H. A. GUILD.

Device for Stopping the Motion of Elevators.

No. 213,565. Patented Mar. 25, 1879.

Fig. 1.

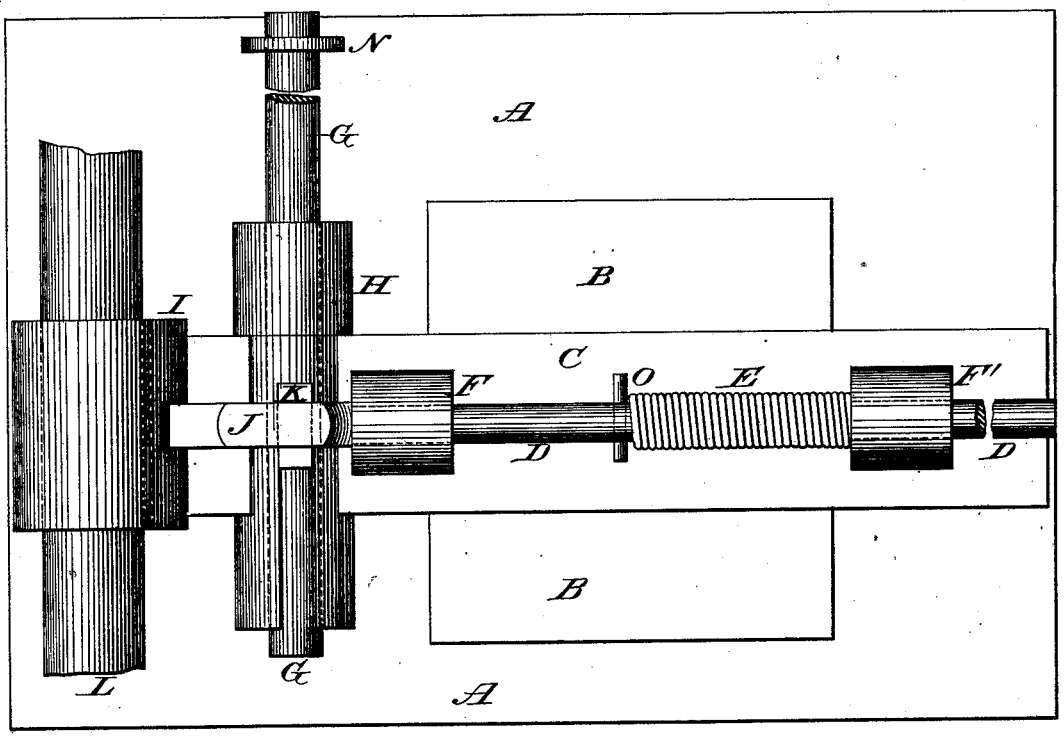
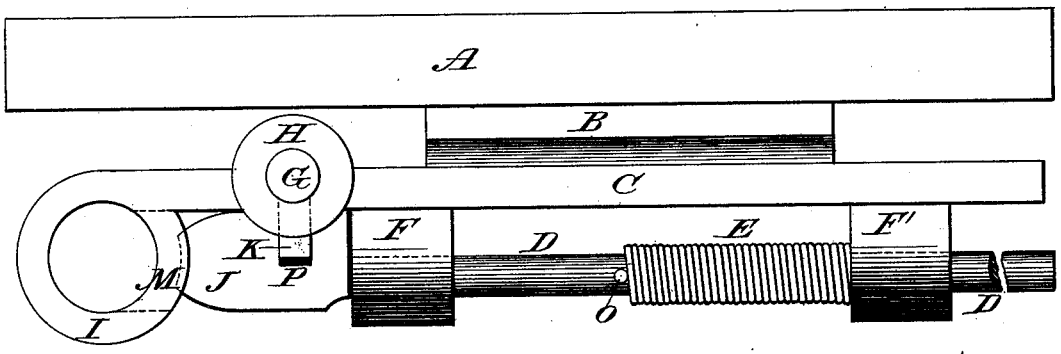


Fig. 2.



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HENRY A. GUILD, OF NEW YORK, N. Y.

IMPROVEMENT IN DEVICES FOR STOPPING THE MOTION OF ELEVATORS.

Specification forming part of Letters Patent No. **213,565**, dated March 25, 1879; application filed January 18, 1879.

