Aug. 25, 1925. 1,550,713

F. W. SPRINGER

SAFETY GUARD

Filed Sept. 22, 1924

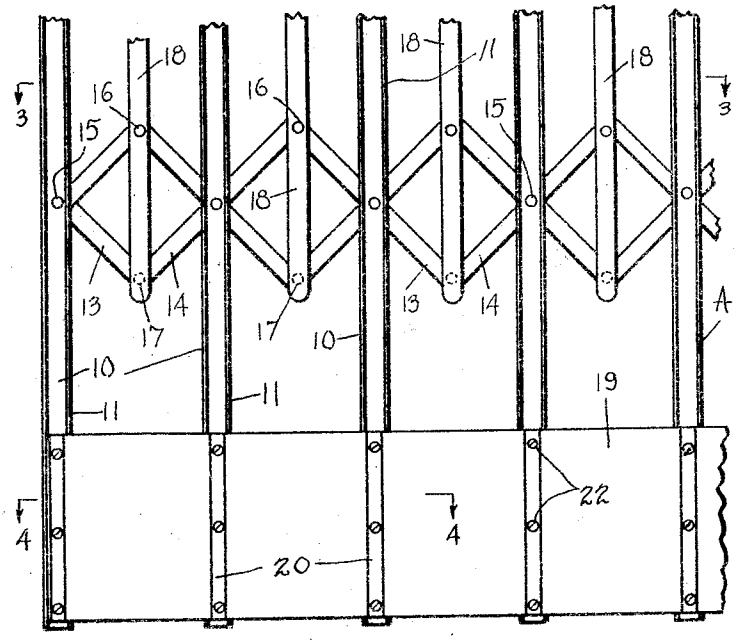


Fig. 1

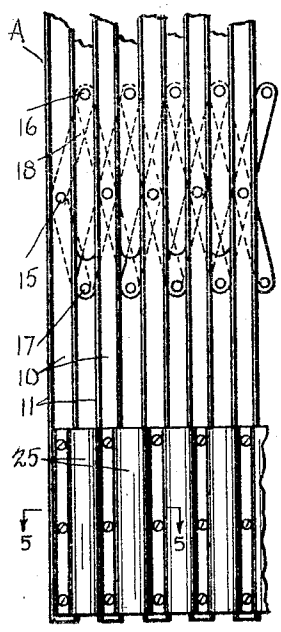


Fig. 2

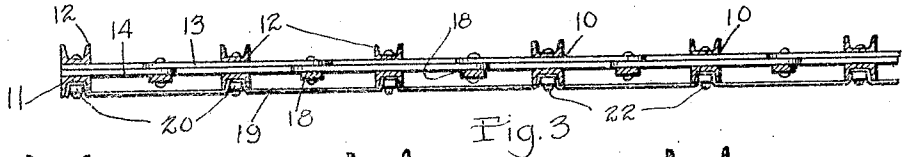


Fig. 3

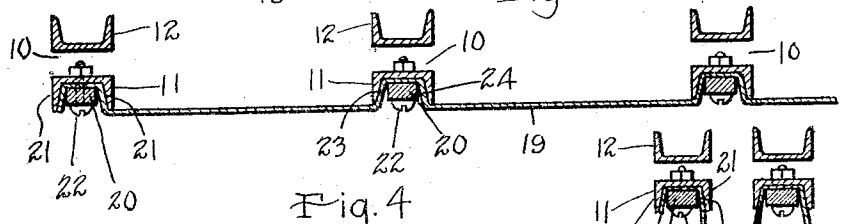


Fig. 4

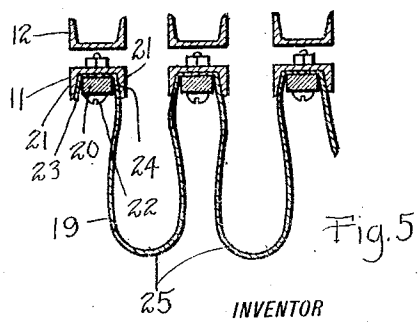


Fig. 5

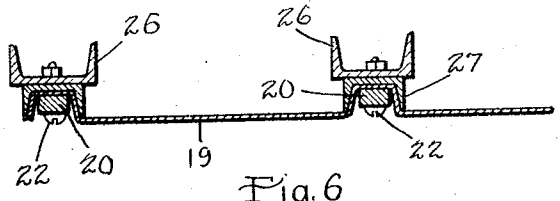


Fig. 6

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Patented Aug. 25, 1925. 1,550,713

UNITED STATES PATENT OFFICE.

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SAFETY GUARD.

Application filed September 22, 1924. Serial No. 739,150.

To all whom it may concern:

Be it known that I, FRANKLIN W. SPRINGER, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Safety Guards, of which the following is a specification.

My invention relates to safety devices for closures and has for its object to provide a guard adapted to be used with collapsible closures.

Another object of the invention resides in providing in conjunction with a closure having a plurality of movable uprights a flexible guard, attached to a number of said uprights and adapted to be stretched out in the plane of the closure when the same is extended and the closure effected to form an effective obstruction across the closure, and which is adapted to be folded back when the closure is open and collapsed.

A still further object of the invention consists of attaching the guard to the closure in such a manner that the intermediate portions of the same tend to naturally fold outwardly in even uniform folds, all extending in the same direction as the closure is being opened.

Other objects of the invention reside in the detailed construction of the same as clearly brought out in the following specification and claims.

In the drawings illustrating my invention in one form:

Figure 1 is a fragmentary elevational view of a closure in extended position showing my invention applied thereto.

