No. 700,319. Patented May 20, 1902.

C. V. FOWLER.

APPARATUS FOR MOVING HEAVY BODIES.

(Application filed June 17, 1901.)

(No Model.)

Fig 3

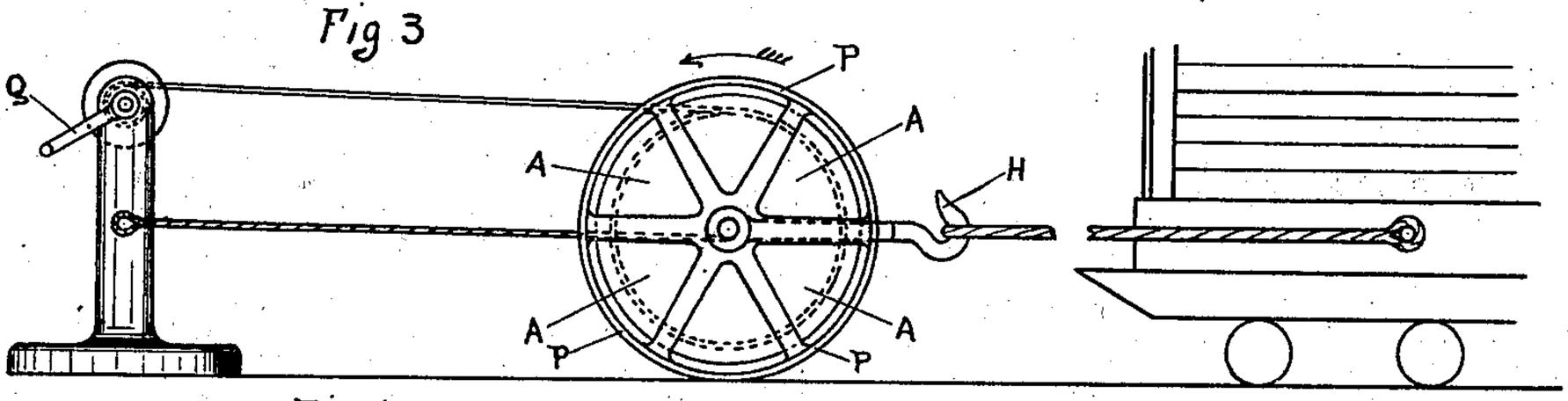


Fig. 4

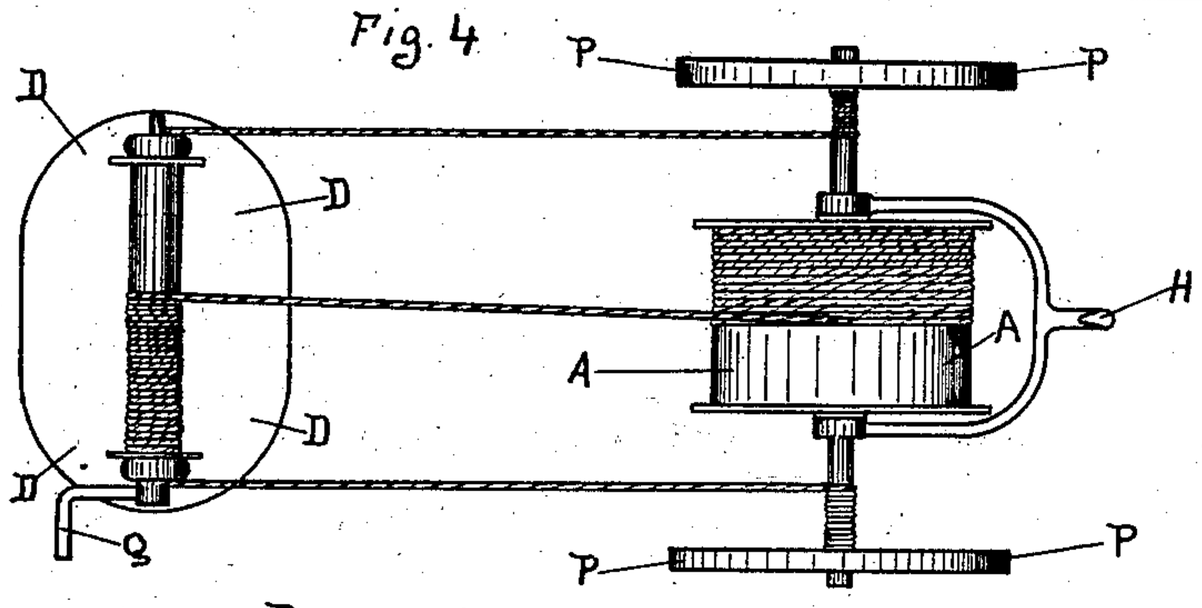


Fig 5

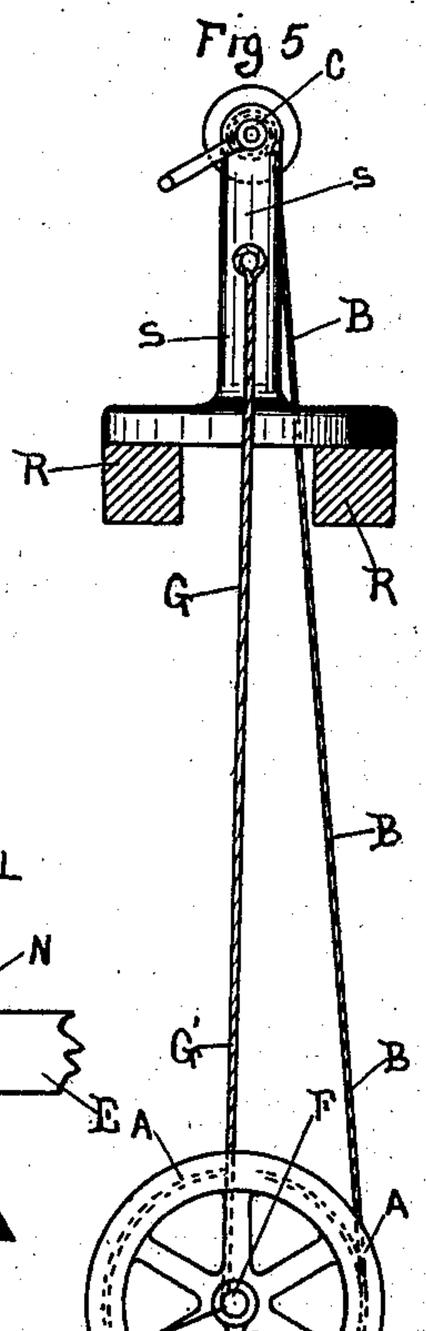


Fig 1

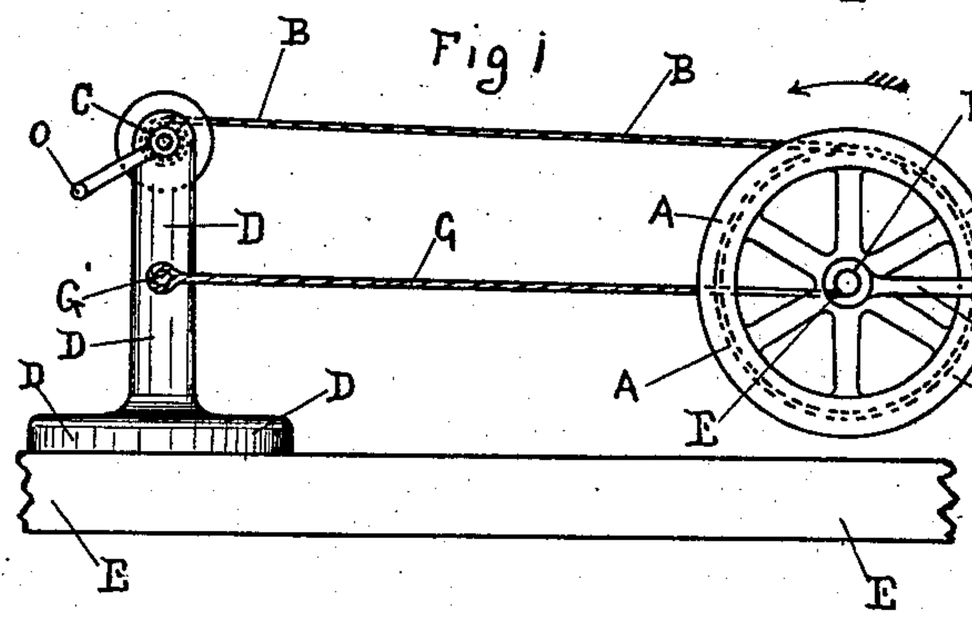
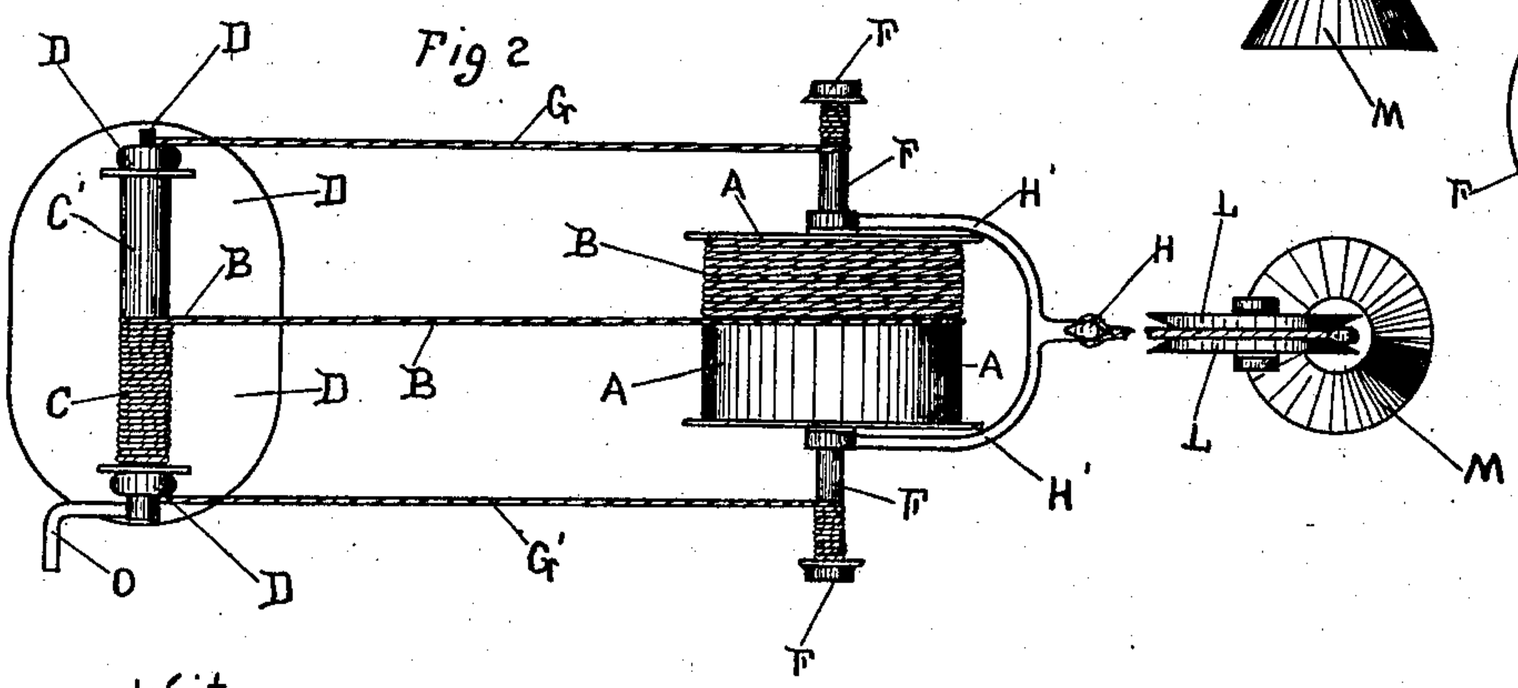


Fig 2



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES V. FOWLER, OF LOS ANGELES, CALIFORNIA.

APPARATUS FOR MOVING HEAVY BODIES.

SPECIFICATION forming part of Letters Patent No. 700,319, dated May 20, 1902.

Application filed June 17, 1901. Serial No. 64,937. (No model.)

To all whom it may concern:

Be it known that I, CHARLES V. FOWLER, of the city of Los Angeles, county of Los Angeles, in the State of California, have invented certain new and useful Improvements in Mechanism or Apparatus for Raising and Lowering or Otherwise Moving Heavy Bodies, of which the following is a full, clear, and exact description or specification, reference being had to the annexed drawings and to the letters marked thereon.

