

(No Model.)

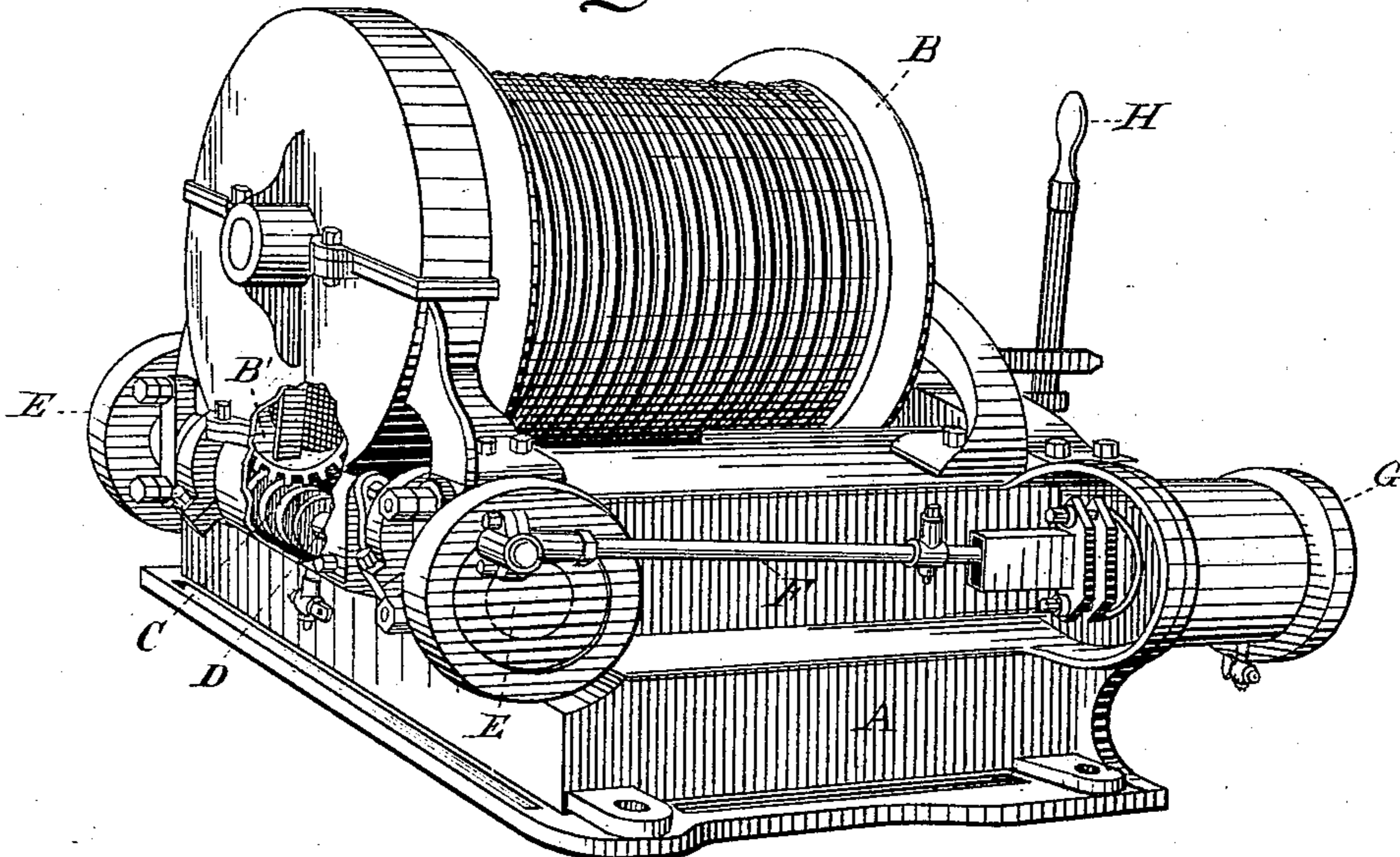
F. MURGATROYD.

HOISTING MACHINE.

