

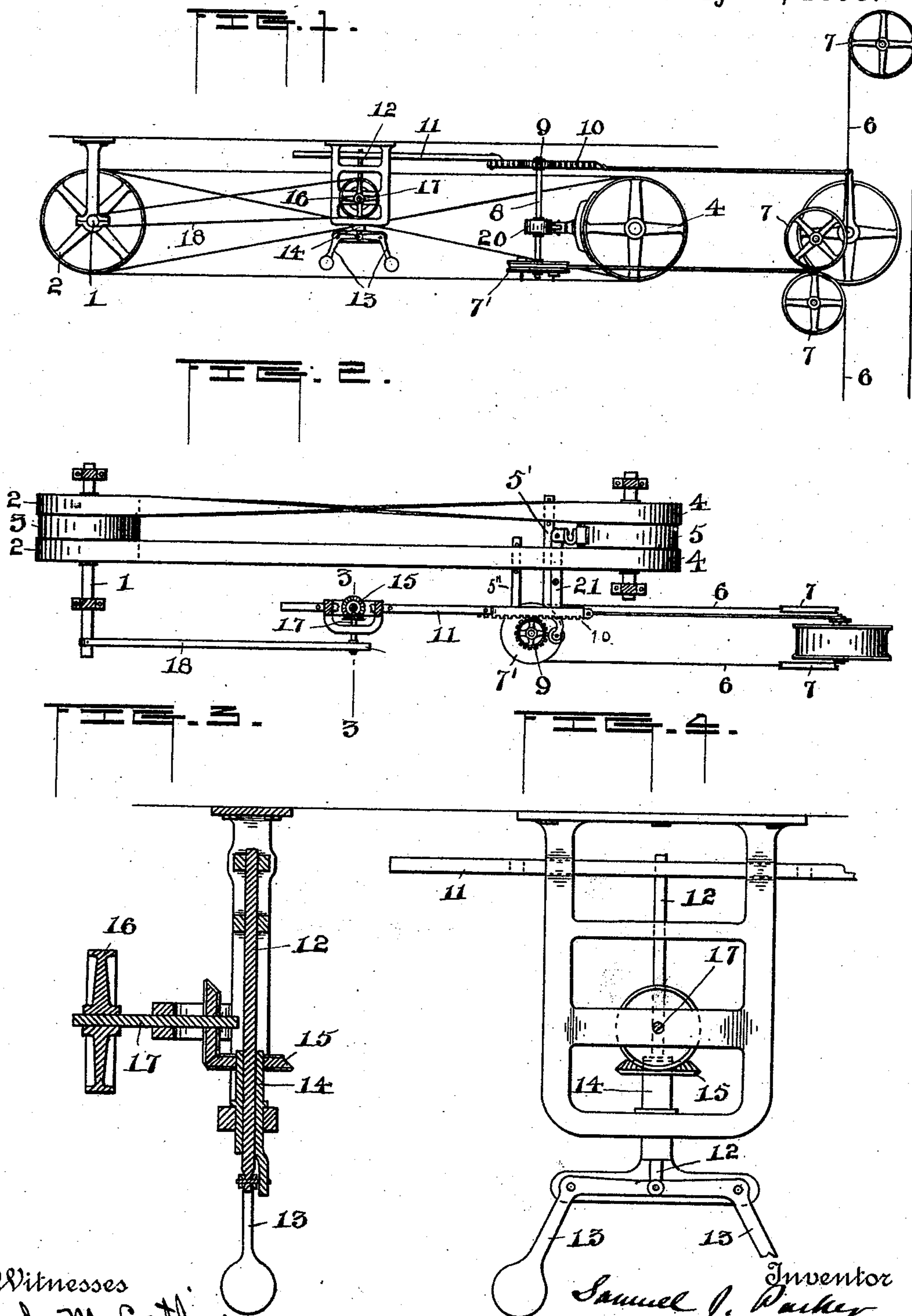
(No Model.)

2 Sheets—Sheet 1.

S. J. PARKER.
AUTOMATIC ELEVATOR LOCK.

No. 501,658.

Patented July 18, 1893.



Witnesses
Arch. M. Catlin.
O. H. Neau.

