

C. F. BUENTE.
 REINFORCED CONCRETE ROAD GUARD.
 APPLICATION FILED APR. 18, 1914.

1,162,282.

Patented Nov. 30, 1915.

3 SHEETS—SHEET 1.

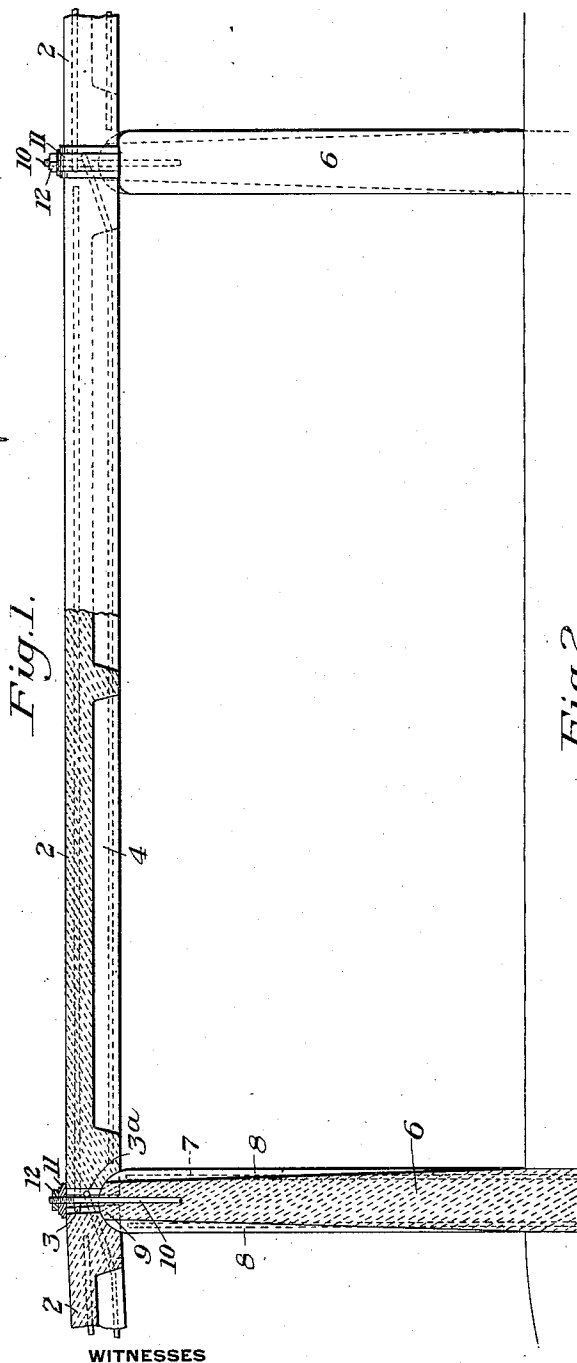


Fig. 1.

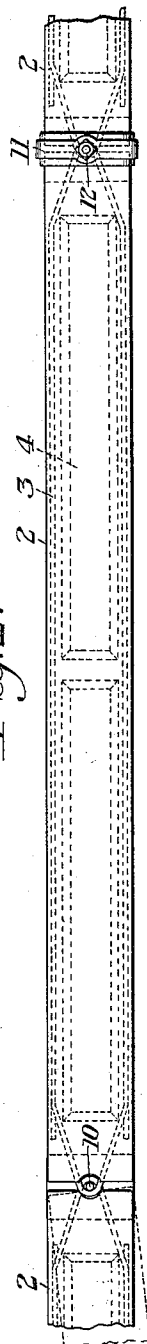


Fig. 2.

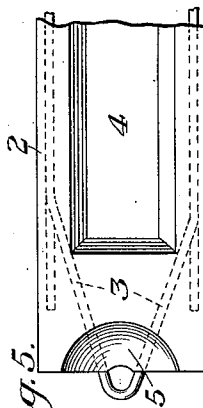


Fig. 3.

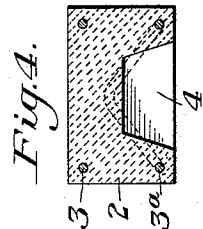


Fig. 4.

