S. KOSZTURA.

SAFETY DEVICE FOR ELEVATORS.

APPLICATION FILED SEPT. 5, 1912.

1,046,609. Patented Dec. 10, 1912.

FIG. 1

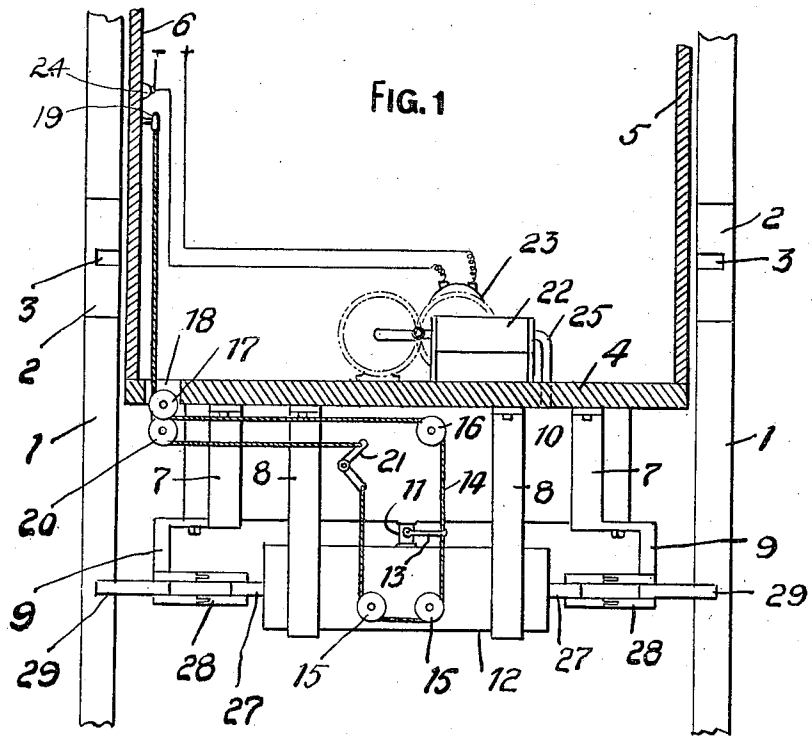


FIG. 2

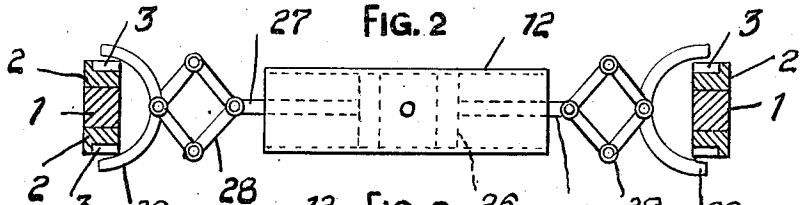
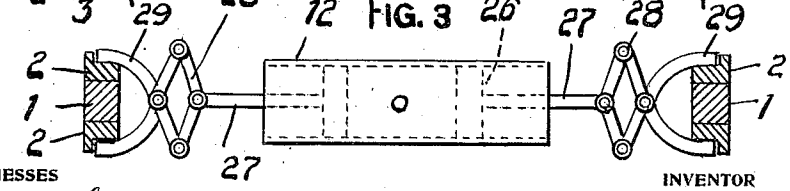


FIG. 3



WITNESSES

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SAFETY DEVICE FOR ELEVATORS.

1,046,609. Specification of Letters Patent. Patented Dec. 10, 1912.

Application filed September 5, 1912. Serial No. 718,722.

To all whom it may concern:

Be it known that I, STEVE KOSZTURA, a subject of the King of Hungary, residing at Gary, in the county of McDowell and State of West Virginia, have invented certain new and useful Improvements in Safety Devices for Elevators, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a safety device for elevators, and my invention aims to provide a device that can be advantageously used in connection with cable hoisted elevators or cages for preventing a sudden descent of the same should the hoisting cable or operating mechanism thereof break, thereby preventing the loss of lives and destruction of property by such breakage.