My said invention, which relates to certain new and useful improvements in mechanism or apparatus for raising or lowering or otherwise moving more or less horizontally upon a more or less horizontal surface bodies having weight and which because of their weight have inhering to themselves resistance to being moved, consists in its simplest form of an axle, upon which is carried at or about the central part thereof a circular drum or pulley, upon which a rope or chain can be wound or unwound by the axis upon which the said drum or pulley is carried being rotated, and upon the outer ends of the axis upon which the said drum or pulley is carried there is wound on or wound off, in the manner hereinafter described, a rope or ropes, whose outer end or ends is or are attached to the framework or other stationary point of a retaining device, wherein or whereby an axis carrying a reel or roller to which a rope whose other end is attached to the aforesaid drum or cylinder is connected in such manner that by rotating the axis carrying the reel in one direction the rope connecting it to the aforesaid drum or cylinder is unwound from the aforesaid drum or cylinder and wound upon the reel itself, while the winding of the drum, brought about by the unwinding of the rope from off the drum, causes the ropes which are attached to the outer ends of the shaft which carries the drum to be wound upon that shaft as the rope itself is being unwound from the drum or cylinder, so that in the act of unwinding the rope from the drum or cylinder the shaft carrying the drum or cylinder winds upon itself the ropes or cables, whose other ends are stationarily attached to the framing or other stationary device carrying the reel, as aforesaid, and in this manner the shaft, with the drum or cylinder at its center, is caused to be moved in the direction of tension of the ropes or cables which become wound up on the shaft itself as the rope itself is unwound from the drum upon the said shaft, and the body to be moved is either raised or lowered or transported either horizontally or at any other angle by the extent to which the distance between the center of the shaft upon which the drum or cylinder is carried and the center of the shaft carrying the reel, accordingly as the distance between these two shafts is varied by the winding on or winding off of the ropes or cables in the manner hereinbefore described, besides which the power or force for raising or lowering or moving at any other angle the body requiring to be moved is capable of considerable variation by the variation of dimension in the diameter of both the aforesaid drum or cylinder and that of the shaft upon which the aforesaid drum or cylinder is carried, and in addition to the great convenience afforded by the apparatus constituting this invention for moving heavy weights in any direction the construction of the apparatus altogether is such that no hindrance whatsoever is introduced in the operating of the apparatus through any desired range or distance, for the reason that there are no permanently-rigid connections between the acting parts of the mechanism, and for this reason the apparatus constituting this invention is especially applicable, as hereinafter described, and shown upon the annexed sheets of drawings, upon which sheets of drawings—

Figure 1 is a side elevation of my apparatus shown as operating in a horizontal position for lifting or lowering a weight in a vertical plane. Fig. 2 is a plan corresponding to Fig. 1. Fig. 3 is a side elevation of the device constituting my invention shown as applied to moving a building, such as a house, upon rollers in order to transfer the building, such as a house, from one location to another location. Fig. 4 is a plan of the apparatus itself constituting my invention and corresponding with Fig. 3, but with the building itself shown in Fig. 3 omitted in Fig. 4. Fig. 5 is an elevation of my apparatus shown as applied to lifting a heavy body vertically from below the level of the apparatus itself and so arranged that it can be moved upon

the beams whereon it rests from any one position to any other position without altering the direction of suspension of the apparatus itself.

In Figs. 1 and 2 of the annexed drawings the main rope-pulley is marked A, and upon its periphery there is shown as partly wound a rope or cable B, the other end of which rope B is shown as partly wound upon the reel C, which reel C is carried in suitable bearings in the framing D, which framing D is securely fastened to any required support, such as the wooden frame E. (Shown partly in side elevation at Fig. 1.) To the axis F of the drum or pulley A there are two ropes or cables G and G′ attached, whose opposite ends are attached to the stationary framing D, so that as the rope B is wound off the drum or pulley A the shaft F, upon which the rope drum or pulley A is carried, rotates in the direction of the arrow shown in Fig. 1, and thereby causes the ends of the ropes G and G′, which are attached to the axis or shaft F, to be wound upon the said axis F, and which winding action necessarily causes the drum or pulley A and its axis F to be drawn horizontally toward the stationary framing D, so that any weight suspended from the hook H, forming part of the shackle H′, carried upon the axis F, if suspended over a carrier-pulley, such as is the pulley L in Figs. 1 and 2, the weight M, suspended by the rope N by the hook H over the pulley L, may be easily lifted or lowered, according to the direction in which the rope or cable B is either wound or unwound, by operating the reel C in either a right or left hand direction by means of the winch-handle O in the manner so clearly shown upon Figs. 1 and 2 of the annexed drawings.

In the arrangement of my device or apparatus shown at Figs. 3 and 4 my said device or apparatus is there shown as adapted for hauling a heavy weight horizontally or at any angle tending toward the horizon—such, for example, as is frequently practiced in moving a house, church, or other building from one site to another site. The only difference in the device as shown at Figs. 3 and 4 from that hereinbefore described with reference to Figs. 1 and 2 is that instead of the drum or cylinder A being entirely held up from off the surface upon or about which it operates it is in Figs. 3 and 4 shown as mounted upon a pair of idler wheels or rollers P P, which as the device is being hauled horizontally by turning the winch-handle (marked Q) or being hauled for purposes of transit gives ample support to the drum or cylinder A and its connections, so that there is no lack of support of the drum or cylinder A or connections carried thereby either during the time when a building is being moved or when the cylinder or drum A is not in use for performing a hauling operation, in which case the idler wheels or rollers P P, being of larger diameter than the drum or roller A, always support the drum or roller A upon any surface whatever which carries or supports the same when out of use.

