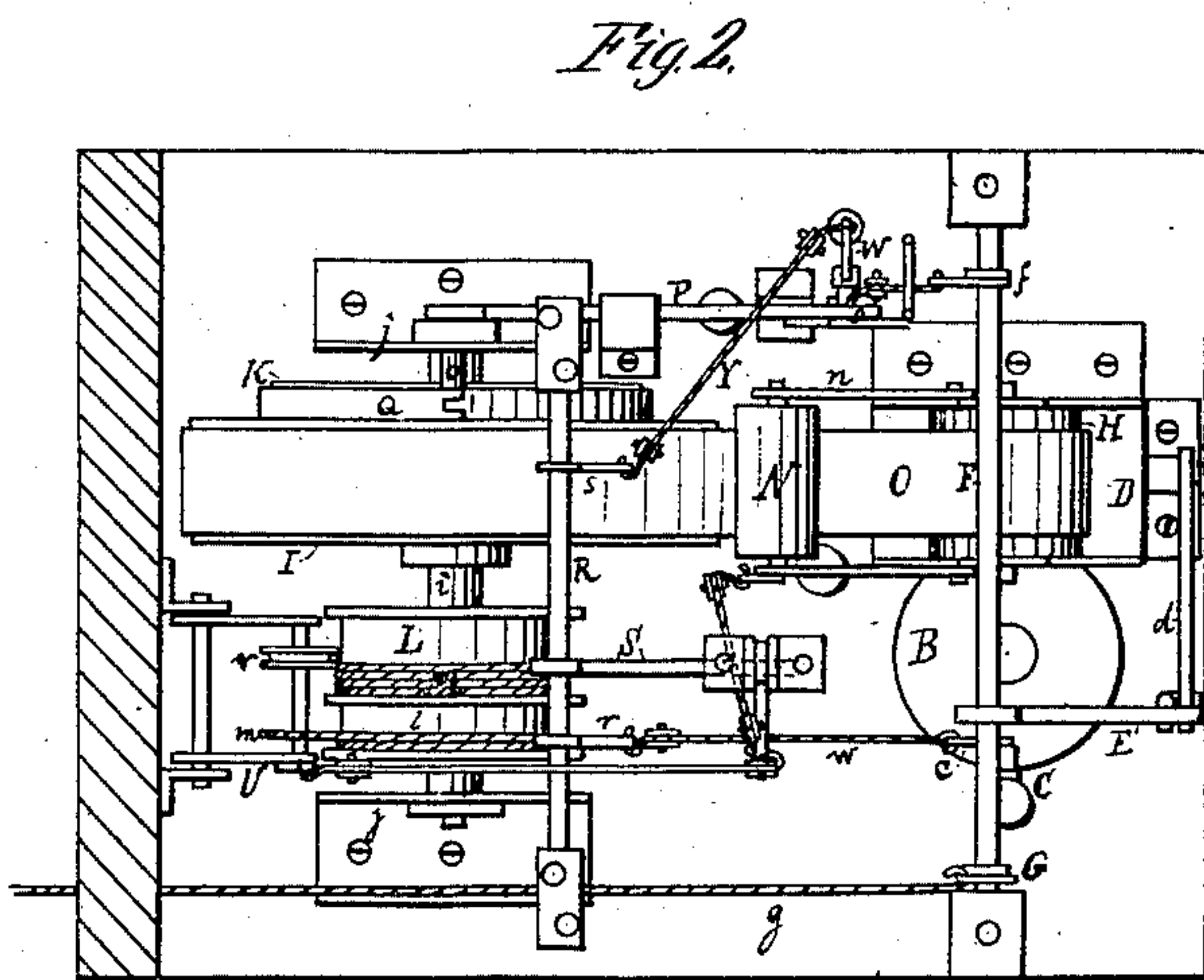
