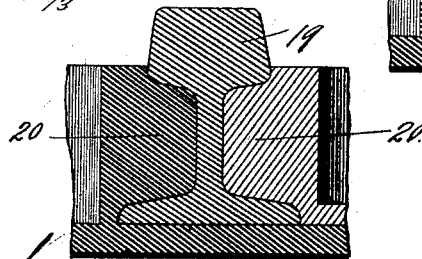
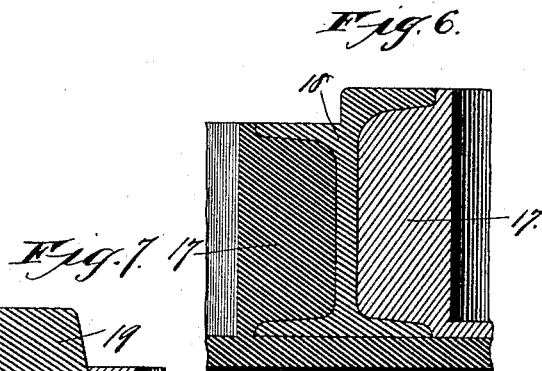
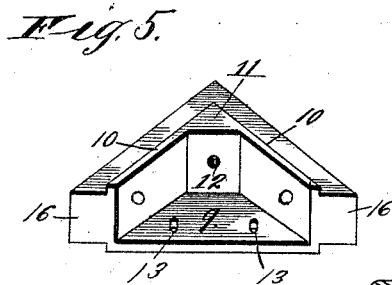
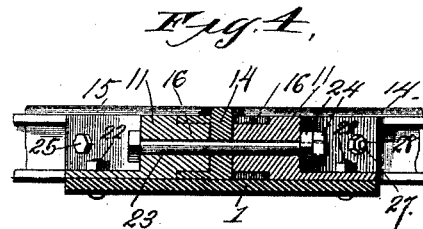
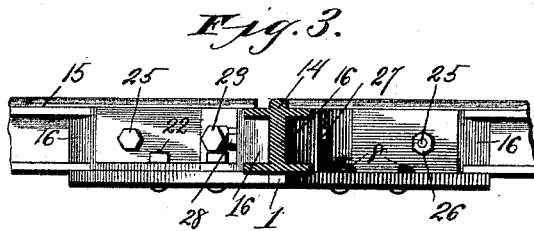
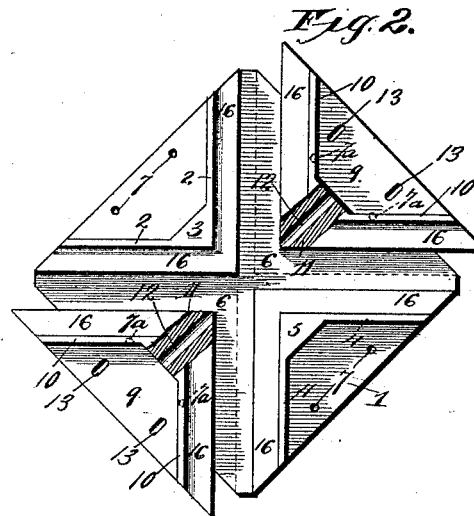
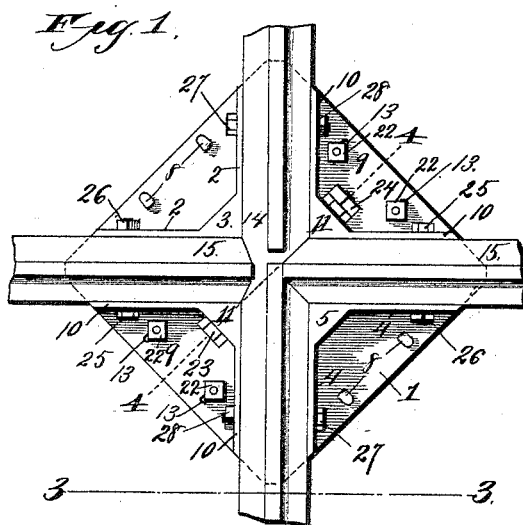


(No Model.)

C. VOGT.
RAILWAY CROSSING PLATE.

No. 491,616.

Patented Feb. 14, 1893.



Witnesses,
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UNITED STATES PATENT OFFICE.

CHARLES VOGT, OF KANSAS CITY, MISSOURI.

RAILWAY-CROSSING PLATE.

SPECIFICATION forming part of Letters Patent No. 491,616, dated February 14, 1893.

Application filed June 21, 1892. Serial No. 437,449. (No model.)

To all whom it may concern:

Be it known that I, CHARLES VOGT, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Railway-Crossing Plates, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to appliances for retaining the adjacent ends of the crossing rails of railways in proper relative position; such appliances being designed for use upon steam railways and all other types of railways.

The objects of my invention are to produce a railway crossing plate or frog which shall be simple, strong, durable and inexpensive in construction and capable of being readily placed in position and removed from position when required and which shall prevent all possibility of accidental dislocation of the rails at the crossings. Furthermore, to produce a railway crossing plate or frog which in addition to the above enumerated advantages, shall be applicable to a great variety of forms or types of railway rails.

