and the burden-chain sprocket-wheels  $e' e^2$ , with the spur-wheel  $d$ , are similarly free to rotate as one body on the spindle  $f$ , it is obvious that the moving parts of the block can be operated without rotating either of the said spindles  $b$  and  $f$ , which accordingly extend as fixtures from side to side of the pulley-block frame in the manner shown more particularly in Fig. 1, where the boss or nave of the hand-wheel

$a$  may extend across the frame of the apparatus. Bosses or enlargements  $g' g^2$ , of the form shown in Fig. 1, are preferably provided as retaining-guides to the burden-chains  $h' h^2$ , whereby the said burden-chains are restrained from jumping out of their places, and in some cases the cross-bar  $k$  of the frame is brought close to the rim of the hand-chain wheel  $a$  to similarly retain the hand-chain in the groove thereof. It will also be observed that by gearing the pinion  $c$  and spur-wheel  $d$  externally instead of internally the spindle  $b$  cannot only be a fixture extending across from side to side of the frame, but that the two spindles  $b$  and  $f$  are or can be set farther apart, and so afford accommodation for an increase in the diameter of the burden-wheels  $e' e^2$  to the extent required to enable them to be operated direct from the burden-chain when dealing with light weights.

By having the roller  $c^2$  loosely mounted upon the same spindle with the hand-chain wheel and with the boss  $g'$  and the pinion  $c$  and by arranging the parts as shown great compactness and simplicity in the structure are obtained.

The various advantages of the herein-described construction will readily suggest themselves to any one skilled in the art.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

In a hoisting device, the combination, with a frame composed of an upper cross-piece provided with means for suspending said frame, and a pair of similar upright side pieces dependent from said cross-piece, each having a plurality of holes therethrough oppositely disposed to holes through the other of said upright pieces; a fixed spindle mounted in each pair of oppositely-disposed holes; the grooved and flanged burden-chain wheels  $e'$  and  $e^2$  having the external gear  $d$  formed between said wheels and integral therewith revolubly mounted upon one of said spindles; the hand-chain wheel  $a$  having an extension upon its hub with a pinion  $c$  and boss or enlargement  $g'$  thereon, revolubly mounted upon another of said spindles, the said pinion  $c$  gearing with the gear  $d$  and driving the same, and the boss  $g'$  adapted to rotate between the flanges

of the wheel  $e'$  in contact with the chain running thereon, and to hold the same in position; and the roller  $g^2$  loosely mounted upon the same spindle with the said hand-chain  
5 wheel  $a$  and with the boss  $g'$  and the pinion  $c$ , and adapted to revolve independently of said hand-chain wheel, and to make contact with the chain running upon the wheel  $e^2$  and

hold said chain in position, substantially as described. 10

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

HENRY CLARK.

Witnesses:

GEORGE JAMES CLARKSON,  
EDWARD THOMAS ELCOAT.