Inventor
Samuel J. Parker
by Benj. R. Catlin Attorney

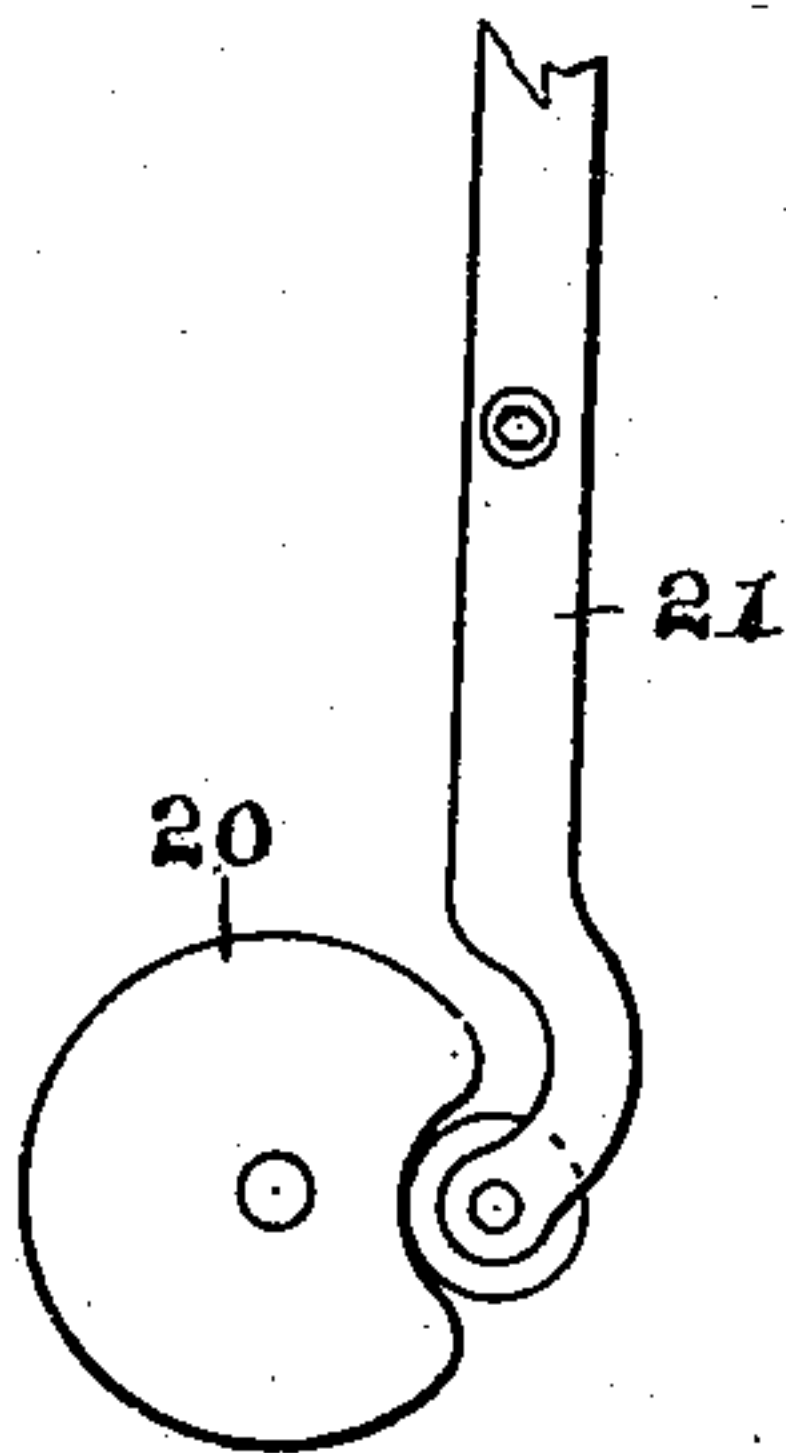
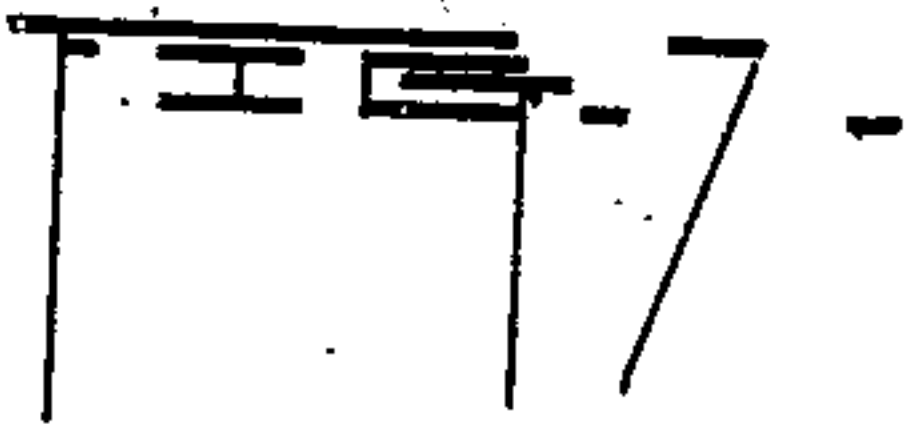
