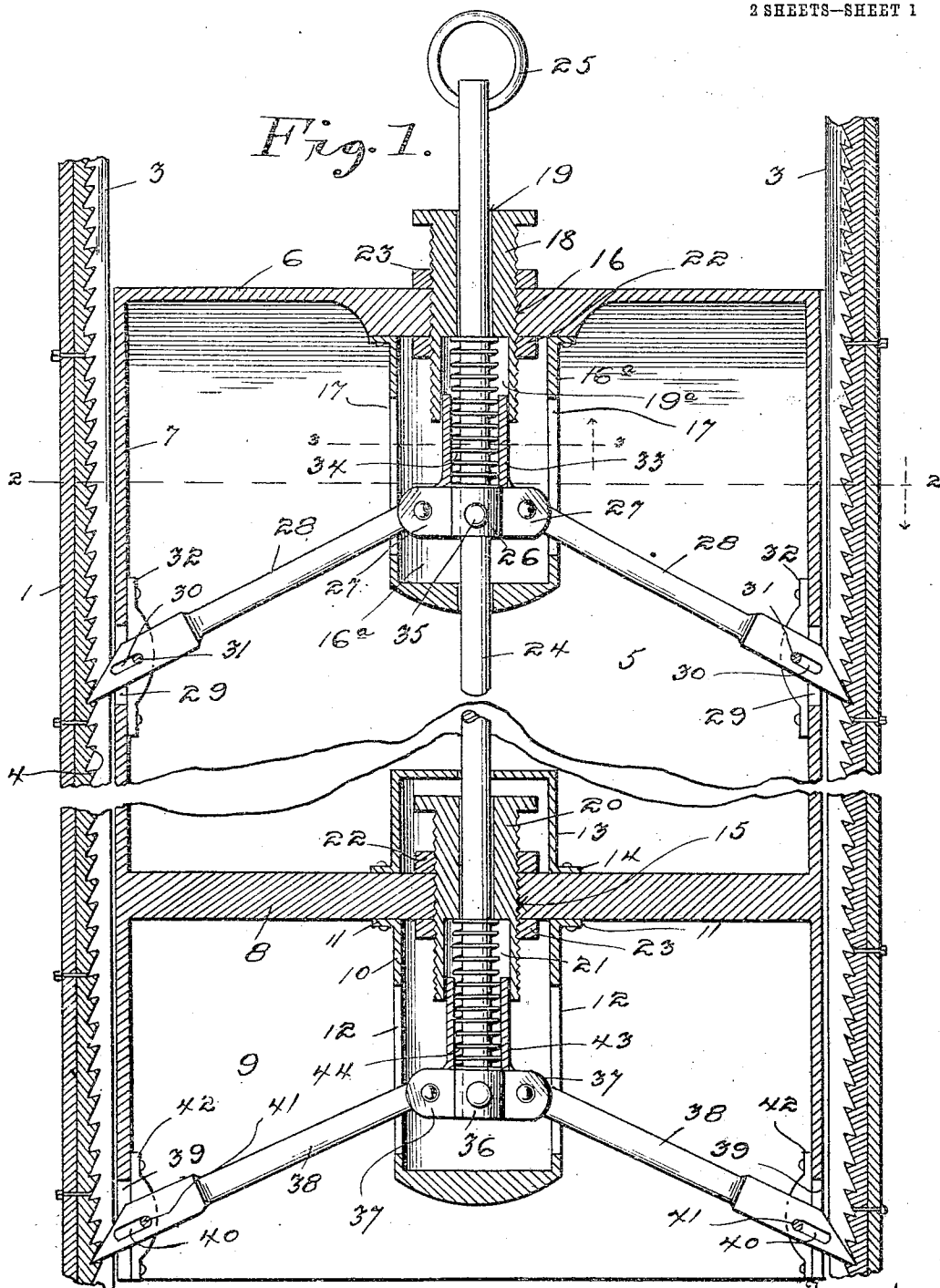


P. WALKER.
SAFETY ATTACHMENT FOR ELEVATORS.
APPLICATION FILED MAR. 30, 1909.

956,552.

Patented May 3, 1910.

2 SHEETS—SHEET 1



Witnesses

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By E. E. Crooman,
his Attorney.

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Fig. 2.

