

No. 759,870.

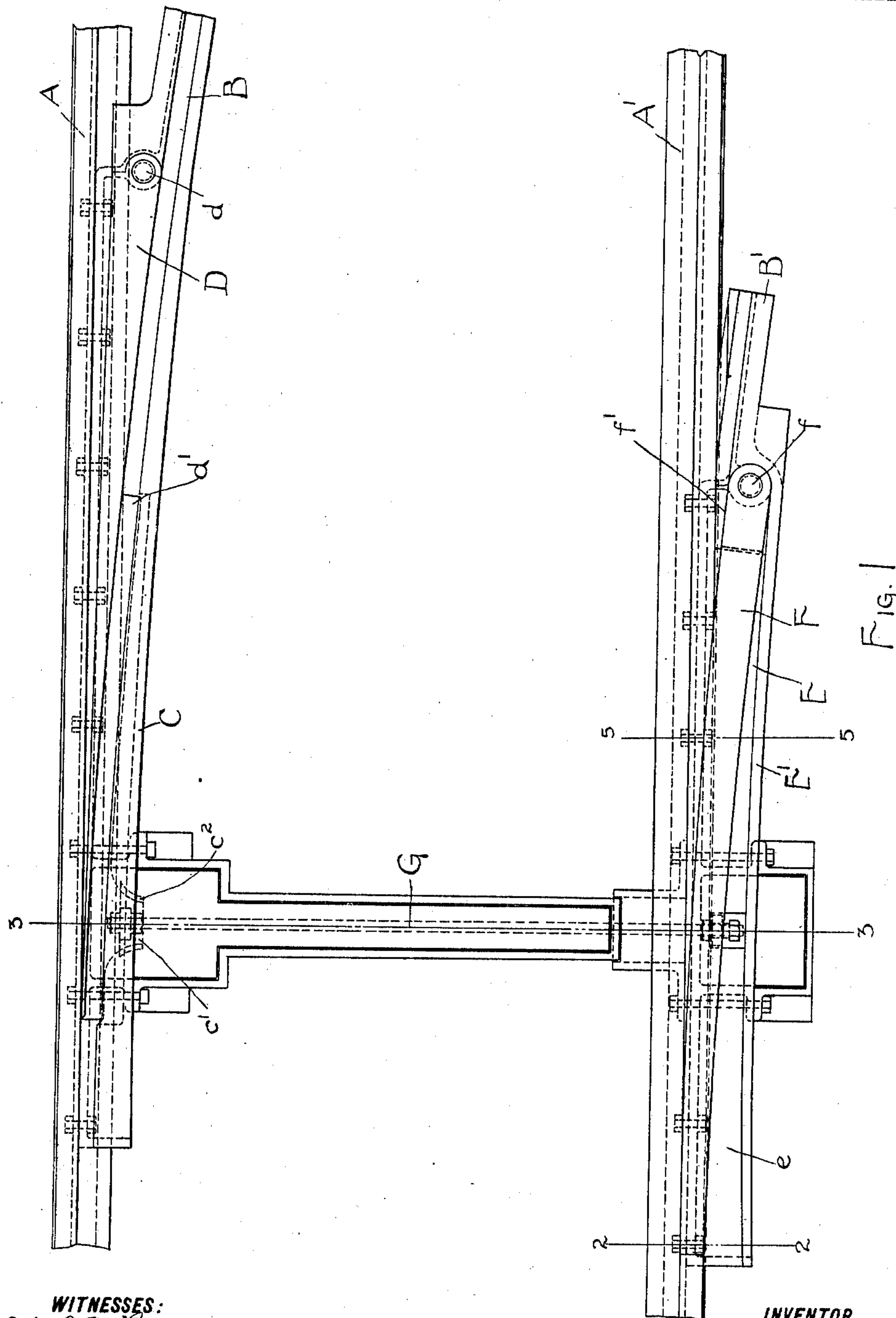
PATENTED MAY 17, 1904.

