Feb. 28, 1956 C. E. PARDOE 2,736,073

FLEXIBLE SAFETY ELEVATOR DOOR PULL

Filed Nov. 6, 1952

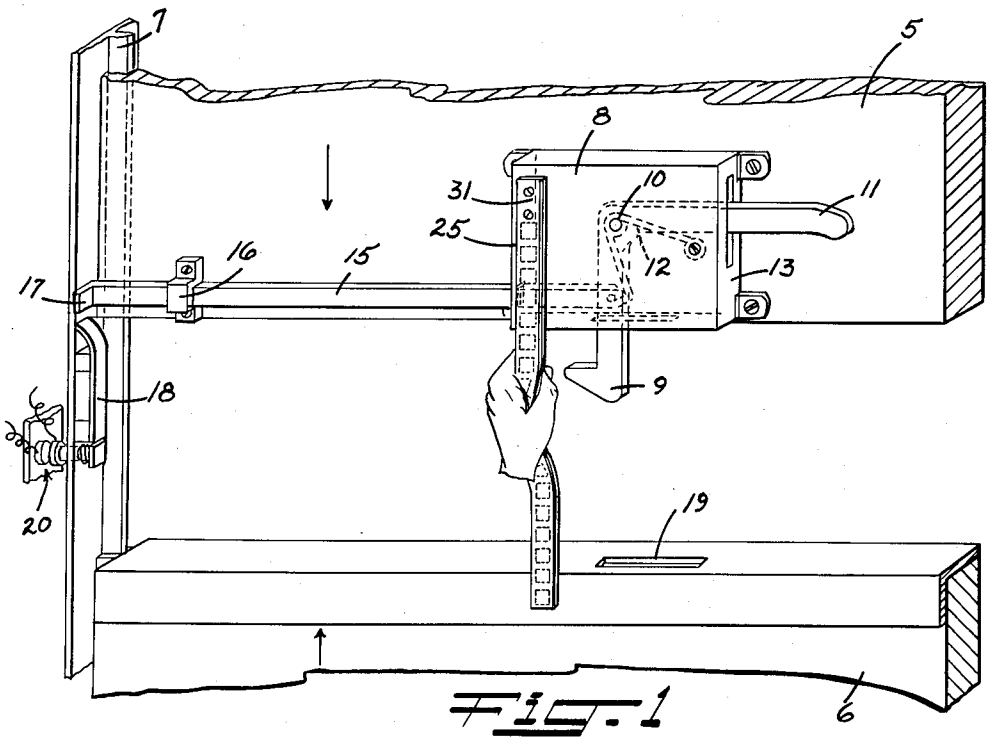


Fig. 1

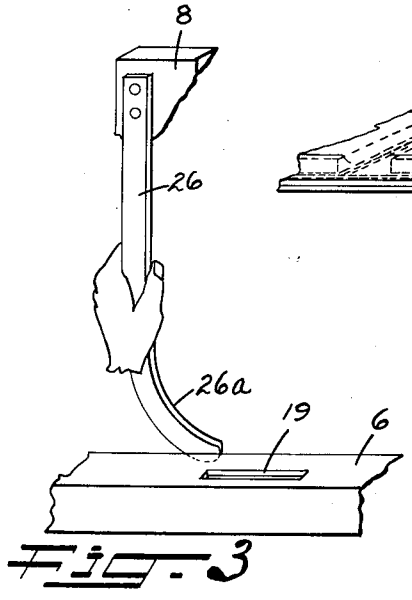


Fig. 3

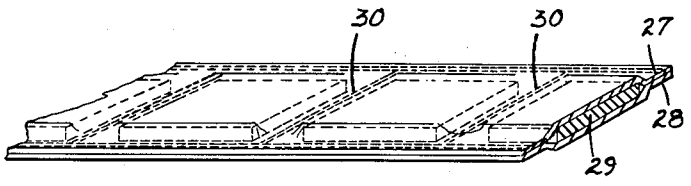


Fig. 2

INVENTOR.
CHARLES E. PARDOE
BY
Thomas R. O'Malley
ATTORNEY.

United States Patent Office 2,736,073 Patented Feb. 28, 1956

2,736,073

FLEXIBLE SAFETY ELEVATOR DOOR PULL

Charles E. Pardoe, Lewistown, Pa., assignor to American Viscose Corporation, Philadelphia, Pa., a corporation of Delaware

Application November 6, 1952, Serial No. 319,028

2 Claims. (Cl. 20—19)

This invention relates to pull straps and more particularly to an improved pull strap for elevator doors.

For many years, it has been customary to install a leather pull strap on elevator doors of the type which split horizontally so that the upper half of the door slides up, and the lower half slides down on vertical guideways. Doors of this type are customarily installed on freight elevators and on both freight and passenger elevators in factories and commerical buildings. A common disadvantage of the leather strap used to close the doors by pulling downwardly on the strap and upper door resided in the fact that the lower free end of the strap became curved, or the manner in which the elevator operator held his hand would inadvertently guide the free end of the relatively stiff leather strap between the closing doors. As a result, several serious disadvantages occurred. First, the elevator operator might get his fingers pinched between the doors. Second, the dangling end of the strap would get between the doors and thus prevent the automatic release for the elevator from operating. Third, the free end of the leather strap might become fouled with the door latch so that the latch would be jammed in the keeper.

