

H. G. TESSMER.
SAFETY DEVICE FOR ELEVATORS.
APPLICATION FILED MAY 8, 1912.

1,039,073.

Patented Sept. 17, 1912.

Fig. 1.

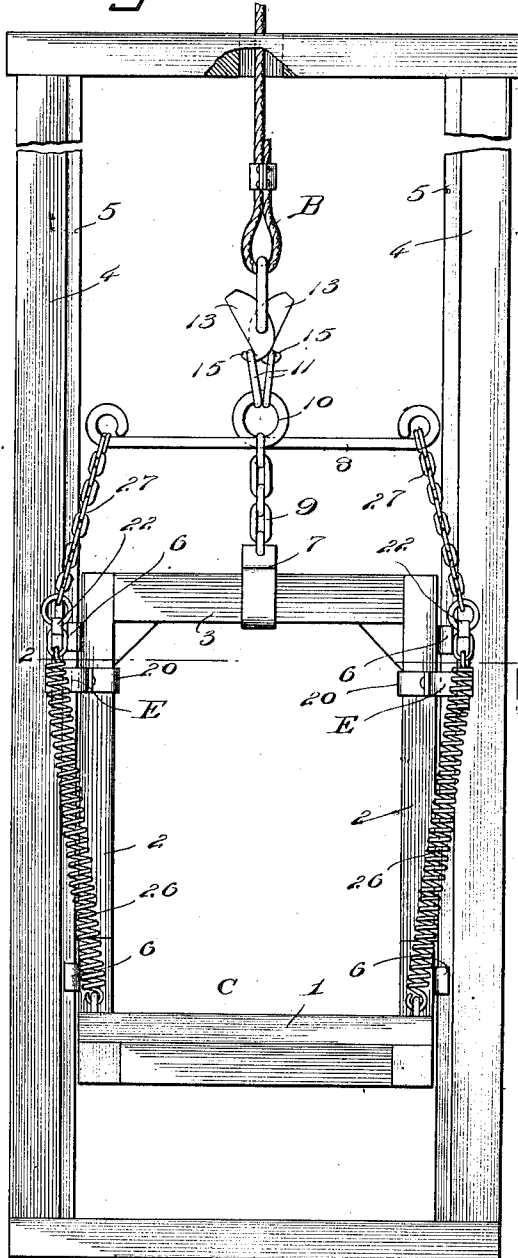


Fig. 2.

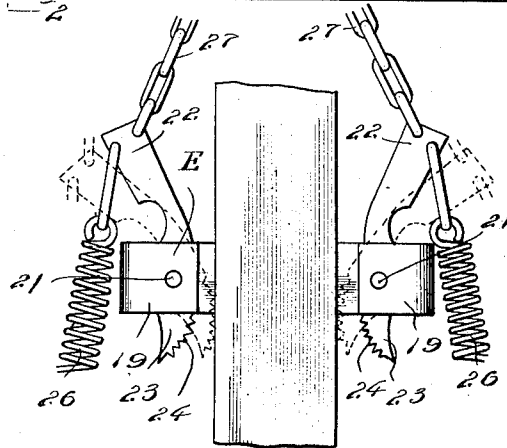
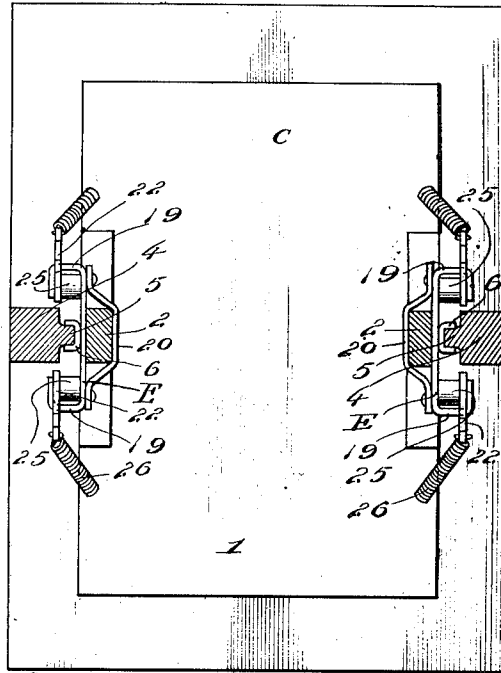


Fig. 3.

Inventor
Herman G. Tessmer

Witnesses

C. E. Kumples,
Wm. A. Bagger

By Victor J. Evans
Attorney

UNITED STATES PATENT OFFICE.

HERMAN G. TESSMER, OF PITTSBURG, KANSAS, ASSIGNOR OF THREE-TENTHS TO O. DOUGLAS SMITH AND THREE-TENTHS TO CLAUDE G. WEATHERS, BOTH OF PITTSBURG, KANSAS.

SAFETY DEVICE FOR ELEVATORS.

1,039,073.

Specification of Letters Patent.

Patented Sept. 17, 1912.

Original application filed March 16, 1912, Serial No. 684,245. Divided and this application filed May 8, 1912. Serial No. 695,913.

To all whom it may concern:

Be it known that I, HERMAN G. TESSMER, a citizen of the United States, residing at Pittsburg, in the county of Crawford and State of Kansas, have invented new and useful Improvements in Safety Devices for Elevators, of which the following is a specification.

This invention relates to elevators, and it is a division of the application, Serial No. 684,245, filed by me on the 16th day of March, 1912.

