

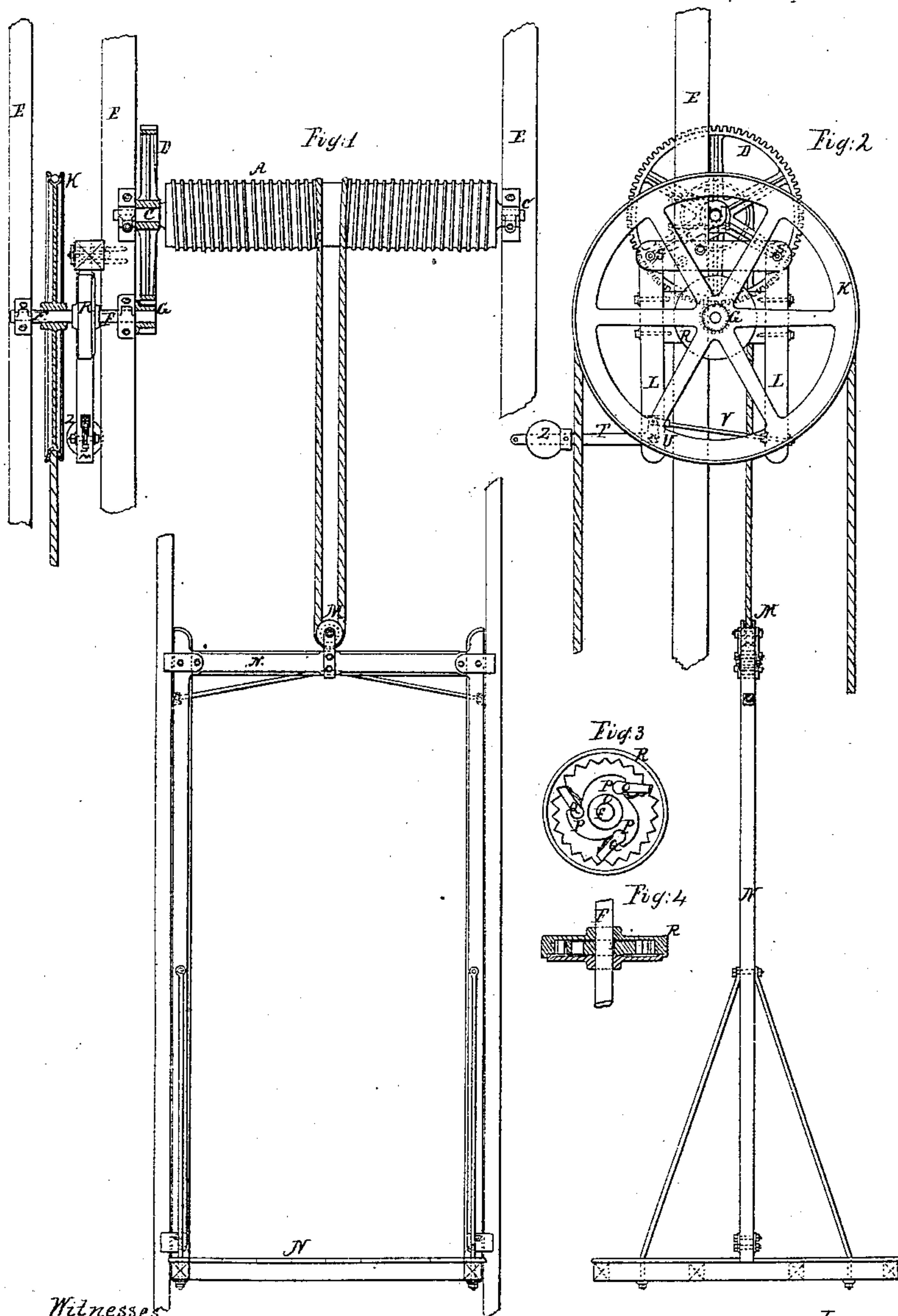
2 Sheets. Sheet 1.

J. Moore,

Elevator.

N^o 64,554.

Patented May 7, 1867.