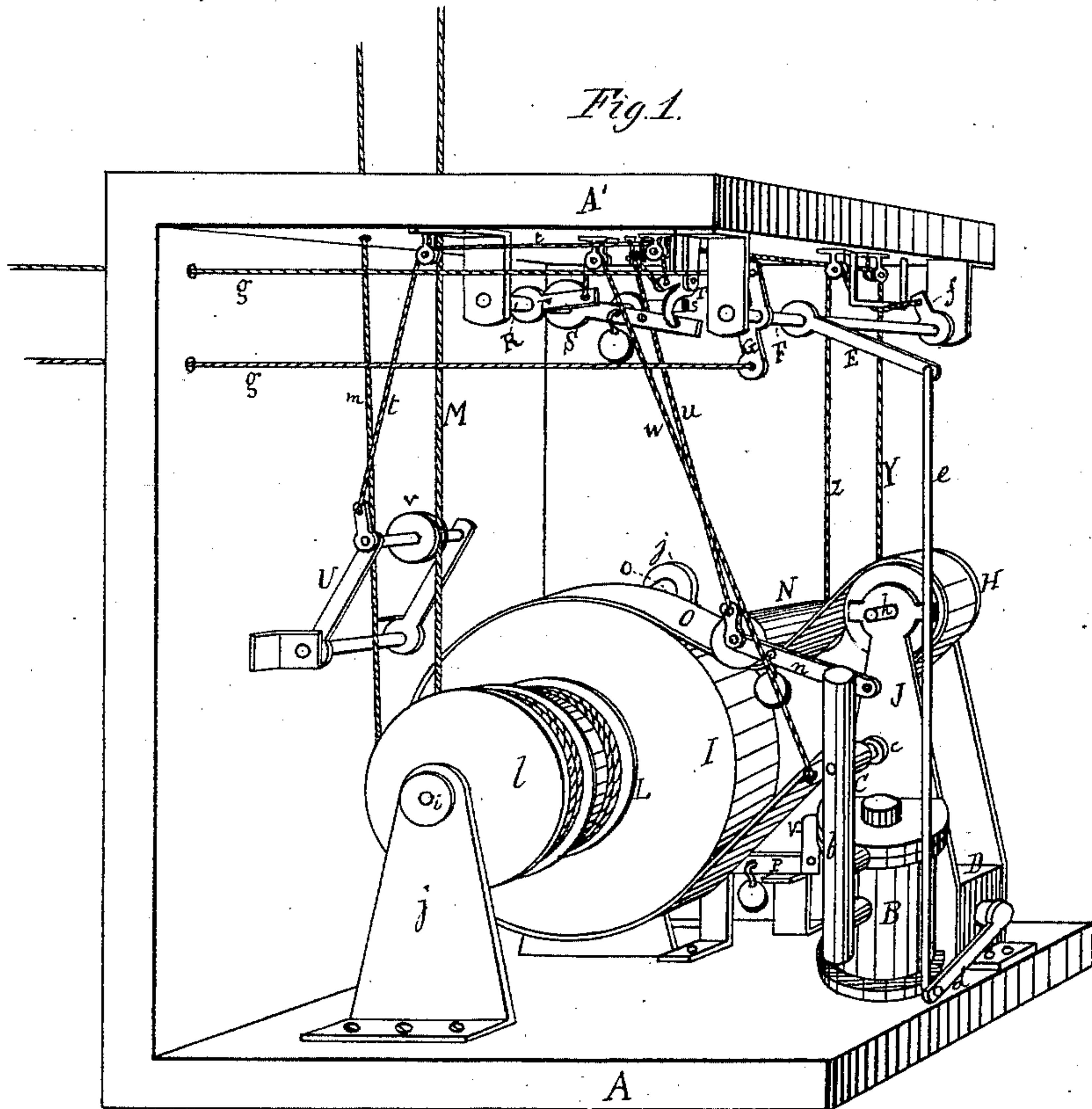


