Sept. 22, 1931. J. H. RAMSEY ET AL 1,824,368

HIGHWAY GUARD RAIL

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Fig. 1

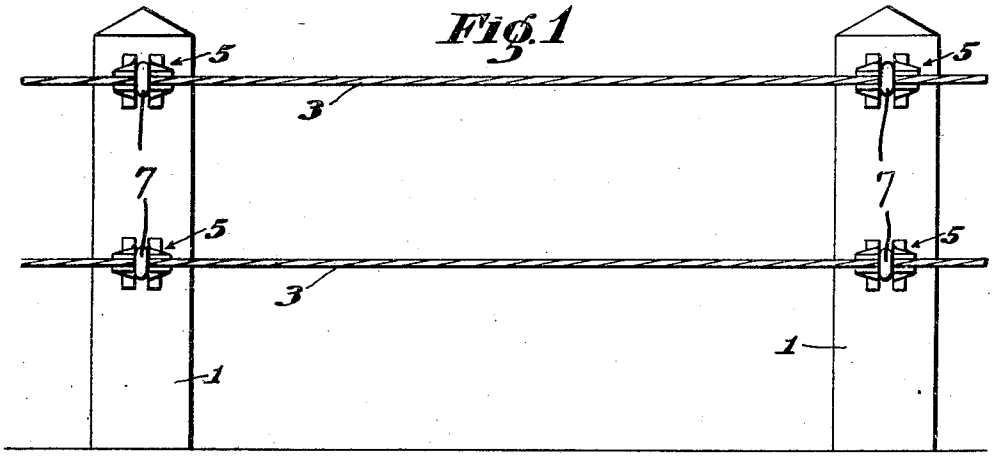


Fig. 2

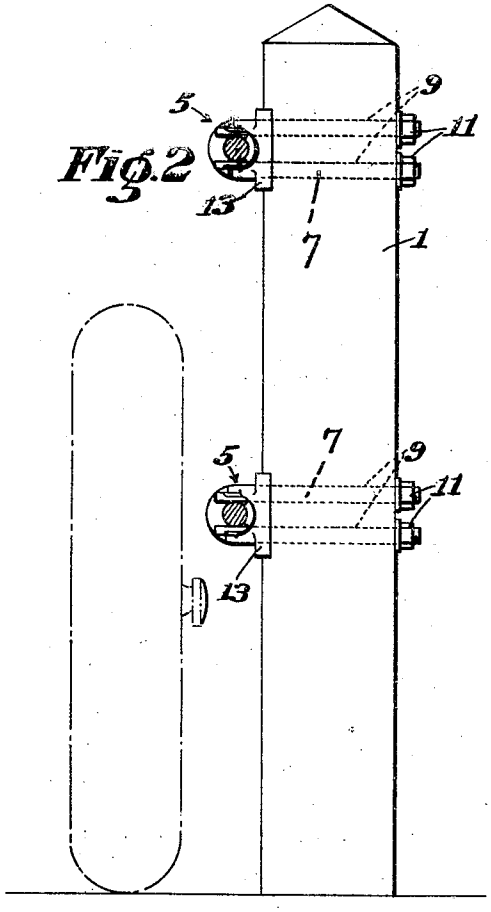
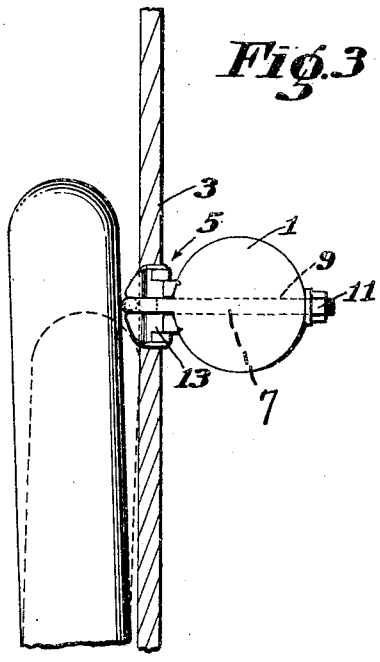


