

No. 688,321.

D. MACPHERSON.
RAILWAY FROG.

Patented Dec. 10, 1901.

(Application filed Jan. 14, 1901.)

(No Model.)

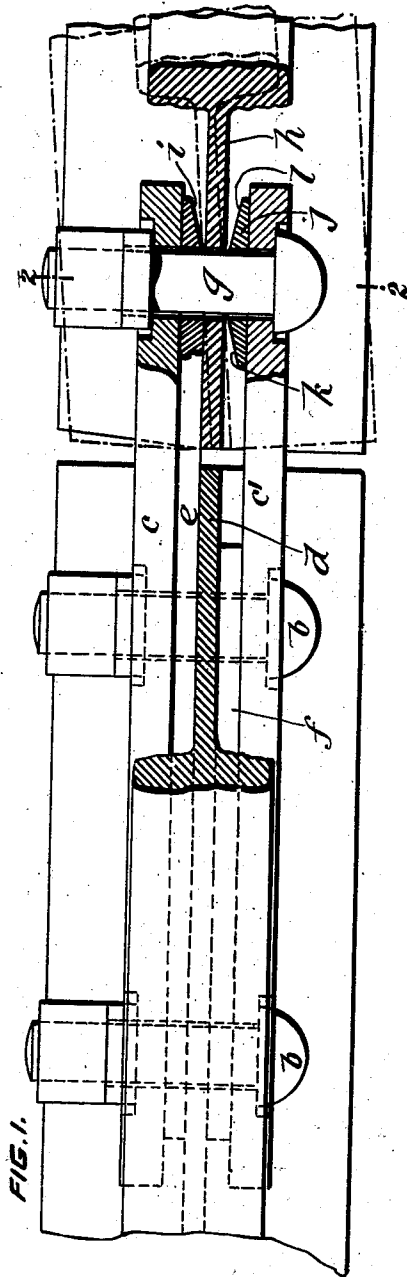


FIG. 1.

FIG. 3.

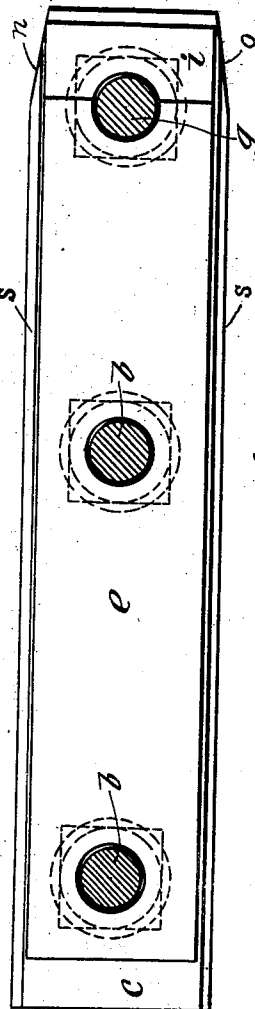
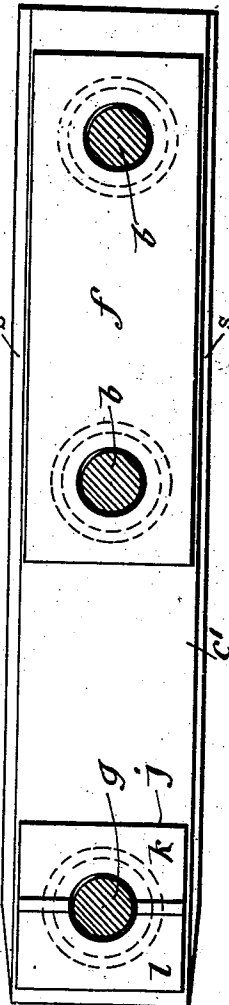
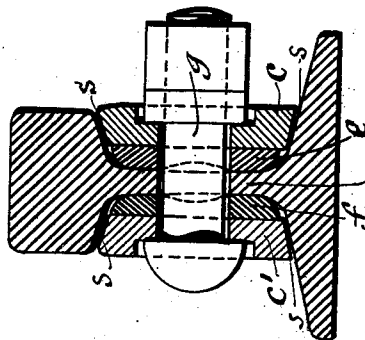


FIG. 4.



Witnesses
R. A. Kimber
H. J. Shaw

FIG. 2.



Duncan MacPherson
Inventor
By his Attorney
John W. Shaw

UNITED STATES PATENT OFFICE.

DUNCAN MACPHERSON, OF MONTREAL, CANADA, ASSIGNOR TO MACPHERSON SWITCH AND FROG COMPANY, OF NIAGARA FALLS, NEW YORK, A CORPORATION OF NEW YORK.

RAILWAY-FROG.

SPECIFICATION forming part of Letters Patent No. 688,321, dated December 10, 1901.

Application filed January 14, 1901. Serial No. 43,284. (No model.)

To all whom it may concern:

Be it known that I, DUNCAN MACPHERSON, of the city of Montreal, in the district of Montreal and Province of Quebec, Canada, have
5 invented certain new and useful Improvements in Railway-Frogs; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates particularly to the
10 means for hinging the movable frog-rail to the fixed lead-rail; and it has for its object to provide a more durable and more effective hinge and one that will be less liable to get out of order.