P. J. SCHMITT.  
Safety Attachment to Elevators.

No. 223,455.

Patented Jan. 13, 1880.



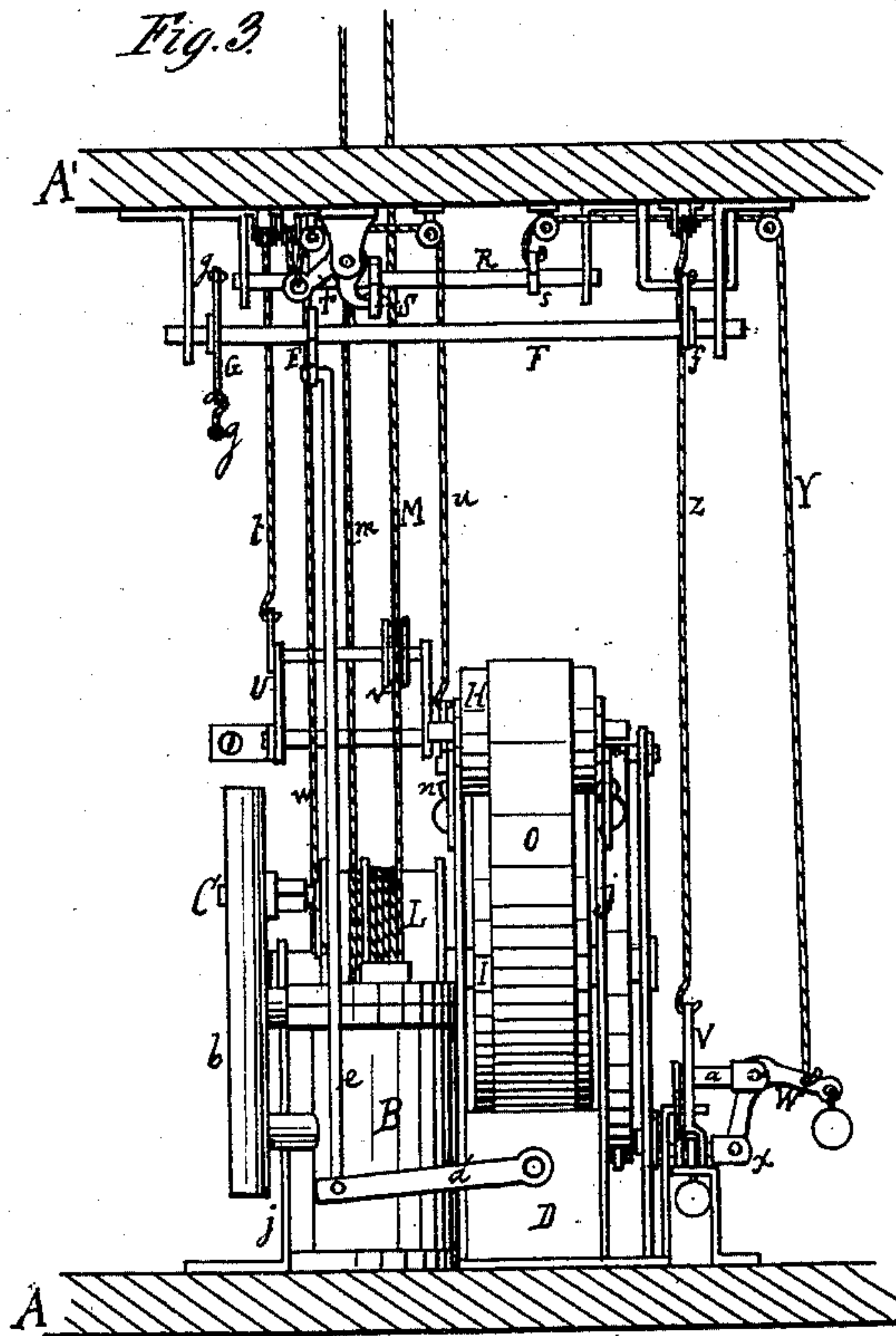
Witnesses:  
F. B. Townsend  
Emil H. Frommann

Inventor:  
Peter Jacob Schmitt  
per Wm H. Lotz  
Attorney.