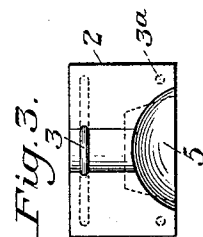


Fig. 5.

WITNESSES

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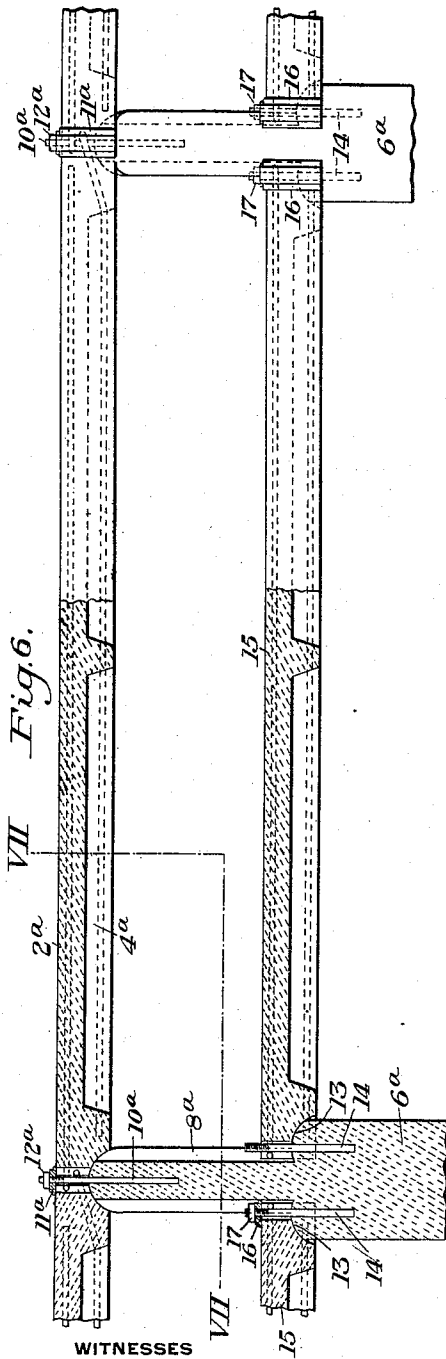


Fig. 6.

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 G. B. Blumung

Fig. 7.

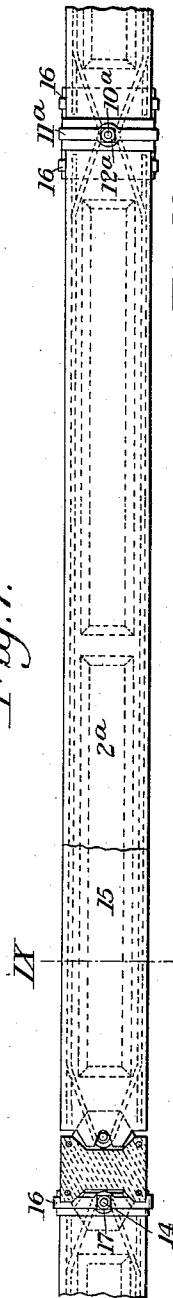


Fig. 10.

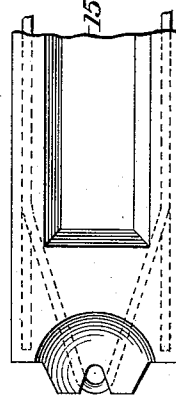


Fig. 9.

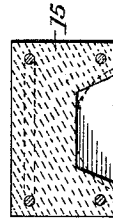
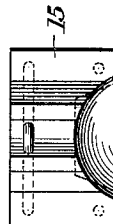


Fig. 8.



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3 SHEETS—SHEET 3.