G. M. ERVIN.
UNBROKEN MAIN LINE SWITCH.

APPLICATION FILED AUG. 1, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

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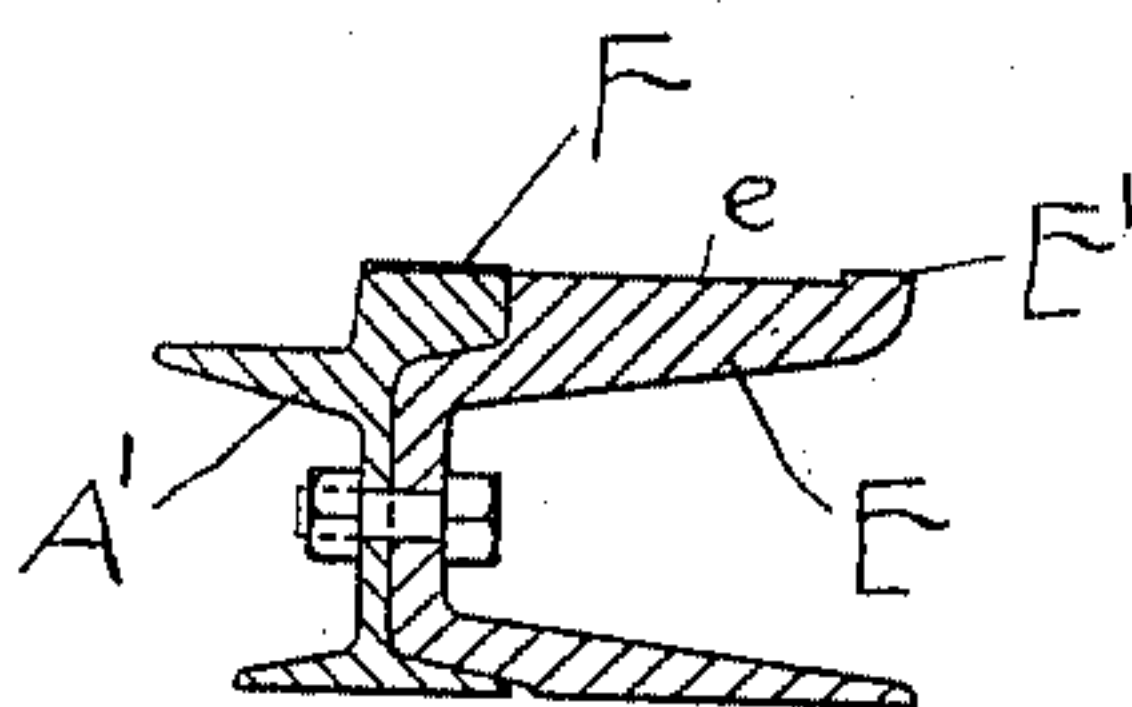


