S. MAHAJ.

SLIDABLE BOLT.

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1,113,667.

Patented Oct. 13, 1914.

Fig. 1.

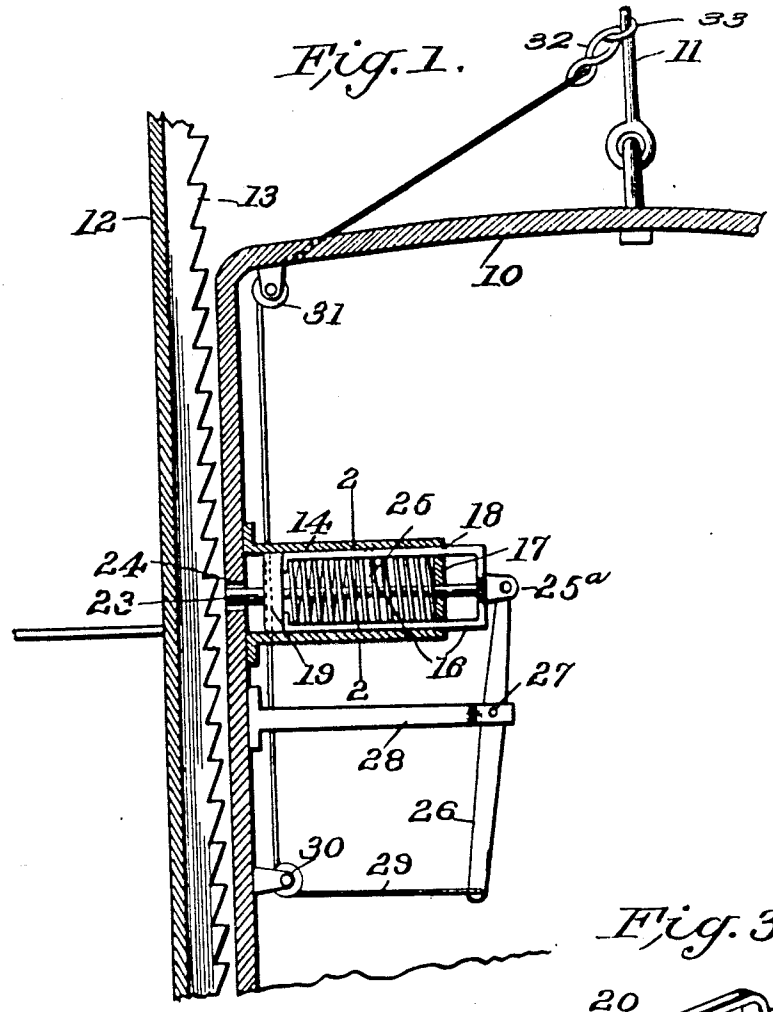


Fig. 3.

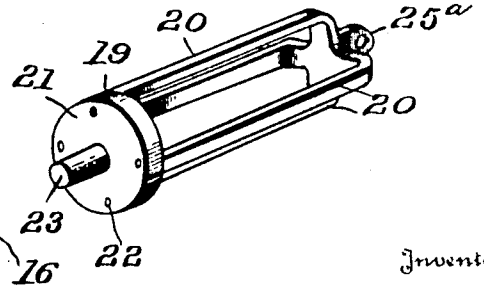
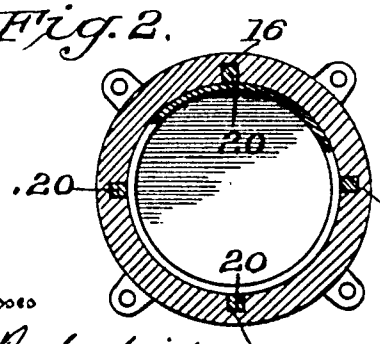


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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SLIDABLE BOLT.

1,113,667. Specification of Letters Patent. Patented Oct. 13, 1914.

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To all whom it may concern:

Be it known that I, STEPHEN MAHAJ, a subject of the Emperor of Austria-Hungary, residing at Munhall, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Slidable Bolts, of which the following is a specification.

This invention relates to new and useful improvements in slidable bolts, especially adapted for use in connection with elevator safety appliances.

The primary object of this invention is the provision of a simple and inexpensive spring-actuated bolt especially designed for use in connection with the various kinds of freight and passenger elevators to positively lock the elevator against accidental dropping upon the giving way or breaking of the hoisting mechanism.

With this object in view the invention consists in the novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the appended claims.