To the above purposes my invention consists in certain peculiar and novel features of construction and arrangement, as hereinafter described and claimed.

In order that my invention may be understood fully, I will proceed to describe it with reference to the accompanying drawings in which:

Figure 1 is a plan view of one set of rails of a railway crossing with a crossing plate or frog embodying my invention applied thereto. Fig. 2 is a detached plan view of one of the crossing plates or frogs, the movable members being slightly out of their normal position. Fig. 3 is a transverse vertical section on the line 3—3 of Fig. 1. Fig. 4 is a transverse vertical section on the line 4—4 of Fig. 1. Fig. 5 is a detached perspective view of one of the movable members of the crossing plate or frog. Figs. 6 and 7 are transverse vertical sections of modified forms of railway rails with correspondingly modified forms of crossing plates or frogs applied thereto.

In said drawings 1 designates the base or body-portion of the crossing plate or frog;

this base or body-portion being in the form of a single integral casting and being also preferably of rectangular shape as shown. Upon its upper side and at one side of the middle of the base the latter is formed with two upwardly extending retaining flanges or ribs 2, which are formed integrally with the body-portion or base of the inner ends and which are integrally united together, a boss or enlargement 3 preferably being formed at this point in order to strengthen the inner ends of the flanges or ribs. From the point of the junction of their inner ends, these ribs or flanges 2 extend divergently outward toward the corresponding crossings of the body portion or base 1 the outer ends of the ribs or flanges 2 terminating at the outer margins of the body portion at points just within the corners of the base.

At the opposite side of the center or middle of the base 1 from that which is occupied by the ribs or flanges 2, just described, are located two similar ribs or flanges 4 which are likewise formed integrally upon the upper side of the base 1, so as to extend outwardly therefrom and the inner meeting ends of which are preferably strengthened by the enlargement or boss 5 corresponding to the enlargement or boss 3 above described. These ribs or flanges 4 also extend divergently outward in an opposite direction from the ribs or flanges 2 and toward the corresponding opposite corners of the base 1 the outer ends of the ribs 4 terminating at the margin of the body-portion and at points just within the corresponding corners. It will thus be seen that by either of the described forms of relative positions of these ribs or flanges 2 and 4, two oppositely disposed V-shaped recesses or cavities 6 intervene between the corresponding sides of the two sets of ribs or flanges 2, and 4 the positions of these cavities being herein after explained.

At points between the inner sides of the sets of ribs or flanges 2, and 4 and adjacent to the margin of the base 1, said base is formed with any suitable or preferred number of openings 7 through which spikes 8 of the usual or any preferred type are inserted, said spikes being driven into the sleepers for the purpose of retaining the frog in its proper position.

similar openings 7^a are also formed in the outer portions of the cavities or recesses 6, near the outer margins thereof, for receiving the additional retaining spikes.

5 9 designates the two removable or detachable members of the crossing plate or frog. Each of these members 9 is in the form of a single integral casting and is of approximately V-shape, as shown, the member being
10 of such dimensions as to fill the remaining portions of the cavities 6 after the crossing rails have been placed in position as hereinafter more fully described. Upon its upper side each of the movable members 9 is formed
15 with two ribs or flanges 10 which diverge outwardly from each other and extend parallel with the sides of the movable member. These two ribs or flanges 10 are formed integrally with the body-portion of the members and
20 extend upwardly therefrom and at the point of the union of their inward ends is formed an integral boss or enlargement 11 which serves to strengthen the ribs or flanges at this point. An opening or channel 12 is formed
25 longitudinally through each of these bosses or enlargements 11 to receive horizontal retaining bolts for the rails as hereinafter explained.

Through the outer portion of the body of
30 each movable or detachable member 9 and at points between the flanges or ribs 10 there are formed any suitable or preferred number of openings 13 which are designed to receive suitable spikes which are to be driven
35 through said openings and through the openings 7^a in the base 1 and into the ties or sleepers so as to retain the movable members 9 in proper position and also to further assist in retaining the crossing plate or frog itself
40 in its required position. It is to be observed that the inner sides of the ribs or flanges 2, 4 and 10 are to abut against the webs of the rails and are to be of such form as to accord with the forms of the webs, the sides of the
45 tread of the member and side portions of the base or foot of the rails and that the precise form of the inner sides of the ribs or flanges is to be varied in accordance with the peculiar type of rail to which the crossing plate or
50 frog is to be applied. In the drawings I have shown three different forms of rails and correspondingly different forms of contours of the abutting sides of the ribs which I will presently describe, but I desire it to be clearly
55 understood that still other modifications of this portion of the construction may be adopted as circumstances may require without involving any departure in the essential features of my invention.