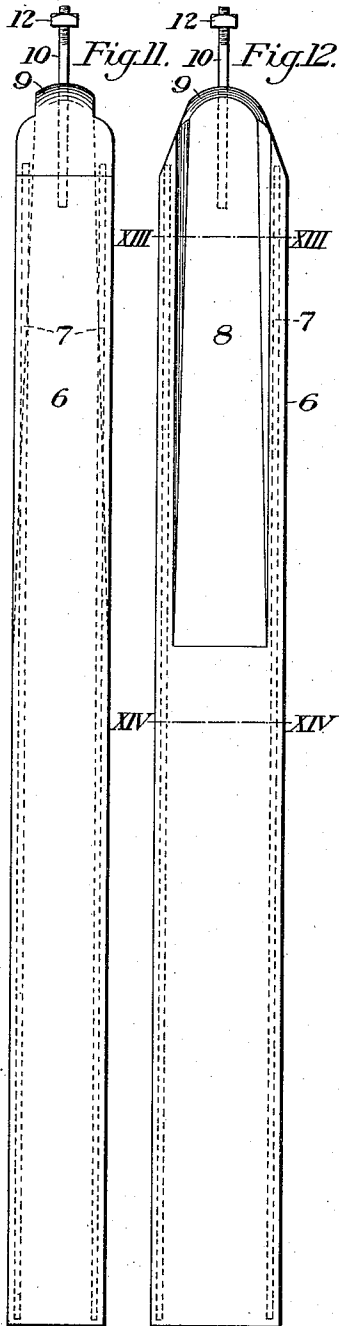


Fig. 13.

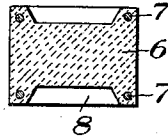


Fig. 14.

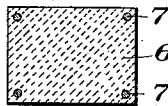


Fig. 17.

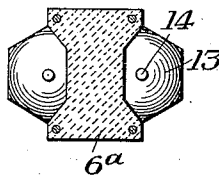
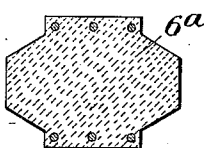
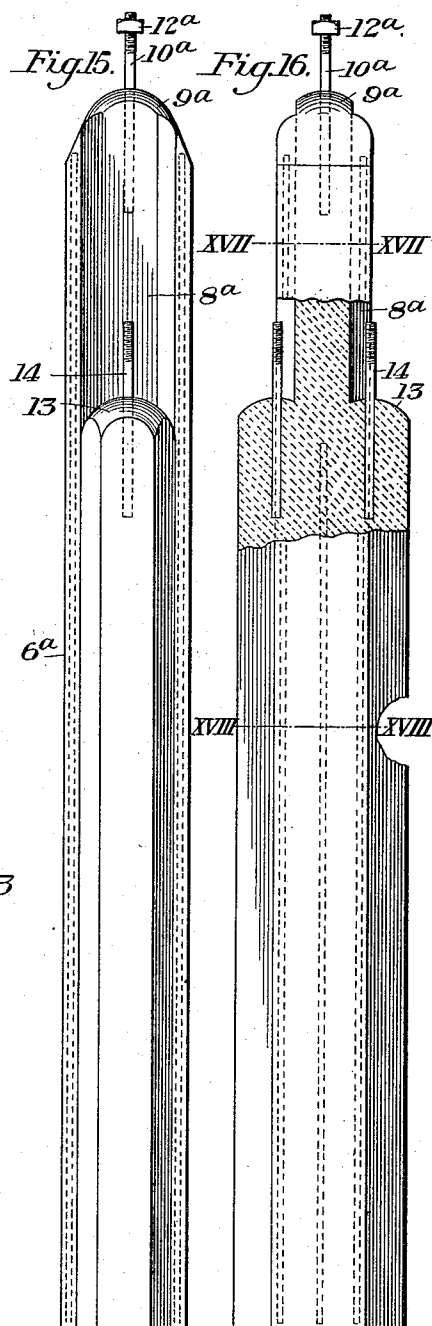


Fig. 18.



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UNITED STATES PATENT OFFICE.

CHARLES F. BUENTE, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO CONCRETE PRODUCTS COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

REINFORCED-CONCRETE ROAD-GUARD.

1,162,282.

Specification of Letters Patent.

Patented Nov. 30, 1915.