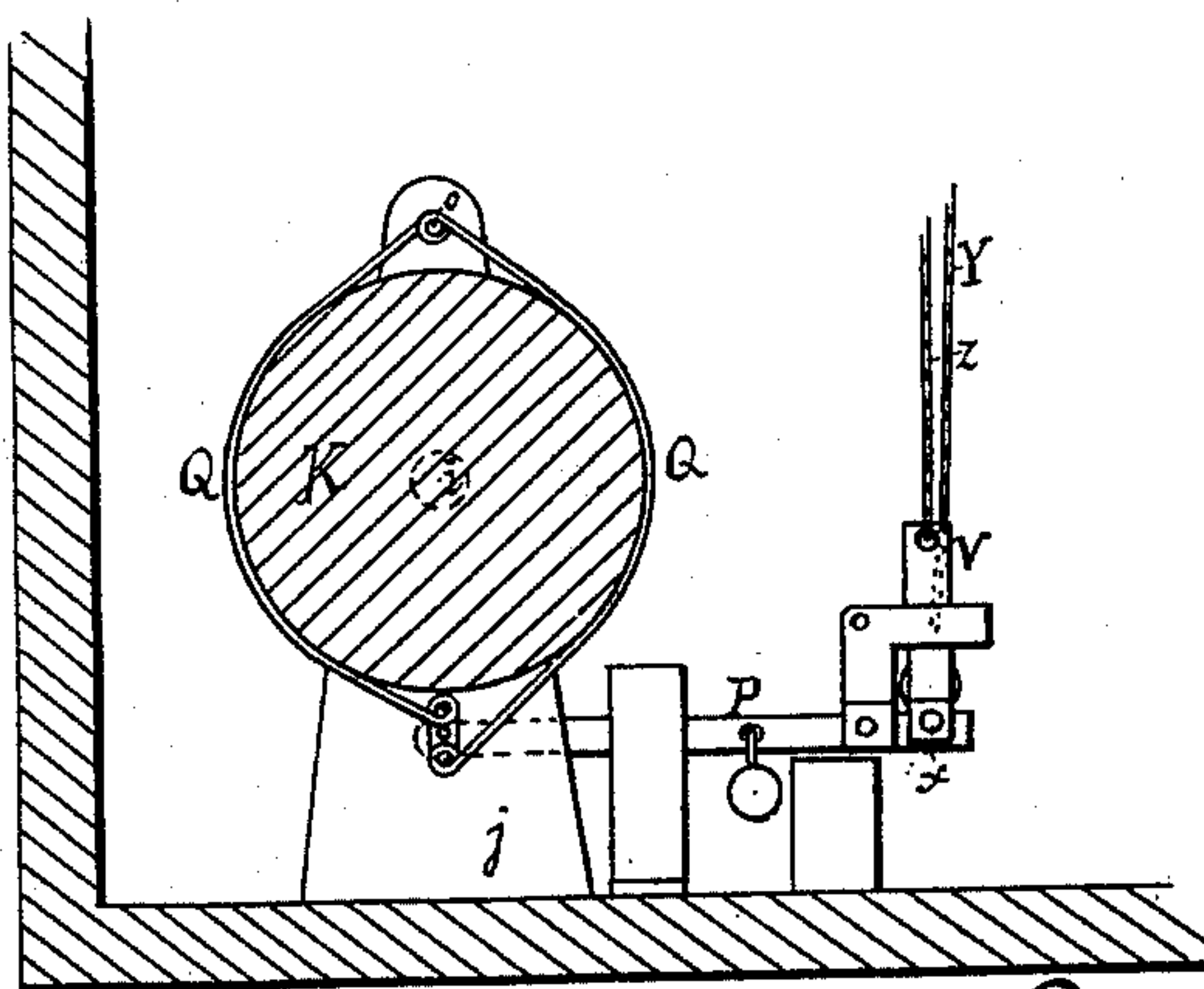
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*Fig. 4.*



*Witnesses:*

*F. B. Townsend*  
*Emil H. Frommann*

*Inventor:*

*Peter Jacob Schmitt*  
*per Wm H Lotz*  
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# UNITED STATES PATENT OFFICE.

PETER J. SCHMITT, OF CHICAGO, ASSIGNOR OF THREE-EIGHTHS OF HIS  
RIGHT TO GEORGE SIEGEL, OF CARLINVILLE, ILLINOIS.

## SAFETY ATTACHMENT TO ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 223,455, dated January 13, 1880.

Application filed September 8, 1879.

*To all whom it may concern:*

Be it known that I, PETER JACOB SCHMITT, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful  
5 Improvement in Safety Attachments to Elevators; and I do declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which this improvement appertains to make  
10 and use the same, reference being had to the accompanying drawings, which form part of this specification.

This my invention relates to devices for preventing accidents with the use of rope elevators; and it has for its object to provide additional improvements to the safety attachments described in Letters Patent of the United States granted to me on September 9, 1879, No. 219,367.

20 My invention consists, first, in a swinging frame having a traversing sheave which leans against the hoist-rope and sustains the said frame at an upward position by the tension of said hoist-rope, and in the peculiar device of  
25 connecting the said frame with a throttle-valve in the steam-supply pipe of the engine, in such a manner that with the slacking or breaking of said hoist-rope the steam-supply to the engine will be shut off instantly; secondly, in the connection between the tightener-  
30 pulley to the belt which transmits the power from the engine to the drum-shaft with the throttle-valve in the steam-supply pipe, in a manner that the breaking or slipping off of  
35 said belt will shut off the steam-supply to the engine; third, in the device of connecting the swinging frame having traversing sheave, and to be upheld by the tension of the hoist-rope, with an attachment for coupling the brake-lever  
40 with the rocker-shaft for reversing the engine, that with the breaking or slacking of the hoist-rope the brake-lever will be set free to act upon the brake for stopping the drum-shaft; fourth, in the device of connecting the  
45 tightener-pulley with the coupling attachment between the brake-lever and the rocker-shaft for reversing the engine, in a manner that the slipping off or breaking of the belt will set the brake-lever free to act upon the brake for  
50 stopping the drum-shaft; and, fifth, in the

general arrangement and combination of the several parts and devices, as hereinafter more fully described.

