E. TROIKE.

SAFETY APPLIANCE FOR ELEVATORS.

APPLICATION FILED JULY 12, 1909.

943,850. Patented Dec. 21, 1909.

Fig. 1.

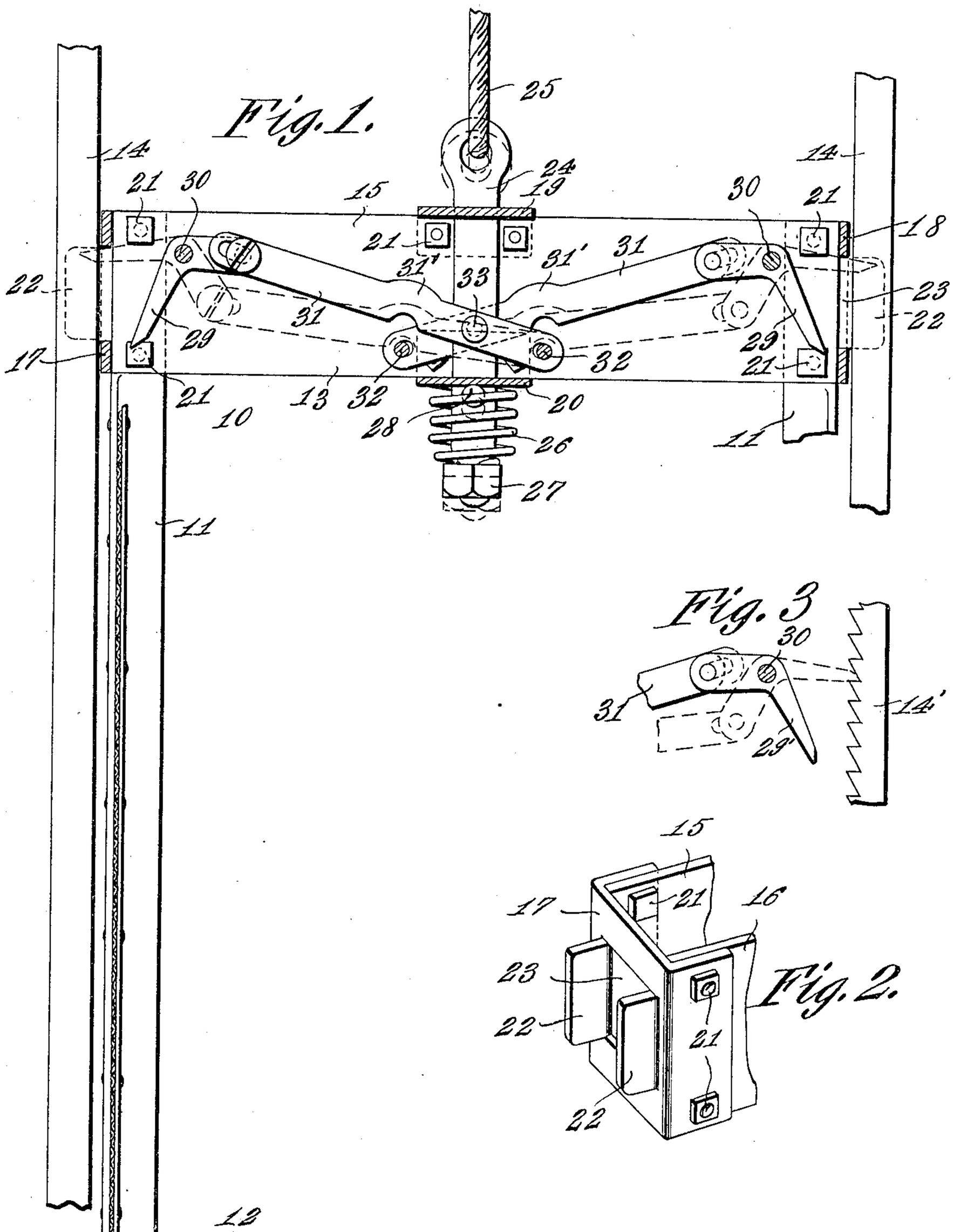

Fig. 3

Fig. 2.

Witnesses

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ERNST TROIKE, OF SANDUSKY, OHIO, ASSIGNOR OF ONE-FOURTH TO PAUL TROIKE, OF SANDUSKY, OHIO.

SAFETY APPLIANCE FOR ELEVATORS.

943,850. Specification of Letters Patent. Patented Dec. 21, 1909.

Application filed July 12, 1909. Serial No. 507,151.

To all whom it may concern:

Be it known that I, ERNST TROIKE, a subject of the Emperor of Germany, residing at Sandusky, in the county of Erie and State of Ohio, have invented certain new and useful Improvements in Safety Appliances for Elevators, of which the following is a specification.

