

(No Model.)

2 Sheets—Sheet 1.

B. L. TOQUET.
HOIST.

No. 585,413.

Patented June 29, 1897.

FIG. 2.

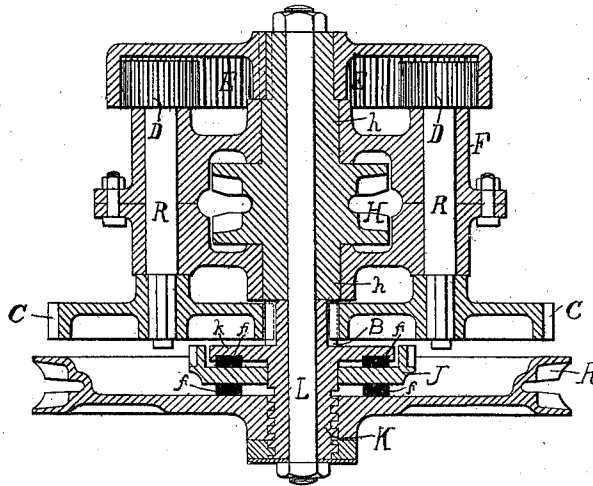
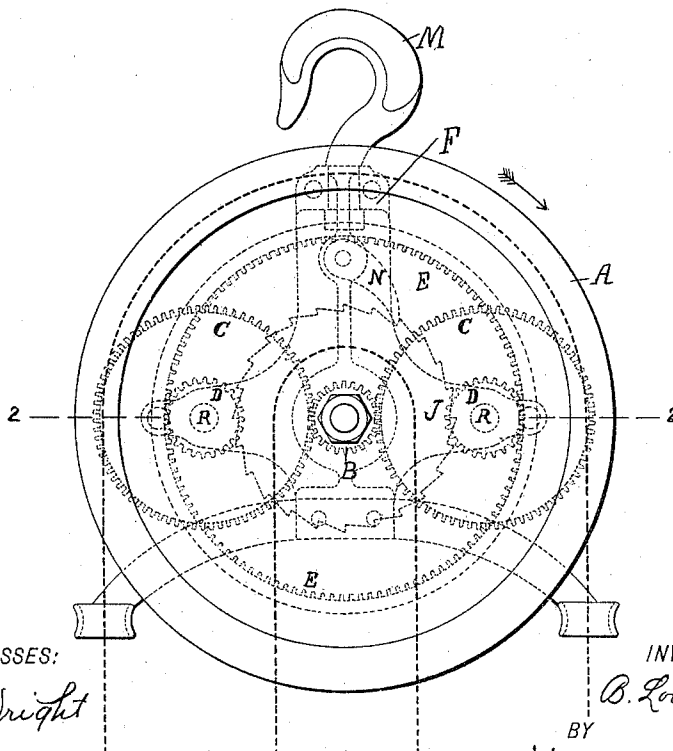


FIG. 1.



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(No Model.)

2 Sheets—Sheet 2.

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FIG. 4.

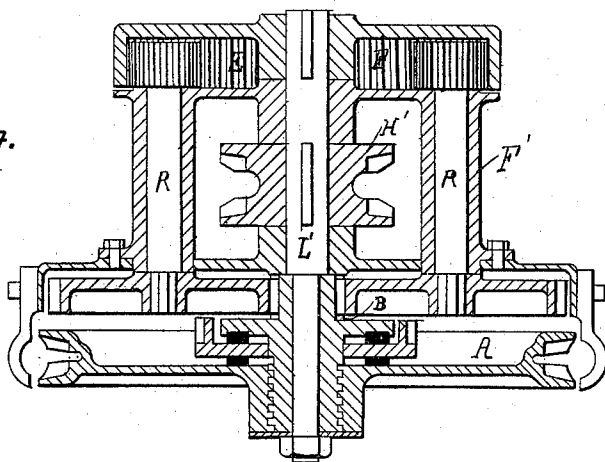


FIG. 3.