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To all whom it may concern:

Be it known that I, CHARLES F. BUENTE, a citizen of the United States of America, and a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Reinforced-Concrete Road-Guards, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation, partially in section, of one form of my improved road guard; Fig. 2 is a plan view thereof, with some of the parts removed; Fig. 3 is an end view of one of the rail members shown in Fig. 1; Fig. 4 is a transverse section through one of the rail members; Fig. 5 is an inverted plan view of one end of one of the rail members; Fig. 6 is a side elevation partially in section through one of the posts of the structure shown in another form of guard; Fig. 7 is a sectional plan view of Fig. 6 on the line VII—VII; Fig. 8 is an end view of one of the lower rails shown in Fig. 6; Fig. 9 is a sectional view on the line IX—IX of Fig. 7; Fig. 10 is a bottom plan view of one end of one of the rail members shown in Figs. 6 and 7; Fig. 11 is an end view of one of the posts shown in Fig. 1; Fig. 12 is a side elevation thereof; Figs. 13 and 14 are transverse sections on the lines XIII—XIII and XIV—XIV, respectively of Fig. 12; Fig. 15 is an end view of one of the posts shown in the construction illustrated in Fig. 6; Fig. 16 is a side elevation partially in section; and Figs. 17 and 18 are transverse sections on the lines XVII—XVII and XVIII—XVIII respectively of Fig. 16.

This invention relates to an improvement in road guards and is designed to provide a cheap and efficient reinforced concrete guard which can readily be made in the factory and easily placed in position on the road.

The object of my invention is to provide a guard of the character in which the rails and posts are properly reinforced and which are so formed that they can readily be assembled on the road and secured in position with ordinary tools.

Another object of my invention is to provide a device of the character in which one rail member can be placed at various angles with relation to an adjacent rail member or

members without chipping or cutting away any portion of the posts or rail members. By the use of structures of this character, I am enabled to place the guard on a road having curves of widely different radii, as well as on grades and on curves and grades combined.

The precise nature of my invention will be best understood by reference to the accompanying drawings, which will now be described, it being premised, however, that various changes may be made in the details of construction without departing from the spirit and scope of my invention, as defined in the appended claims.

Referring to Figs. 1, 2, 5 and 11 to 14, the reference character 2 designates the rail members, each of which is provided with a looped reinforce 3 and 3^a. The upper reinforce is provided with a loop at one end, while the body members thereof extend along both sides of the rail member adjacent to the top to a point close to the other end of the rail. The reinforce 3^a is also provided with a loop at the other end of the rail member, and the body members thereof extend downwardly and then longitudinally along both sides of the rail in the lower portion thereof to a point adjacent to the other end of the rail member. The loops on these reinforces are so placed that the loop at one end of the rail member is in a different horizontal plane from the loop at the other end of the rail member in order to permit the loops of adjacent rail members to extend over a securing pin, as hereinafter described. These rail members may be provided with recesses in their under faces, as indicated at 4, below the neutral axis of the rails to reduce the cost of material, and at the same time lighten the structure without materially affecting its strength. The ends of the rail members are also provided with spherically shaped sockets 5 for receiving the ends of the supporting posts, as hereinafter described. The posts 6 are each provided with vertically extending reinforcing members 7, which may be of any desired shape, and may be placed in any desired position, but I prefer to use four straight rods, one in each corner of the post. The upper portions of these posts may be recessed, as indicated at 8 and the upper ends thereof are provided with a

spherical head 9. 10 is a vertical bolt secured in the upper end of the post at the center thereof, for engagement with the loops on adjacent rail members. In the construction shown in these figures, the posts are placed in the ground at proper intervals, and the rails are then placed on top of the posts in the manner shown in the section at the left hand side of Fig. 1, so that the loops of adjacent rail members engage the bolts 10; the loop on one rail member lying in a different horizontal plane from the loop on the other end of the rail member.

It will readily be understood by those familiar with the art that the arrangement of ball and socket joints between the tops of the posts and the rail members will permit the rails to be placed on the tops of the posts to compensate for curves in the road, as well as inclines of the road. After the rails are placed in position, a U-shaped cap member 11, having an opening therein for the bolt 10 is placed over the joint between the rail members and secured in position by means of a nut 12. If desired, after the rail members have been placed in position and before the caps 11 are placed over the joints, the open spaces between adjacent rail members may be filled up with any suitable cement or concrete.

