

A.R. Lemen,

Elevator.

N^o 62,647.

Patented Mar. 5, 1867.

Fig. 1.

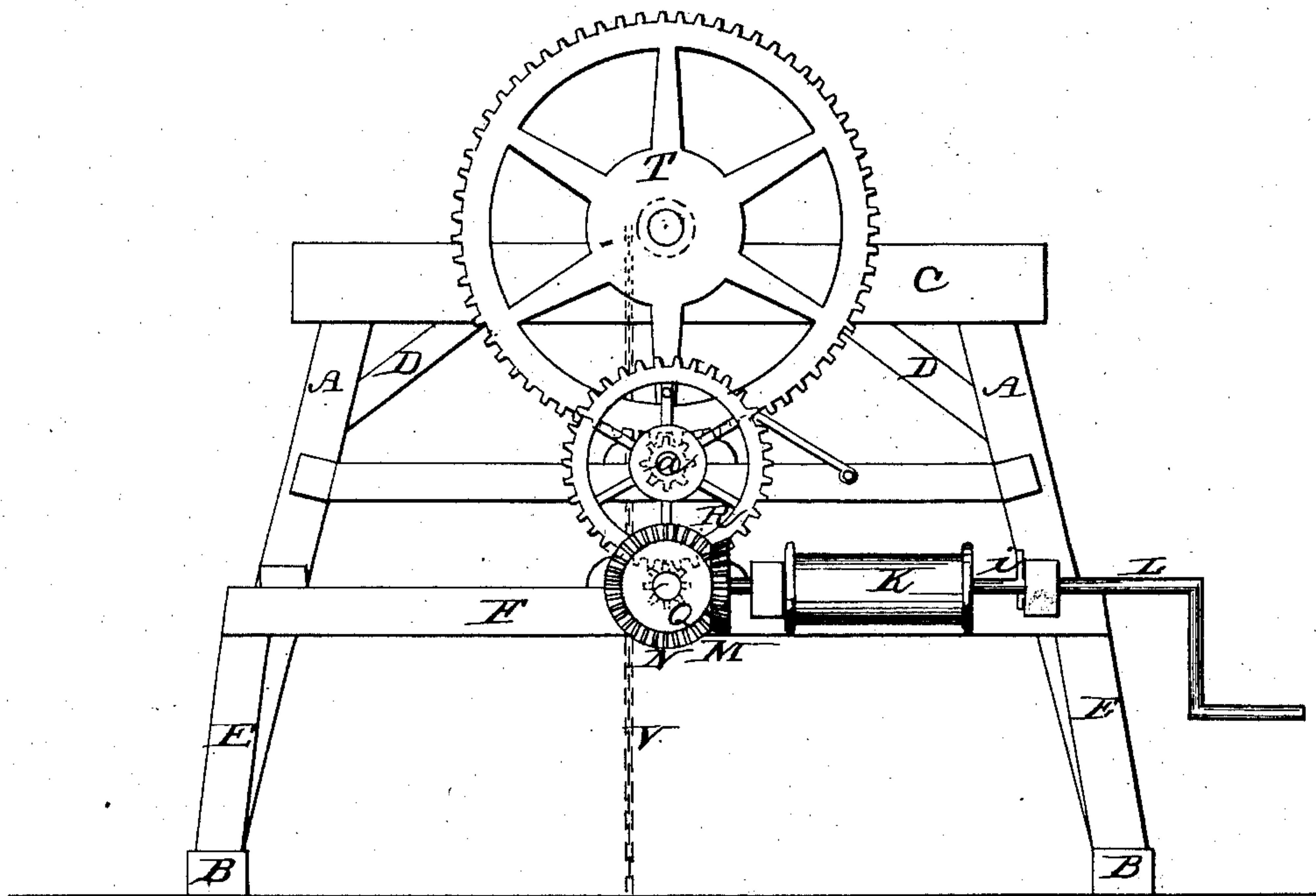
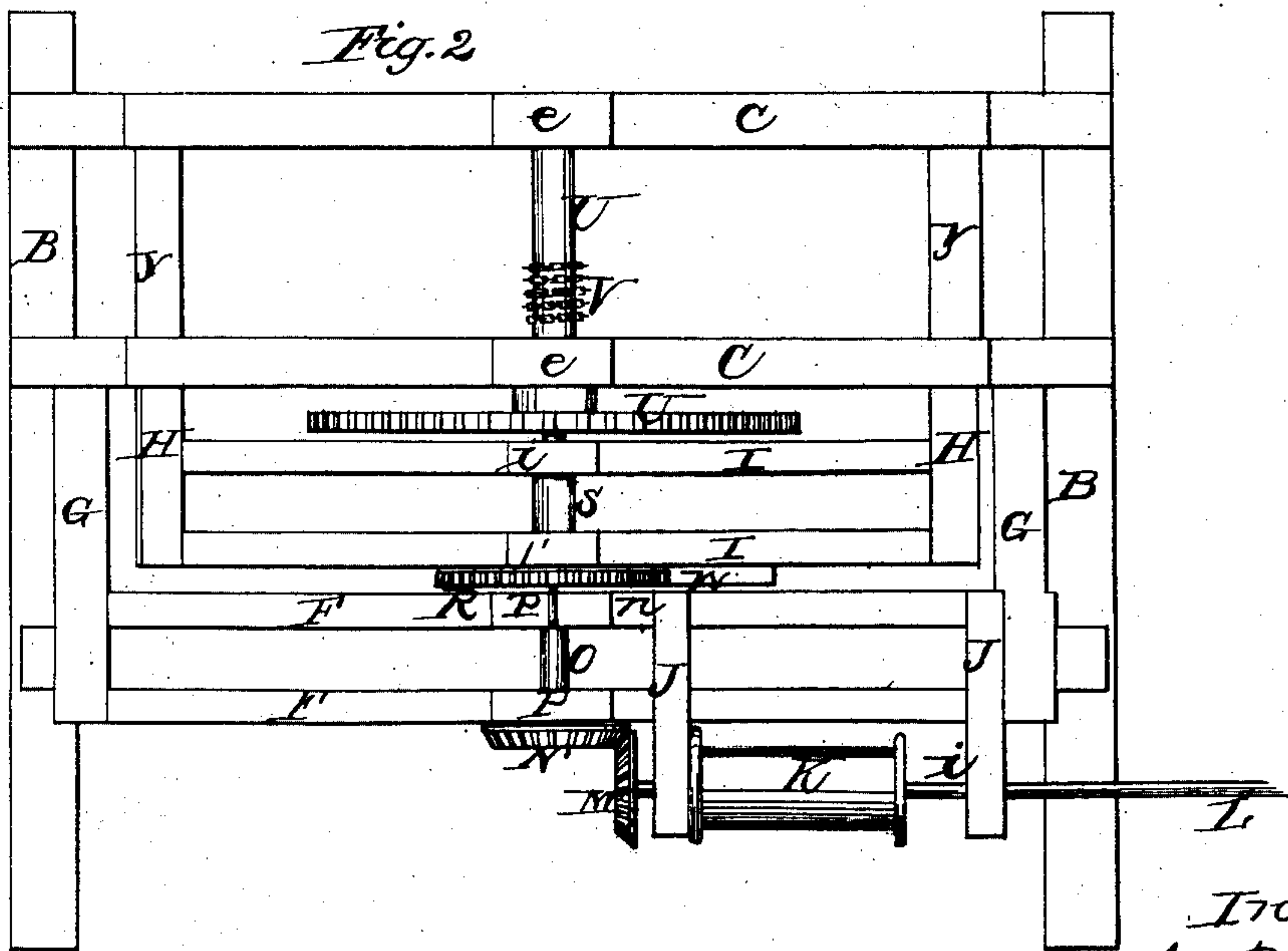