The present invention overcomes the above disadvantages by providing a strong flexible weighted strap suitable for use on elevator doors which not only positively prevents the dangling free end of the strap from becoming engaged between the doors but also provides a sufficiently rough and uneven surface to prevent the operator's hand from slipping off the strap.

A primary object of the invention therefore is to provide a flexible tough strap all parts of which hang vertically.

A further object of the invention is to provide a tough flexible elevator pull strap providing non-slip gripping surface.

A still further object of the invention is to provide a tough flexible elevator pull strap having a plurality of weighted sections throughout the length of the strap.

Further objects will be apparent from the specification and drawings in which

Fig. 1 is a fragmentary perspective showing my improved strap applied to conventional elevator doors;

Fig. 2 is a perspective detail showing the construction of the strap; and

Fig. 3 is a perspective showing the prior art leather pull strap.

The invention comprises essentially the provision of an elongated flexible band made of two layers of heavy cotton webbing between which there is stitched at closely spaced intervals, a plurality of lead weights. In the preferred embodiment, the weights are sections of bar stock approximately ½" x ¾" and about 1/16" thick. It will be understood, however, that any other heavy material may be substituted for the lead and the size and thickness of the weights may be varied as desired. Also, in the preferred form the weighted sections extend substantially throughout the length of the strap. This is not strictly essential, however, provided the strap is sufficiently weighted at its free end to insure that the free end of the strap always hangs vertically.

Referring now more particularly to the drawing, Figure 1 shows a conventional freight elevator door assembly having an upper door section **5** and a lower door section **6** both of which move vertically on the track section **7**. The upper door section is provided with a latch assembly **8** having a latch member **9** pivoted in the assembly at **10** and a handle **11** formed integrally with latch member **9** by which the operator may release the latch to open the doors. A torsion spring **12** is connected between the latch case **13** and the latch **9** to retain the latch in a normally locked position. An actuating bar **15** is secured to the door in one or more brackets **16** and has a foot **17** which cooperates with an abutment **18** secured to the track section **7**. As the doors approach a nearly closed position shown in Fig. 1 the abutment **18** pivots the latch **9** to prepare it for engagement with the keeper **19** in the lower door **6**. As the doors completely close, the foot **17** drops off the lower end of abutment **18** to close a switch **20** which is connected to the elevator operating mechanism to prevent movement of the elevator unless the doors are fully closed. The above described function and construction of freight elevator doors is well-known in the art and forms no part of the present invention.

In order that the operator can close the doors, a strap **25** is attached to a part of the upper door structure. As shown in Fig. 1, this strap is ordinarily secured to the latch case **13**. Also, the strap must be long enough so that even a short operator can reach the strap when the door is fully open. In past construction, it has been customary to employ a heavy leather strap **26** such as shown in Fig. 3 and since the strap must have substantial length in order to be within the operator's grasp, these leather straps become naturally bent or curled at their lower end as shown at **26a** in Fig. 3. When this condition was present, this free end of the strap frequently became engaged between the doors when they closed thus preventing the proper closing of switch **20**. Furthermore, injuries have been occasioned when the elevator operator attempted to prevent the strap from becoming caught in this manner. Sometimes the free end of the strap would become lodged in the keeper **19** so that the latch **9** would jam in the keeper which necessitated removing the latch or cutting the strap.

By using my improved strap as shown in Fig. 2, the free end of the strap as well as the main body of the strap **25** always hangs vertically. This strap is desirably formed of cotton web belting approximately 1¼" wide. Two pieces of belting **27** and **28** are stitched along their edges to enclose pieces of lead **29**. Several courses of cross stitches are made between each of the individual lead weights as shown at **30**, **30** in Fig. 2. It is to be understood that the pockets in the webbing which contain the sheet lead may be filled with lead shot or some other heavy material. The spaces between the individual pockets, however, should be sufficiently close together to render the entire strap extremely flexible. Furthermore, the thickness of the weights and therefore the pockets should be such that the external faces of the strap are uneven throughout the area of the strap that will be grasped by the operator. The weights **29** are omitted from the upper end of the strap which may be folded over on itself one or more times and stitched together at **31** to provide a sufficiently strong connection for attaching the strap to the upper door.

It will thus be apparent that I have provided an improved elevator door pull strap which is safer and more efficient than previously known straps of this type. It not only positively prevents improper operation of the

elevator doors, but provides a better grip for the elevator operator's hand.

Having thus described my invention, I claim:

1. In combination, a vertically movable elevator door, an elongated pull strap affixed to the door a predetermined distance from the bottom edge of the door whereby the strap extends below the bottom edge of the door, pockets formed within the strap which are uniformly spaced lengthwise of the strap, and weights in the pockets to cause the free end of the strap to hang vertically downward at all times and thereby prevent it from curling under the edge of the door.

2. In combination, an upper vertically movable elevator door, a mating lower vertically moving elevator door the upper edge of which contacts the lower edge of the upper door when the doors are in a closed position, an elongated pull strap affixed to the upper door a predetermined distance above the bottom edge of the door, said strap extending below the bottom edge of the top door when the doors are in the closed position, pockets in the strap uniformly spaced lengthwise thereof, and weights in the pockets to cause the free end of the strap to hang vertically downward at all times and thereby prevent it from curling under the elevator door.

References Cited in the file of this patent

UNITED STATES PATENTS

970,175	Brooks	Sept. 13, 1910
1,062,403	Kahn	May 20, 1913
1,620,741	Smith	Mar. 15, 1927
2,071,319	Buchanan	Feb. 23, 1937
2,224,675	Graham	Dec. 10, 1940