Fig. 3



INVENTORS:
Joseph H. Ramsey
Geo A. Short
BY Henry T. Williams,
ATTORNEY

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Fig. 4

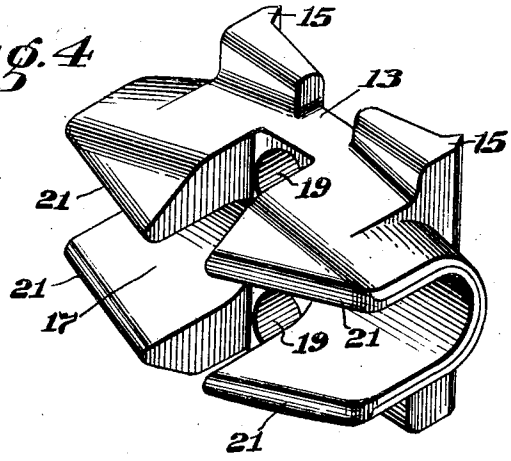


Fig. 5

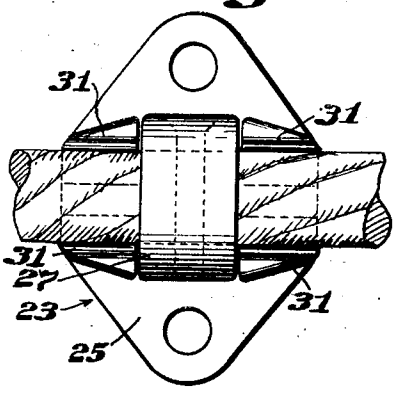


Fig. 6

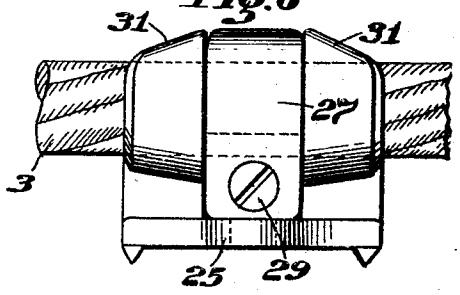


Fig. 7

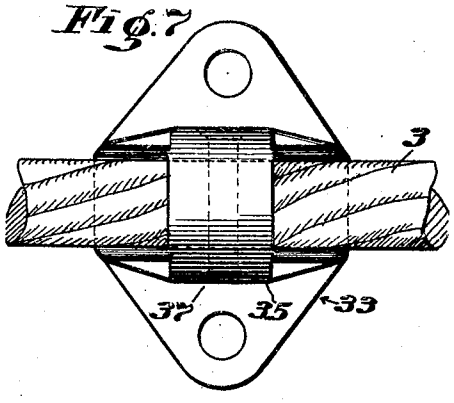


Fig. 8

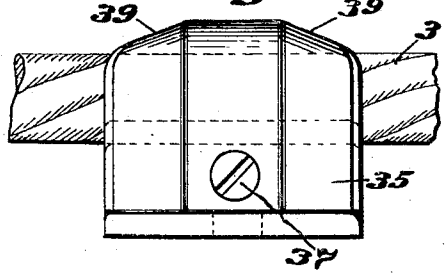
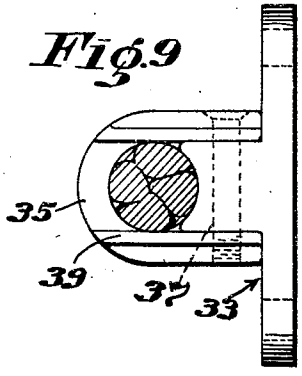


Fig. 9



INVENTORS:
Joseph H. Ramsey
Cleo A. Short
BY Henry T. Williams,
ATTORNEY

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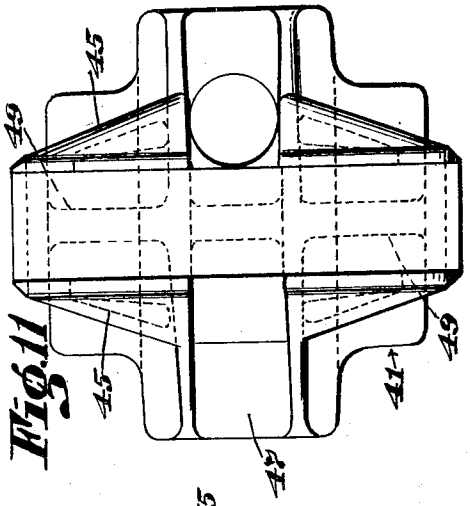