Witnesses
Geo. H. Strong
Wm. A. Mendenhall

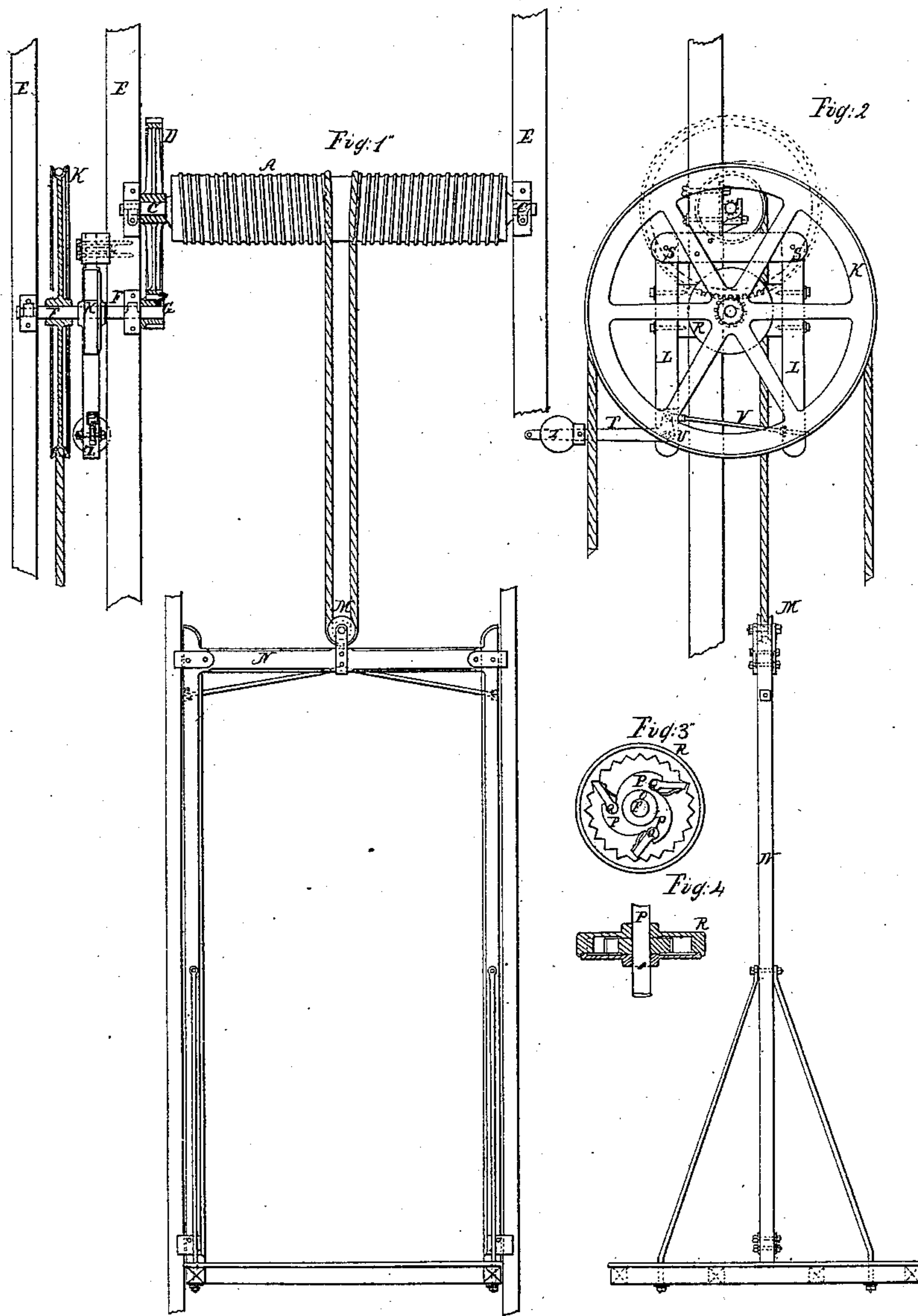
Inventor
Joseph Moore

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Witnesses
Alpha Rip
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Inventor
Joseph Moore

United States Patent Office.

JOSEPH MOORE, OF SAN FRANCISCO, CALIFORNIA.

Letters Patent No. 64,554, dated May 7, 1867.

IMPROVEMENT IN FRICTION-PAWL.