60 Referring first to Figs. 3 and 4, 14 and 15 designate two crossing rails of the railway crossing; the rails 14 and 15 being shown as of what is known as a "T-rail." The rail 14 is left perfectly continuous throughout its length and is
55 shown as extending between one side of one of the ribs or flanges 2 and the corresponding side of an obliquely opposite rib or flange 4. The

companion rail 15 is divided into two portions which lie at opposite sides of the rail 14 and which extend oppositely at rightangles
70 from said rail 14. In order that the abutting sides of the flanges 2, 4 and 10 shall closely embrace the sides of the rails 14 and 15, said flanges or ribs are in this instance formed on
75 their inner sides with horizontal integral extensions 16 which enter between the base or foot and the treads of the rails and also which closes against the webs of the same as shown.

In Fig. 6 I have shown what may be termed an "I-rail," the abutting sides of the ribs or
80 flanges being formed with extensions 17 of quite similar form to that of the extensions 16 just described but curved at their upper and lower corners and margins to accord with the corresponding curvature of the sides of
85 the rail.

In Fig. 7 I have shown the usual head and base type 19 of railway rails, employed particularly in steam railways and in this
90 instance the ribs or flanges are formed with integral extensions 20 of curved form so as to accord with the curvatures of the base and head of the rail. It is obvious that by slight further modifications of form the flanges or
95 ribs can be applied to the usual type of L-rails in street railways or of grooved rails and all other types.

Now, in using this crossing plate or frog, the base or body portion 1 is first laid in its
100 required position the continuous rail 14 being placed in position as described and the transverse divided rail being also placed in its required position so as to extend either at rightangles from the continuous rail or
105 more or less obliquely therefrom according to the nature of the crossing, and the detachable members 9 are then placed in their required positions as shown. It is to be understood that any where where when one set of
110 rails crosses another obliquely, that is not at rightangles, very simple and obvious modifications of the precise V-form of the flanges or ribs both of the movable members and base may be adopted without departing from the
115 essential spirit of my invention. After these parts have been placed in their required positions, the base 1 is secured by its spikes 8 and the movable members 9 are secured by
120 their spikes or by bolts 22 and retaining nuts as shown in Fig. 1. A bolt 23 is passed through an opening or channel 12 above described and obliquely through the continuous
125 rail 14 and is retained in its position by nuts 24 which may be of any suitable or preferred type, but which are preferably jam-nuts or locking-nuts. Bolts 25 having suitable retaining nuts 26 are passed horizontally
130 through the outer portions of the flanges 2 and also similarly through the webs of the divided rails 15, and bolts 27 having suitable retaining nuts 28, are passed horizontally through the outer portions of the companion
ribs 2 and 10 and similarly through the web of the companion rail 14.

From the above description it will be seen that I have produced a crossing plate or frog which is simple, strong, durable and inexpensive in construction, capable of being readily placed into position and removed therefrom as required, and which securely retains the rails at the crossing in their required positions and furthermore, prevents all possibility of accidental dislocation of such rails. Furthermore, that the movable or detachable members of the plate can be readily removed when worn out or injured in any way, and other perfect plates can be readily substituted for them without necessitating any breaking up of the crossing or any removal of the plate or frog itself.

Having thus described my invention what I claim as new therein and desire to secure by Letters Patent, is:—

1. A railway crossing plate or frog comprising a suitable continuous base plate or body-portion having integral and divergent retaining ribs or flanges located in pairs upon said plate and extending oppositely from each other and removable members located upon the base or body-portion and having companion divergent ribs or flanges and also located oppositely from each other and intermediately of the sets of flanges or ribs of the base, substantially as set forth.

2. A railway crossing plate or frog comprising a continuous base plate or body portion having formed upon its upper side two sets of oppositely disposed divergent ribs or flanges provided each at the junction of their inner ends with strengthening bosses or enlargements, substantially as set forth.

3. An attachment for railway crossing plates comprising a detachable member having formed upon its upper side a set of divergent retaining ribs or flanges united at their inner

ends by an integral boss or enlargement and provided with an opening or channel extending longitudinally through such boss or enlargement, substantially as set forth.

4. A railway crossing plate or frog, comprising a continuous base plate or body-portion, having formed upon its upper side two sets of divergent flanges, and two removable members located upon the base or body-portion, and having formed upon their upper sides and integral therewith sets of divergent ribs or flanges, said members being designed to be interposed between the ribs or flanges of the base, and a through bolt, passing through the oppositely disposed removable members, through the enlargements thereof and through the continuous rail, and having a retaining and locking nut thereon, substantially as described.

5. A railway crossing plate or frog, comprising a continuous base plate or body-portion, a pair of divergent ribs or flanges at the upper side of said plate and integral therewith, a pair of divergent flanges located diagonally opposite the first-named pair, and also at the upper side of the base plate and integral therewith, and two removable members located diagonally opposite each other and upon the base plate, one between the adjacent sides of each pair of stationary or integral members, and the outer sides of each divergent rib or flange provided with a longitudinal rib or enlargement, adapted to fit closely and conform to the curvature of the side of the rail against which it is placed, substantially as set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

CHARLES VOGT.

Witnesses:

HARRIET E. PRICE,
JNO. L. CONDRON.