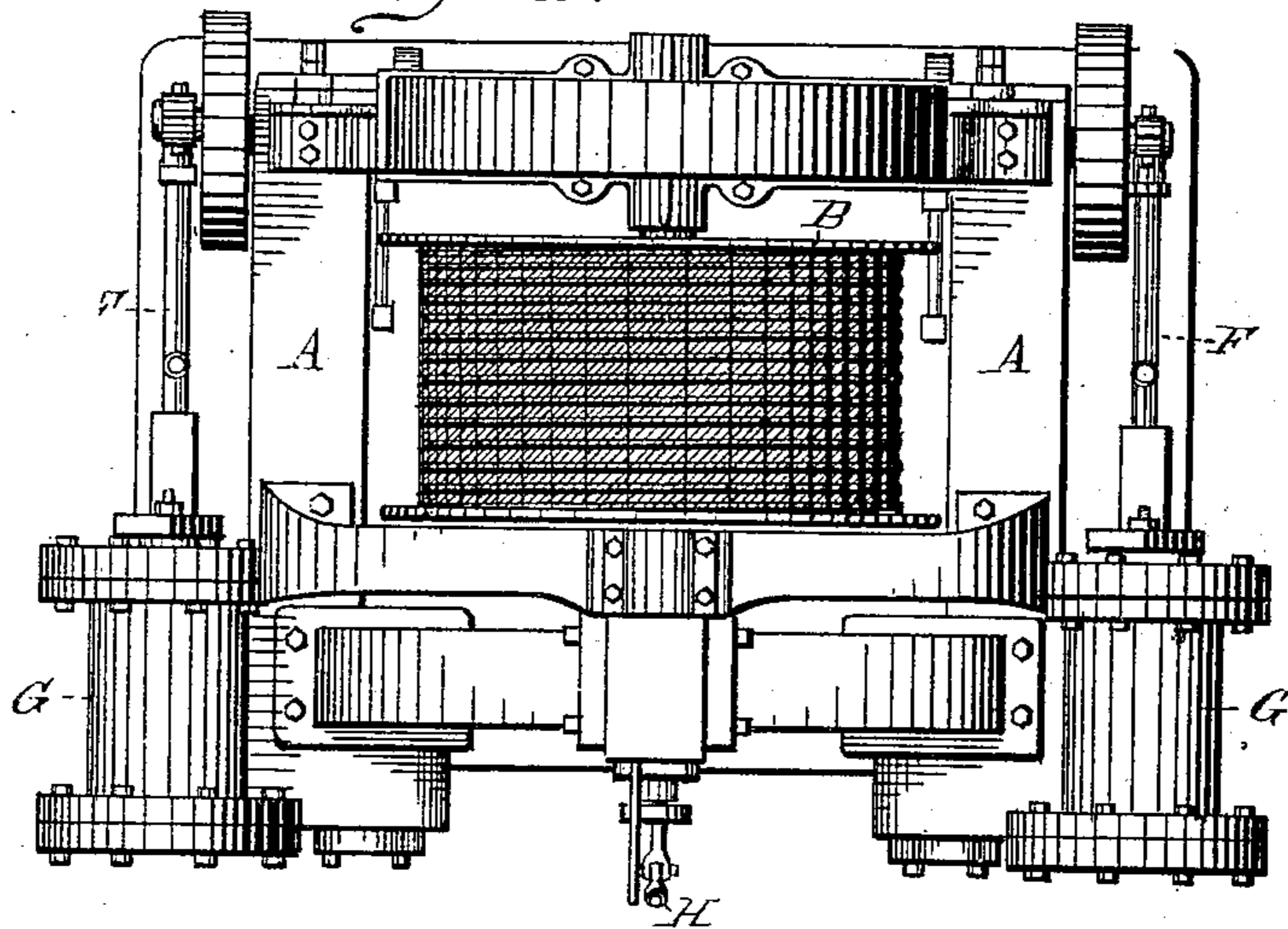
No. 254,496.

Patented Mar. 7, 1882.

*Fig. 1.*



*Fig. 2.*



WITNESSES

*W. Engel*  
*Jos. Crowell Jr*

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# UNITED STATES PATENT OFFICE.

FRANK MURGATROYD, OF CLEVELAND, OHIO.

## HOISTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 254,496, dated March 7, 1882.

Application filed December 13, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK MURGATROYD, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Hoisting-Machines; 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 pertains to make and use the same.

My invention relates to hoisting mechanism; and it consists in adapting a horizontal engine to revolve a drum by means of worm-gearing, and in parts and combination of parts that will more fully hereinafter appear.

In the drawings, Figure 1 is an isometric view of a hoisting-engine constructed according to my invention. Fig. 2 is a plan view of the same.

In the said drawings, A represents a stand or support adapted to hold and contain the operative parts of my device.

B is a drum of the usual pattern, adapted to hold the cord or rope used in sustaining the weight to be raised. This drum is provided at one end with a gear-wheel, B', which in turn meshes into the worm-gear C, permanently secured to the shaft D.

To the outer ends of the shaft D are attached cranks or eccentrics E, which are in turn connected by means of the eccentric or crank rod F with a piston in the engine-cylinder G. As shown in the drawings, I prefer to station an engine upon either side of the drum B; but it is not an essential feature of this invention.

H is a lever by means of which the engines are reversed or stopped, as occasion may require, the lever H being connected by suitable

mechanism and valves with the cylinder G. This engine is especially adapted for elevators, the object being to furnish a sufficient amount of power in the least possible space.

The operation of my device is as follows: The valves are opened by operating the lever H, when steam is admitted into the cylinder G, by means of which the crank-rod F is made to move, carrying with it the crank E. By this operation the shaft D is given a rotary motion, when the worm-gear C meshes with the gear-wheel B', which in turn operates the drum B. By manipulating the lever H the engine may be stopped or be caused to operate in the opposite direction.

What I claim is—

1. In a hoisting-machine, the combination, with the eccentric of a horizontal engine, of a shaft adapted to be revolved by said eccentric, worm-gearing C, and a revolving drum provided with a gear-wheel adapted to mesh with and be revolved by said worm-gear, substantially as set forth.

2. In a hoisting-machine, the combination, with the frame or stand A, of the drum B, provided with gear-wheel B', shaft D, worm-gear C, and the eccentric E, the latter being adapted to revolve the shaft D, and connected directly to the pitman of a horizontal engine, substantially as set forth.

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

FRANK MURGATROYD.

Witnesses:

JNO. CROWELL, Jr.,  
ALBERT E. LYNCH.