

(No Model.)

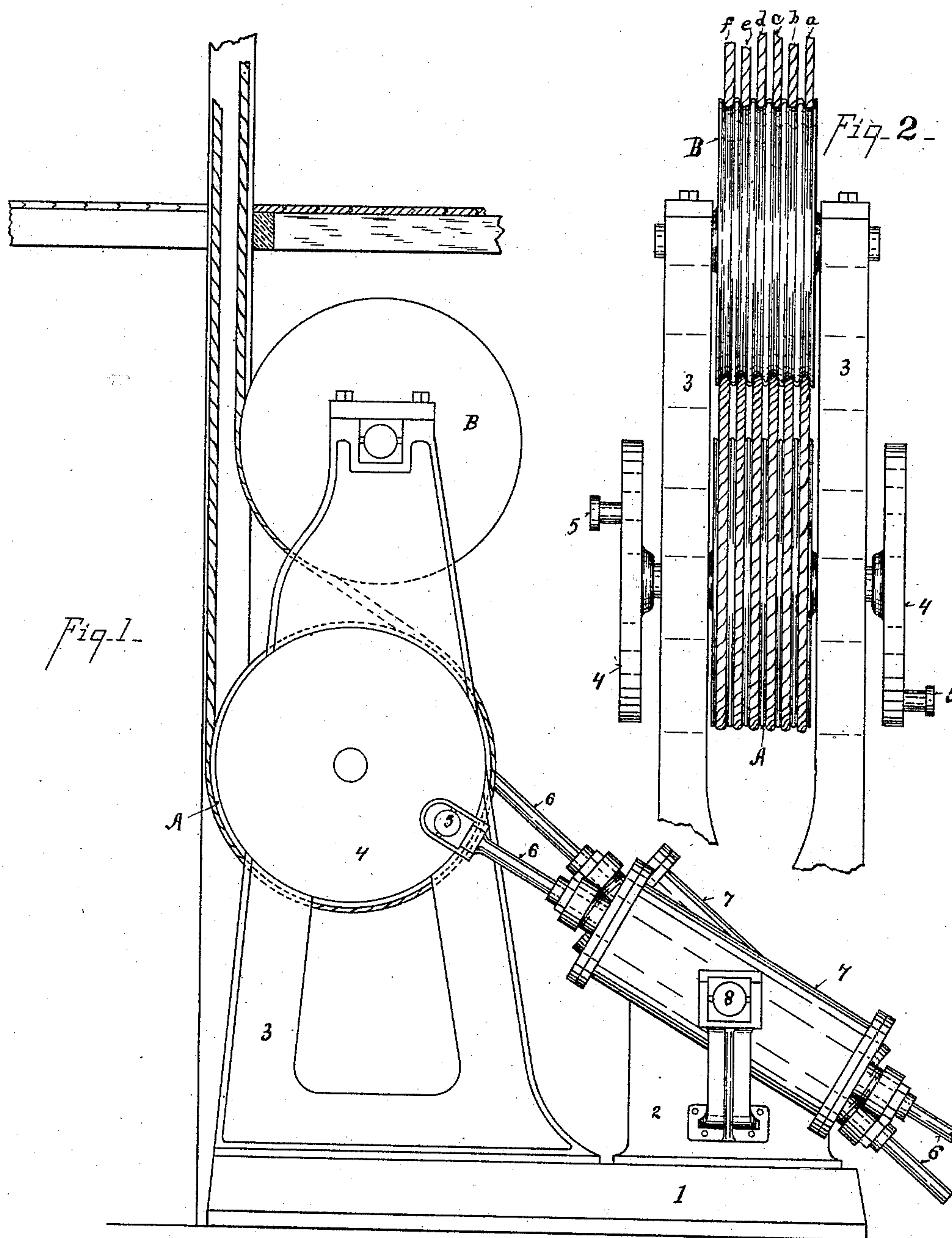
2 Sheets—Sheet 1.

H. J. REEDY.

DRIVING MECHANISM FOR ELEVATORS.

No. 445,902.

Patented Feb. 3, 1891.



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2 Sheets—Sheet 2.