In the drawings forming a part of this application and in which like reference numerals designate corresponding parts throughout the several views:—Figure 1 is a vertical transverse sectional view of a portion of an elevator within a shaft and having the invention applied thereto. Fig. 2 is a vertical transverse sectional view taken upon lines 2—2 of Fig. 1, and Fig. 3 is a perspective view of the sliding cage and bolt detached.

Referring more in detail to the drawings, the elevator 10 is illustrated as supported by a hoisting cable 11 within an elevator shaft, one wall 12 thereof being shown and said wall provided with a toothed or notched rack 13.

The present invention comprises automatic bolt mechanism carried upon the frame of the elevator interiorly thereof and adapted to be automatically tripped into engagement with a notch of the rack 13 in the event that the cable 11 becomes either broken or extremely slackened for any reason whatever.

A cylindrical casing 14 is secured within the elevator by suitable base screws or bolts and is provided with longitudinal grooves ways 16 extending substantially the e length of the casing and channeled in e inner wall thereof. The closed outer end 17 of the casing is provided with perforations 18 in alinement with the grooves 16. A sliding cage 19 is positioned within said casing with its side bars 20 projected through the perforations 18 and into the said grooves 16 for a sliding movement inwardly and outwardly of the casing. A head disk 21 is secured to the free ends of the side bars by screws or other desired means 22 while the bolt 23 centrally projects outwardly from the head disk and in alinement with an opening 24 in the side of the elevator and adjacent to the rack 13. A helical expansion spring 25 is positioned interiorly of the casing 14 and the cage 19 and bearing at one end upon the inner side of the cage head 21 and at its other end upon the inner face of the closed end 17 of the casing and whereby as will be evident, the pressure of the spring is exerted for normally separating said members 17 and 21 and at the same time tending to impart an outward locking movement to the bolt 23.

Upon the free end of the cage is provided a perforated lug 25^a with the end of a rocker arm 26 pivoted thereto, while said arm is pivoted substantially centrally thereof in a loose bifurcated joint or socket 27 at the free end of a bracket 28 rigidly secured to the interior of the elevator at a point adjacent to the point of attachment of the casing 14 therewith. A cord 29 is secured to the lower free end of the arm 26 and passing over the lower pulley 30 and upper pulley 31 is attached to the supporting cable 11 as by means of the terminal hook 32 engaging a ring or loop 33 of said cable.

With the device positioned as illustrated in Fig. 1, it is evident that in the event of breaking the elevator supporting cable 11 that the cord 29 will become loose or be slightly paid out thereby releasing the rocker arm 26 and the cage 19 which has been held under tension by the spring 25, and whereupon such spring will exert its outward force to expel or project the bolt 23 into locking engagement with the adjacent one of the teeth or notches of the rack 13. It will therefore be evident that upon a certain severing of the cable 11, the bolt and notch engagement instantly taking place, the elevator will be firmly locked in its suspended position within the elevator shaft and thus prevent the elevator from suddenly falling upon the occurrence of any

such accident. It will also be seen that in the event of striking such an obstruction as to delay the progress of the elevator downwardly, the supporting cable 11 will become slackened which would produce the same effect of allowing the bolt lock to engage the rack and retain the elevator suspended while the lock would become released upon the cable again becoming taut in its normal working condition.

While the form of the invention herein shown and described is what is believed to be a preferable embodiment thereof, it is nevertheless to be understood that minor changes may be made in the form, proportion and details of construction without departing from the spirit and scope of the invention.

What is claimed as new and desired to be secured by Letters Patent of the United States is:—

1. A spring-actuated bolt comprising a casing closed at one end and having longitudinal grooves upon its inner surface and alining perforations through the closed end thereof, a cage provided with side bars longitudinally slidable within said grooves and through said perforations, a bolt carried by and slidable with said cage and resilient means within said cage engaging the casing at its closed end and the forward end of the cage to project said bolt.

2. A spring-actuated bolt comprising a casing having a closed end, said casing having longitudinal grooves in its inner wall in alinement with perforations through said closed end, longitudinally slidable bars positioned within said grooves and projecting through said perforations, a head disk secured to the free ends of said bars, and a bolt centrally positioned exteriorly upon said disk, a helical expansion spring positioned within said casing and cage and bearing against said head disk and the closed end of the casing.

3. A spring-actuated bolt comprising a casing having longitudinal inner grooves and also having a closed outer end provided with perforations in horizontal alinement with said grooves, bars connected at their outer ends and slidably mounted in said grooves and perforations, a head disk upon the free ends of said bars, a bolt projecting from the outer face of said disk and positioned within said opening, and expansion means between the closed end of said casing and said disk to project the bolt.

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

STEPHEN MAHAJ.

Witnesses:
JULIUS EGECCZKY,
GEORGE TALAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."