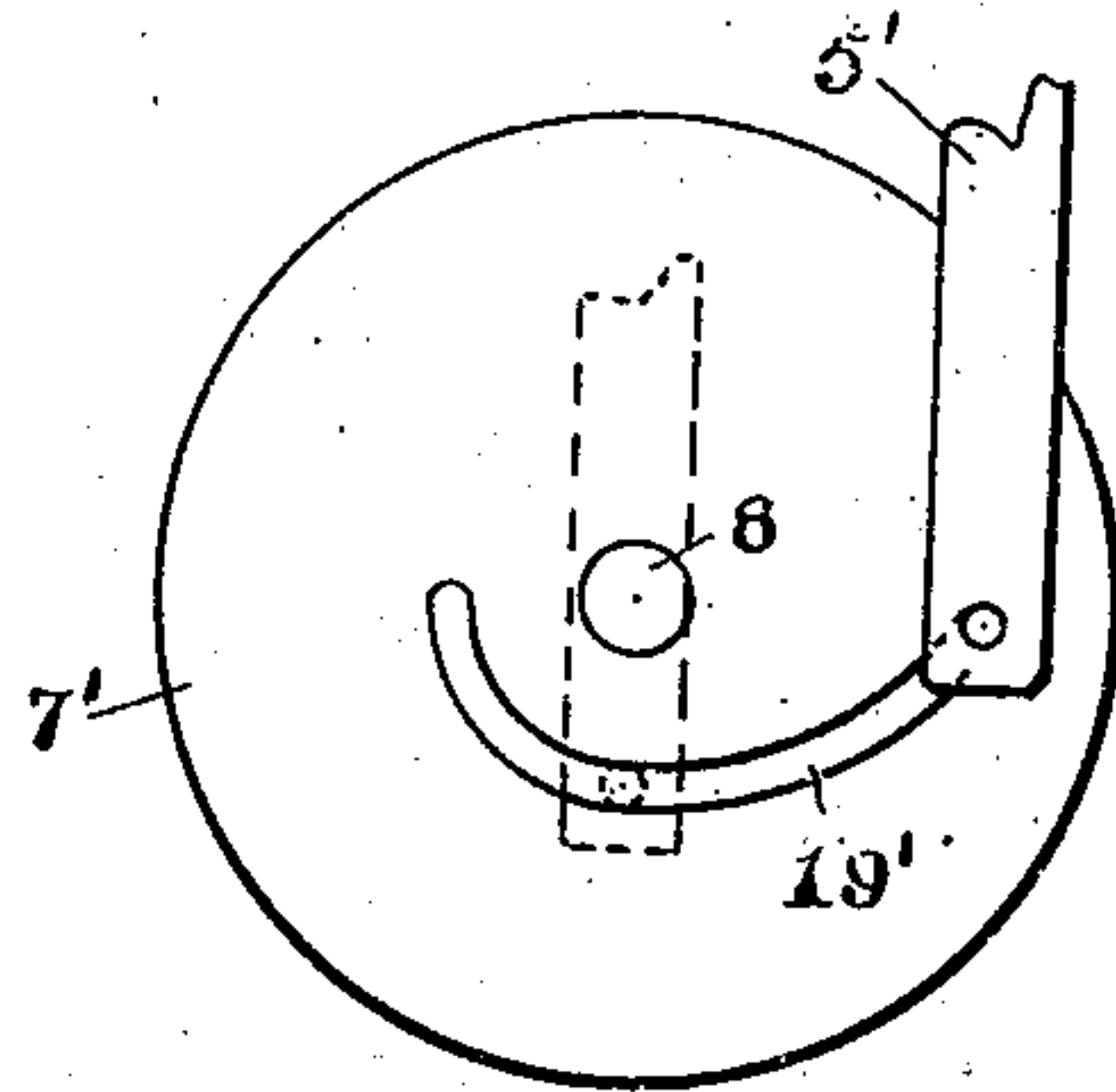
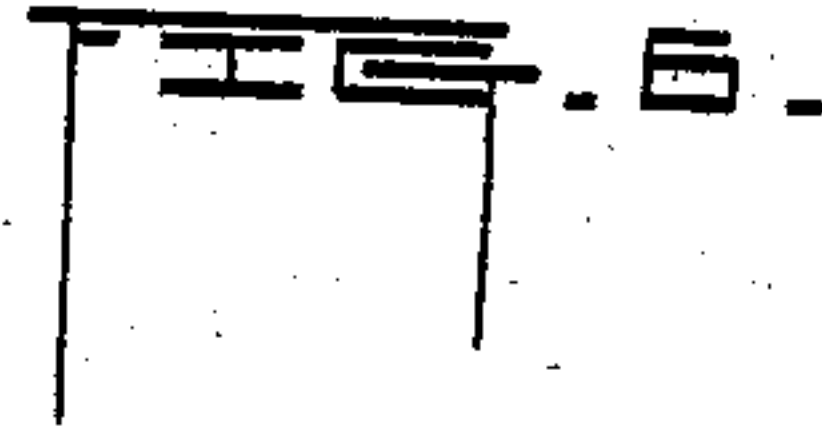
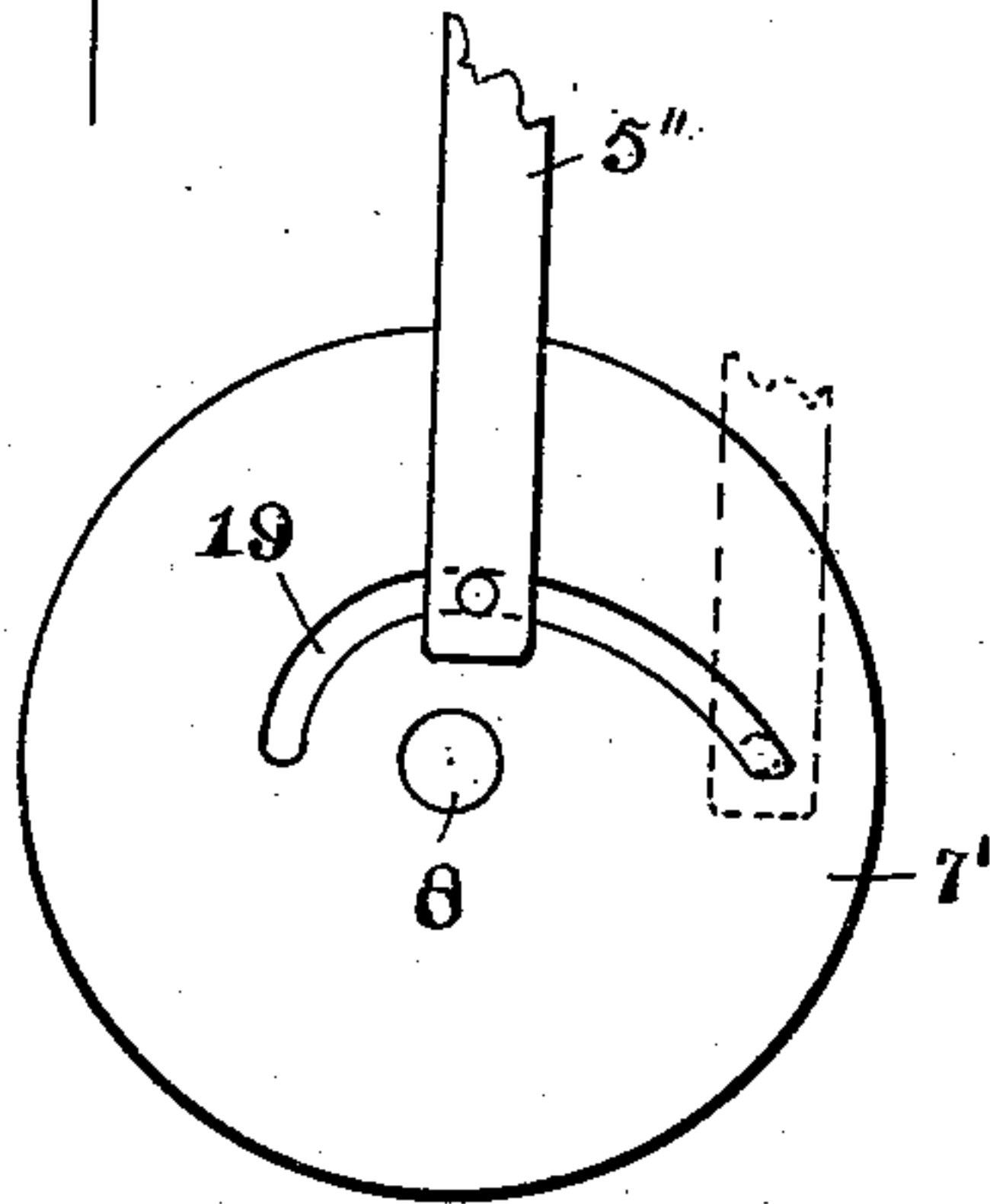
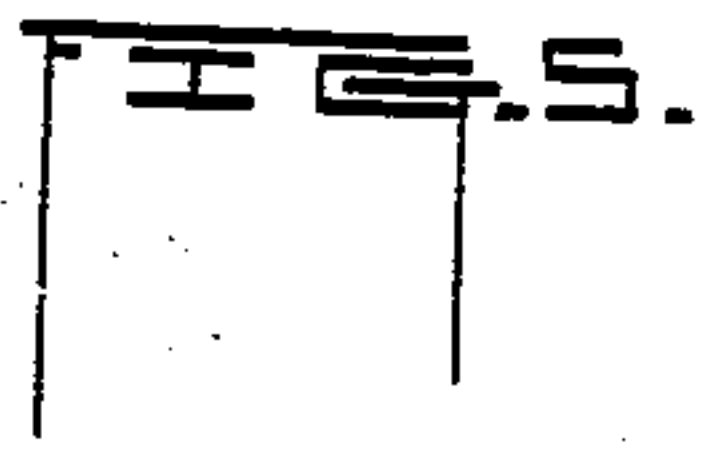
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S. J. PARKER.
AUTOMATIC ELEVATOR LOCK.