In Figs. 6 to 10 and 15 to 18, I have shown a modified form in which I use two sets of rail members. In this construction, the upper ends of the posts and the upper rail members are similar to the upper ends of the posts and the rail members shown in the various figures, and I have applied the same reference characters to the same parts with the letter *a* affixed. These posts are also provided with an intermediate shoulder 13 at each side thereof, and 14 are securing bolts for the rails extending upwardly through the shoulders. 15 are the lower rail members which are provided with reinforces similar to the reinforces of the upper rails, but in this case the loops at opposite ends of the rail members are approximately in the same plane as each bolt 14 is only arranged to receive the loop of one rail. This structure is also assembled in a manner similar to the structure shown in Fig. 1, and after the lower rails 15 are placed in position, they are secured by means of caps 16 and nuts 17, which caps are arranged to be seated in the recessed portions 8^a on the posts 6^a.

The advantages of my invention result from the provision of posts and rails having a ball and socket connection with each other, together with loops extending from the ends of the rails engaging securing bolts connected to the posts.

I claim:

1. A road guard comprising a plurality of posts and a plurality of reinforced con-

crete rails, universal connections between the posts and the ends of adjacent rails, a cap for securing the rails to the posts, and means for connecting said cap to the post to clamp the rail thereto, substantially as described.

2. A road guard comprising a plurality of posts and a plurality of reinforced concrete rails, a ball and socket joint between the posts and the ends of adjacent rails, means for securing said rails to the posts, and cap members covering the joint between the ends of adjacent rails; substantially as described.

3. A road guard comprising a plurality of posts having spherically shaped heads, a bolt extending upwardly from the center of each head, reinforced concrete rail members extending from post to post, and having a concaved portion at each end for receiving the heads on the posts, means on said rails for engaging said bolts, and means for securing said rail members to said bolts; substantially as described.

4. A road guard comprising a plurality of reinforced concrete posts, each of said posts having a spherically shaped top, a bolt extending upwardly from the center of the top of each post, rail members extending from post to post having spherical sockets for engaging the spherical tops of the posts, loop members extending outwardly from the ends of the rail members in engagement with the bolts, cap members mounted over the joints between adjacent rail members, said cap members having openings for the reception of the bolts, and nuts for securing the caps to the posts and rails; substantially as described.

5. A road guard comprising a plurality of posts, each of said posts having a spherical top, rail members extending from post to post having spherical sockets for engagement with the spherical tops, means for securing said rail members to the tops of the posts, a spherical shoulder on each side of the posts below the tops, rail members extending from the shoulder on one post to a shoulder on an adjacent post, and means for securing said rails to said shoulders; substantially as described.

6. A road guard comprising a plurality of posts each having a spherically shaped top, rail members extending from post to post, each having spherically shaped sockets on their bottoms at the ends thereof, the ends of said rails being arranged so that at least two rails can be seated on the top of each post, and means for clamping the rail members to the tops of the posts; substantially as described.

7. A road guard having posts and rail members formed with universal pivotal connections, cap members adapted to engage the ends of two rail members, and means

for securing said caps to the posts to clamp the rails in position, substantially as described.

8. A road guard comprising a plurality
5 of posts having spherical shaped heads, a bolt extending upwardly from the center of each head, reinforced concrete rails extending from post to post having spherically shaped sockets at the ends thereof seated on
10 the heads of the posts, reinforcing members in said rails, said reinforcing members having loops extending through the ends of the rails and arranged to engage the bolts on the posts, and nuts for securing said rails
15 in position on the posts; substantially as described.

9. A road guard comprising a plurality of posts, each of said posts having a spherical head, rail members extending from post
20 to post, the ends of said rail members hav-

ing spherical sockets arranged to receive the tops of the posts, there being two rails extending in different directions from the top of each post, a spherical shoulder on two sides of each post below the tops, a rail 25 member extending from the shoulder on one post to the shoulder on the next post, upwardly extending rods extending through the heads and shoulders on the posts, reinforcing members in each rail having loops 30 extending outwardly through the ends of the rail engaging said rods, and means on said rods for securing the rails in position; substantially as described.

In testimony whereof, I have hereunto set 35 my hand.

CHARLES F. BUENTE.

Witnesses:

W. C. LYON,
H. M. CORWIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."