Fig. 11

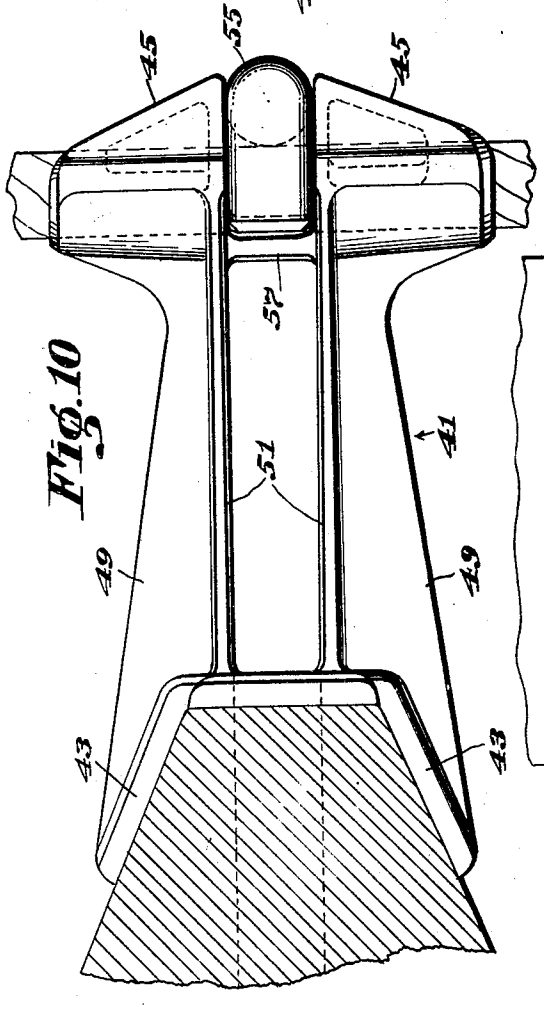


Fig. 10

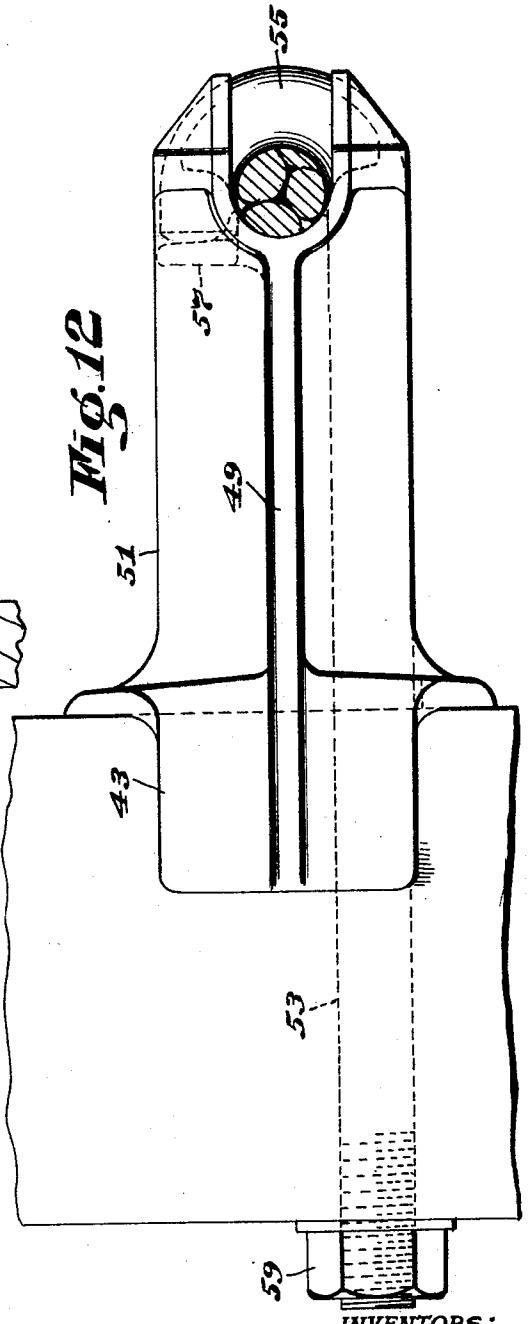


Fig. 12

INVENTORS:
Joseph H. Ramsey
Chas A. Shultz
BY Henry T. Williams,
ATTORNEY

Patented Sept. 22, 1931 1,824,363

UNITED STATES PATENT OFFICE

JOSEPH H. RAMSEY, OF ALBANY, NEW YORK, AND CLEO ALVIN SHORT, OF MEDFORD, MASSACHUSETTS; SAID SHORT ASSIGNOR TO SAID RAMSEY

HIGHWAY GUARD RAIL

Application filed October 3, 1930. Serial No. 486,070.

This invention relates to guard rails employed for the protection of motorists on highways and more particularly to an improved device for supporting the guard rail.

Guard rails have become a necessary adjunct of highways, more especially since the advent of hard surfaced roads, permitting travel in automobiles at relatively high speeds. The earlier types of guard rails consisted of posts of wood with openings through which wire cables were drawn, the cables being anchored at their ends. This construction permitted a portion of each post to project beyond the guard rail toward the highway. The posts were struck frequently by projecting parts of automobiles, and consequently an improvement was developed in which the cables were secured to the posts by hook-bolts. These bolts likewise projected beyond the cables and afforded obstacles which were likely to be struck by fenders, hub-caps, and the rims of automobile wheels. Since the introduction of balloon tires, the destructive effect of the sharp edges of the rims has been particularly notable, because the relatively soft tires are easily deflected and the sharp rims often strike the unprotected hook-bolts with sufficient force to damage the steering gear of the automobile with consequent liability of serious accident to the occupants of the automobile.

It is the object of the present invention to provide a simple, inexpensive and effective device for supporting guard rails which is adapted to deflect any projecting part of an automobile which may happen to strike it, and thus to reduce the force of any blow, thereby protecting the automobile, the supporting device, the guard rail and supporting posts and increasing the effective life thereof.

