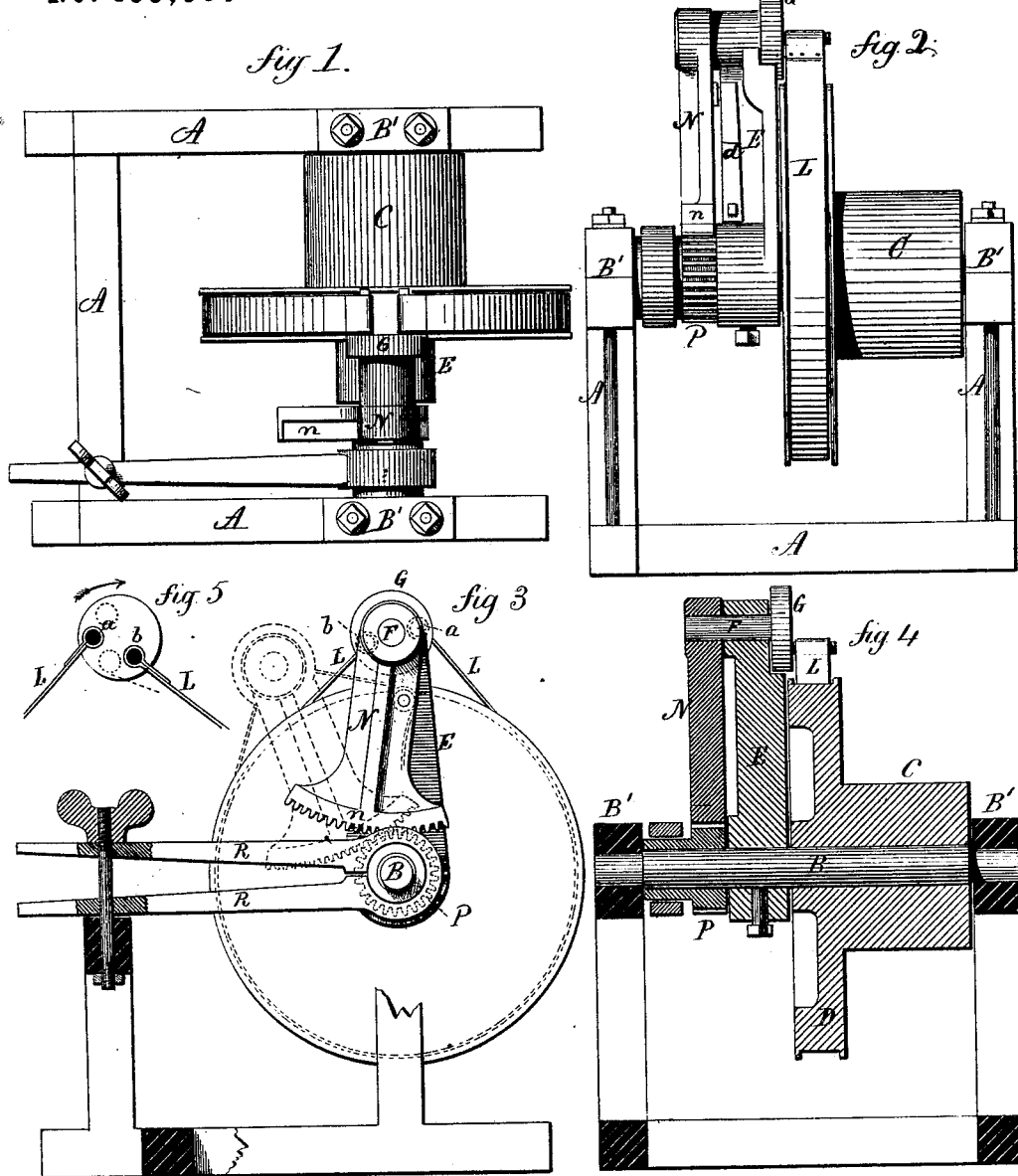


A. Y. PARMELE.

CLUTCHING APPARATUS FOR HOISTING-MACHINES.

No. 185,567.

Patented Dec. 19, 1876.



Witnesses.
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UNITED STATES PATENT OFFICE

ANDREW Y. PARMELE, OF NEW HAVEN, CONNECTICUT, ASSIGNOR OF ONE-HALF HIS RIGHT TO ALBERT B. BEAN, OF SAME PLACE.

IMPROVEMENT IN CLUTCHING APPARATUS FOR HOISTING-MACHINES.

Specification forming part of Letters Patent No. 185,567, dated December 19, 1876; application filed November 6, 1876.

To all whom it may concern:

Be it known that I, ANDREW Y. PARMELE, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Hoisting Apparatus; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, plan view; Fig. 2, front view; Fig. 3, end view; Fig. 4, longitudinal section; Fig. 5, detached part.

