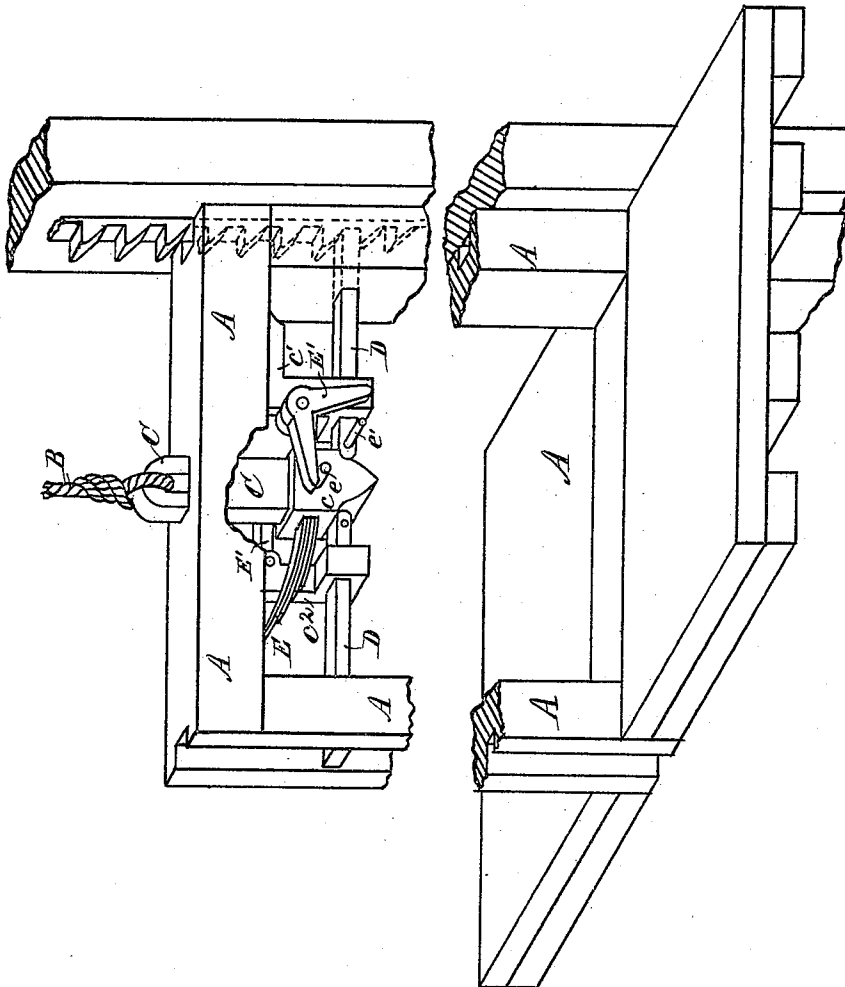


P. F. KING.

SAFETY-STOP FOR ELEVATORS.

No. 174,631.

Patented March 14, 1876.



Witnesses:

J. H. Barthol.
Chas. P. Meisner.

Inventor:

Princas F. King
per Barthol. & Co.
Atty.

UNITED STATES PATENT OFFICE.

PHINEAS F. KING, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN SAFETY-STOPS FOR ELEVATORS.

Specification forming part of Letters Patent No. **174,631**, dated March 14, 1876; application filed July 26, 1875.

To all whom it may concern:

Be it known that I, PHINEAS F. KING, of St. Louis, in the county of St. Louis and State of Missouri, have invented an Improved Safety-Stop for Hoisting Apparatus, &c., of which the following is a specification:

The object of this invention is to form an improved safety-stop for hoisting apparatus, elevators, &c., affording a certain and practical means for preventing the fall of the cage or elevator-platform in consequence of sudden release, breakage, or accident to the hoisting rope or chain. It therefore relates to the peculiar combination and operation of the parts composing the safety-stop, in the manner as will now more fully appear.

Of the drawing, Figure 1 is a perspective view of my improvement as applied and in practical operation.

A is the hoisting cage or platform. B is the rope or chain secured to top of the center-piece C. The center-piece C slides through the slotted head of the cage, and, by means of its enlarged body part at *c*, raises and lowers said cage when operated. D are horizontal sliding bars, their inner ends passing through slotted supports *c*¹ *c*², which are secured to the under side of the head. The outer ends of the bars D pass likewise through slots in the sides of the cage, in order to be engaged with or disengaged from the side racks. E is a suitable spring, passed through the center-piece C, and made to engage the under side of the head. I further provide the center-piece C to have projecting pins *e*, which are oppositely positioned, and the object of which is to operate angle-levers E', (one being on one side and the other on the opposite side,) pivoted each to one of the supports *c*¹ *c*², as indicated. Further, the angle-levers E' engage each a lower projecting pin, *e'*, which form part of the inner ends of the bars D. In order that the sudden descent of the platform (or lowering of the center-piece) can be made to force the horizontal bars apart or into engagement with the racks, I form the lower extremity of said center-piece arrow-shaped. (See figure.) The inner ends of the bars D are also shaped so as to fit snugly in curved

parts of the arrow-head, (see figure,) thus allowing the full action of the arrow part to take place and pass through between said bars.

The parts thus constructed and arranged, their operation is as follows: The rope attachment draws upward the center-piece C, so that its arrow-head is above and clear of the horizontal bars D, and in doing so the weight of the platform depresses the spring E. At same time as it raises, by means of the pins *e*, it causes the top lever-arm of the angle-levers E' to be raised, which, in turn, are made to engage the lower pins *e'* of the horizontal bars D, and act upon these. When, therefore, the center-piece is in full raised position preparatory to raising or lowering the platform, the bars D are drawn out and kept out of engagement with the racks. In case, now, from accident or otherwise, the rope or chain should suddenly break or become loosened, the spring E forces the center-piece immediately down to its original position, and the fall of the arrow-head thereof acts to separate the bars, forcing them to slide into engagement with the racks or posts, and the platform is stopped. It is apparent that the stoppage here is instantaneous, as the locking of the parts is decisive, immediate, and certain.

The spring E can be dispensed with, as the weight of the center-piece itself can be utilized for the same purpose, and to insure a proper stoppage and operation of the parts.

The greater the weight on the cage or platform the more positive in manner is the operation of my safety-stop.

What I claim is—

The combination of the center-piece C, its pins *e e*, angle-levers E E', sliding bars D D, having pins *e' e'*, said parts being arranged with relation to each other to form a safety-stop, operating in the manner described and for the purpose set forth.

In testimony of said invention I have hereunto set my hand.

PHINEAS F. KING.

Witnesses:

WILLIAM W. HERTHEL,
CHAS. F. MEISNER.