(No Model.)

T. C. NARAMORE.

RAILROAD TIE AND RAIL ELEVATOR.

No. 262,819. Patented Aug. 15, 1882.

Fig. 1.

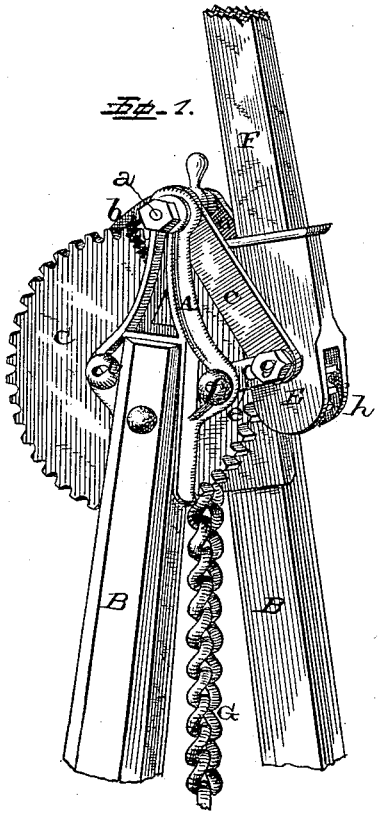


Fig. 2.

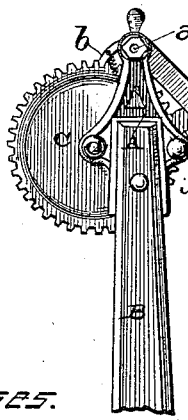


Fig. 3.

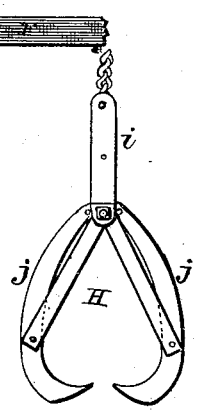
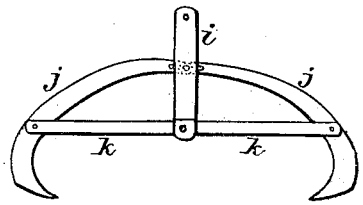


Fig. 4.



Witnesses.
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UNITED STATES PATENT OFFICE.

TRUMAN C. NARAMORE, OF WILLISTON, VERMONT.

RAILROAD TIE AND RAIL ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 262,819, dated August 15, 1882.

Application filed February 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, TRUMAN C. NARAMORE, a citizen of the United States of America, residing at Williston, in the county of Chittenden and State of Vermont, have invented certain new and useful Improvements in Railroad Tie and Rail Elevators; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in devices for raising heavy weights, and is especially adapted to the raising of railroad ties and rails.

It consists in so arranging and combining the mechanism employed that while it possesses the essential characteristics of simplicity, cheapness, and durability in its construction, its application of power is most economical and effective.

It consists of a metallic frame so designed as to sustain one or more gear-wheels, with their respective drums, operated by a lever-socket pinion, having an independent attachment to the upper extremity of the frame, so that the power can be conveniently applied on either side of the frame at the fulcrum on the ends of the fulcrum supports or braces. One or more spring dogs or pawls serve to take the strain of the lift and prevent reverse motion while resetting the socket-pinion. The weight is thus always on the upper or dog shaft, which is located directly over the center of the frame and on a line perpendicular to that portion of the lifting-chain to which the weight is attached by means of a grappling-iron of novel construction.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective of my invention. Fig. 2 is a side elevation of the same. Figs. 3 and 4 are side elevations of the grappling-irons.

Similar letters refer to similar parts throughout the several views.

A is a metallic frame, the two sides of which I prefer to make triangular in form, connected together at each angle, and designed to be sustained by the stanchions B B, which are suitably braced, and to the upper extremities of which they are attached. Through the angle, at the apex, passes a bolt, *a*, which forms the shaft of the spring dog or pawl *b* and sustains the fulcrum-braces *c c*. Through one of the angles, at the base, passes the shaft *d* of the gear-wheel C and drum D, which is cast solid to one or both sides of the gear-wheel C.

e e are slotted supports on either side of the fulcrum-braces *c c*, and which are pinioned to the base of the frame A at *f f*.

E is a lever-socket pinion, made of metal, having a socket at one end, into which a lever, F, is fitted. The other extremity is a segment of a pinion, having teeth designed to engage with the teeth of the gear-wheel C. The pinion E revolves upon a pin or bolt, *g*, which passes through the extremities of the braces *c c* and the slotted holes of the supports *e e*, and thus forms a fulcrum of the lever F. The projecting ends *h h* of the pinion E, together with its connection with the supporting-braces *c c* and *e e*, serve to retain the pinion rigidly in place while meshing with the gear-wheel C.

G is a chain which is fastened to the drum, passing over it to the side toward the pinion E. It terminates in the grappling-iron H, which is composed of the double straps *i i*, the curved arms *j j*, and the double supporting-braces *k*. To the upper extremity of the straps *i* the chain G is attached, one end of the double braces *k* being pivoted to the lower end of the straps *i* and the other on each side of the lower part of the arms *j* respectively. The upper extremities of the arms *j* are hinged together so as to slide freely between the straps *i i*. By this arrangement the upper portion of the arms *j* always form a guide to keep their lower parts or hooks in a reliable position, the weight being wholly sustained by the double braces *k* and the hooks, so that whatever may be the size of the weight to be elevated it is always readily and firmly grasped by the grappling-iron H. By working the lever F the gear-wheel C is revolved, thus winding up the chain G on the drum and raising the weight to which the grappling-iron H is attached. The strain is always on the dog-shaft *a* directly over the weight, the power being applied at the fulcrum *g*, the dog-brace

thereby sustaining the weight, so that it is transmitted below to a point just as far from the center as is the axle of the gear-wheel C. The dog *b* is braced by the fulcrum-brace, which sustains the lever when the dog is not holding.

By elevating the lever F it is at once thrown out of gear, and the weight is more or less rapidly lowered, according as the socket may be used as a brake. As the connections are all above the wheel C, it is apparent that the apparatus can be worked either at the top or sides or wherever it is most convenient; or, if desired, the lever can be reversed and worked upon the other side. By means of a double dog at the top, and by connecting the lever with double-slotted braces below, the gear-wheel can be turned the other way by raising the lever. In brief, the apparatus is susceptible of being used in every position where a lever can be used, and in every variety of ratchet movement.

Having thus described my invention, I claim—

1. The combination of the lever F, the pinion-socket E, the slotted supports *e*, braces *c*, pawl *b*, wheel C, and chain, substantially as shown.

2. The combination of the uprights B, the castings A, applied thereto, the gear-wheel C, bolt *a*, spring-dog braces *c*, slotted supports *e*, and operating lever and pinion, substantially as set forth.

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

TRUMAN C. NARAMORE.

Witnesses:

CHARLES E. ALLEN,

ARCHD. ORMSBEE.