15 The invention may be said, briefly, to consist of the combination and arrangement of parts hereinafter set forth and claimed. For full comprehension, however, of the invention reference must be had to the accompanying drawings, forming a part of this specification, in which like symbols indicate the
20 same parts, and wherein—

Figure 1 is a plan view of one end of a fixed lead-rail and the end of the movable frog-rail hinged thereto, with a portion of the
25 tread of each broken away and with the hinge parts proper in horizontal sectional view. Fig. 2 is a transverse vertical sectional view thereof, taken on line 2 2, Fig. 1. Figs. 3
30 and 4 are views of the inside faces of the fish-plates and illustrating particularly the filler-plates in elevation.

In connecting a movable frog-rail to a fixed lead-rail with a hinged connection according
35 to my invention I rigidly secure, by a pair of bolts *b*, a pair of fish-plates *e* and *c'* to the web *d* of the fixed lead-rail, with a pair of filler-plates *e* and *f*, preferably of malleable or wrought iron, between said fish-plates and
40 web. The fish-plates and the filler *e* are of a length to project sufficiently beyond the end of the lead-rail to allow a bolt *g* to be passed therethrough and through the web *h* of the movable frog-rail, which are correspond-
45 ingly bored to accommodate it, and the top and bottom edges of said fish-plates are beveled, as at *s*, to conform to the shape of the rail ends. The projecting end of filler *e* is beveled, as at *z*, from the center of its last-
50 mentioned bolt-hole to its end, and a filler

portion in the form of a washer *j*, preferably of malleable or wrought iron and centrally bored to accommodate the bolt *g*, is located between the fish-plate *c'* and the web of the movable frog-rail, while the filler *f* is only of
55 sufficient length to receive the bolts *b*. The washer *j* has the side nearest the web beveled from within a short distance of its middle toward each side, as at *k* and *l*, and the beveling thereof at *k* and of the end of the filler
60 *e* accommodates the movable frog-rail in its movement when being set for either main line or siding. The boring through the web *h* is sufficiently greater in diameter than the bolt to allow of this movement. The fish-
65 plate *c* has the corners of the end thereof which overlaps the movable frog-rail beveled, as at *n* and *o*, to clear the head and flange, respectively, of said movable frog-rail when it is moved to be set at any angle to the fixed
70 lead-rail.

A hinge-joint constructed as above described is more durable and of greater strength than hinge-joints for rails heretofore used, owing to the fact that there is great
75 latitude for the weight and strength that may be given to the various parts for connecting the rails together, including the bolt which constitutes the hinge-pintle.

It is obvious that, if desired, the fish-plate
80 can be formed with integral portions corresponding to the fillers *e*, *f*, and *j*, or either one of them, within the spirit of my invention, because practically the fish-plate and filler *e* constitute an integral plate with the
85 inner side of one end beveled, and the fish-plate and filler *j* constitute another integral plate with a beveled shoulder on its inside.

What I claim is as follows:

1. The combination with a stationary rail-
90 road-rail and a movable railroad-rail arranged end to end, of plates secured rigidly to the web of one of said rails and extending to overlap the web of the other rail the overlapping
end of one of the plates being beveled, the overlapping end of the other plate having an
95 oppositely-beveled shoulder; and a bolt passing through the plates, said beveled shoulder and the web, substantially as and for the purpose set forth.

2. The combination with a stationary railroad-rail and a movable railroad-rail arranged end to end, of plates secured rigidly to the web of the stationary rail and extending to overlap the web of the movable rail, beveled filler portions between the plates and the web of the movable rail, and a bolt passing through the plates, the filler portions and the web of the movable rail, substantially as and for the purpose set forth.

3. In a railway-frog the combination with a stationary rail and a movable rail, of a joint or hinge connection comprising plates secured rigidly to the web of one of said rails and extending to overlap the web of the other rail, the overlapping end of one of said plates being beveled, a filler portion or washer *j* having the beveled face *k*, *l*, located between the overlapping end of the other plate and the web of the rail overlapped thereby, substantially as described and for the purpose set forth.

4. In a railway-frog the combination with the fixed lead-rail and the movable frog-rail, of a pair of plates rigidly bolted one to each side of the web of said lead-rail and overlapping opposite sides of the web of said frog-rail, a filler portion between each plate and the web of the adjustable frog-rail, a bolt carried by said overlapping portions of said plates and passing through coinciding borings in said filler portions and the web of the movable frog-rail, one of said filler portions being beveled from the bolt projecting there-through to the end farthest from the fixed lead-rail and the other of said filler portions

being beveled from said bolt to the edge thereof adjacent to said fixed lead-rail, substantially as described.

5. In a railway-frog the combination with the fixed lead-rail and the movable frog-rail, of a pair of fish-plates bolted to the opposite sides of the web of the fixed lead-rail and overlapping the adjacent end of said movable frog-rail, a filler portion between one fish-plate and the webs of both the fixed lead-rail and the movable frog-rail and having the inside face of the end of its overlapping portion beveled, a filler-plate extending between the other fish-plate and the web of the fixed lead-rail only, a filler portion in the form of a washer between said last-mentioned fish-plate and the web of the movable frog-rail and having its inside face beveled from its middle to the side edge adjacent to the fixed lead-rail, a pair of bolts securing said fish-plates and filler-plates rigidly to said fixed lead-rail, and a bolt carried rigidly in borings in the overlapping ends of said fish-plates, and passing through coinciding borings in said beveled filler-plate (at the inner edge of its beveled portion) in the web of said movable frog-rail, and in said washer (at the inner end of the beveled portion of said washer) substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

DUNCAN MACPHERSON.

Witnesses:

FRED. J. SEARS,
FRANK H. DENMAN.