Other objects and advantages of the invention will be apparent as it is better understood by reference to the following specification and accompanying drawings, in which:

Fig. 1 is an elevation of two posts and cables secured thereto by devices embodying the invention;

Fig. 2 on an enlarged scale is a side view of one of the posts, and shows the relation of a wheel thereto;

Fig. 3 is a sectional view through a post, and shows a portion of one of the cables and one of the devices for securing the cable to the post, and also shows in dotted and full line positions the wheel approaching one of the brackets and deflected thereby;

Fig. 4 on an enlarged scale is a perspective view of one form of the device;

Figs. 5 and 6 are plan and side views of another form of the device;

Figs. 7, 8 and 9 are plan, side and end views of another form of the device; and

Figs. 10, 11 and 12 are plan, end and side views of still another form of the device.

Referring to the drawings, 1 designates posts of concrete or other suitable material carrying guard rails, in the present instance in the form of strong cables 3 secured to the posts by devices in the form of brackets 5, preferably comprising U-shaped members adapted to embrace the cables, spacing members or saddles adapted to hold the cables in spaced relation to the posts, and cam or deflecting surfaces adapted to divert away from the cables and their supporting devices any body such as a part of an automobile sliding along the cables and coming in contact with the brackets.

The form of the invention shown in Figs. 1 to 4 comprises a U-bolt 7 projecting beyond and embracing the roadside surface of the cable and having legs 9 adapted to extend through the post, the ends of said legs being threaded to receive nuts 11. One of the legs may be shorter than the other, so that the U-shaped member will be in the form of a hook bolt, the curved end of which is adapted to embrace the cable.

