

No. 652,033.

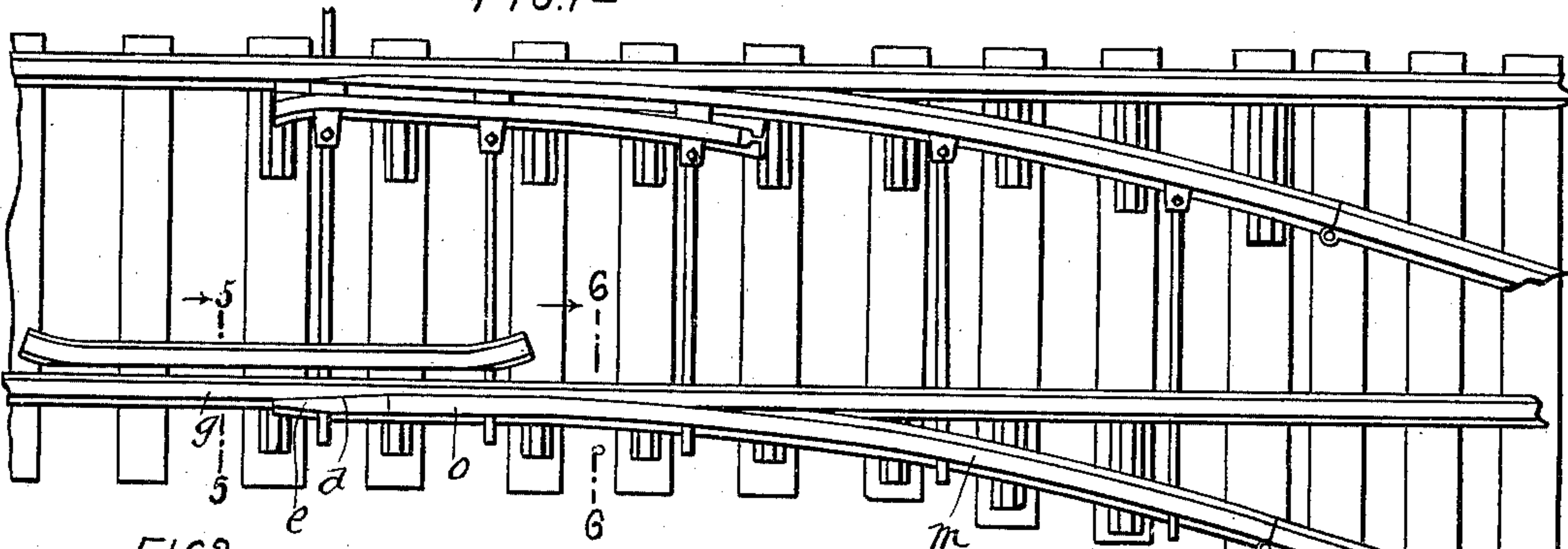
Patented June 19, 1900.

D. MACPHERSON.  
RAILWAY SWITCH.

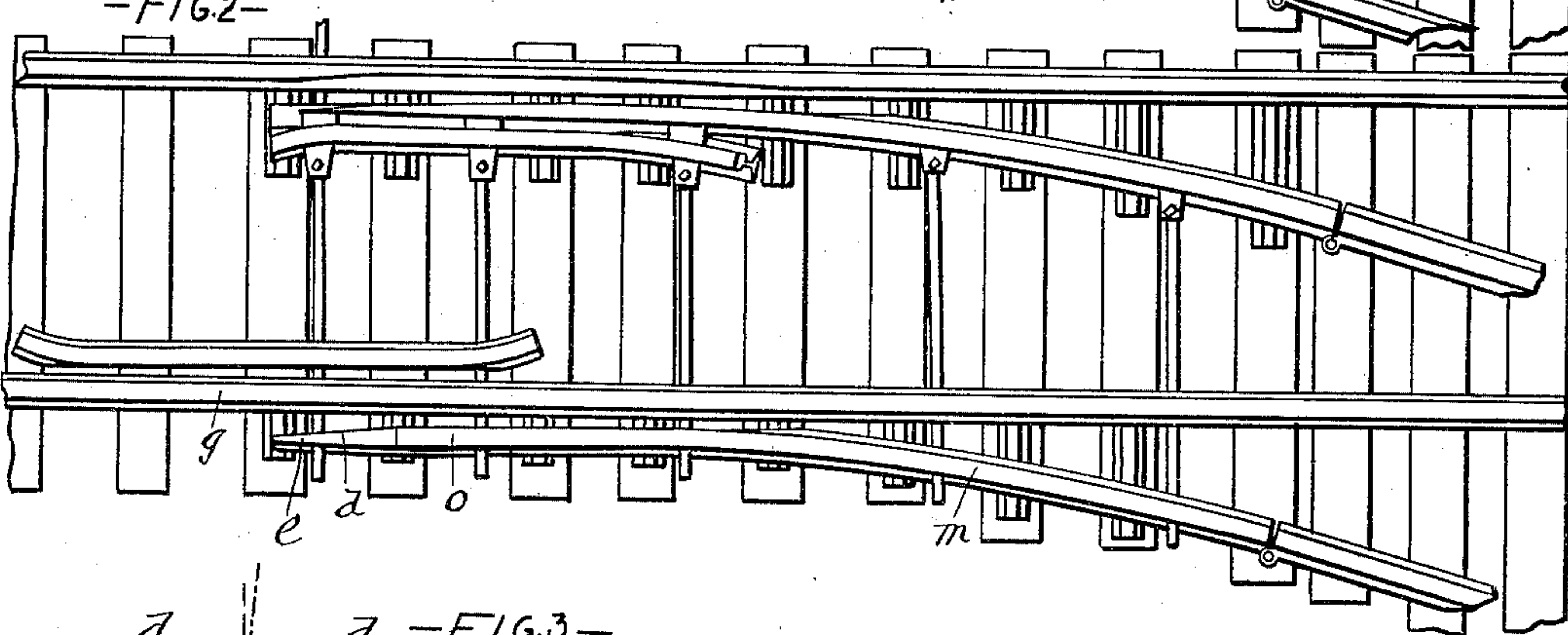
(Application filed June 5, 1899.)

