Jan. 8, 1946. F. MICHAELS 2,392,755

FLEXIBLE GUARD RAILING

Filed July 19, 1944

Fig.1.

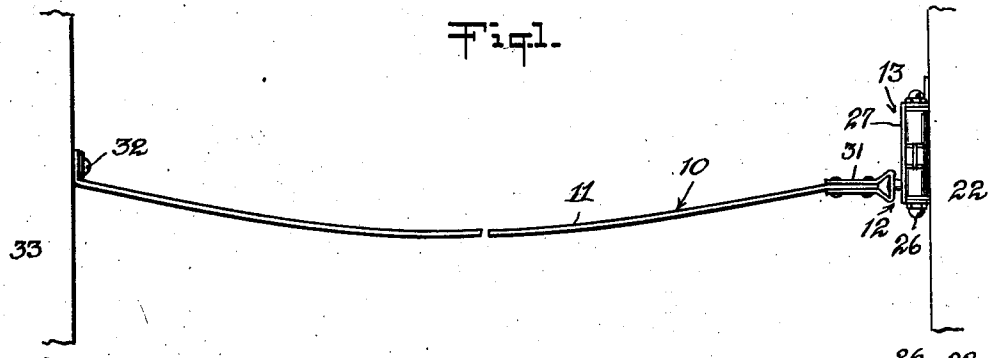


Fig.2.

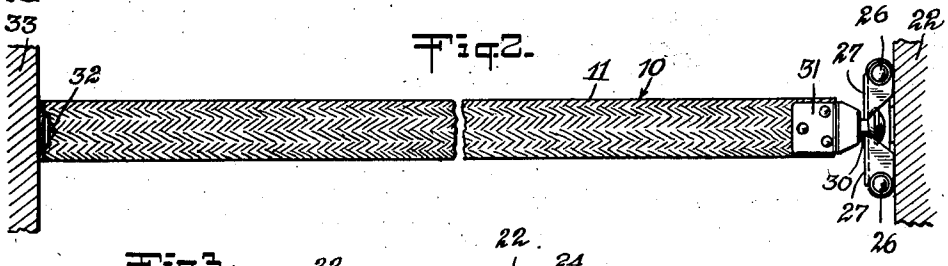


Fig.3.

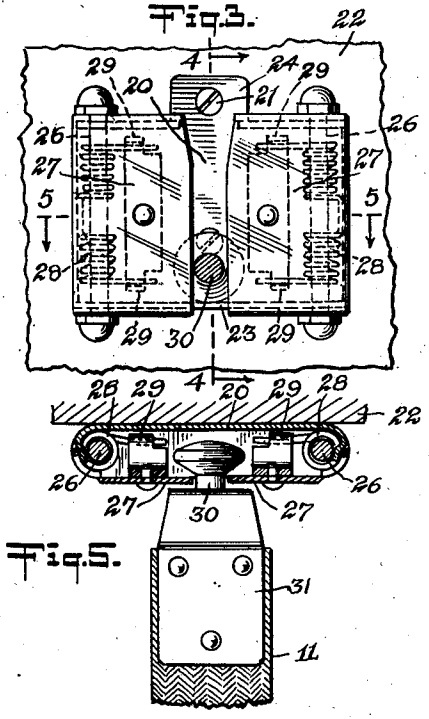


Fig.4.

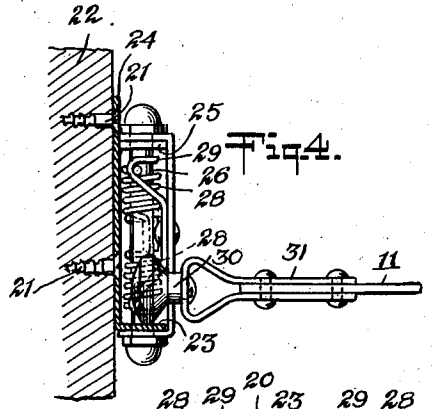
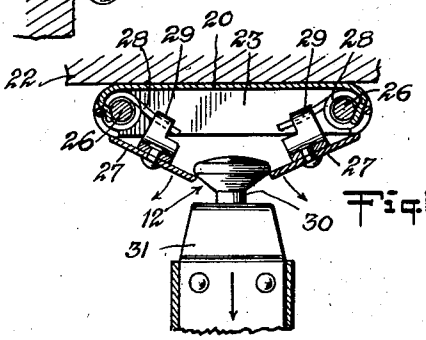


Fig.5.

Fig.6.



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FLEXIBLE GUARD RAILING

Frank Michaels, New York, N. Y.

Application July 19, 1944, Serial No. 545,671

2 Claims. (Cl. 39—74)

This invention relates to flexible guard railings such as of rope, cable, chain and tape, used as barriers and guide lines in theaters, railroad stations, public halls and churches. Specifically this invention relates to a safety type of flexible guard railing which is yieldably and detachably affixed to posts, stanchions and other fixtures.

The primary object of the invention is to provide a flexible guard railing which would serve as a guide or barrier in public places during normal conditions and which would yield to the pressure of a panic stricken crowd pressing against it in time of emergency, as when seeking escape from a fire.