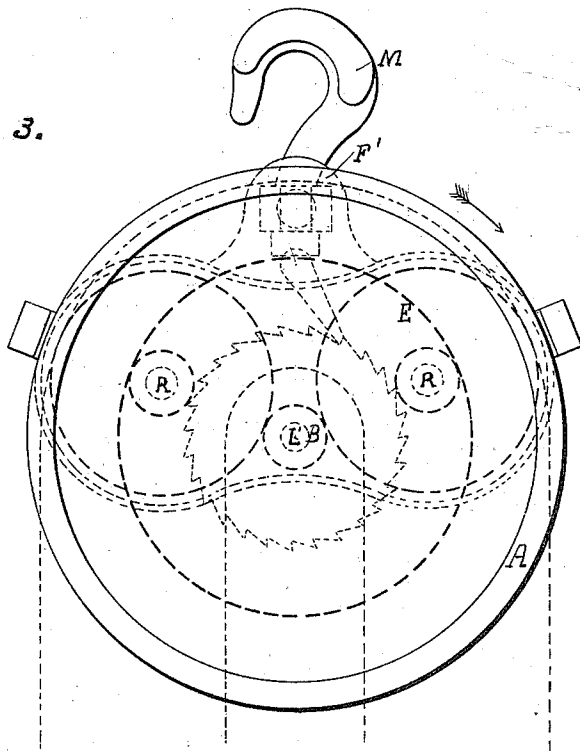
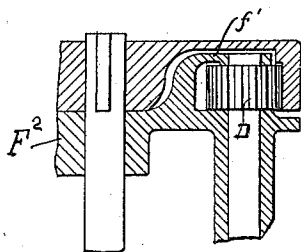


FIG. 5.



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UNITED STATES PATENT OFFICE.

BENJAMIN LOUIS TOQUET, OF WESTPORT, CONNECTICUT.

HOIST.

SPECIFICATION forming part of Letters Patent No. 585,413, dated June 29, 1897.

Application filed February 2, 1897. Serial No. 621,653. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN LOUIS TOQUET, a citizen of the United States of America, and a resident of Westport, Fairfield county, Connecticut, have invented an Improved Hoist, of which the following is a specification.

My invention relates to improvements in the construction of hoisting mechanism, more particularly of the kind usually termed "portable hoists" or "pulley-blocks;" and the main object of my invention is to construct a light, inexpensive, and durable hoist, occupying but a small space, and yet giving great power with high efficiency.

In the accompanying drawings, Figure 1 is a side elevation of a hoist constructed in accordance with my invention. Fig. 2 is a sectional view on the line 2 2, Fig. 1. Figs. 3 and 4 are corresponding views of a modification, and Fig. 5 is a sectional view illustrating another modification.

In the construction shown in Figs. 1 and 2, F is the frame of the machine, provided with the usual suspending-hook M.

A is the driving wheel or pulley, shown sprocketed in this instance for the reception of the operating-chain, and H is the lifting or hoisting wheel, which is also shown sprocketed for the reception of the lifting-chain.

In conjunction with the driving-wheel A and operated thereby is a driving-pinion B on the same side of the frame and lifting-wheel H as the driving-wheel. This driving-pinion B meshes with one or more gears C, (two in the present instance,) each keyed to a shaft R, which has at its opposite end, on the other side of the frame and lifting-wheel H, a pinion D, meshing with an internal gear E. This internal gear E is keyed to the outer end of the shaft or axis of the hoisting-wheel H, which shaft or axis turns in bearings in the frame F. The hoisting-wheel H has journals h, turning in bearings in the frame F, which may be made in two parts bolted together, as indicated in Fig. 1, as construction may require.

The axis of the chain-wheel is shown in Fig. 1 as tubular, and there passes through it a central shaft L, on the front end of which are mounted the driving-wheel A and driving-pinion B.

