T. ROWLEY.

SAFETY APPLIANCE FOR ELEVATORS.

APPLICATION FILED MAY 13, 1908.

**912,173.** Patented Feb. 9, 1909.

Fig. 1.

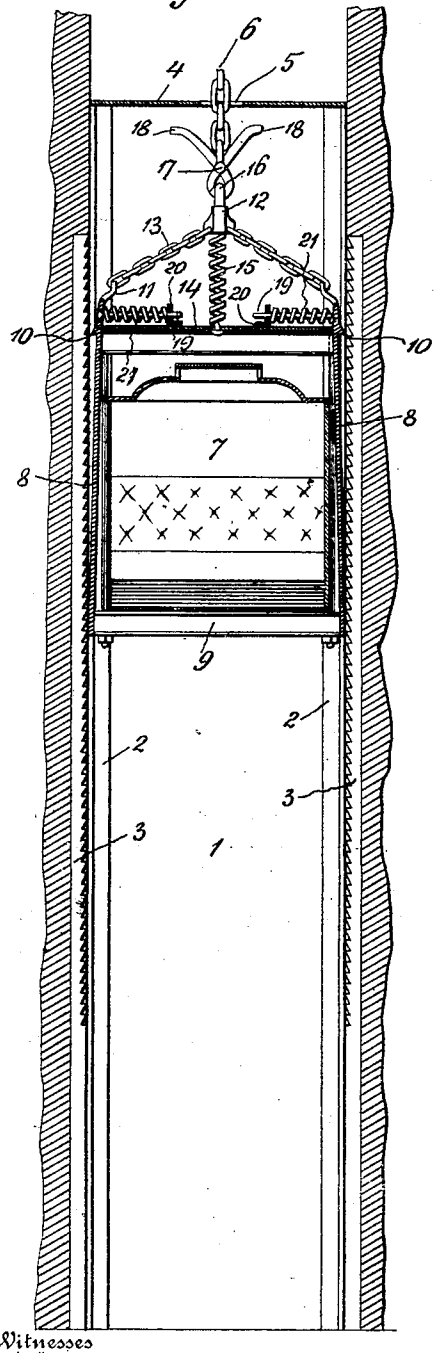



Fig. 2.

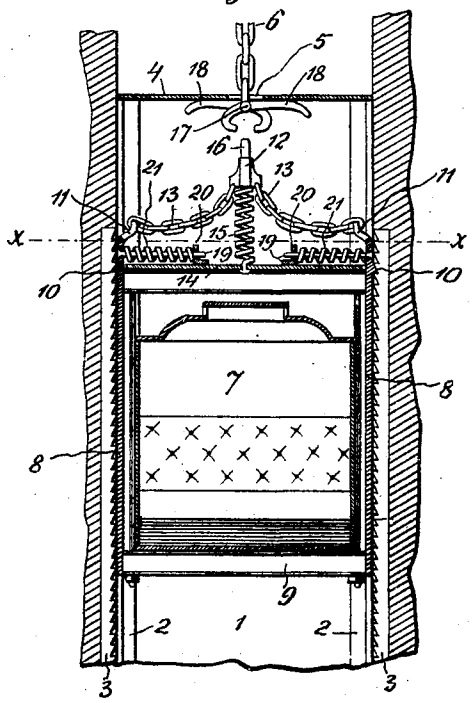
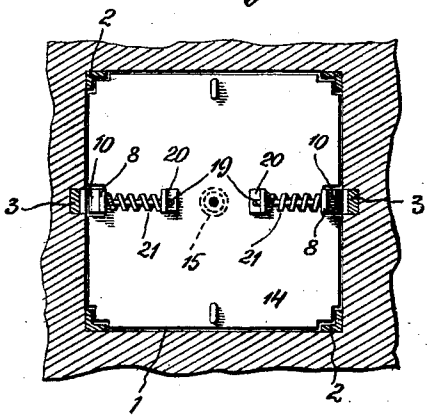



Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## SAFETY APPLIANCE FOR ELEVATORS.

No. 912,173. Specification of Letters Patent. Patented Feb. 9, 1909.

Application filed May 13, 1908. Serial No. 432,720.