The cable is held in spaced relation to the post by a saddle 13 having wedge-shaped feet 15 adapted to bite into and firmly engage the post. This saddle has a channel 17 for receiving the cable, and at opposite sides of the channel are holes 19 through which the legs of the U-bolt extend. To prevent parts of an automobile from striking the portion of the U-bolt which embraces the roadside surface

of the cable, the saddle is formed to provide cam or deflecting surfaces 21. The construction is such that the wheel of an automobile sliding along the cable to the bracket will be deflected by said cam surfaces away from the cable, thereby facilitating steering of the automobile in a direction of approach toward the highway. This will materially reduce the liability of damage to the steering gear of the automobile, and reduce the liability of injury to the cables and posts.

The form of the device shown in Figs. 5 and 6, comprises a saddle 23 having a base 25 adapted to be secured to the post by lag screws entered through holes in the base. A U-shaped member 27 embraces the cable, and is secured to the saddle by a screw bolt 29 entered through registering holes in the saddle and member. The saddle is formed to provide cam or deflecting surfaces 31.

The form of the device shown in Figs. 7, 8 and 9 is rather similar to that shown in Figs. 5 and 6, and comprises a saddle 33, a U-shaped member 35, and a screw bolt 37 for securing the same to the saddle. In this form the cam or deflecting surfaces 39 are on the U-shaped member instead of on the saddle.

The form of the device shown in Figs. 10, 11 and 12 comprises a saddle 41 having feet 43 for receiving the post between them. At the outer end of the saddle are cam or deflecting surfaces 45, and between them is a channel 47 for receiving the cable. Projecting from the channel to the feet are horizontal strengthening ribs 49, and extending from the channel to the feet are vertical strengthening ribs 51. A U-shaped member or bolt 53 has a hook 55 embracing the cable, and its end engages a stop 57 on the saddle, thereby preventing the hook from gripping the cable which is always free to slide in the saddle channel. The bolt has a shank extending through the post and threaded to receive a nut 59.

The several forms of the device as described are manufactured preferably of suitable material, malleable iron castings or drop forgings being preferred because of their lightness, toughness, and the rust-resisting qualities of such metal. The device may, nevertheless, be made from other materials such as pressed sheet steel. In any of the forms described the supporting devices for guard rails are particularly effective in avoiding the transmission of destructive shocks to the posts and to the guard rail. Consequently the life of the guard rail is prolonged and the expense of upkeep, which is an important factor at present in the maintenance of highways, is considerably reduced.

These devices are simple and cheap to manufacture and may be quickly and easily connected to the cables and posts or other supports. The deflecting surfaces are inherent to the devices themselves, and therefore are supported independently of the guard rails.

Various changes may be made in the details of construction and arrangement of the parts, without departing from the invention or sacrificing any of the advantages thereof.

What is claimed is:

1. A support for a highway guard rail comprising a U-shaped member adapted to embrace a guard rail, and means co-operating with the U-shaped member and supported independently of the guard rail to receive and deflect blows and thereby to protect the guard rail.

2. A support for a highway guard rail comprising a U-shaped member adapted to embrace the guard rail, fenders supported independently of the guard rail and arranged to divert objects from striking the sides of the member, and means for supporting the member and fenders in operative relationship to the guard rail.

3. A support for highway guard rails comprising a U-shaped member having an inner surface shaped for engagement with a corresponding roadside surface of the guard rail, fenders supported independently of the guard rail and arranged to divert objects from striking the sides of the member, and means for supporting the member and fenders in operative relationship to the guard rail and a supporting post.

4. A support for a highway guard rail comprising means adapted to project beyond and embrace the roadside surface of the guard rail, and means associated therewith and supported independently of the guard rail for diverting a vehicle wheel from and preventing the same from striking the rail embracing means.

5. A support for a highway guard rail comprising means adapted to project beyond and embrace the roadside surface of the guard rail, and a fender supported independently of the guard rail presenting a cam surface for diverting a vehicle wheel from and preventing the same from striking the rail embracing means.

6. A support for a highway guard rail comprising a saddle having a channel for receiving a highway guard rail, and a bolt adapted to secure the saddle to a post and embrace and hold the guard rail in the channel, said saddle having strengthening ribs extending longitudinally thereof, and a deflecting surface for preventing a vehicle from striking the rail embracing portion of the bolt.

JOSEPH H. RAMSEY.
CLEO ALVIN SHORT.