To all whom it may concern:

Be it known that I, HENRY A. GUILD, of the city, county, and State of New York, have invented a new and useful Device for Stopping the Motion of Elevators, of which the following is a specification, reference being had to the drawings herewith, which constitute part thereof.

Elevator platforms or cages usually travel between guiding-posts, which extend from the basement of a building to the upper floors thereof, motion being given them by a rope attached to the frame of the elevator-platform, and running over a drum situated at the top of the elevator-way, and connecting with an engine hoisting-apparatus in the basement. Steam is supplied to the engine through a valve placed in the steam-pipe leading from a boiler to the engine, which valve is opened or closed by a chain or rope connected to the valve-stem, and running parallel with the travel of the elevator-cage in its travel, and generally passing through a guide in the cage itself, so that an attendant on the elevator-cage, or by its side, can open or shut the steam-valve by pulling the valve-shifting rope up or down, as the case may be.

By means of this shifting-rope the motion of the elevator-cage may be entirely stopped, or caused to move either up or down. When the cage is ascending, with the engine-valve open, the shifting-rope is pulled up to close the valve. To reverse the motion of the cage the shifting-rope is pulled still farther up, which opens the valve to admit steam to the opposite end of the engine-piston and reverse its motion, and that of the cage or platform, so that it will descend. When the cage is moving down, by reversing the operation the cage may be stopped or moved up.

At the level of the several floors, especially in the case of freight-elevators, covers, called "hatch-covers," are located, which shut down to close the hatchway, to prevent persons from falling into the elevator-way. It often happens that these covers are closed when they should be open for the passage of the elevator-cage, in which case the cage would injure them.

The object of my invention is to render such an accident impossible; and to this end my invention consists in certain combinations of mechanism, specifically set forth at the end of this schedule.

In order that persons skilled in the art may understand, make, and use my invention, I will proceed to describe it, referring to the drawings, in which—

Figure 1 represents a front elevation of my device. Fig. 2 represents a top view of the same.

A is a portion of the elevator-cage, to which my device is attached by flange B on frame C. F F′ are bearings on frame C, in which slides a griping-rod, D, placed at about right angles with the travel of the elevator-cage, and shifting-rope L, which runs in a guide, I. On the end of rod D toward guide I is a brake, shaped to gripe the shifting-rope L, by passing through a slot in guide I, (marked M in Fig. 2,) when thrown forward against said shifting-rope, by the power of a spring, E, acting between bearing F′ and a pin or shoulder, O, on rod D. At about right angles to the rod D, and parallel with the travel of the elevator-cage, is placed a trip-rod, G, which extends beyond the elevator-cage, so as to strike any obstruction before the cage reaches it. Trip-rod G travels up and down in a guide or slotted bearing, H, and is provided with a feather, K, arranged to catch into a slot, P, in brake J when they are opposite each other, and serves to hold griping-rod D, with brake J, in its rearward position out of the slot in guide I, and free from contact with shifting-rope L, the spring E being compressed ready for action.

When the elevator-cage is moving upward, should a hatch-cover be closed against the passage of the cage, the trip-rod G comes in contact with said cover and it is thrown down, throwing the feather K out of slot P in brake J and releasing it, so that the spring E will throw the brake forward through slot M in guide I against the shifting-rope L, which holds it fast. The motion of the cage upward draws up the shifting-rope, and thus closes the steam-valve to the engine, and stops the further travel of the elevator cage before it has reached the hatch-cover, and thus prevents injury which would otherwise result. A stop is placed on rod G, to regulate its down-

ward motion by coming in contact with the top of guide H.

When desirable, the slot in guide H is cut far enough upward to allow the feather K to be thrown out of slot P in brake J in an upward direction, so that the downward motion of the elevator-cage may be stopped, by extending trip-rod G through the bottom of elevator-cage, in which case the rod G, by striking the hatch-cover, would stop the downward motion of the cage in a similar manner as when the cage was traveling upward.

The device is then set for further use by placing the parts in the positions as indicated in the drawings.

I have found this device very efficient in practical operation.

Having now fully described my invention, and the manner in which I have embodied it, what I claim as my invention, and desire to secure by Letters Patent, is—

The combination, with an elevator platform or cage, of the valve-shifting rope-guide, trip-rod, and the spring-brake, arranged to move across the line of motion of the valve-shifting rope, to lock it to the elevator-cage, when operated by said trip-rod, all arranged to operate automatically, substantially in the manner and for the purposes set forth hereinbefore.

HENRY A. GUILD.

Witnesses:
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