Fig. 2

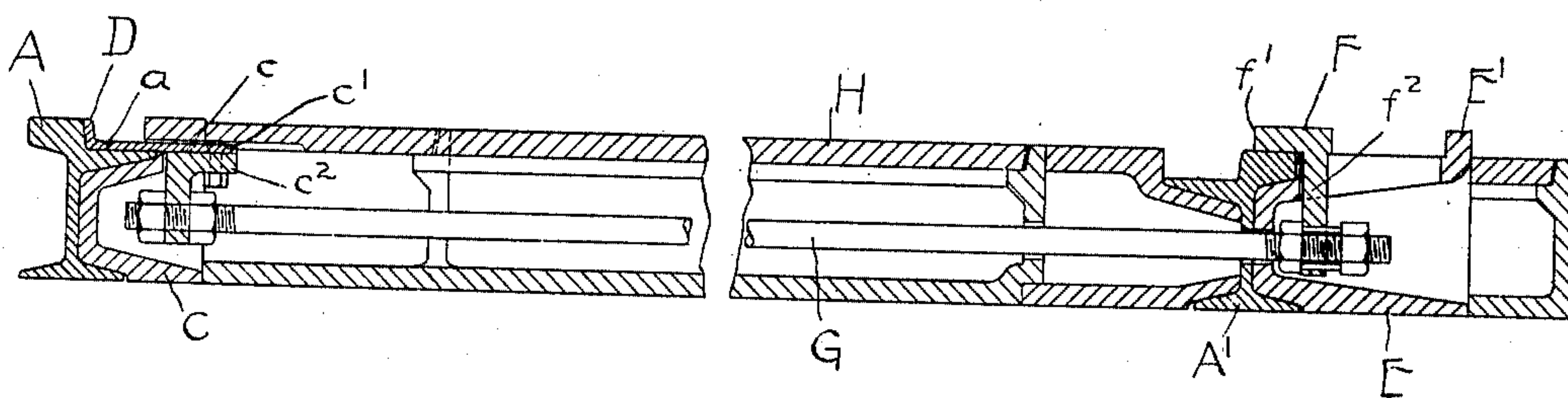


Fig. 3

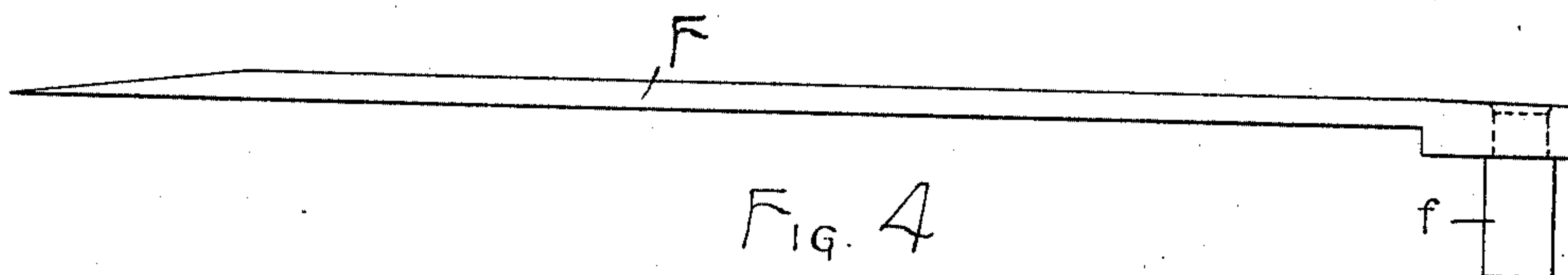


Fig. 4

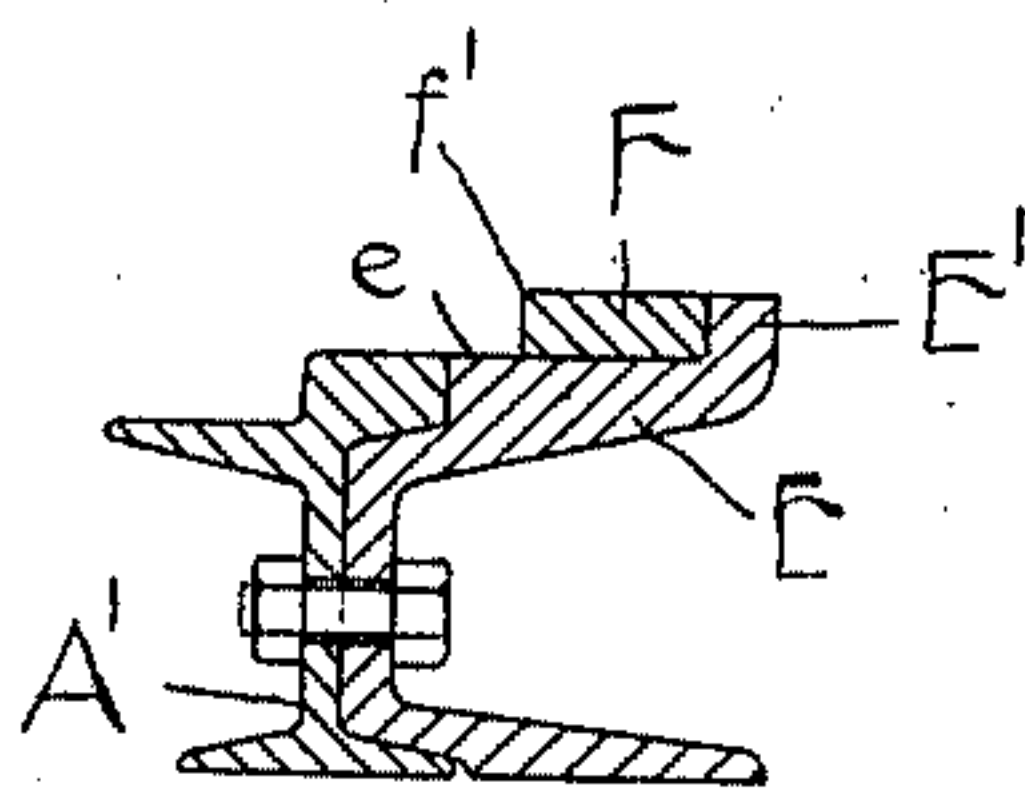


Fig. 5

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UNITED STATES PATENT OFFICE.

GEORGE M. ERVIN, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE
LORAIN STEEL COMPANY, A CORPORATION OF PENNSYLVANIA.

UNBROKEN-MAIN-LINE SWITCH.

SPECIFICATION forming part of Letters Patent No. 759,870, dated May 17, 1904.

Application filed August 1, 1903. Serial No. 167,890. (No model.)

To all whom it may concern:

Be it known that I, GEORGE M. ERVIN, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Unbroken - Main - Line Switches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention has relation to railway-switches, and more particularly to that class of switches known as "unbroken-main-line switches."

The object of my invention is to provide a switch of this type in which the main line is absolutely unbroken, which can be readily and quickly applied whenever it is desired to make connections for a branch track or turnout, which will not form an obstruction in the street, and which is of such character and construction that it will not injure or be injured by the wheels of miscellaneous street traffic.

With these objects in view my invention consists in the novel construction, arrangement, and combination of parts, all substantially as hereinafter described, and pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a switch embodying my invention; Fig. 2, a section on the line 2 2 of Fig. 1; Fig. 3, a section on the line 3 3 of Fig. 1; Fig. 4, a side view of one of the movable switch members; and Fig. 5, a section on the line 5 5 of Fig. 1, but with the movable member or tongue moved over to its other position.

The letters A A' designate the main-track rails, and B B' the branch-track or turnout rails.

