(No Model.)

A. N. CALKINS.

ELEVATOR CONTROLLING DEVICE.

No. 523,197. Patented July 17, 1894.

Fig. 1.

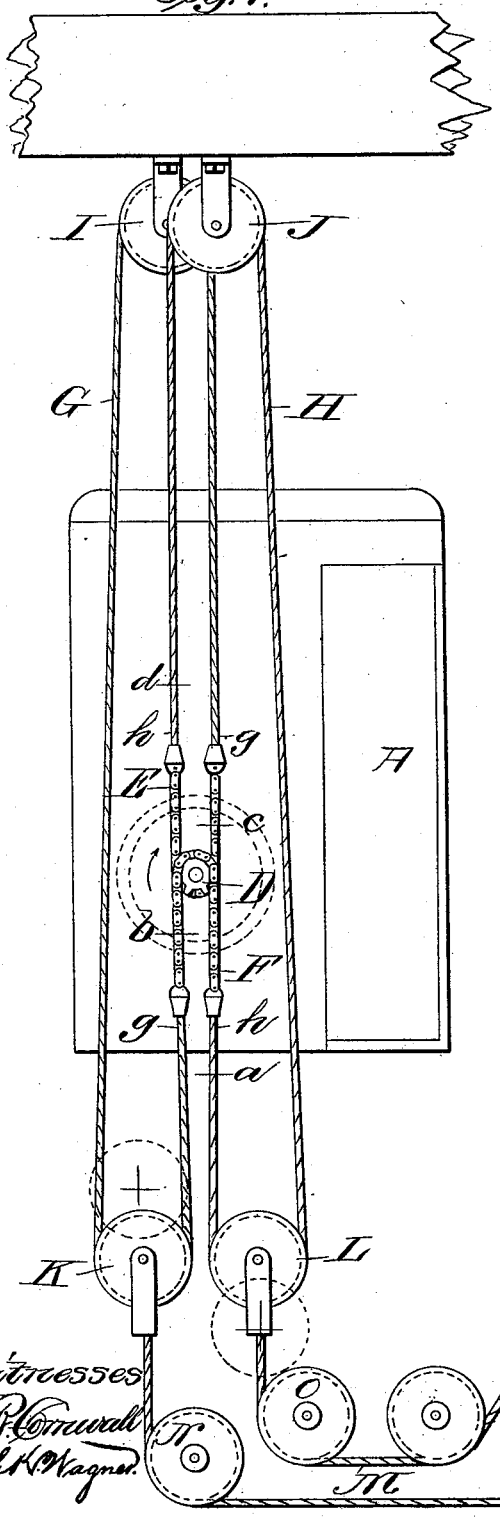
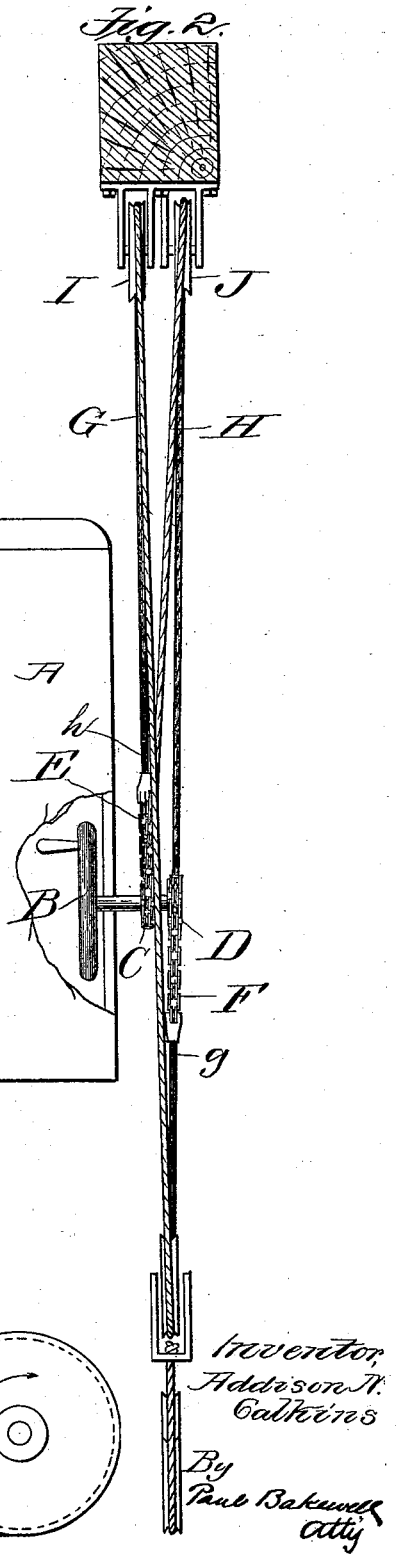


Fig. 2.



Witnesses
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Hugh K. Wagner.

Inventor,
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By
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Atty

UNITED STATES PATENT OFFICE.

ADDISON N. CALKINS, OF QUINCY, ILLINOIS, ASSIGNOR TO THE CENTRAL MACHINE AND FOUNDRY COMPANY, OF SAME PLACE.

ELEVATOR CONTROLLING DEVICE.

SPECIFICATION forming part of Letters Patent No. 523,197, dated July 17, 1894.

Application filed November 9, 1893. Serial No. 490,449. (No model.)