2 Sheets—Sheet 2.

No. 501,658.

Patented July 18, 1893.



Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL J. PARKER, OF ROCHESTER, NEW YORK.

AUTOMATIC ELEVATOR-LOCK.

SPECIFICATION forming part of Letters Patent No. 501,658, dated July 18, 1893.

Application filed September 24, 1892. Serial No. 446,804. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL J. PARKER, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Automatic Elevator-Locks; 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.

The invention relates to that class of elevators in which the movements of the car are controlled by a car operator without stopping or changing the motion of the motor or main driving shaft, and which elevators are adapted to be used at regular intervals, or at intervals separated by considerable periods of time, such, for instance, as elevators which are not in use during the night, and in which the motor and main driving shaft being stopped only during such intervals, it is not essential to extend the motor-controlling devices to the elevator car. The invention, however, is independent of the particular character or situation of said devices.

It has for its object to automatically lock an elevator brake when moved to its operative position provided the elevating motor rests at such time, and also to automatically unlock the brake by the starting of the motor.

In the accompanying drawings, Figure 1 is a side elevation of mechanism embodying the improvement. Fig. 2 is a plan of the same partly in section. Fig. 3 is an enlarged section on line 3—3 of Fig. 2. Fig. 4 is a side elevation of the device shown in Fig. 3. Figs. 5 and 6 are plans of opposite sides of a belt shifting cam wheel and Fig. 7 is a plan of the brake cam.

