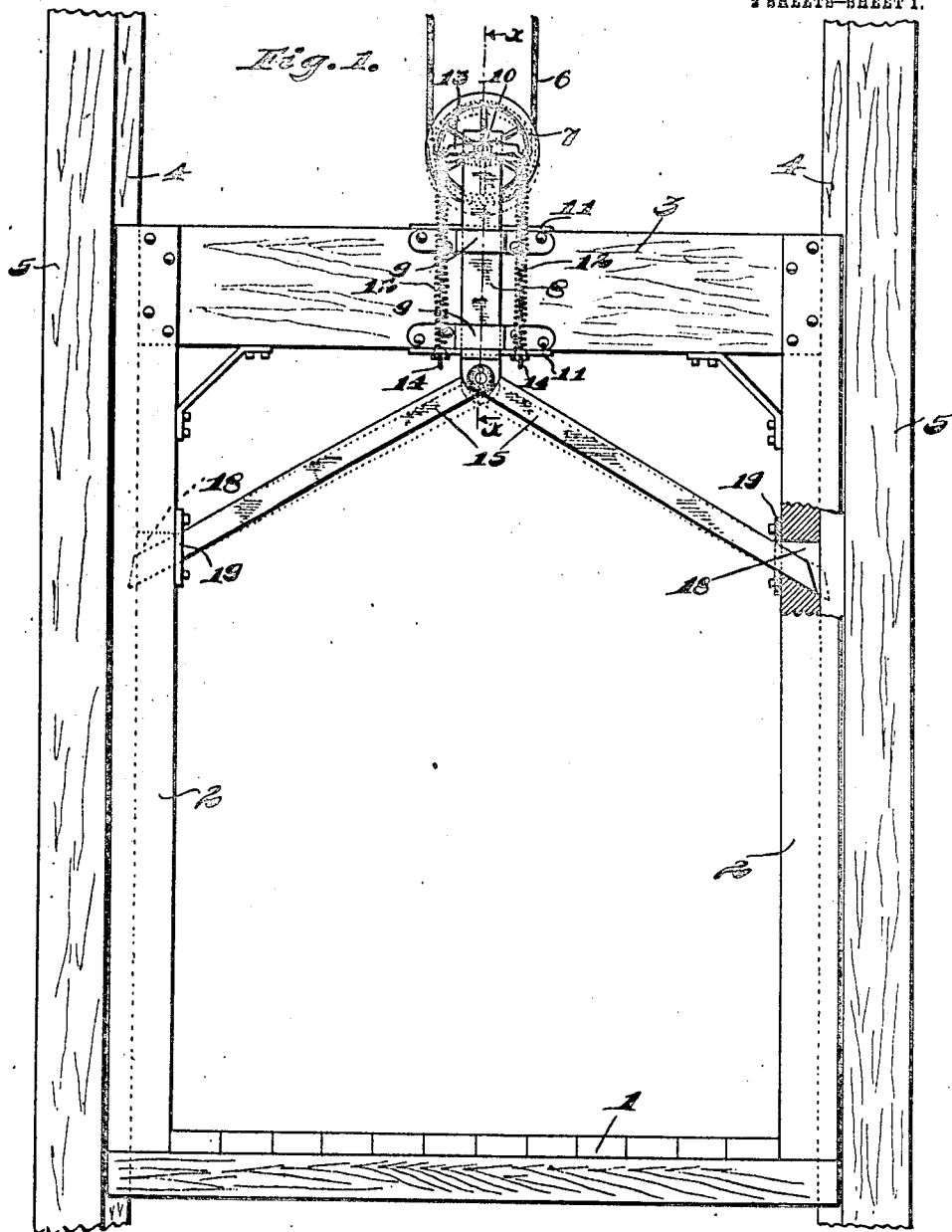


C. CARSON & E. B. TIMMERMAN.
SAFETY DEVICE FOR ELEVATORS.
APPLICATION FILED DEC. 1, 1911.

1,041,019.

Patented Oct. 15, 1912.