This invention relates to an improvement in apparatus for hoisting and like purposes, the object being to connect the power with the hoisting-drum by means of a frictional band; and it consists in the mechanism hereafter described, and more particularly recited in the claims.

A represents the frame, upon which the mechanism is arranged; B, the shaft, supported in suitable bearings B'. Loose upon this shaft is the drum C, which is constructed with, or has attached to it, a wheel, D, preferably grooved upon its edge. Rigidly attached to the shaft is an arm, E, or, if preferred, this may be a wheel, to which the hoisting-power is communicated. If it be not a wheel, then power is applied to impart a continuous revolution to the shaft B and the arm E. In the arm E a shaft, F, is arranged with a head, G, upon the side next the wheel D, and in this head there are two studs, *a b*, as shown in Fig. 5, and broken lines, Fig. 3. To one of these studs *b* one end of a metallic or other suitable strap, L, is attached, and to the other stud *a* the other end of the said strap is attached, the strap passing around the periphery of the wheel D, the flanges of the groove of which prevent the said strap from running off the wheel. The studs *a b* are both eccentric to the axis of the shaft F; hence, when the shaft F is turned in the direction as indicated by the arrow, Fig. 5, the two ends attached to their respective studs, will be drawn in opposite directions—say, to position denoted in broken lines, Fig. 5—until

the band produces sufficient friction in the wheel D to cause it to turn with the shaft B, to which the arm E and shaft F are securely attached, but when the studs *a b* are in their normal condition then the shaft B, with the arm E and stud-shaft F, together with the band L, all revolve freely, while the drum remains stationary. To thus turn the shaft F to cause the power to engage the hoisting-drum a lever, N, is attached to the stud-shaft F, and extends inward, its inner end toothed, forming a segmental gear, *n*, and loose upon the shaft is a pinion, P, which engages into the teeth of the lever N. The hub of the pinion P is elongated, and is grasped by a pair of frictional levers, R R, or any suitable device, which will engage or release the said pinion. When the friction upon the pinion P is removed, then the lever N and the pinion all revolve freely with the shaft B through their connections to the lever E; but by gripping the pinion P by the levers R R, or otherwise, produce sufficient friction to arrest its revolution. The arm E, still revolving, will carry the lever N forward to the position seen in Fig. 3. The engagement of the teeth of the lever N with the stationary pinion will cause the lever to turn on its own axis, and consequently turn the shaft F until the band L engages the wheel of the hoisting-drum. The friction produced upon the pinion P should only be sufficient to cause the shaft F to turn till it produces the required friction upon the hoisting-drum. The power will then overcome the friction upon the pinion P, and the revolving lever N will cause the pinion to turn with it and the arm E, the friction on the pinion P, however, holding the lever N back to maintain the friction upon the hoisting-drum, thus connecting the parts together, so that the drum will wind up the cord or chain and raise the weight. By loosening the friction upon the pinion P the lever N will return to its normal condition, and allow the weight to descend. A resistance for such descent may be made by producing friction upon the pinion P less than enough to cause the band L to stop the wheel D, the friction in that case only retarding the revolution of the

hoisting-drum. The raising or lowering the weight may at any time be stopped, and the weight held in suspense by adjusting the friction upon the pinion P. A spring, *d*, is arranged upon the arm E, which operates upon the lever N to cause it to return to its normal condition when released from the power of the pinion P.

While the friction upon the pinion P is best produced by grasping-levers, it will be evident to mechanics skilled in the art that other frictional device to accomplish the same object may be applied to the pinion.

Other devices may be employed for turning the stud-shaft F than through the instrumentality of the lever N, but this is believed to be the best arrangement.

I claim—

1. In a hoisting apparatus the combination of the following elements: a driving-shaft; a hoisting-drum, loose on said shaft; an arm or wheel, rigidly attached to the said shaft; a pair of studs hung on said wheel or arm ec-

entric to the axis on which they rotate; and a frictional band around said drum or wheel attached thereto, the ends of the said band, respectively, attached to the said studs, substantially as described.

2. In a hoisting apparatus the combination of the following elements: a driving-shaft; a hoisting-drum, loose on said shaft; an arm or wheel, rigidly attached to the said shaft; a pair of studs, hung on said wheel or arm, eccentric to the axis on which they rotate; a frictional band around said drum or wheel attached thereto, the ends of the said band, respectively, attached to the said studs; and a lever attached to the shaft, by which said studs are rotated, extending inward and engaging with a pinion loose upon the shaft, with mechanism for applying friction to the said pinion, substantially as specified.

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Witnesses:

JOHN E. EARLE,

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