In the drawings, Figure 1 represents a perspective view of the engine and drum-shaft 55 having my improvements attached. Fig. 2 represents a plan of the same. Fig. 3 shows a front elevation, and Fig. 4 a sectional view, of the brake and connections.

Like letters in the several figures of the 60 drawings designate like parts.

A denotes the floor, and A' the ceiling, of the engine-room, adjoining the elevator-hatchway. B is the steam-cylinder, and b the pipe supplying steam from the boiler to the engine, 65 having a stop or throttle valve, C, operated by arm c. D is the steam-chest of the engine, and d the lever operating the reversing-valve inside of said steam-chest, and connected by a rod, e, with an arm, E, of rocker-shaft F, 70 which is journaled in hanger-bearings to the ceiling of the engine-room. A double crank, G, is mounted upon the end of the rocker-shaft F, which, in relation with the arm E, occupies a rectangular position, and has attached 75 the ends of the elevator-controlling ropes g, passing horizontally through the wall and thence over sheaves vertically upward in the elevator-hatchway, so as to enable the operator to start and stop and to reverse the mo- 80 tion of the elevator by said ropes while standing upon the platform. H represents the driving-pulley, mounted upon the main engine-shaft h, which is journaled in an upright frame, J. Upon the drum-shaft i, which with its end 85 journals is pivoted between the pedestal-bearing j, is mounted a large pulley, I, with brake-wheel K to one side and two spools, L l, to the other side—one for the hoist-rope M and the other for the safety-rope n, as described 90 in my former patent.

Power is transmitted from the driving-pulley H to the drum-shaft pulley I by a belt, O, which is stretched taut over said pulleys by an idler-pulley, N, journaled between the ends 95 of two arms, n, the opposite ends of which are pivoted to the engine-frame J, so as to permit a swinging motion for the pulley N to ride upon the belt and tighten the same by its gravity.



The brake-wheel K is embraced by two semicircular steel bands, Q, which are pivoted with their top ends upon a stud, o, of the pedestal j, and with their lower ends to the diametrical opposite sides of the fulcrum-pin of brake-lever P, projected through the base of pedestal j. This brake-lever has a weight suspended, and its end is connected by a rope, z, which passes over pulleys under the ceiling, with an arm, f, of rocker-shaft F in such a manner that when the reversing-lever d is set on a horizontal line, so as to stop the engine, the brake will hold the spool-shaft from turning; but when the lever d is swung to either direction, whether above or below a horizontal line, for causing the engine to turn the shaft in either direction, the brake-lever will be raised, and the spool-shaft will be free to rotate with the engine-shaft.

The above, as far as described, relates to the usual arrangement for rope elevators driven by steam, and to which I lay no claim, excepting to the auxiliary spool and safety-rope, which I have described in my former patent.

R is a tumbler-shaft suspended in two hanger-bearings under the ceiling, and having a long gravitating arm, S, and two short cranks, r and s. T is a bell-crank, pivoted with its apex in a suitable bracket under the ceiling, and having a hook formed to the end of its pending arm, which will enter a hole in the end of arm S, and will support said arm to occupy a horizontal position. The end of the other arm of bell-crank T is formed a loop, which is connected with the ends of two ropes, t and u. The rope t, after being carried over two pulleys underneath the ceiling, connects with its opposite end to a vibratable frame, U, composed of two arms, which at their ends are connected by rods. One of these rods forms the fulcrum on which the frame swings in brackets secured to the wall, and the other one of which forms the axis for a sheave, v, so as to have freedom to traverse thereon laterally. This sheave v will roll against the hoist-rope M in a manner that the tension of said rope will sustain the frame on an upwardly-inclined position, and that, if said rope breaks or becomes slack, the weight of the frame U will turn the bell-crank T to disengage the arm S.