To all whom it may concern:

Be it known that I, ADDISON N. CALKINS, a citizen of the United States, residing at Quincy, Adams county, State of Illinois, have invented a new and useful Elevator Controlling Device, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, wherein like letters of reference refer to like parts wherever they appear, and in which—

Figure 1 is a diagrammatical view, in side elevation, showing the operation of my new controlling device. Fig. 2 is a similar view at right angles.

My invention relates to a new and useful improvement in devices for controlling the motive power of elevator machinery, and consists, generally stated, in combining with the elevator car, two wheels, around which pass cables, which cables pass around pulleys or sheaves located above and below the travel of the car, and are paid out or drawn in on each side of the wheels on the car when the same are rotated, to operate a controlling rope which is secured to movable pulleys or sheaves actuated by the cables.

In the drawings, A represents the elevator car, in which is mounted a suitable operating hand-wheel or lever B whose shaft projects through the side of the car and is provided with two sprocket wheels C and D. Passing over these sprocket wheels, are short sections of chain E and F, to the ends of which are connected the ends of the cables G and H, which pass over sheaves I and J, respectively, at the top of the shaft, and under movable sheaves K and L at the bottom of the shaft, or vice versa, as the case may be.

The sheaves K and L are mounted in suitable bearings attached to the ends of a controlling rope or cord M, which passes under suitable stationarily mounted sheaves N and O and around the controlling wheel or pulley P, which operates a valve rheostat or belt shifter directly controlling the machinery or motive power of the elevator.

The cables G and H have their ends *g* and *h*, connected, respectively, to the chains E and F, in such manner that when the sprocket-wheels C and D are caused to rotate and the chains E and F pass under and over or from one side to the other of said sprockets, the ends of the cables G and H will be drawn toward or away from each other, dependent upon the rotation of the sprocket wheel, which will shorten one of said cables and lengthen the other, as the case may be, and raise or lower the sheaves K and L, which will disturb the equilibrium of rope M rotating the wheel or pulley P in one direction or the other to start, stop, or effect the shift of the elevator power machinery.

The operation is as follows:—Assuming the parts to be in their normal position, in Fig. 1, or a position in which the machinery is at rest, and assuming that to effect the rise of the elevator car the wheel P is to be turned to the right, or in a direction as indicated by the arrow, the operator turns the wheel B or lever, as the case may be, in the direction indicated by the arrow in Fig. 1. This will cause the sprocket wheels C and D to be rotated to the right, forcing the right hand end of the chain F down to a point about line *a* and raising the left hand side of the chain to about a point indicated by the line *b;* at the same time, causing the chain E to pass under the sprocket wheel C, bringing the right hand end down to a point about *c* and raising the left hand end to a point about line *d*. As the cables G and H have their ends connected to the chains E and F on opposite sides of the sprocket C and D, respectively, when said sprocket wheels are caused to be rotated, as above indicated, one end *g* of the cable G will be brought down to about line *c*, while the other, the lower, connected to the chain F, will be raised to about line *b*. This shortening of cable G causes the sheave K to be raised, pulling rope M so as to revolve wheel P in the direction of the arrow. At the same time, the sheave L will be permitted to follow the rope M by the cable H which passes thereunder being lengthened by the chains E and F reaching lines *d* and *a*, respectively. To throw off the power, or cause the elevator car to stop, it is only necessary that the sprocket wheels C and D be returned to a position so as to equalize the cables and their sheaves K and L to which the controlling rope proper is attached, and, to reverse the motion of the car, or permit it to run down

the shaft, a continued movement of the sprocket wheels C and D in an opposite direction from that indicated will cause the sheave L to rise and K to be lowered.

It will be noted that the cables being secured to the chains, as above described, form substantially a continuous cable, which passes around two stationarily mounted pulleys located beyond one end of the travel of the car, around two movable pulleys located beyond the other end of the travel of the car, and around the wheels on the elevator car.

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

The herein-described means for controlling elevator machinery, consisting in the combination with a car, of two sprocket wheels mounted thereon, means for operating said sprocket wheels, chains passing around said sprocket wheels and leading in opposite directions, two cables stationarily mounted, sheaves at the top of the shaft over which said cables pass, two movable sheaves at the bottom of the shaft under which said cables pass, said cables having their ends connected to the two chains on opposite sides of the sprockets, a controlling rope attached to the two movable sheaves at the bottom of the shaft, and means for rotating the sprockets from the car, whereby when the same is done, one cable is drawn in or shortened, thereby raising one of the movable pulleys, and the other cable is paid out or lengthened, thereby lowering the other pulley or sheave, substantially as described.

In testimony whereof I hereunto affix my signature, in presence of two witnesses, this 4th day of November, 1893.

ADDISON N. CALKINS.

Witnesses:
C. S. BURBIDGE,
JOSEPH KURZ.

Corrections in Letters Patent No. 523,197.

It is hereby certified that in Letters Patent No. 523,197, granted July 17, 1894, upon the application of Addison N. Calkins, of Quincy, Illinois, for an improvement in "Elevator Controlling Devices," errors appear in the printed specification requiring correction, as follows: In line 22, page 2, a comma should be inserted after the word "cables," and same line, same page, the comma after the word "mounted" should be stricken out; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 31st day of July, A. D. 1894.

[SEAL.]

WM. H. SIMS,
First Assistant Secretary of the Interior.

Countersigned:

JOHN S. SEYMOUR,
Commissioner of Patents.