When the apparatus shown in Figs. 3 and 4 is used for hauling a house or other building or weight, that part of the framing of the apparatus marked D D is securely fastened to the ground or to any suitable attachment or framework with sufficient resistance to motion, which may be effected by the laying on of sufficient weights upon or by bolting down the framing D D, so as not to be shifted or moved while the house or other building or weight is being moved from one position to another position; but in all other respects the apparatus shown at Figs. 3 and 4 is the same as the apparatus shown at Figs. 1 and 2.

In that form of my device or apparatus shown at Fig. 5, and which form of my device or apparatus is more especially adapted for lifting weights in a shed or other locality, wherein a frame carrying a winding-reel and handle or gear for operating it can be supported upon horizontal beams, so that the said apparatus is either stationary in its position or movable in its position upon said beams. The entire apparatus constituting my invention is supported by this vertical suspension in the manner now to be described.

In Fig. 5 the parts marked R R represent two beams in transverse section which are carried in any suitable manner at any required or desired distance above the floor of the building or above the ground upon which the material or weights have to be moved from one place to another in the operations of constructing any structure or machine—such, for example, as in railway-carriage-construction works or railway-locomotive-construction works or other works wherein large masses of material have to be moved from one place to another in order to be assembled into a railway-carriage body or a locomotive-engine or other heavy piece or structure of either mechanical or static character. Upon these two beams R R there is supported the vertical framing S S, in the upper part of which the axle or reel C, corresponding to the axles and reels C C in Figs. 1, 2, 3, and 4, is carried, and upon which reel C C the rope B B is wound, while the other end of the rope B B is wound upon the suspended pulley A A, and the axle F F of the pulley A A being connected by the ropes G G′ to the framing S S as the pulley A A is rotated by the rope B B being unwound therefrom and wound upon the reel C C this causes the drum A A, its hook H, and any weight suspended to or by the hook H to be raised by the ropes G G′ being wound upon the axle F F of the drum or cylinder A A in the manner hereinbefore described with reference to Figs. 1, 2, 3, and 4 of the drawings.

Having now described the nature of my said invention and some of the best systems, modes, and manners of usefully employing the same,

I desire to observe, in conclusion, that what I consider to be novel and original, and therefore claim as the invention to be secured to me by Letters Patent, is as follows:

1. The apparatus or device for moving heavy bodies consisting of a drum or cylinder of much larger diameter than the reel of the apparatus, the rope wound partly upon the drum and partly upon the reel, the two ropes, one of the ends of each of which is fastened to the reel-frame, and the other end of which ropes is fastened to the axis of the drum, the hauling-hook carried upon the axis of the drum to which the weight or heavy body to be lifted is attached, all operating together in the manner and for the purposes substantially as hereinbefore described.

2. The combination of the drum, the reel, the handle for rotating the reel, the prolonged axis of the drum, the ropes connecting the prolonged axis of the drum to the framing of the reel, the hauling-hook carried by or upon the axis of the drum, all operating together in the manner and for the purposes substantially as set forth.

3. The combination of the drum, the reel, the handle for rotating the reel, the prolonged axis of the drum, the ropes connecting the prolonged axis of the drum to the framing of the reel, the hauling-hook carried by or upon the axis of the drum, also the carrier or idler wheels for supporting the drum and its attachments, all operating together in the manner and for the purposes substantially as set forth.

4. The apparatus or device suspended vertically from the frame carrying the winding-reel, consisting of the drum, the rope wound partly upon the drum and partly upon the winding-reel connecting the drum and winding-reel together, and the two ropes whose upper ends are attached to the framing of the apparatus, with their lower ends attached to the prolonged axis of the drum; also the hauling-hook carried upon the prolonged axis of the drum, all operating together in the manner and for the purposes substantially as set forth.

In witness whereof I, the said CHARLES V. FOWLER, have hereunto set my hand, this 7th day of May, A. D. 1901, in the presence of two subscribing witnesses.

CHARLES V. FOWLER.

Witnesses:
ST. JOHN DAY,
BEATRICE WILKINS.