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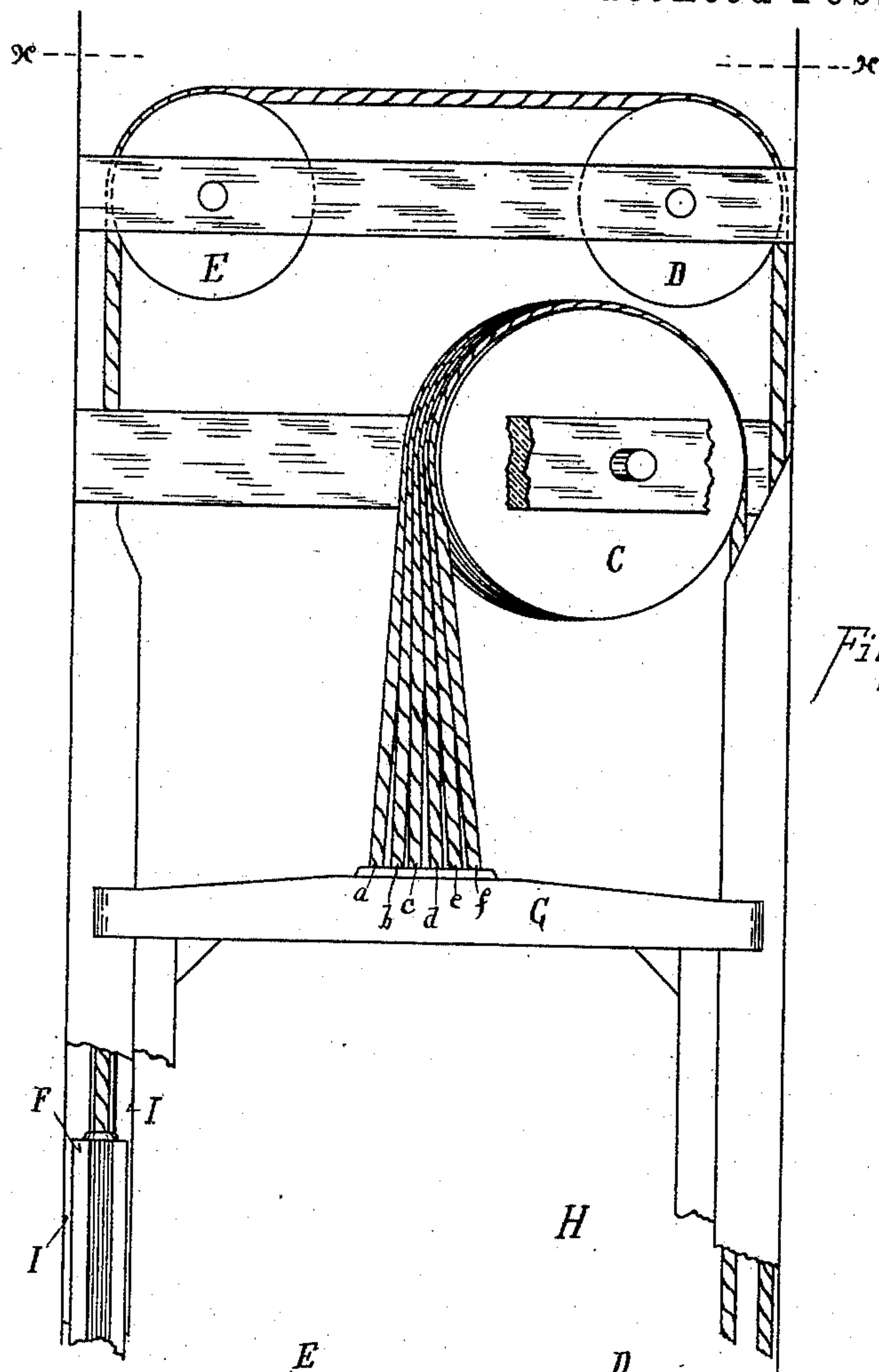