C designates a tongue-switch which forms the means of connection between the main-track rail A and the outer rail B of the branch track. This tongue-switch is preferably but not necessarily of the construction described and claimed in my pending application, Serial No. 161,866. It consists of a casting C, which is bolted to the inner side of the main rail A and which is formed integrally with or to which is connected the rail member B of

the branch track. The floor *c* of this casting is level with the floor *a* of the tram of the rail A, and said floor and tram form a bed for the movable switch tongue or point D, pivoted to said casting at *d*. This tongue is tapered down to a slender point reinforced by the base-flange *d'*, to receive which the guard portion *e* of the casting C is undercut or recessed, the point portion of the tongue being also protected by said guard portion in the manner and for the purpose more fully described in my said application and the tongue being so shaped and arranged as to leave normally an unobstructed full-width flangeway for the main track.

The casting E is always shaped to fit the particular section of rail which may be used in any case.

E is a casting which is secured to the outer side of the main-track rail A and which is formed integrally with or to which is integrally connected the section B' of the branch track. This casting is formed with a floor *e*, which is level with the head of the rail A' and upon which is seated a movable member or tongue F, pivoted to said casting at *f*, so that it can be moved across the head of the rail A', as shown in Figs. 1 and 2. In this position its gage-line edge *f'* is in line with and connects the gage-lines of the rails A' and B' across the head of the rail A'. The point or free end of this member is tapered off, so that the car-wheel is gradually raised and carried over.