This invention relates to elevators adapted for use for the conveyance of passengers or freight, and has particular reference to certain specific novel features of construction hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical sectional view of a cage and showing certain parts in elevation; Fig. 2 is a detail in perspective of a part of the head piece, and Fig. 3 is a detail of a modified form of guide.

Throughout the following detail description and on the several figures of the drawings, similar parts are referred to by like reference characters.

Referring particularly to the drawings the numeral 10 refers to an elevator car or cage comprising a pair of side members 11, a bottom 12, and a head piece 13. Said car is guided for vertical movement between a pair of guides 14 of any suitable construction and secured in place in any suitable manner.

The head piece 13 is constructed preferably of strong sheet metal, and comprises a pair of side plates 15 and 16, which are spaced apart and are maintained in such relation by means of end shoes 17 and 18 and also by a pair of braces 19 and 20 spanning the top and bottom edges of the side plates substantially midway between the guides. Each of the said shoes and braces is provided with a pair of flanges bent at substantially right angles to the main portion thereof to embrace said plates, and fastening means such as bolts or rivets 21 are employed to secure said parts permanently and rigidly together. The shoes furthermore are constructed in a peculiar manner so as to provide means to embrace the guides 14. As indicated in Fig. 2 the metal of each shoe is slitted and portions 22 of the metal thus formed are bent outwardly so as to be disposed on opposite sides of the adjacent guide and yet such portions are maintained as integral parts of the shoe. The said parts being bent outwardly as indicated leave an opening 23 hereinafter referred to. The braces 19 and 20 are provided with central holes in which is mounted a shackle 24 and said shackle is provided with an eye at its upper end to receive the hoisting rope 25. At any convenient point the shackle is provided with a strong spring, shown as a coil spring 26 connected to the lower end of the shackle and bearing against the bottom of the brace 20, and held thereon by means of a nut 27. The shackle may be provided with a cross pin 28 to limit the upward movement of the shackle positively by coöperation with the brace 20 if desired, although the spring 26 may serve such purpose.

The safety devices proper include a pair of dogs 29 pivoted intermediate of their ends on pivots 30 passing through the side plates 15 and 16 of the head piece near the ends thereof. The outer ends of the dogs are pointed and are adapted to be projected through the said openings 23 of the shoes so as to engage the guides 14. The movement of the dogs upwardly and outwardly is positively limited by engagement with the wall of the shoes bounding the upper portion of the openings 23, as indicated in dotted lines in Fig. 1. A pair of levers 31 are pivoted at their inner ends on pivots 32 passing through the side plates 15 and 16 closely adjacent to and on opposite sides of the shackle 24. The levers extend thence past the shackle on opposite sides thereof and are pivotally connected at their outer ends to the inner ends of the dogs 29. A pin 33 passes through the shackle and said levers, whereby the movement of the shackle with respect to the head piece determines the position of the levers and dogs. By the construction indicated a very slight relative movement between the shackle and head piece will cause considerable movement of the outer ends of the dogs, and in this fact lies one of the chief advantages of this construction over previous devices of this character. Since each of the levers 31 overlaps the pivot supporting the inner end of the other, it is preferred to bow the levers upwardly at 31′ so as to avoid interference with the pivots.

The guides 14 may be constructed of wood or any other material with which the dogs 29 may engage to prevent the fall of the car or cage in the event that the hoist rope 25 should become broken or disconnected from

the hoisting machinery. Actual demonstration of this mechanism proves that the cage will not drop more than a small fraction of an inch at such emergency, due to the peculiar mechanism above described.

The guides may be constructed of metal as indicated at 14′ in Fig. 3 and toothed so as to receive the shoes of the dogs 29′, instead of the dogs entering the material of the guides as contemplated in Fig. 1. The same form of head piece and operating device for the dogs will be used in this instance as in the former.

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

1. In a safety appliance, the combination with a pair of guides and an elevator car comprising a head piece embracing and slidable along said guides, of a pair of dogs pivoted in said head piece and adapted to coöperate with the guides, a shackle extending vertically through the head piece, a spring tending to normally force the shackle downwardly with respect to the head piece, a pair of levers pivoted at their inner ends to the head piece closely adjacent to and on opposite sides of the shackle and extending thence past the shackle and having their outer ends pivotally connected to said dogs, and a pin passed through the shackle and said levers, whereby the position of the levers and dogs is determined by that of the shackle.

2. In a safety appliance of the character set forth, the combination of a head piece comprising a pair of metallic side plates, a pair of shoes connected to the ends of the side plates, and a pair of braces spanning the upper and lower edges of the same, said shoes and braces being permanently secured to the side plates and constituting spacing means therefor, each of said shoes being slitted at its central portion and portions of the metal adjacent thereto being bent outwardly to form guiding means, a pair of guides coöperating with the said head piece and embraced by said shoe guiding means, and movable dogs housed within the head piece and adapted to be projected through the shoes into engagement with said guides, substantially as set forth.

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

ERNST TROIKE.

Witnesses:
O. W. Mielke,
Al. C. Lermann.