Fig. 3 -

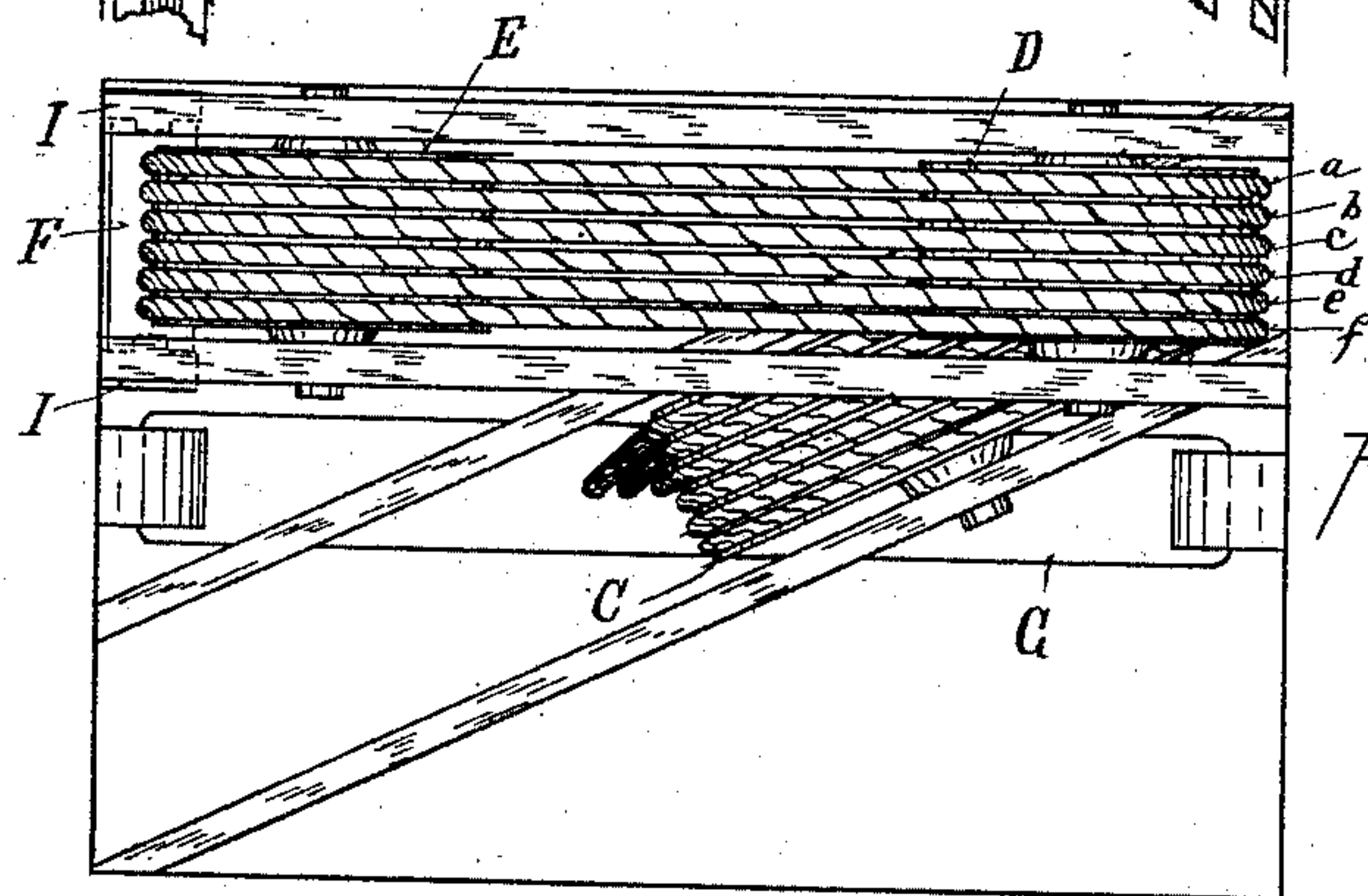


Fig. 4 -

Witnesses

C. W. Miles.
T. Simmons.

Inventor

Henry J. Reedy.
By his Attorneys Wood & Bond

UNITED STATES PATENT OFFICE.

HENRY J. REEDY, OF CINCINNATI, OHIO.

DRIVING MECHANISM FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 445,902, dated February 3, 1891.

Application filed October 21, 1890. Serial No. 368,829. (No model.)

To all whom it may concern:

Be it known that I, HENRY J. REEDY, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Driving Mechanism for Elevators, of which the following is a specification.

