Dec. 28, 1943. E. D. SAWYER 2,337,626

BALUSTRADE

Filed Nov. 24, 1941

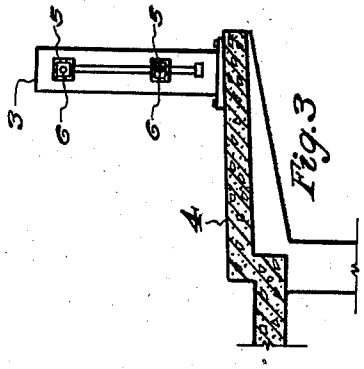


Fig. 3

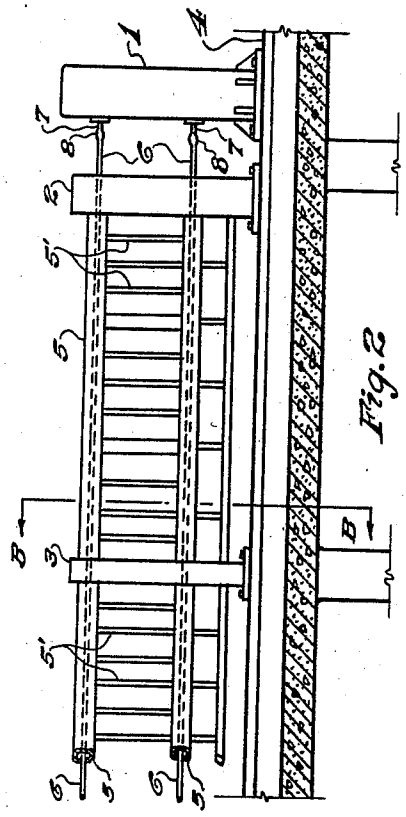


Fig. 2

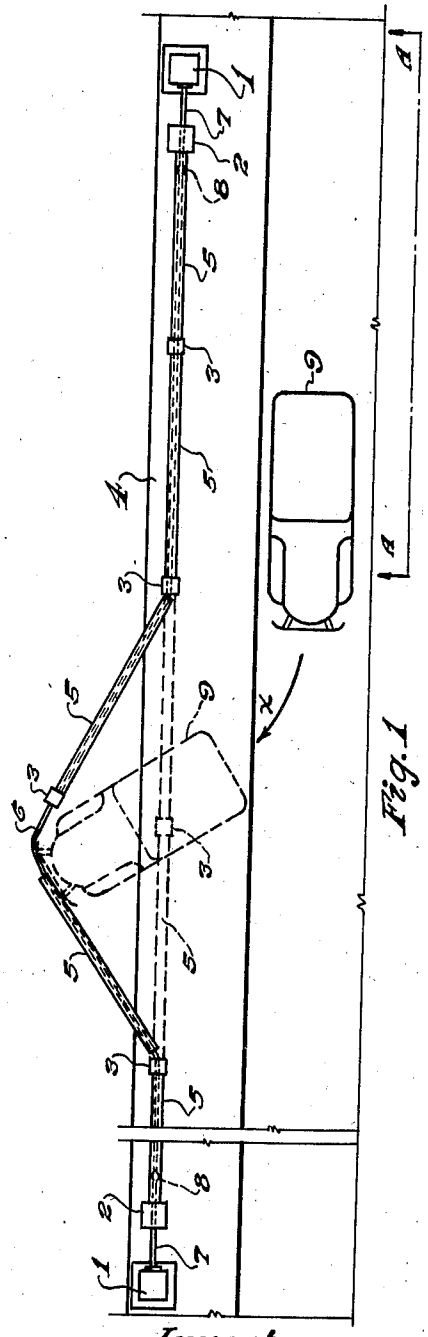


Fig. 1

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2,337,626

BALUSTRADE

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Application November 24, 1941, Serial No. 420,241

1 Claim. (Cl. 256—1)

The invention relates to improvements in yieldable balustrade or guard railings for bridges, viaducts, elevated structures, and the like, the present invention being a continuation-in-part of my co-pending application, filed April 4, 1938, Serial No. 199,933 on which Letters Patent No. 2,263,649 issued on November 25, 1941.

The primary object of the invention is to provide a construction of the character indicated which will greatly increase the protection afforded to automobiles and the like on such structures without necessitating any radical revision of the structural design thereof.

A further object of the invention is to provide a construction of the character indicated which is applicable to both newly built and existing structures.

A further object of the invention is to prevent parts of the structure which may be broken by an impact from falling on the traffic below.

Other objects will appear hereinafter.

In the present improvement the supporting posts thereof, which are not strong enough to withstand the impact of even a small automobile, are nevertheless utilized as snubbing posts for retarding cables which may thus be caused to stop a heavier vehicle within a few feet of travel. In this way rigid, but fragile, railings may be re-enforced as to stop a vehicle even if one section thereof is disrupted by the first part of the impact.

The invention consists of the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a partial plan view of the deck of an overhead bridge, viaduct, or the like, illustrating a balustrade embodying the invention as applied to the outer edge of the sidewalk thereof;

Fig. 2 is a partial elevational view taken substantially on line A—A of Fig. 1;

Fig. 3 is a sectional view taken substantially on line B—B of Fig. 2.

The embodiment of the invention illustrated in Figs. 1, 2 and 3 of the drawing comprises two end posts 1 located as indicated, at the side edge of the sidewalk 4, said posts being the same posts as are disclosed more fully in my Patent No. 2,263,649.

Arranged adjacent to each of the end posts 1 is a comparatively strong, rigid post 2, and a series of lighter posts 3 are spaced at intervals between the posts 2 as shown. Tubular rails 5 are secured in superimposed relation between the posts 2 and 3 and are connected by vertical bars 5′ which thus serve to hold said rails in parallel relation to each other. Heavy wire cables 6 are threaded through posts 2 and 3 and also through the rails 5, said cables being connected at their ends to the pay-out, retrievable cables 7 by means of tapered sleeve-like connections 8, as indicated.

In use and operation, when a vehicle 9 swerves from the roadway of the structure and strikes the balustrade with sufficient force to break off one of the posts 3, as is indicated in Fig. 1, the cables 6 will be drawn through the posts 2 and 3 and the rails 5 to provide the additional cable lengths to permit the broken off part of the balustrade to precede the automobile, as shown. This will draw the pay-out cables 7 out of the posts 1 to provide the extra lengths of cable necessary. In moving through the posts 2 and 3 and the rails 5, the cables 6 will exert a large snubbing resistance to assist the resistance of cables 7 in bringing the vehicle to a stop. During this action, the rails 5 and their spacing bars 5′ serve to prevent spreading of the cables 6 and thus act, in effect, as flexible barriers for the purpose. When the stopped vehicle has been removed, the cables 7 are retrieved into the posts 1 and the distorted rails, cables and broken posts drawn back to original positions to serve their original purpose until repairs can be made.

While I have illustrated and described the preferred form of construction for carrying the invention into effect, these are capable of variation and modification without departing from the spirit of the invention. I therefore do not wish to be limited to the precise details disclosed, but desire to avail myself of such variations and modifications as fall within the scope of the appended claim.

I claim:

A balustrade comprising a plurality of suitable supports arranged along the side of a roadway; hollow rails connecting said supports; flexible tension members strung through said supports and rails; and flexible yieldable retrievable pay-out means connected with the ends of said tension members and adapted and arranged to yieldingly resist movement of any part of said tension members relatively to said supports.

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