(No Model.)

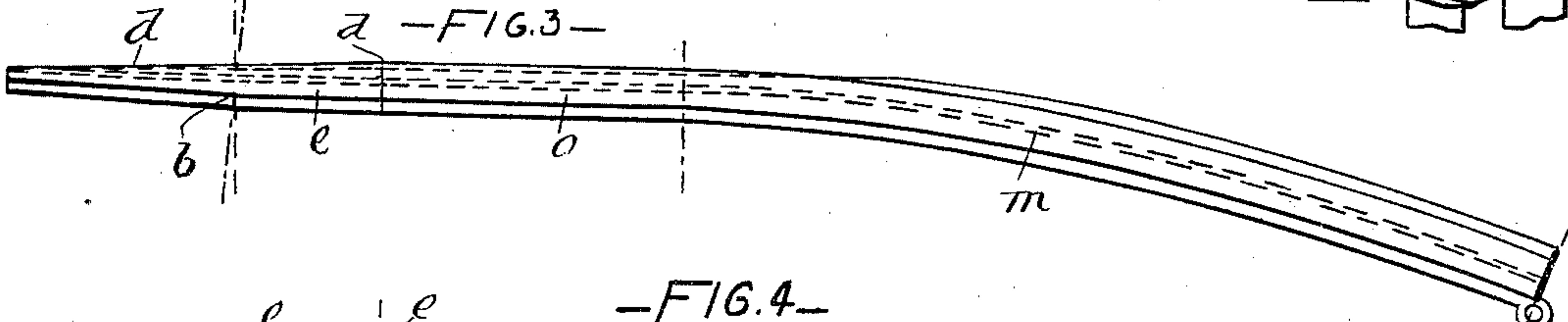
-FIG. 1-



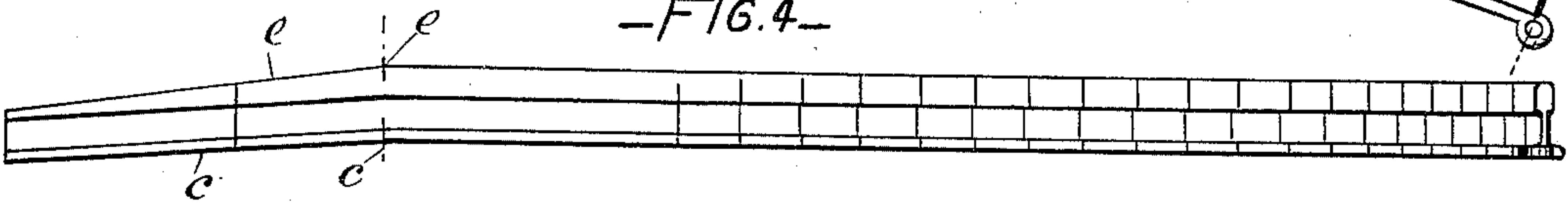
-FIG. 2-



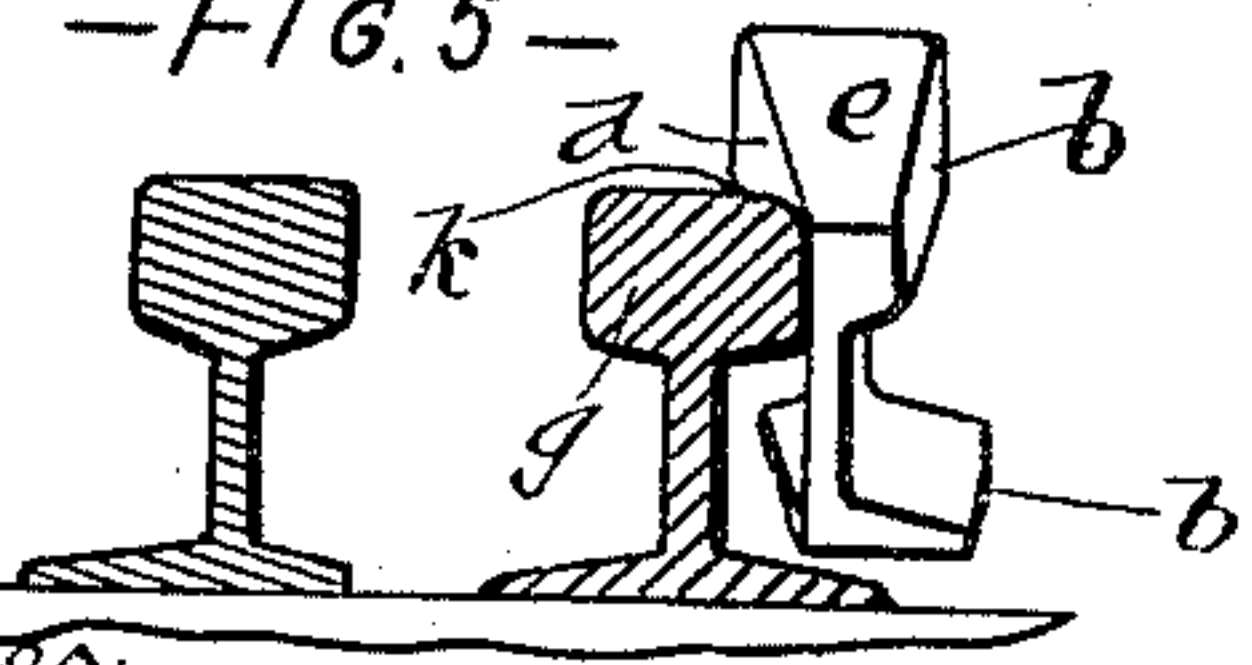
-FIG. 3-



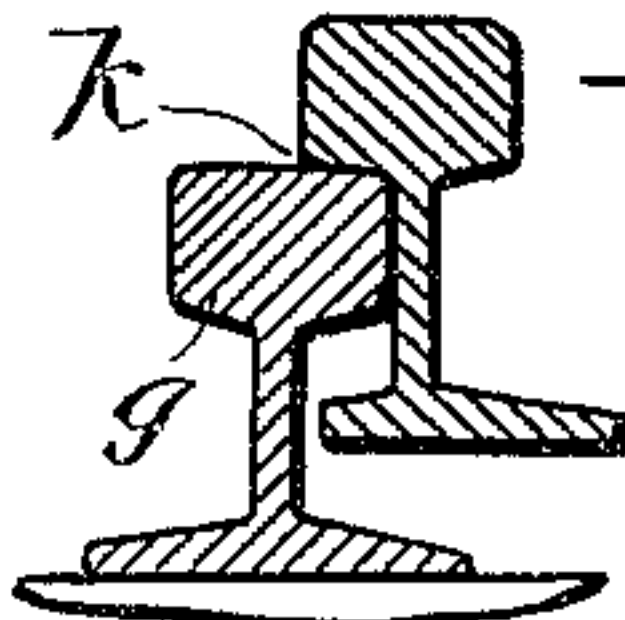
-FIG. 4-



-FIG. 5-



-FIG. 6-



Witnesses

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# UNITED STATES PATENT OFFICE.

DUNCAN MACPHERSON, OF MONTREAL, CANADA.

## RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 652,033, dated June 19, 1900.

Application filed June 5, 1899. Serial No. 719,431. (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-Switches; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates particularly to the construction of the outer switch-rail, illustrated and described in Letters Patent of the United States granted to me on the 22d day of December, 1891, under No. 465,531; and it has  
10 for its object to construct said switch-rail to overlap the main rail to a maximum extent and at the same time bring the bearing center of the end thereof as near as possible to the bearing center of the main rail, and thus obviate any chance of the wheels of a narrow-gage truck failing to properly mount the  
20 switch-rail.

My improved switch-rail consists of a length of rail having one end bent inwardly toward the main rail and downwardly, the top thereof  
25 of planed and the side adjacent to the main rail beveled, the portion contiguous to the end portion just described being straight or parallel to the main rail, the portion contiguous to the straight portion and between that  
30 and the heel curved.