2 SHEETS-SHEET 1.



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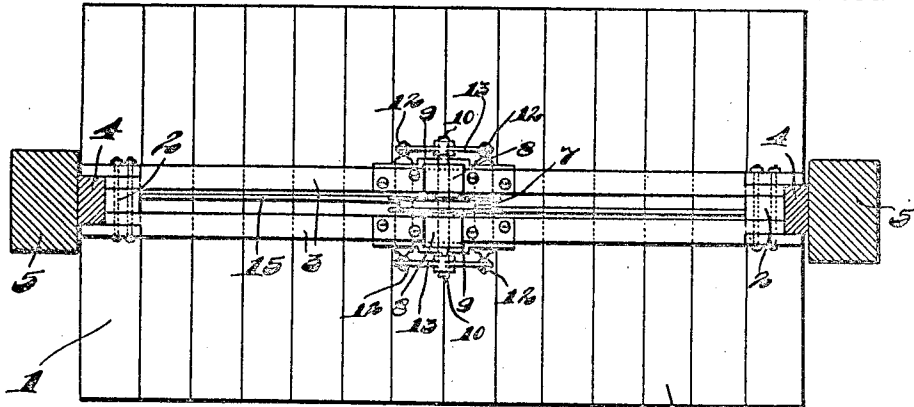


Fig. 1.

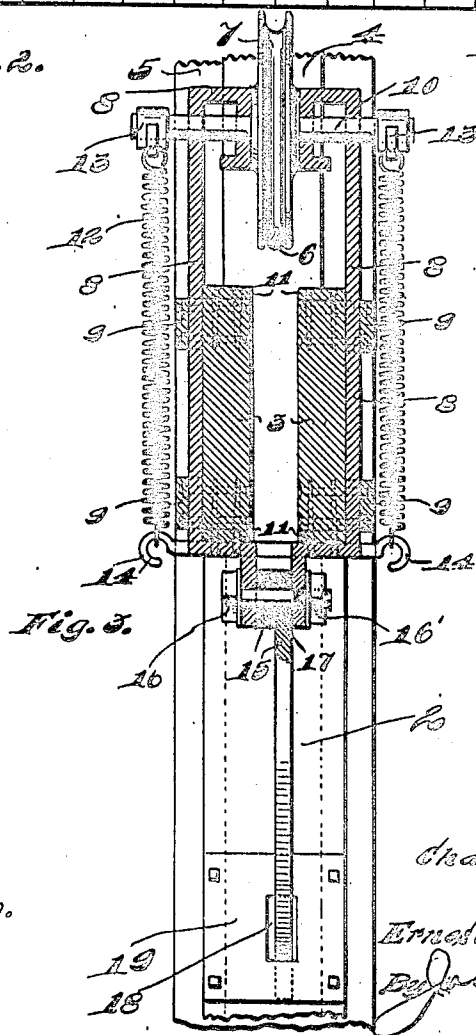


Fig. 2.

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UNITED STATES PATENT OFFICE.

CHARLES CARSON AND ERNEST B. TIMMERMAN, OF CHICAGO, ILLINOIS.

SAFETY DEVICE FOR ELEVATORS.

1,041,019.

Specification of Letters Patent.

Patented Oct. 15, 1912.

Application filed December 1, 1911. Serial No. 663,383.

To all whom it may concern:

Be it known that we, CHARLES CARSON and ERNEST B. TIMMERMAN, citizens of the United States, and residents of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Safety Devices for Elevators, of which the following is a specification.

Our invention relates to improvements in safety devices for elevators and has for its object the production of a mechanism of this character which will be adapted, upon accidental breaking of the hoisting cable, to be automatically operated to prevent the descent of the elevator car and hence possible injury to occupants of the car.

A further object is the production of a safety device as mentioned which will be positive in its operation, and efficient in use. Other objects will appear hereinafter.

With these objects in view our invention consists in the combinations and arrangements of parts hereinafter described and claimed.

Our invention will be more readily understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a front elevation of an elevator construction to which is applied a safety mechanism embodying our invention, a portion of the car being broken away and shown in section in order to better illustrate the construction, Fig. 2 is a top plan view of the construction shown in Fig. 1, and Fig. 3 is an enlarged detail section taken on substantially the line $x-x$ of Fig. 1.

The preferred form of construction as illustrated in the drawings comprises an elevator car consisting of the floor or platform 1 and the vertical side members 2, the upper ends of the latter being rigidly connected by cross beams 3 which are spaced apart with their extremities engaging the upper extremities of the side members 2. The side members 2 are of a channel form engaging vertical guides 4 secured to the posts 5. The elevator car is moved vertically by means of a hoisting cable 6, the bight or lower end portion of said cable passing under the channel pulley 7 as is ordinary.