My invention further aims to utilize air pressure actuated mechanisms for retarding and eventually stopping the sudden descent of an elevator or cage, the mechanism including an electrically operated pump that supplies the necessary air pressure for placing the safety mechanism in operation when occasion demands.

The invention further aims to accomplish the above results by a mechanical construction that will be hereinafter specifically described and then claimed, and reference will now be had to the drawing, wherein:—

Figure 1 is a side elevation of the safety device as applied to an elevator or cage. Fig. 2 is a plan of a gripping mechanism, showing the same in an unlocked or inactive position, and Fig. 3 is a similar view showing the mechanism locked.

Further describing my invention in detail with reference to the drawing, wherein like numerals denote corresponding parts throughout: 1 denotes the vertical guides of an elevator shaft or well, said guides being oppositely disposed and having the sides thereof provided with stop blocks 2. These blocks are arranged at intervals throughout the length of said guides and each block has a socket or recess 3.

4 denotes the bottom of an elevator or cage that has side walls 5 and 6. The underneath side of the cage is provided with sets of hangers 7 and 8, the former having depending bearings 9. The hangers 7 support a reservoir or air cylinder 10 that has a connection 11 with a cylinder 12, carried by the hangers 8. The connection 11 is provided with a valve having a lever 13 to which is connected a cable 14 that passes under revoluble sheaves 15, carried by the cylinder 12. The cable passes over a revoluble sheave 16 carried by the reservoir 10, under a revoluble sheave 17 supported at an opening 18 in the bottom 4 of the cage. The cable extends upwardly and is attached to a hand wheel 19 carried by the side wall 6 of the cage. This same hand wheel is attached to the opposite end of the cable that extends downwardly under a sheave 20 revolubly supported adjacent to the sheave 17 and said cable is connected to a bell crank lever 21 pivotally supported by the reservoir 10. The bell crank lever is connected to the end of the cable 14, as clearly illustrated in Fig. 1. It is through the medium of the cable mechanism, including the hand wheel 19, that air from the reservoir 10 can be admitted to the cylinder 12.

22 denotes an air pump located upon the cage or elevator and this pump is operated by an electric motor 23 receiving its energy from any suitable source, the operation of the motor being controlled by a switch or push button 24, carried by the side wall 6 of the cage or elevator. The motor 23 is of the ordinary and well known type, also the pump 22, which is connected by a pipe 25 to the reservoir 10.

Slidably mounted in the cylinder 12 are piston heads 26 having pistons 27 pivotally connected by toggles 28 to pivoted gripping arms 29 carried by the bearings 9.

When air is admitted to the cylinder 12, the pistons are forced outwardly and through the medium of the toggles 28, the gripping arms 29 are swung into engagement with the guides 1 to encounter the blocks 2 and engage in the sockets 3 thereof to retard and stop a sudden descent of the cage or elevator.

Air can be supplied to the reservoir 10 by operating the pump 22 and after the safety device has been used, the pistons and gripping arms can be restored to their normal position. This can be manually accomplished after repairs have been made in connection with the broken operating mechanism of the cage or elevator.

From the foregoing it will be observed that I have devised a simple, durable and inexpensive device for preventing accidents by breakage in connection with cable hoisted cages or elevators.

It is to be understood that the invention

is susceptible to such changes as fall within the scope of the appended claim.

What I claim is:—

In a safety device for elevators, the combination with oppositely disposed guides having stop blocks, and a cage movable between said guides, of hangers suspended from said cage, a reservoir carried by some of said hangers, a cylinder carried by other of said hangers and in communication with said reservoir, a valve controlling the communication between said reservoir and said cylinder, a cable operated mechanism extending into said cage and adapted to be operated to open and close said valve, pistons arranged in said cylinder, gripping arms supported from the hangers of said reservoir and actuated by said pistons for engaging the stop blocks of said guides, and means carried by said cage and electrically operated for supplying air to said reservoir.

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

STEVE KOSZTURA.

Witnesses:
JOS. RISKO,
ANDY RISKO.