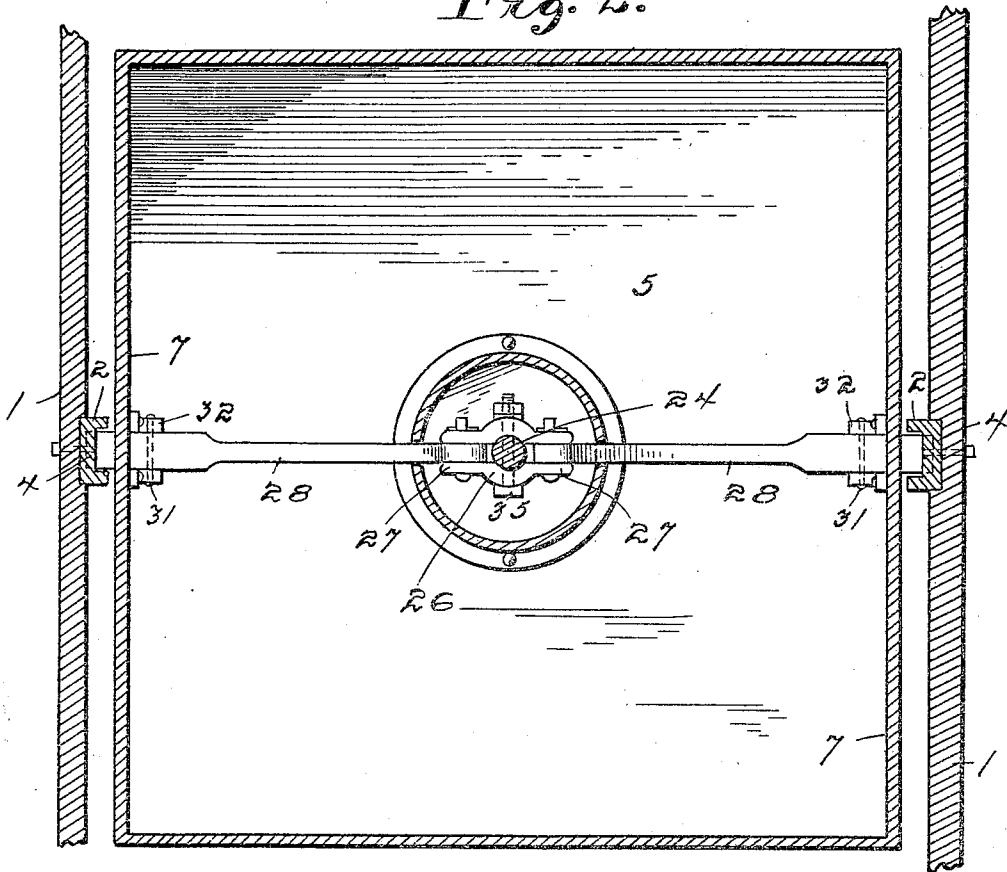


Fig. 4.

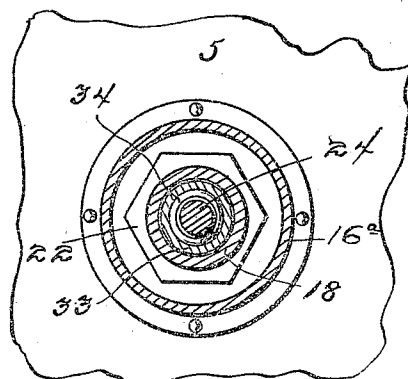
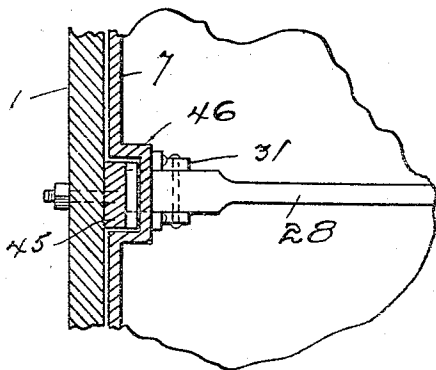


Fig. 3.

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UNITED STATES PATENT OFFICE.

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SAFETY ATTACHMENT FOR ELEVATORS.

956,552.

Specification of Letters Patent.

Patented May 3, 1910.

Application filed March 30, 1909. Serial No. 486,762.