Figure 2 is a view similar to Figure 1 showing the closure with my invention attached thereto in collapsed position.

Figure 3 is a sectional view taken on line 3—3 of Figure 1.

Figure 4 is an enlarged sectional view similar to Figure 3, taken on line 4—4 of Figure 1.

Figure 5 is an enlarged sectional view similar to Figure 4, taken on line 5—5 of Figure 2.

Figure 6 is a view similar to Figure 4 showing another method of attaching the guard to the closure.

When a collapsible closure is used with elevator cars or cabs or other movable structures considerable danger arises to the passengers and freight from passing objects where the closure is so formed when closed that the passengers' limbs or body may be projected thru the same and be injured by the passing objects, or the freight carried may project thru the same and in like manner be injured. My invention provides a simple and effective means for completely closing and guarding such portions of the closure as might readily permit of the projection of the passengers' limbs or the freight therethru, thereby eliminating the hazards now common with such types of closures.

In the drawings I have shown a type of closure indicated at A which is frequently used with passenger and freight elevator cabs. This device consists of a number of uprights or stanchions 10, each constructed of two channel iron members 11 and 12, arranged in spaced relations with their webs facing one another. Between these members are positioned crossed bars 13 and 14 which are pivoted at their centers to said members 11 and 12 at 15 to hold the same together and which are pivoted to each other at their upper portions at 16 and their lower portions at 17. In this manner a lazy tong device is provided which supports the uprights 10 of the closure and which permits the closure to be extended as shown in Figure 1 or collapsed as illustrated in Figure 2. In the drawings I have only shown a portion of a gate or closure which is similarly provided at its upper portion with a corresponding lazy tong arrangement. In the type of closure illustrated, intermediate uprights 18 are employed which are pivoted to the cross links 13 and 14 of both sets of lazy tongs at the pivots 16 and which are otherwise free so that the same move in conjunction with the other portions of the closure A to assist in closing the space between the uprights 10 when the closure is extended. It will however be noted that these members do not extend to the bottom of the closure nor could they, when the closure is extended, due to the vertical movement imparted to the same.

My invention proper consists of a band of flexible material 19 which is stretched across the uprights 10 and secured thereto in a manner to be presently described. This strip or band is placed where it is desired for the purposes previously set forth. When the invention is used on an elevator gate

the band is placed at the bottom of the gate to prevent the passengers from placing their feet outwardly beyond the elevator cab where they might be squeezed in between the landings and the elevator floor.

Where the uprights 10 are formed with outwardly facing flanges the band 19 is attached to the same by means of clamp bars 20 which are of a width sufficient to permit the said bars to be placed between the flanges 21 of members 11, together with the band 19. A number of bolts 22 passing thru both the bars 20 and the members 11 hold the band 19 properly attached to the closure A. It will be noted in Figure 4 that portions 23 and 24 of the band lying adjacent the flanges 21 of members 11 extend outwardly at right angles to the plane of the closure. This forms an important feature of the invention in that it causes the band to naturally and positively fold in loops 25 as shown in Figure 5 when the closure A is collapsed.

Where the closure uprights are formed of a solid bar or of channel iron members arranged with their webs extending outwardly as shown in Figure 6, at 26 I attach the band 19 thereto by means of channel shaped clips 27 which take the place of the members 11. These clips are of a length substantially equal to the width of the band 19 and are attached to said uprights 26 by means of the bolts 22 which pass directly thru said uprights 26, clips 27 and the bars 20.

Although I have shown my invention in the shape of a band, extending across a portion of the closure, it can readily be understood that the same may be of any width and placed wherever desired, or made to extend across the entire closure. It can be readily seen that the band may be run close to the floor, ceiling and walls of the closure so that the objects may be prevented from passing between the same. The device may also be used with closures which operate vertically as well as horizontally. The band may be made of any suitable fabric, such as canvas, webbing or the like, or it may be made of leather, rubber or any other flexible material. Where canvas or other fabric is used, the same may first be shrunk to prevent stretching after it has been applied and the same may further be waterproofed to render the same unaffected by moisture.

My invention is exceedingly simple in construction and can be applied to existing closures without difficulty. By having the portions of the band where they are fastened to the closure sunk within the channel uprights the band is positively made to fold outwardly from the closure.

Having described my invention in one form and illustrated the same as applied to a particular use, I desire to have it understood that the invention may be constructed of other materials and in different ways and put to uses other than those set forth within the scope of the following claims.

I claim—

1. In combination with a closure having a plurality of spaced members movable towards one another, a flexible band extending across said members and secured at intervals thruout its length to said members and adapted to fall in folds adjacent said members as the same are moved towards one another, and means for causing all of said folds to fall in the same direction, as said members are moved towards one another.

2. In combination with a closure having a plurality of spaced members movable towards one another, a flexible band extending across said members, and means for attaching said band to said members, said means having a portion holding said band at its attachment to said members at an angle to the plane of said closure.

3. In combination with a closure having a plurality of spaced members movable towards one another, a flexible band extending across said members and secured thereto, said band normally lying in the plane of said closure, and means for causing a portion of said band at all times to lie at right angles to the plane of said closure for causing said band to fall outwardly in folds as the members are brought together.

4. In combination with a closure having a plurality of spaced members movable towards one another, a flexible band extending across said members, said members being provided with grooves, and clamp bars positioned within said grooves for holding said band attached thereto.

5. In combination with a closure comprising a number of channel shaped uprights, a flexible band extending across said uprights having portions lodged between the flanges thereof, and clamp bars positioned between the flanges of said members for holding said band in place.

In testimony whereof I affix my signature.

FRANKLIN W. SPRINGER.