The rope u, after passing over two pulleys underneath the ceiling, is coupled with its opposite end to one of the arms n of idler-pulley N, which, with losing its support upon the belt, from the breaking or slipping off of the latter by its gravity, will act upon the bell-crank T to disengage the arm S.

The crank r of tumbler-shaft R, by a rope, w, which is passed over a small pulley overhead, is connected with crank c of throttle-valve C on steam-supply pipe b in such a manner that the gravity of the lever S, when disengaged from bell-crank T, will close said valve instantly, and will shut off the steam-supply to the engine.

The rope z is connected with lever P by a bifurcated bar, V, and a coupling-pin, x, having a forked head, which is pivoted to the end of a vertical arm of a bell-crank, W, pivoted with its apex in the forked end of a stud, a, which is secured to bar V.

The end of the horizontal arm of the bell-crank W has a weight attached, which, by its gravity, will hold the coupling-pin x in its place, and is also connected to the end of a rope, Y, which, after being passed over pulleys underneath the ceiling, connects with crank s of tumbler-shaft R in such a manner that the turning of said tumbler-shaft by the gravity of arm S will extract the coupling-pin x, and will free the brake-lever P to tighten the brake by its gravity.

As will be seen from the above description, the steam-supply to the engine and the brake will be tightened simultaneously and automatically in either case, whether the hoist-rope becomes slack from breakage or otherwise, or whether the power-transmitting belt will break or slip off.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The tightening-pulley N of belt O, connected with the throttle-valve C of the engine in such a manner that the breaking or slipping off of the belt will shut off the steam-supply to the engine, substantially as set forth.

2. The tightening-pulley N of belt O and the vibratable frame U, carrying sheave v, and arranged to be sustained at an elevated position by the tension of the hoist-rope M, both connected with the throttle-valve C of the engine in such a manner that whether either the belt or the hoisting-rope breaks or becomes slack the supply of the steam to the engine will be shut off, substantially as described and shown.

3. The vibratable frame U, carrying sheave v, and arranged to be sustained at an elevated position by the tension of the hoist-rope M, in connection with the pin x, for coupling the brake-lever P with the reversing-gear of the engine in such a manner that the breaking or slacking of the hoist-rope will disengage the brake-lever and will set the brake to act upon the spool-shaft, substantially in the manner set forth.

4. The tightening-pulley N of belt O, connected with the coupling-pin x between the brake-lever P and the reversing-gear of the engine, so that the breaking or slipping off of the belt will set free the brake-lever to act upon the brake for stopping the spool-shaft, substantially as and for the purpose described and shown.

5. The combination of the tightener-pulley N, sustained by the belt O, with the vibrating frame U, supported by the hoist-rope M, both said tightener-pulley and vibrating frame being connected with the coupling-pin x, between brake-lever P and the reversing-gear of the engine, in such a manner that whether the



belt or hoist-rope breaks or slackens the brake will be set free to act upon the spool-shaft, substantially as and for the purpose set forth.

5 6. The vibratable frame U, having sheave *v*, arranged to be sustained at an elevated position by the tension of hoist-rope M, and connected by rope *t* with hook-crank T, in combination with tumbler-shaft R, having gravitating arm S and crank *r*, connected by rope  
10 *w* with crank *c* of throttle-valve C, the same being constructed to operate substantially in the manner set forth.

15 7. The tightening-pulley N of belt O, connected by rope *u* with hook-crank T, in combination with tumbler-shaft R, having gravitating arm S and crank *r*, connected by rope *w* with crank *c* of throttle-valve C, the same being constructed and arranged to operate substantially as set forth.

20 8. The coupling attachment between rocker-shaft F and brake-lever P, consisting of bifurcated bar V, pin *x*, and bell-crank W, con-

nected by rope Y with tumbler-shaft R, having gravitating lever S and crank *s*, in combination with hook-crank T, connected by rope  
25 *t* with vibratable frame U, having sheave *v*, and devised to be sustained by the tension of hoist-rope M, the same being constructed and arranged to operate substantially in the manner set forth.

30 9. The coupling attachment between rocker-shaft F, for reversing the motion of the engine, and brake-lever P, consisting of bifurcated bar V, pin *x*, and bell-crank W, connected by rope Y with tumbler-shaft R, having gravitating lever S and crank *s*, in combination  
35 with hook-crank T, connected by rope *t* with tightening-pulley N of belt O, the same being constructed and arranged substantially as described and shown.

PETER JACOB SCHMITT.

Witnesses:

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JOHN SAURENTHALER.