The Schedule referred to in these Letters Patent and making part of the same

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOSEPH MOORE, of the city of San Francisco, San Francisco county, State of California, have invented a certain new and improved "Friction-Pawl;" and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention without further invention or experiment.

The nature of my invention is the use of a friction-clutch and pawl in connection with a hoisting-gear, in order to guard against accidents, and to prevent a backward motion of the load without any manipulation of the brake, so constructed that the hoisting-wheel may be turned easily in a direction to raise the weight, while, by means of pawls inside of the ratchet-case, and frictional brake-beams, the load may be stopped at any point with perfect safety.

To more fully explain my invention, reference is had to the accompanying drawings, forming a part of this specification, of which—

Figure 1 represents a side elevation, with section of gears and hoisting-wheel.

Figure 2, an end elevation.

Figure 3, a side view of pawls and ratchet-case.

Figure 4, a sectional view of the same.

Similar letters indicate like parts in each of the figures.

A is a hoisting-drum, which extends across the hatchway, (if applied to hoists in stores,) and may be of wood or iron; C C are bearings, upon which the drum A revolves; D is a gear fastened to the drum A; E E E are posts supporting the drum-bearings; F is a small shaft, upon which are fastened the pinion G, rope-wheel K, and friction-clutch R. Upon the drum A spiral grooves are made, running from right to left on one side, and left to right on the other, of the centre, to which drum there is attached a chain or rope, fastened at both ends to the drum, with a pulley, M, in a line below the middle of it, to which is hung a cage, N, sliding in grooves in the usual manner. The friction-pawl is composed of the centre hub O, keyed fast to the shaft, with three or more recesses P P P to receive pawls, which catch in teeth on the outer or friction-ring R. R is a case with outer ring, as shown in the drawings, having one side solid, with hub made wide, and bored to size of shaft F, and upon which it is made to revolve loosely, with the least possible friction. The inside of the case R is a round plate fitted against said case, and covering in the pawls Q, preventing them from falling out, also supplying additional bearing to the case on shaft F. The case is so constructed, that, when put together with the hub keyed on the shaft, the pawls set in their places, and the outer flange bolted up against the side of case, the outer rim or case R can be revolved in the direction in which the pawls point, while the shaft F is kept stationary, but cannot be turned the reverse way on account of the pawls catching the teeth of the case and preventing its revolving without revolving the shaft with it. The case R is prevented from revolving by two brakes hung upon the pins S S, and reaching beyond the friction-clutch sufficient to allow a bent lever, T, hung upon a pin, U, and acting upon the two brake-beams L L through the rod V, by the weight Z.

The action of my machine is as follows: A load is put upon the cage or frame N, and by means of an endless rope over V, pulley K, the shaft F is made to revolve, giving motion through the gear G to D, thereby turning the drum A in the direction for hoisting, causing the chain or rope to wind on the drum from both ends toward the centre, and so calculated to the height as to meet in the middle when the cage is at the top. During the time it has been hoisting, the weight Z, acting through the lever T, on brake-beams L L, have held the case R stationary, and allowed the shaft to turn the hub O in the direction in which the pawls were free; but immediately the strain was taken off the hoisting side of the rope on V, wheel K, the weight upon the cage N would cause the drum A to revolve the reverse way, communicating the motion through the gears D and G to the shaft and hub O, and immediately cause the pawls Q to catch in the rim or case of friction-clutch R, which being held stationary by means of the friction of the brake-beams L L, the whole machine is brought to a stand-still, and yet without any additional action of the hoisting power. The weight Z is made heavy enough to sustain the heaviest weight the machine is to work to, so that in hoisting or lowering the cage N can be left standing at any stopping-place or floor with perfect safety. When it is desired to lower the load, all that is necessary

is to lift up the weight Z, when the machine will immediately reverse, by the rim or case R slipping round or revolving between the brake-beams L L, following the clutches or pawls Q, to revolve with the rim R.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

A stop apparatus for hoisting-machinery, constructed with the pawls Q Q Q, moving with the shaft F and the ratchet-case R turning loosely upon said shaft, together with the brake-beams L L, levers T and V, and weight Z, constructed and operated substantially as and for the purpose described.

In witness whereof I have hereunto set my hand and seal.

JOSEPH MOORE. [L. S.]

Witnesses:

GEO. H. STRONG,
C. W. M. SMITH.