Fig. 2



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A. R. LEMEN, OF KALAMAZOO, MICHIGAN.

Letters Patent No. 62,647, dated March 5, 1867.

IMPROVEMENT IN HOISTING APPARATUS.

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, A. R. LEMEN, of Kalamazoo, in the county of Kalamazoo, and State of Michigan, have invented a new and improved Hoisting Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification.

The nature of my invention consists in constructing an apparatus so that great weights may be raised by the application of a small amount of power. It more particularly consists in constructing and arranging a series of gear-wheels, in combination with a frame to which the said gear-wheels are attached.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation, in which—

Figure 1 represents an end elevation of my improved hoisting apparatus; and

Figure 2 is a top plan view of the same.

Letters of like name and kind refer to like parts in the figures.

A A may represent four inclined posts framed into two parallel timbers B B, the said posts and timbers being of suitable dimensions for the purpose. Upon the top of the said posts A are framed cross-timbers or beams C C, strengthened and supported by inclined braces D D. E E are two short posts erected upon the timbers B B, at the top of which are secured two cross-timbers or beams F F, one of which is firmly secured upon each side of the posts E, so as to leave a space between the two timbers the width of the two posts. G G are two straight horizontal braces connected to the tops of the posts E E and the cross-timbers or beams F F, which extend, and are secured to the posts A A, for the purpose of supporting and adding strength to the posts and beams before described. H H are two beams which extend out in a horizontal direction from the posts A, a short distance above where beams or braces G G connect to the said posts. To these said beams H H are firmly framed two cross-beams I I. J J are two strong timbers or bars framed to the cross-beams or timbers F F, which project outside of the timbers or beams F F for the purpose of forming a bearing for the crank-shaft L, upon which is the pulley K. This pulley K is for the purpose of winding a rope, to which a team is attached to operate the apparatus. Y Y are two girths framed to the posts A A, running parallel with the bottom timbers B B for the purpose of supporting the framework. Upon the outer end of the crank-shaft L is a bevel pinion-wheel, M, that meshes into a corresponding bevel gear-wheel, N, that is secured and turns with shaft O, the said shaft O having suitable bearings P P upon the beams F F. Upon the opposite end of the said shaft O, from the bevel-wheel N, is a small pinion, Q, (fig. 1,) that meshes into and turns a corresponding spur-wheel, R, which is firmly secured to the shaft S, that is provided with and runs in suitable bearings I' I', which are located and secured near the centre of the cross-beams or timbers I I. At the opposite end of the shaft S, from the spur-wheel R, is another small pinion-wheel, a, fig. 1, that fits and meshes into a corresponding wheel, T. This said wheel T is rigidly secured to a strong shaft or axle, U, that is provided with and runs in bearings e e, the said bearings being located and secured upon the main cross-beam or timbers C C. Around the said shaft or axle U works the chain or rope V, the purpose of the said rope or chain being to attach to the weight designed to be raised by the machine. i is a small pin located in and passing through the crank-shaft L, so as to form a shoulder against the bearing while the machine is in the act of raising a weight. When it is desired to lower the chain rapidly, the pin i is withdrawn from the crank-shaft L, which will allow the pinion M to become disengaged from the bevel-wheel N; the chain will then run down fast, and while the pinion M is out of gear, the end of the chain V may be raised rapidly by means of the pin w in the wheel R.

The operation of this apparatus is easy and powerful. The machine or apparatus is placed over the body or object to be raised, and the chain V attached thereto, when, by turning the crank L or drawing a rope around the pulley K, puts in motion the wheel R, which transmits a reduced motion to the wheel T, through the medium of the pinion a, which is attached to the shaft or axle U, upon which winds the chain V. If it is desired to stop the machine while elevating a weight, the pawl w, that works in the teeth of the wheel R, will hold the weight suspended. When the weight is raised, and it is desired to lower the chain rapidly, by removing the pin i from the shaft L allows the pinion M to slip out of mesh with the wheel N, and the chain to run down; and when it is desired to wind the chain up rapidly around the shaft or axle U, by turning the wheel R, by the pin

n, it is readily wound up, making it one of the cheapest, most powerful, and convenient machines ever used for hoisting purposes.

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

The combination and arrangement of the gear-wheels, as shown and described, in combination with the frame, when constructed substantially as described and for the purposes set forth.

A. R. LEMEN.

Witnesses:

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