Another object is the provision of a safety catch for use in connection with such flexible guard railings, said catch being of a type which would engage and hold such railing under normal conditions of use, and which would release said railing in response to the pressure of a crowd in an emergency.

These and other objects are attained by mechanism illustrated in the accompanying drawing in which:

Fig. 1 is a side view of the safety device, shown connecting two fixed objects;

Fig. 2 is a top view of the safety device, connected as shown in Fig. 1;

Fig. 3 is a face view of the safety catch member of the safety device;

Fig. 4 is a vertical section of said safety catch showing the engaging button in engaged position therein;

Fig. 5 is a horizontal section of said safety catch also showing the engaging button in engaged position therein; and

Fig. 6 is a view similar to that of Fig. 5 showing the engaging button being withdrawn from the safety catch against the action of the gates of said safety catch.

The safety device 10 herein claimed, comprises an elongated rope or tape 11 affixed at one end to a stanchion or other heavy or immovable object and having an engaging button 12 affixed to its other end, and a safety catch 13 affixed to another stanchion or similar object, said safety catch being adapted to yieldingly engage said engaging button.

The safety catch 13 has a base plate 20 which in normal conditions of use is vertically disposed being affixed by means of screws 21 to a vertical wall or stanchion 22. The bottom of the plate is bent upward to form a bottom shelf 23 which bears at right angles thereto. The top of the plate, with the exception of a center portion 24 thereof, is bent downwardly to form a pair of spaced top shelves 25 which lie in a common plane, said plane being parallel to the plane of bottom shelf 23. A pair of spaced vertically disposed pivot pins 26 are fixed in said shelves in the usual manner, said pins being fixed on parallel axes.

Mounted on said pins are a pair of gates 27 which are held tightly against said top and bottom shelves by means of springs 28. Said springs are also mounted on said pins. At one end said springs engage the base plate; at the other end they engage hooks 29 which are affixed to said gates. It will be noted that when the gates are in closed position, that is, in pressure contact with shelves 23 and 25, lying in a plane parallel to the plane of the base plate, they are spaced from each other. The space between said gates, when closed, is smaller in width than the diameter of the button 12. The space is wide enough, however, to accommodate button neck 30 hereinafter mentioned.

The engaging button 12 has a narrow neck 30 which is riveted or otherwise affixed to a yoke 31, which in turn is riveted or otherwise affixed to one end of tape 11. The other end of the tape is affixed, by means of screw 32 or otherwise, to wall or stanchion 33.

To use the device, the yoke end of the tape is held in the hand, and the button inserted into the space between top shelves 25 and then moved down behind gates 27 until it reaches, and is stopped by, bottom shelf 23. The neck 30, of course, moves integrally with the button, passing downwardly through the space between the gates.

To disengage the device, the button is removed from behind the gates in the same way it was inserted.

It will be noted that the only force that keeps the button from being removed from the safety catch 13 in any manner and direction other than that previously described, is the tension force exerted by the springs upon the gates to hold them in pressure contact with the shelves. A pulling force applied to the tape greater than the tension force of the springs will cause said gates to swing open against said tension force. This is illustrated in Fig. 6. When the gates are swung open to a predetermined extent, measured by the diameter of the button, the button, and hence the tape to which it is attached, will be released.

Any crowd of any size, and indeed any individual, pushing against the tape as, for example,

to escape from a fire, would be able, without any difficulty, to exert sufficient pressure against the tape to bring about its release from the safety catch, as aforesaid.

The device herein described may be modified in its features of construction, without departing from the principles of the invention. For example, the device may be provided with one stationary and one swinging gate, instead of the two swinging gates above described. Another modification might be to provide a single length of tape with two buttons, one at each end, and to provide a pair of safety catches to engage them. This would permit of removing the tape entirely from between the two stanchions when desired.

I claim:

1. A safety device of the type described, comprising a rope adapted to be affixed at one end to a stanchion, a button affixed to the other end of said rope, said button having a relatively large head and a relatively small neck, and a safety catch, said catch consisting of a base plate adapted to be affixed to a stanchion, a pair of gates spaced from each other and from the base plate, said gates being pivoted on a pair of vertically disposed pins which are affixed to said base plate, and a pair of tension springs which engage said base plate and said gates, and act to prevent said gates from opening outwardly from said base plate, the space between said gates being larger than the diameter of the button neck and smaller than the diameter of the button head, said gates being adapted to yieldingly engage said button when the neck thereof is inserted into the space between said gates, and the head thereof moving integrally therewith, is inserted into the space behind said gates and in front of said base plate.

2. A safety device of the type described, comprising a rope, a button affixed to one end of the rope, and a safety catch, said catch consisting of a base plate, a pair of gates pivotally mounted on said base plate on parallel pivots which lie in a plane parallel to the base plate, and a pair of tension elements which engage said base plate and said gates to yieldingly prevent the gates from opening outwardly from the base plate, said gates being adapted to yieldingly engage and hold said button.

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