The pulley 7 is mounted between the upper end portions of straps 8 which are mounted for vertical sliding in guide loops 9 secured upon the outer sides of the cross

beams 3. The upper end portions of the straps 8 are bent into substantially rectangular form, as clearly shown in Fig. 3, to constitute bearings for the shaft 10 of the pulley 7.

Downward movement of the straps 8 is limited by contact of the upper downwardly turned ends of said straps which engage the upper edges of the cross beams 3, upward movement of said straps being limited by the angularly formed inwardly turned lower ends thereof which are adapted to engage against the lower edges of said cross beams, metallic bearing plates 11 being preferably provided upon said edges of said plates at the places of contact of the extremities of said straps therewith. The cross beams 3 are spaced apart sufficiently to afford clearance for the lower end portion of the pulley 7 when the straps 8 and hence said pulley are moved downwardly. Said straps 8 and hence the pulley 7 are normally held at their lower terminals of movement by means of helical tension springs 12, the upper extremities of said springs engaging the respective extremities of yokes 13 provided at the respective ends of shaft 10, the lower extremities of said springs engaging outwardly projecting hooks 14 rigidly secured to the under sides of the cross beams 3. This being so, the springs 12 will be in tension when the straps 8 are at their upper terminals of movement and so that, when said straps are released, the same will be instantly moved downwardly by said springs. During the operation of the elevator car then, in which event, the entire elevator car is suspended from the pulley 7, the straps 8 will be positioned at their upper terminals of movement, the car being suspended therefrom by engagement of the lower edges of the cross beams 3 with the inwardly turned ends of said straps, the springs 9 therefore, when the elevator car is in use, being in tension.

Arranged below the cross beams 3 is a pair of laterally projecting inclined bars 15, the inner ends of said bars being pivotally connected with the lower ends of the straps 8. This connection is effected preferably through the medium of a bolt 16 which connects said ends of said straps, the inner ends of the bars 15 being rotatably mounted upon a sleeve 17 which is provided upon the bolt 16 between the lower ends of the straps 8. A nut 16' threaded upon the

bolt 16 serves to lock the parts together. The outer ends of the bars 15 project through openings 18 provided in the side members 2 of the elevator car, said ends of
 5 said bars being pointed. The inner sides of the openings 18 are reinforced or protected by correspondingly slotted plates 19. The arrangement is such that, when the
 10 straps 8 are at their upper terminals of movement, the outer ends of said bars will be positioned in the openings 18 out of engagement with the guides 4. Upon downward movement of said straps 8 the outer
 15 ends of the bars 15 will be moved laterally into engagement with said guides, as shown in dotted lines in Fig. 1, to prevent downward movement of the elevator car. With
 20 this construction then it will be seen that in the event of the hoisting cable of the elevator breaking, in which event the straps 8 will be moved downwardly by means of the
 25 springs 12, as above described, the outer ends of the bars 15 will be moved instantly into engagement with the guides 4 and thus serve to instantly check the fall of the elevator car, thereby avoiding possible injury to property and occupants of the car.

A mechanism of the character described is durable and economical, and the same is
 30 positive and of high efficiency in use.

While we have illustrated and described the preferred form of construction for carrying our invention into effect, this is capable
 35 of variation and modification without departing from the spirit of the invention. We, therefore, do not wish to be limited to

the precise details of construction set forth but desire to avail ourselves of such variations and modifications as come within the scope of the appended claims.

Having described our invention what we claim as new and desire to secure by Letters Patent is:

1. The combination of a car; vertically movable straps on said car; a shaft traversing the upper ends of said straps; a yoke secured to each end of said shaft, springs interposed between said yokes and said car; a pulley on said shaft between said straps; a hoisting cable passing under said pulley; and stop bars pivoted to the lower ends of said straps, substantially as described.

2. The combination of a car having a cross beam at the top; vertically movable straps arranged on opposite sides of said beam; a shaft traversing the upper ends of said straps; a yoke secured to each end of said shaft; springs interposed between said yokes and said car; a pulley on said shaft between said straps; a hoisting cable passing under said pulley; and stop bars pivoted to the lower ends of said straps, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

CHARLES CARSON.
 ERNEST B. TIMMERMAN.

Witnesses:

HELEN F. LILLIS,
 JOSHUA R. H. POTTS.