Tongues F and C are connected to move in unison by a rod or bar G, which is protected by a casing H. This casing may consist of boxes, as shown in Figs. 1 and 3, or simply of a piece of pipe or tubing. To connect with this rod the tongue C has a laterally-projecting arm *c'*, to which is secured a depending lug *c''*, in which one end portion of the rod is threaded, and the tongue F has a depending lug or arm *f''*, on which the opposite end portion of the rod is threaded. It will be noted that the lug *c''* comes inside the tram of the rail A, while the lug *f''* is outside the head of the rail A'. It is therefore unnecessary in connecting the switch to cut the heads or trams of these rails, all that is necessary being to

drill holes in their webs for the bolts which secure the castings C and E and a hole in the web of rail A' for the rod G. The switch can therefore be readily connected in at any point
 5 along the main track where desired. By simply moving the castings C and E ahead or back in setting them any desired widening of gage may be obtained. The tongue F is set
 10 far enough back of the tongue C so that the car-wheel flanges will be raised clear of the rail A' before the tongue C commences to deflect the car. It will be seen that the deflection of the car is accomplished wholly by the tongue C, the only function of the tongue F
 15 being to carry the car over the head of the main rail. This makes it possible to do away with a guard-flange on the tongue F and which would constitute a bad obstruction on the street, as it would necessarily have to be
 20 of considerable height. In the present construction the flange E' at the back of the casting E need only be the height of the tongue, which may be made quite thin. The normal position of the tongue being that shown in
 25 Fig. 5, it will be seen that the only part of the structure which is raised above the street-level is a slightly-elevated flat surface, which is unobjectionable. It will also be observed that inasmuch as the side thrust of the tongue D
 30 in deflecting a car comes directly against the main-line rail A and as the tongue F is a lifting-tongue only and takes the weight of the car I am able to dispense with all locking devices for the tongues.

35 I do not wish to limit myself to the particular details of construction and arrangement which I have herein shown and described, as these may be varied without departing from the spirit and scope of my invention as it is
 40 defined in and by the following claims.

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

45 1. In an unbroken-main-line switch, the combination of a movable deflecting-tongue in the outer side of the branch track or turnout, and a movable lifting-tongue at the inner side of said track.

50 2. In an unbroken-main-line switch, the combination of a movable deflecting-tongue in the outer side of the branch track or turnout, and a movable lifting-tongue at the inner side of said track, and a connection between said
 55 tongues whereby they may be moved in uni-

3. In an unbroken-main-line switch, the combination of a pivoted deflecting-tongue at the outer side of the branch track or turnout, of a lifting-tongue at the inner side of said track and movable across the head of the adjacent
 60 main-line rail, and a connection between the said tongues.

4. In an unbroken-main-line switch, a casting secured to the outer side of one of the main-line rails and forming a part of the inner rail of a branch track or turnout, said casting having a floor level with the head of said
 65 main-line rail, and a flat non-grooved lifting-tongue pivoted to said casting and movable across said head.
 70

5. In an unbroken-main-line switch, a casting secured to the outer side of one of the main-line rails and forming a part of the inner rail of a branch track or turnout, said casting having a floor level with the head of said
 75 main rail, and a flat non-grooved lifting-tongue pivoted to said casting and movable across said head, said casting also having an outer bearing flange or rib level with the said
 80 tongue.
 85

6. In a switch of the character described, the combination with the unbroken and uncut main-line rails A, A', and the branch-track rails B, B', of a casting C secured to the inner side of the rail A and forming a part of
 85 the rail B, a deflecting-tongue pivoted to said casting, a casting E secured to the outer side of the rail A' and forming a part of the rail B', said casting E having a floor level with the head of the rail B', a lifting-tongue pivoted to the casting E and movable across the
 90 said head, and a connection between the said tongues.
 95

7. In a switch of the character described, the combination with main-track rails A, A', and the castings C and E secured to said rails, of the deflecting-tongue pivoted to the casting C and having a lug connected thereto entirely inside the rail A, a lifting-tongue pivoted to the casting E, and having a depending
 100 lug outside of the rail A', and a transverse connecting rod or bar engaging said depending lugs.

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

GEO. M. ERVIN.

Witnesses:

LORETTO O'CONNELL,
 H. W. SMITH.