The hoist is constructed with a frictional lowering-brake on the same side of the lifting-wheel H as the driving-wheel A, and preferably between the latter and the pinion B on the shaft L, as illustrated. The hub of the driving-wheel A is internally threaded to fit over the threaded sleeve K, which may conveniently be made in one with the pinion B, and this sleeve has a flange k. Between this flange k and the driving-wheel A is a ratchet-wheel J, and friction-rings f are interposed between this ratchet-wheel and the driving-wheel on one side and the ratchet-wheel and the flange k on the other side. A pawl N, hinged to the frame, engages with the teeth of the ratchet-wheel J and prevents the said wheel from being turned in one direction. A substantially similar construction is shown in Figs. 3 and 4, the frame F' in this case being shown as somewhat different in construction from that illustrated in Fig. 1, but it will not need a detailed description, as it is not an essential part of my invention. In this modification the hoisting-wheel H' is shown as keyed to a shaft L', turning in bearings in the frame and carrying at its rear end the internal gear-wheel E. On the forward end of this shaft L' are mounted the driving-pinion B, frictional lowering-gear, and driving-wheel A.

In Fig. 1 the shafts R R are illustrated as lying in the same plane with the central shaft, but in the modifications seen in Figs. 3 and 4 the shafts R R are shown as lying in a different plane from that of the shaft L'.

In the modification seen in Fig. 5 the frame F² is illustrated as having a part f' carried around to the back of the pinion D to afford an additional bearing therefor.

The operation of the device is as follows: To raise the load, the driving-wheel is turned in the direction of the arrow, Figs. 1 and 3, with the result that the wheel A turns on the screw of the sleeve K until the friction-rings are bound so tightly that the driving-pinion B must turn with the driving-wheel A. Motion is communicated from the pinion B through the gears C, shafts R, pinions D, and gear-wheel E to the lifting or chain wheel H. Backward movement is prevented by the pawl N engaging with the ratchet-wheel J. When the load has been raised to the desired height,

it will be sustained. When, however, it is desired to lower the load, the wheel A is turned in the opposite direction from that described, with the result that the friction-rings of the lowering-brake are partially released, the ratchet-wheel I being held by its pawl, and the weight of the load turns the pinion B backward, the screw-sleeve K following the wheel A as long as the latter is turned back. When this backward motion of the wheel A is stopped, the friction-rings tighten up at once and cause the load to be sustained.

I claim as my invention—

1. A hoisting-machine having a frame and a hoisting-wheel, in combination with a driving-pulley, a driving-pinion operated thereby and a lowering-brake, all three on the same side of the hoisting-wheel and external to the frame, and means for driving the hoisting-wheel from the pinion, substantially as described.

2. In a hoisting-machine, a frame and a hoisting-wheel in combination with a driving-pulley, driving-pinion and lowering-brake on one side of the hoisting-wheel and external to the frame, a gear-wheel on the opposite side of the hoisting-wheel to operate the latter, and means for driving said gear-wheel from the pinion, substantially as described.

3. A hoisting-machine having a frame, a driving-pulley and a shaft supporting the driving-pulley, in combination with a driving-pinion and a lowering-brake, the said pul-

ley, pinion and brake all being external to the frame on one side thereof, a hoisting-wheel within the frame, and means for driving the hoisting-wheel from the pinion, substantially as described.

4. A hoisting-machine having a frame and provided on the same side of the frame with a driving-wheel, a driving-pinion and an intermediate lowering-brake, in combination with a hoisting-wheel and means for driving the latter from the pinion, substantially as described.

5. In a hoisting-machine, the combination of a driving-wheel having a hollow threaded hub with a driving-pinion having a correspondingly-threaded sleeve adapted to the hub, and an intermediate lowering-brake, substantially as described.

6. In a hoisting-machine, the combination of the driving-wheel and hollow threaded hub with a supporting-shaft, a pinion thereon having a threaded sleeve and a flange, and a ratchet-wheel and friction-rings interposed between the driving-wheel and flange, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BENJAMIN LOUIS TOQUET.

Witnesses:

CHARLES H. FULLER,
HUBERT HOWSON.