This invention has for its object to provide novel means for actuating the hoisting-cable of an elevator mechanism, whereby the car or cab can be safely run at high speed and be easily stopped and started at any point. To accomplish this object, my invention involves the features of construction, the combination or arrangement of devices, and the principles of operation hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a detail side elevation showing the arrangement of parts at the lower end of the elevator-shaft. Fig. 2 is a detail front elevation showing the hoisting sheave or drum and a portion of the hoisting-cable. Fig. 3 is a broken side elevation showing the arrangement of sheaves at the top portion of the elevator-shaft; and Fig. 4 is a top plan view on the line $x x$, Fig. 3.

1 represents the bed-plate of the engine. 2 represents standards, on which is mounted a pair of oscillating engines.

3 represents a frame, upon which is mounted the winding sheave or drum A of the hoisting-cable.

4 represents a pair of crank-wheels, and 5 represents the crank-pins.

6 represents the piston-rods of a duplex engine, each of which engages with its respective crank-pin. They are connected up so that one piston-rod will be a quarter of a stroke ahead of the other in its movement, so as to avoid dead-centers and allow the engine to be stopped at any point in the revolution of the winding sheave or drum and to enable it to be stopped and started easily without shock or jar.

7 represents the cylinders of the duplex engine. They may be of single or compound type, as desired. They oscillate upon the centers 8. The steam-chest ports and valves are

not shown, as they are of the ordinary construction.

A represents the main winding-drum.

B represents a guide sheave or sheaves.

C represents a carrying-sheave at the top of the elevator-shaft.

D E represent carrying-sheaves for guiding the ropes over to the opposite end of the elevator-shaft, where they are connected to the counterbalance-weight F. In order to obtain the requisite amount of friction with the least amount of weight, I employ a multiple cable comprising several strands $a b c d e f$, which run, respectively, in grooves in the several sheaves and connect at one end with a counterweight F and at the opposite with the elevator car or cab H.

The engine is stopped and started by the ordinary reversing and shifting devices mounted in the car or cab in the usual manner. The counter-weight F runs up and down the ways I on one side of the shaft in the usual manner.

By means of this construction and arrangement of the parts I am enabled to run a high-speed elevator by a steam-engine smoothly at any desired rate of speed and stop and start the same at any point of the travel of the piston.

By connecting the piston-rods directly with the cranks or crank-wheels on the same shaft with the winding-sheave I am enabled to use large cylinders and run them at slower speed and dispense with gearing and all lost motion hitherto necessarily employed when the piston-rod is not connected directly to the driving sheave or drum of the hoisting-cable. This avoiding of the lost motion is a material advantage in stopping and starting the elevator car or cab without jar or shock or a jerky motion due to lost motion. The advantage of having large cylinders and pistons is that a larger amount of power may be applied directly to the winding-drum at the instant of movement.

I have shown the oscillating engines with the piston-rods directly connected to the cranks or crank-wheels as the preferred form of construction; but it is manifest that stationary engines with the piston-rods connected to the cranks or crank-wheels by means of

pitmen would be the equivalent thereof; but the former mode I deem simplest and best.

Having described my invention, what I claim is—

5 1. The combination, in an elevator, of the car or cab, the hoisting-cable connecting with the car and with a counterbalance-weight, the winding sheave or drum with which the hoisting-cable engages at the bottom of the elevator-shaft, a crank at each side of the hoisting sheave or drum on the shaft thereof, and
10 an engine arranged at the lower end of the elevator-shaft and directly connected with the cranks for rotating the hoisting sheave or
15 drum, and thereby operating the hoisting-cable of the elevator-car, substantially as described.

2. The combination, with an elevator-car, a hoisting-cable connected with the car and with a counterbalance-weight, a winding- 20 sheave engaging the cable at the bottom of the elevator-shaft, and a shaft for the sheave, having a crank at each side thereof, of an oscillating duplex engine located at the bottom of the elevator-shaft and having its piston-rods 25 connected, respectively, with the cranks for rotating the sheave and operating the hoisting-cable, substantially as described.

In testimony whereof I have hereunto set my hand.

HENRY J. REEDY.

Witnesses:

T. SIMMONS,
C. W. MILES.