*To all whom it may concern:*

Be it known that I, THOMAS ROWLEY, a citizen of the United States of America, residing at Wellsville, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Safety Appliances for Elevators, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a safety appliance for elevators, and the objects of my invention are, first, to provide positive and reliable means in connection with an elevator cage for preventing the same from dropping in an elevator shaft, should the hoisting chain or cable thereof break; second, to provide novel means for releasing the hoisting cables or chains of an elevator cage, should the hoisting operation of said cage be lost control of to that extent that said cage would be injured and would damage the overhead work of an elevator shaft; and third, to provide a simple, inexpensive and durable safety appliance that can be advantageously used to insure perfect safety of persons traveling in the cage and of property in which the elevator cage is operated.

I attain the above objects by providing a novel hold-fast mechanism that is immediately placed in operation should the hoisting cable of an elevator cage break or said cage dangerously approach the over-head construction of an elevator shaft.

The detail construction entering into my invention will be presently described and then specifically pointed out in the appended claim.

Referring to the drawings forming a part of this specification, Figure 1 is a vertical sectional view of my elevator safety appliance, illustrating the hold-fast mechanism in a retracted position permitting of the raising or lowering of the elevator cage. Fig. 2 is a similar view illustrating an elevator cage as firmly held by my appliance, and Fig. 3 is a horizontal sectional view taken on the line *x*—*x* of Fig. 2.

In the accompanying drawings, 1 designates a shaft for an elevator cage, this shaft having diametrically opposed sides provided with vertical guides 2 and vertical racks 3, said guides having their upper ends connected by a transverse bar or plate 4 having a central opening 5 formed therein.

Suspended in the shaft 1 by a hoisting and lowering cable or chain 6 is an elevator cage 7, said cage being designed to move up and down in the shaft 1 and carry passengers or freight. Oppositely disposed sides of the cage are provided with hold-fast-mechanism for engaging the racks 3 and preventing a sudden downward movement of the elevator cage, should the hoisting or lowering cable or chain 6 break. The hold-fast-mechanism comprises resilient arms 8, which are suitably fastened or secured to the platform or base 9 of the elevator cage 7. The upper ends of the resilient arms 8 are provided with outwardly projecting lugs 10 adapted to engage the teeth of the racks 3, and said arms are also bent inwardly and apertured, as at 11 to be connected to a head 12 by chains or cables 13. The head 12 is connected to the top plate 14 of the elevator cage by a retractile spring 15, and by an eyelet 16 to a two-part hanger 17, carried by the lower end of the hoisting and lowering chain or cable 6. The hanger 17 is similar to a pair of tongs, *i. e.*, comprising two pivoted hook shaped members 18, the object of which will presently appear.

Attached to the upper ends of the resilient arms 8 are inwardly projecting rods 19, these rods being guided by brackets 20, carried by the top plate 14 of the elevator cage. Interposed between the ends of the arms 8 and the brackets 20 are coil springs 21, said springs encircling the rods 19 and remaining under tension when the elevator cage 7 is suspended by the hoisting and lowering cable or chain 6. Should the chain or cable 6 break, the retractile spring 15 immediately pulls downwardly upon the head 12, and the springs 21 force the upper ends of the arms 8 outwardly, placing the lugs 10 thereof in engagement with the rack 3 and preventing the elevator cage 7 from descending or falling in the shaft 1.

For fear that in some instances the elevator cage 7 may be drawn upwardly to strike the top plate 4 and probably injure the over head operating mechanism of the elevator cage, I have provided the two-part hanger 17. When the pivoted members 18 of said hanger strike the under side of the top plate 4, the lower hook shaped ends of said members will be immediately opened, as shown in Fig. 2 of the drawings, releasing the head 12 and preventing the elevator cage from contacting with the plate 4. The ele-

vator cage is immediately supported by the resilient arms 8 and prevented from descending in the shaft 1.

While in the drawings forming part of this application there is illustrated a preferable form of construction embodying the invention, it is to be understood that the elements therein may be varied or changed without departing from the spirit of the invention.

Having now described my invention what I claim as new, is;—

In a safety appliance for elevators, the combination with an elevator shaft having oppositely disposed vertical racks, of an elevator cage adapted to move in said shaft, vertically disposed hold-fast arms carried by said elevator cage and adapted to engage said racks, chains connected to the upper ends of said arms, a head connecting said chains, a retractile spring connecting said head with said elevator cage, a hoisting chain connected to said head, and means arranged upon the top of said cage for forcing said arms into engagement with said racks when released from said hoisting chain.

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

THOMAS ROWLEY.

Witnesses:
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