For full comprehension, however, of my invention reference must be had to the accompanying drawings, forming part of this specification, in which like symbols indicate the  
35 same parts, and wherein—

Figure 1 is a plan view of a switch set for siding, the outer rail whereof is constructed according to my invention. Fig. 2 is a similar view set for a clear main track. Figs. 3  
40 and 4 are respectively an enlarged side elevation and plan of my improved switch-rail; Fig. 5, an end view of same with main rail shown in section on line 5 5, Fig. 1; and Fig. 6, an enlarged transverse vertical sectional  
45 view taken on line 6 6, Fig. 1.

My improved switch-rail has the portion adjacent to the end thereof that comes into contact with the main rail bent inwardly, as  
50 at *b*, and downwardly, as at *c*, the side thereof adjacent to the main rail being beveled or cut away on a diagonal line extending from

the point of juncture of the bent-down portion with the main portion of the switch-rail to the inside face of the web, as at *d*. The top of the inwardly and downwardly bent  
55 portion is further inclined by being planed, as at *e*, to insure its extreme end lying low enough beneath the head of the main rail *g* to prevent its being struck by worn tires or tripped upon by chains or the like that may  
60 be hanging from passing cars, the remaining portion of the switch-rail being raised sufficiently to enable its head to overlap the main rail, as at *k*. A short distance from the inwardly-bent portion the main portion of the  
65 switch-rail is horizontally curved, as at *m*, while the portion *o*, intervening the said inwardly-bent portion and curved portion, is straight.

In Fig. 1 I have illustrated the switch as it  
70 appears when set for a siding. By reference to this figure and to the detail illustrations in Figs. 3, 4, and 5 it will be observed that the offsetting of the rail portions contiguous to the straight portion *o* (by the inward curve  
75 *m* from the heel of the switch-rail toward the main rail and the inward bend *b* and downward bend *c* and planing *d*) has the effect of causing the said straight portion *o* to overlap the  
80 main rail to the extent of having its web (see Fig. 5) lie in close contact with the side of the head of the main rail and the under side of its head rest upon said head of the main rail. This construction secures the maximum extent of overlap and insures that even the  
85 wheels of a narrow-gage truck will mount the switch-rail instead of, as might happen, running inside of the switch-rail.

The structural advantage of my improved rail is, as before mentioned, that the portion  
90 *o* of the switch-rail will overlap the main rail to a maximum extent, thereby bringing the bearing center thereof as near as possible to the bearing center of the main rail, and, furthermore, the web of my switch-rail will remain  
95 intact and unsevered from the head at any point and extend completely from end to end thereof.

It is obvious that although I have illustrated and described my invention as applied  
100 to the construction of the outer switch-rail, any rail member of a switch that is con-



structed according to the foregoing will be within the spirit of my invention.

What I claim is as follows:

1. A movable switch-rail having a portion bent inwardly toward the rail against which it is adapted to abut.

2. In combination with a rail, a movable switch-rail having a portion bent inwardly toward said first-mentioned rail, and a straight horizontal portion contiguous to said inwardly-bent portion.

3. A movable switch-rail comprising an end portion bent downwardly and a part of such end portion bent laterally; and a straight horizontal portion adjoining the end portion, substantially as described and for the purpose set forth.

4. A movable switch-rail comprising an end portion bent downwardly and a part of such end portion bent laterally; a straight horizontal portion adjoining the end portion, and a horizontally-curved body portion, substantially as described and for the purpose set forth.

5. In combination with a stationary rail, of a movable switch-rail comprising a portion bent inwardly toward said stationary rail, a straight horizontal portion contiguous to said inwardly-bent portion, and a portion curved outwardly from said stationary rail, substantially as and for the purpose set forth.

6. In combination with a stationary rail, of a movable switch-rail comprising a portion bent downwardly and inwardly toward said horizontal portion contiguous to said inwardly-bent portion, and a portion curved outwardly

from said stationary rail, substantially as and for the purpose set forth.

7. In combination with a stationary rail, of a movable switch-rail comprising a portion bent inwardly toward said stationary rail, and having its side adjacent to said stationary rail beveled substantially as described, a straight horizontal portion contiguous to said inwardly-bent portion, and a portion curved outwardly from said stationary rail, substantially as and for the purpose set forth.

8. In combination with a stationary rail, of a movable switch-rail comprising a portion bent downwardly and inwardly toward said stationary rail, and having its side adjacent to said stationary rail beveled substantially as described, a straight horizontal portion contiguous to said inwardly-bent portion, and a portion curved outwardly from said stationary rail, substantially as and for the purpose set forth.

9. A movable switch-rail comprising a horizontally and downwardly bent end portion having one side beveled substantially as described; a straight horizontal portion contiguous to said first-mentioned portion; a curved portion contiguous to said second-mentioned portion and a straight heel portion, substantially as described and for the purpose set forth.

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

DUNCAN MACPHERSON.

Witnesses:

FRED J. SEARS,  
R. A. WIMBER.