J. BEGGS.

AUTOMATIC-STOPS FOR ELEVATORS.

No. 194,546. Patented Aug. 28, 1877.

Fig. 1.

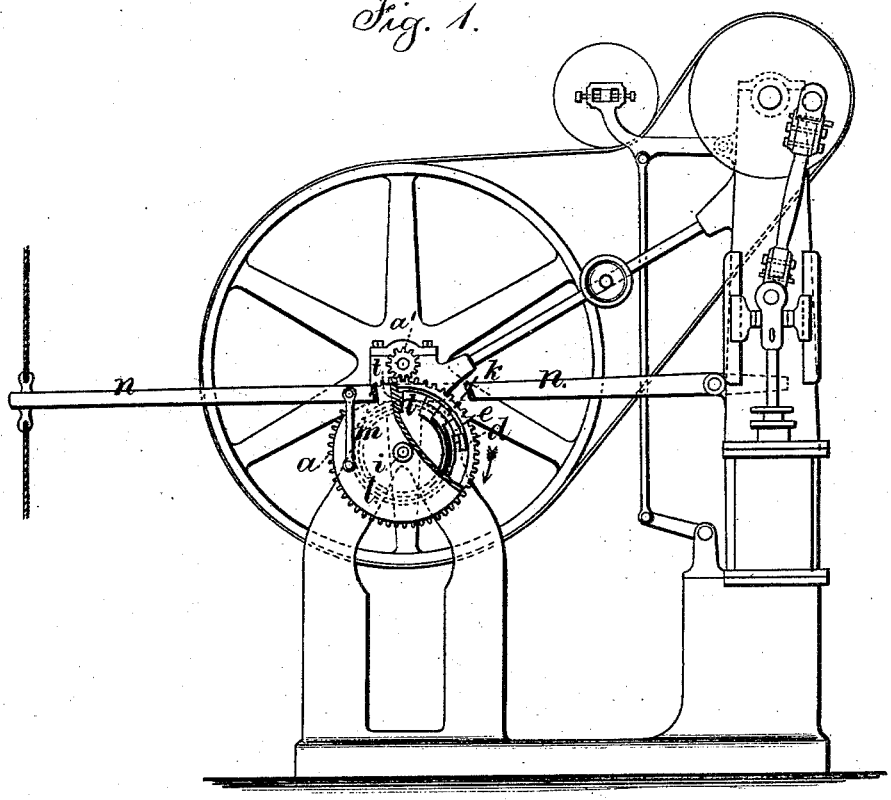
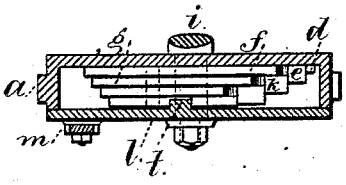


Fig. 2.



Witnesses

Chas H. Smith

Harold Terrell

Inventor.

James Beggs.

per Lemuel W. Serrell

Atty

UNITED STATES PATENT OFFICE.

JAMES BEGGS, OF PATERSON, NEW JERSEY.

IMPROVEMENT IN AUTOMATIC STOPS FOR ELEVATORS.

Specification forming part of Letters Patent No. **194,546**, dated August 28, 1877; application filed August 1, 1877.

To all whom it may concern:

Be it known that I, JAMES BEGGS, of Paterson, in the county of Passaic and State of New Jersey, have invented an Improvement in Automatic Stops for Elevators, of which the following is a specification:

In car and platform elevators it is usual to have a vertical stopping and starting hand-rope, and upon this there have been stops at the extreme upward and downward movements, so that the car actuates the stopping mechanism at the extremes of its vertical movement. In case of this hand-rope breaking there is nothing to stop the engine, and something is injured.

The object of this invention is to provide an automatic stop that will operate at both ends of the movement of the car or platform independent of the hand-rope, so that it may be relied on as a substitute for the stops upon the hand-rope, or act in addition thereto and come into play should the hand-rope break.

I make use of a gear-wheel and a disk upon the same shaft, with tumblers intervening, so that the disk remains quiescent during the hoisting operation, while the tumblers are revolved in succession, and just before the car or platform reaches its extreme movement the tumblers stop, come into contact with each other, and form a connection from the gear-wheel to the disk, and the latter is partially revolved, and the stopping and starting lever moved by a link from the said disk.

When the movement of the engine is reversed the tumblers are rotated one after and by the other until all the stops come into contact with each other and cause the wheel to move the disk, link, and lever in the opposite direction, and again stop the engine.

In the drawing, Figure 1 is an elevation of the hoisting apparatus with part of the disk removed, and Fig. 2 is a sectional plan of the gear-wheel, disk, and tumblers in larger size.

The wheel *a* upon the shaft *i* may be one of the band or gear wheels of the hoisting apparatus. It is, however, shown as a special wheel, revolved by the pinion *a'*; but it may be an arm carrying the stop *d*, that projects at one side to take the stop *e* upon the tumbler *f*, and this stop *e* also comes into contact with the stop *k* of the tumbler *g*, and so on. Each tumbler has a stop projecting laterally to take the next tumbler, and each tumbler is loose upon its shaft *i*. The disk *l* is also upon the shaft *i*, and it is connected by the link *m* with the stopping, starting, and reversing lever *n* of the hoisting apparatus. The stop *d* is revolved around the shaft *i* whenever the engine is moving, and according to the proportion of the gearing and the movement of the car or platform, so the stop *d* will make two or more revolutions during the hoisting or lowering of the car or platform, and according to the number of revolutions, so two or more tumblers will be required.

Starting with the stops all against each other, as seen in Fig. 1, suppose the wheel or arm, with the stop *d*, to be revolved in the direction of the arrow, away from the other stops, then they remain stationary until the stop *d* has made nearly a revolution, then it comes around against the next stop *e* or tumbler, and carries that with it, and the two make nearly another revolution and come against the stop *k*, and moves that, and so on, and when the car or platform is near its extreme movement the stop *t* on the disk *l* is acted upon, the disk partially revolved, and the link *m* and lever *n* moved so as to stop the engine. The reversal of the engine causes the same parts to be moved successively in a similar manner, and finally to stop the engine when the car or platform arrives at the extreme point of movement in the opposite direction.

This apparatus is not subject to the objections that would arise if a train of gearing to reduce the speed was employed, because in my apparatus the action upon the stopping-lever is nearly as rapidly as by hand.

I claim as my invention—

The combination, with the elevating mechanism, of a range of tumblers with stops, the actuating-wheel and connections to the stopping-lever of the engine, substantially as set forth.

Signed by me this 20th day of July, A. D. 1877.

JAMES BEGGS.

Witnesses:
GEO. T. PINCKNEY,
WILLIAM G. MOTT.