To all whom it may concern:

Be it known that I, PETER WALKER, a citizen of the United States, residing at Dickerson, in the county of Coahoma and State of Mississippi, have invented certain new and useful Improvements in Safety Attachments for Elevators, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to elevators, and has specially in view a safety attachment for the same whereby when the hoisting cable breaks or releases its strain upon the cage or car, a plurality of arms will be automatically actuated and caused to engage with the usual side racks of the shaft or well and thereby stop the car, or prevent it being moved.

In the practical application of the invention it will, of course, be readily understood that the essential features necessary are susceptible of structural changes and variations of details, but one preferred and practical embodiment thereof is shown in the accompanying drawings, wherein—

Figure 1 is a central vertical sectional view of a car or cage showing the same locked to the side racks of a shaft or well. Fig. 2 is a horizontal sectional view taken on the line 2—2, Fig. 1. Fig. 3 is a similar view taken on the line 3—3, Fig. 1. Fig. 4 is a detail sectional view showing the side of the car or cage provided with a channel or guiding duct for the side racks of the well.

Referring to the accompanying drawings by numerals, 1 designates the usual upright timbers of the well or shaft of an elevator which have bolted or otherwise rigidly secured thereon the side racks 3, which in the preferred embodiment of the invention may be of channel irons, the teeth 4 thereof being located within the channels.

The elevator represented in the accompanying drawings is of the conventional mine car type, although it will be perfectly obvious that the invention is in no way to be considered as limited to such type of elevators. Said cage, which is designated in its entirety by the numeral 5 is composed of a top or roof 6, sides 7, bottom 8 and pendant lower portion or housing 9. The bottom 8 has a casing 10 bolted to its bottom or undersurface by means of the outturned bolting flange 11, said casing 10 having slots 12 formed in its sides. A casing 13 has its bolting flange 14 securely fastened to the

upper surface of the bottom of the cage, the said two casings surrounding a threaded opening 15 formed through the bottom of the cage. The top of the cage is also provided with a threaded opening 16 which aligns with the opening 15 formed through the bottom, said opening 16 being surrounded by the outturned flanged end of a casing 16^a depending from the said top of the elevator. Said casing 16^a is provided with slots 17 in its sides similar to the slots formed in the casing carried by the bottom of the cage.

A guiding sleeve 18 which is externally threaded, projects through the opening 16 in the top of the cage and into the casing 16^a, said guiding sleeve having a central opening 19 formed longitudinally through it which terminates at the bottom of the sleeve in an enlarged recess 19^a forming a housing and an abutment for a spring, to be referred to later. A similar guiding sleeve 20 projects through the bottom opening of the cage, the end recess thereof being designated by the numeral 21. The upper portion of the sleeve 20 is inclosed by the casing 13 and its recessed portion inclosed by the casing 10. The sleeves 18 and 20 are retained in the desired adjusted positions relative to the top and bottom of the cage by means of the lock nuts 22—23 which engage the upper and lower surfaces of the top and bottom of the elevator car or cage.

A lifting rod 24 projects through the two guiding sleeves 18 and 20, the upper end of said rod extending well above the top of the cage and being provided with a ring or eye 25 for connection with the usual lifting or hoisting cable, not shown. A collar 26 is carried by said rod, said collar being located within the casing 16^a and carrying oppositely disposed pivot ears 27 which are in pivotal engagement with one end of a pair of locking arms 28, the other ends of said arms being thickened and projecting through side slots 29 formed in the sides of the cage, and having beveled points adapted for engagement with the side racks of the shaft or well. Said pointed ends of the arms are provided with guide slots 30 which engage with side lugs or pins 31 carried by brackets 32 having a bolting engagement with the sides of the cage. Said collar 26 carries an upstanding tube or sleeve 33 which surrounds a strong spiral spring 34 coiled about the rod 24, the upper end of

said spring bearing upon the abutment formed by the junction of the central opening 19 of the guiding sleeve 18 and the bottom recess 19^a, the other end of said spring being seated upon said collar. Said collar is preferably adjustably mounted on the rod 24 and is held in the desired position thereon by means of the adjusting bolt or bolts 35. A similar collar 36 is adjustably mounted upon the lower end of the rod 24, said collar being located within the casing 10 and carrying pivot ears 37 which are in pivotal engagement with the oppositely projecting arms 38 which extend through the side slots of said casing and have their thickened and beveled free ends extended through side slots 39 formed in the sides of the cage. Said arms are also provided with guide slots 40 adjacent to their beveled points which engage with lugs 41 carried by the brackets 42. A sleeve or tube 43 is carried by said collar 36 which surrounds a spiral spring 44 coiled about the rod 24 the upper end of said spring bearing against the end of the longitudinal recess formed through the sleeve 20, its other end being seated upon the said collar.