The present invention has for its special object to provide simple and improved safety means whereby the elevator car when descending by gravity owing to a broken or disconnected hoisting cable will be automatically arrested, thereby avoiding danger to the occupants of the car.

A further object of the invention is to simplify and improve the construction and arrangement of the means whereby the safety device is supported on the elevator car for engagement with the upright guides.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawing has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the claims may be resorted to when desired.

In the drawing,—Figure 1 is a front view of an elevator constructed in accordance with the invention. Fig. 2 is a horizontal sectional view taken on the line 2—2 in Fig. 1. Fig. 3 is a detail view in side elevation showing the safety grips or clutch members in position for hoisting and with dotted lines showing said grips or clutch members in position to arrest the downward movement of the car.

Corresponding parts in the several figures are denoted by like characters of reference.

The elevator car C, a simple conventional form of which has been illustrated, includes a platform 1, side members 2 and a top

cross bar 3. The car is shown as being guided for vertical movement between uprights 4, 4 having guide strips 5 on their inner faces, said guide strips being engaged by clips 6 on the uprights 2 of the car. The top cross bar 3 of the car is provided with a clamp 7 with which a hoisting bar 8 is connected by a flexible element, such as a short chain 9. The hoisting bar is provided with a centrally disposed loop or eye 10 with which a pair of links 11 are connected. Said links are connected detachably with the flexible hoisting element B, which latter may consist of a chain, rope or cable, by pivotally supported cam members 13 having hooks 15 engaging the links 11 to provide for the automatic disengagement of the hoisting element from the car, as set forth in the application of which this is a division and which, therefore, need not be herein described in detail.

Each of the uprights 2 of the elevator car carries a clamp or bracket E on the external side or face thereof, said clamp or bracket being bent to form U-shaped or hook-shaped ends 19. The clamps E are reinforced by straps 20 extending across the inner faces of the uprights 2. The U-shaped ends of the clamps E support shafts or journals 21 on which the safety catches consisting of levers 22 are journaled, said levers being provided with cam-shaped heads 23 which are provided with sharp-edged teeth or ratchets 24 having abrupt shoulders adapted to engage the uprights 4 or the guide strips, as may be preferred. In the drawings the catch members have been shown as engaging the uprights 4. Spools or spacing members 25 on the journals 21 serve to hold the levers 22 in proper engaging position. The ends of the levers 22 which extend outwardly from the uprights 4 are connected by means of traction springs 26 with the floor of the elevator car or with any suitable point of attachment, which will enable the springs to so actuate the levers as to keep the heads 23 in engaging position with reference to the uprights 4. The outer ends of the levers 22 are also connected by flexible elements, such as chains 27, with the ends of the hoisting bar 8. The flexible elements 27 are so proportioned to the flexible element 9, whereby the elevator car is suspended from the hoisting bar 8 that when the flexible element 9 is held

taut by the weight of the elevator car, the flexible elements 27 will pull the levers 22 against the tension of the springs 26 sufficiently to disengage the corrugated faces of the heads 23 from the uprights 4. When, on the other hand, the flexible element 9 becomes slackened owing to disengagement of the elevator car from the hoisting element or from any other cause, the tension of the springs 26 will actuate the levers 22 to throw the corrugated heads 23 into engagement with the uprights 4, thereby checking the descent of the car.

From the foregoing description, taken in connection with the drawing hereto annexed, the operation and advantages of this invention will be readily understood. It is obvious that when for any reason the car becomes disengaged from the hoisting element, the levers 22 will be instantly actuated by the springs 26 to hug the uprights, thereby checking the descent of the car and avoiding injury to the mechanism of the elevator structure; as well as the danger to life and limb of passengers carried by the car.

Having thus described the invention, what is claimed as new, is:—

1. In an elevator, uprights constituting guide members, a car guided thereon and having uprights, clamps secured on the uprights and having U-shaped ends, shafts journaled in said U-shaped ends, levers fulcrumed on the shafts and having ratchet toothed heads adapted to engage the upright guides, springs actuating the levers to hold the toothed heads in engagement with the upright guides, a hoisting bar, a flexible element connecting the hoisting bar with the car, and flexible elements connecting the hoisting bar with the levers to pull the latter

against the tension of their actuating springs, the last named flexible elements being proportioned to hold the levers against the tension of the actuating springs with the toothed heads clear of the upright guides when the flexible element connecting the car with the hoisting bar is held taut by the weight of the car.

2. In an elevator, uprights constituting guide members, a car guided thereon and having uprights, clamps secured on the outer faces of the uprights and having U-shaped ends, reinforcing strips for the clamps extending across the inner faces of the uprights, shafts mounted in the U-shaped ends of the clamps, levers fulcrumed on the shafts and having ratchet toothed heads adapted to engage the upright guides, spacing spools on the shafts to maintain the levers in position for effective engagement with the guides, and lever actuating means.

3. In an elevator, uprights constituting guide members and having guide strips on their inner faces, a car having uprights and clips on said uprights engaging the guide strips and guided thereon, clamps secured on the outer faces of the uprights and having U-shaped ends, reinforcing strips for the clamps extending across the inner faces of the uprights, shafts supported in the U-shaped ends of the clamps, levers fulcrumed on the shafts and having ratchet toothed heads adapted to engage the upright guides, and lever actuating means.

In testimony whereof I affix my signature in presence of two witnesses.

HERMAN G. TESSMER.

Witnesses:

G. W. KIDDER,
VANITA ALBERTY.