Numeral 1 denotes the main driving shaft of the elevating mechanism. 2 and 3 indicate respectively loose and tight pulleys on the same. 4 and 5 indicate corresponding pulleys on a second or counter-shaft. 6 denotes the operating cord, or hand rope of an elevator, and 7 its guide pulleys, said hand rope being secured to a pulley 7' fast on a shaft 8 and adapted to rock the same. Said shaft 8 has a pinion 9 which meshes with a rack 10. 19 and 19' indicate cam grooves in pulley 7' for operating belt shifters. These parts are of usual construction.

To the rack 10 is fixed a sliding bar 11 which together with the rack is suitably supported in ways, hangers or the like. The bar is provided with a series of holes 10' one of which when the rack is in position corresponding to the application of the brake or to the resting of the elevator, is in a situation to receive the bar 12 pivotally connected to governor arms 13 which are supported in extensions of the hollow shaft 14 of the bevel gear 15 by which gear the governor is connected mediately to a pulley 16 on a shaft 17 driven by a belt 18 from the main shaft. The construction is such that when the main shaft and pulley 16 are at rest the bar 12 will be held in a hole of the slide by the governor balls. When the shaft and pulley are put in motion the governor will withdraw bar 12 from the slide and release it. The rack 10 is therefore locked whenever the driving shaft is at rest and released when it is started. Assaid rack meshes with the pinion 9 fast on shaft 8 to which the cam 20 that operates the brake lever 21 is affixed, said brake is mediately locked in operative position by bar 12 whenever said bar engages the rack and is only unlocked when power is applied to the main driving shaft. Therefore accidents due to the release of the brake before a belt is in motion so as to be shifted onto a fixed pulley are effectually obviated.

To start the elevator the brake being assumed to be locked as described the power is "turned on" by any usual means to set shaft 1 in motion whereby through the medium of the belt 18 the bar 12 is withdrawn from the brake lock. The brake can then be thrown off the fixed pulley 5 by means of cord 6 which turns pulley 7' and its shaft and throws the foot of brake rod 21 out of the depression in cam 20 (see Fig. 7). This cord is endless and passes about pulley 7 and 7' to the latter of which it may be fastened as before stated. One of the pulleys 7 situated directly below the highest is omitted from the drawings the cord being represented as broken away. The rocking of the shaft 8 by means of the pulley 7' and cord 6 operates the belt shifter 5' or 5'' by means of cam groove 19' or 19 formed in said pulley 7' (see Figs. 3 and 6) thereby starting the elevator through the medium of the tight pulley. Either the straight or crossed

belt is thrown onto the fixed pulley according to the direction of the movement of the cord 6 and of the cam wheel 7' which operates the belt shifters.

5 The elevator lifting and lowering mechanism is connected to and driven by the shaft of the fixed pulley 5 which mechanism being well known is not herein set forth, though a winding drum is indicated at 22. As represented the rack 10 is also connected to a crank 10'' on the drum shaft which may be provided in usual manner with automatically operating devices to move the rack and shift the belt to stop the elevator at the top or bottom of the shaft, but such devices are not of the present invention.

Though I have illustrated a lock applied to a brake my invention is not limited to the particular mechanism indicated and it consists essentially in mechanism for automatically locking an elevator brake when its motor is at rest. The mechanism may be varied by mechanical skill without departing from the invention provided substantially the same principles of construction and operation are employed, it being characteristic of my im-

provement that a brake is automatically locked when the power rests and unlocked when it starts as by the herein described operation of the governor. This locking of the brake prevents any movement of the elevator when the power is at rest or disconnected or any consequent slackening of the elevator-raising rope.

Having thus described my invention, what I claim is—

In an elevating apparatus the combination of a main driving shaft, an elevator brake, its operating rope, an automatic locking device for said brake operative when the said shaft is at rest, and connections between said shaft and lock to automatically unlock the brake when the main shaft is in motion, substantially as set forth.

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

SAMUEL J. PARKER.

Witnesses:

WM. LIVINGSTON,
M. D. PHILLIPS.