In Fig. 4 of the accompanying drawings the side racks of the well are shown as of the ordinary flat type and are designated by the numeral 45. The cage in this form of the invention is provided with side ducts or channels 46 which surround the sides and front surface of said racks. The locking arms project through said ducts or channels in a manner similar to that described in connection with the preferred form of the invention.

It will be seen from the foregoing description that when the hoisting cable is exerting a pressure on the rod 24 the upper and lower arms will be retracted, thereby removing their ends from contact with the side racks of the well or shaft. But as soon as the pressure is removed from said rod, such for instance as when said cable breaks, or slips from its drum, the springs coiled about said rod will expand and cause the rod to move downward and thereby project said arms outwardly and cause their ends to engage with the side racks and stop the movement of the cage. It will also be seen that the tension of the springs coiled about the rod 24 may be regulated by adjusting the guiding sleeves, and that said sleeves may be held in their adjusted positions by means of the lock nuts.

What I claim as my invention is:—

1. The combination with a well and side-racks therefor, of a cage positioned in said well, said cage provided with a top, a casing provided with a closed bottom, and fixedly secured at its upper portion to the end face of the top of said cage, said casing provided with side-openings, a vertically-

movable shaft extending through the top and through said casing, a spring mounted upon said shaft within said casing, sectional inclosing means within said casing and surrounding said spring, one of the sections of said casing means carried by the top and another section of said casing means movable with said shaft, and means carried by the shaft and movable therewith and extending through the side-openings of said casing and engaging the side-racks for holding the cage in a fixed position in the well.

2. A device of the character described comprising a well, side racks therefor, a cage therein and provided with upper and lower alined openings, a casing surrounding each opening, a guiding sleeve extending through the same, a lifting rod extending through said guiding sleeves, collars mounted on said rod and each carrying a tube, a spring seated upon each collar and inclosed by the tube carried thereby, and locking arms projecting from each collar and having their free ends held in position to engage with said side racks when a strain is removed from said lifting rod.

3. A device of the character described comprising a well, side racks therefor, a cage therein, upper and lower pendent casings in said cage the sides of which are slotted, a lifting rod passing through said cage and said casings, collars mounted upon said rod, one being located within each casing, oppositely projecting arms carried by each collar and passing through the slotted sides of the casings and having their free ends passing through the sides of the cage, and a spring seated upon each collar and exerting a pressure upon said rod to force said arms into engagement with the side racks of the well.

4. A device of the character described comprising a cage provided with upper and lower alined openings, a pendent casing surrounding each opening and provided with side slots, a guiding sleeve fitting each opening, a lifting rod projecting through the said guiding sleeves, collars mounted on said lifting rod, one of said collars being within each casing, a tube carried by each collar and surrounding said rod, a spring seated upon each collar and coiled about said rod with its upper end bearing upon the guiding sleeve, and locking arms having a pivotal connection with each collar and having their free ends projecting through the sides of the cage.

5. In a safety device for elevators, the combination with a well and its side racks, of a cage, a rod passing therethrough and having a connection with a hoisting cable, an upper and a lower casing carried by said cage and surrounding said rod, said casings being provided with side slots, upper and lower guiding sleeves carried by said cage

and each having a recessed end which projects into one of the casings, a collar located within each casing and mounted on said rod, a spring coiled about said rod between each collar and the adjacent guiding sleeve, oppositely projecting arms carried by each collar and extending through the slotted sides of the casings and the sides of the cage and adapted to be forced into engagement with said side racks when strain is removed from said rod.

6. In a safety attachment for elevators, the combination with the well and its side racks, of a cage, an upper and a lower pendent casing carried by said cage, a guiding sleeve projecting into each casing and each having a recess formed in its lower end, a lifting rod for said cage which projects

through both casings, collars carried by said rod, one being located within each casing, a tube carried by each collar, a spring seated upon each collar and inclosed by said tube, said springs being coiled about the rod with their upper ends bearing upon said guiding sleeves, and oppositely projecting locking arms carried by each collar and projecting through the casings and the sides of the cage and adapted to engage with the said racks of the well when strain is removed from said lifting rod.

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

PETER WALKER.

Witnesses:

THOS. F. LOGAN,
S. SACKS.