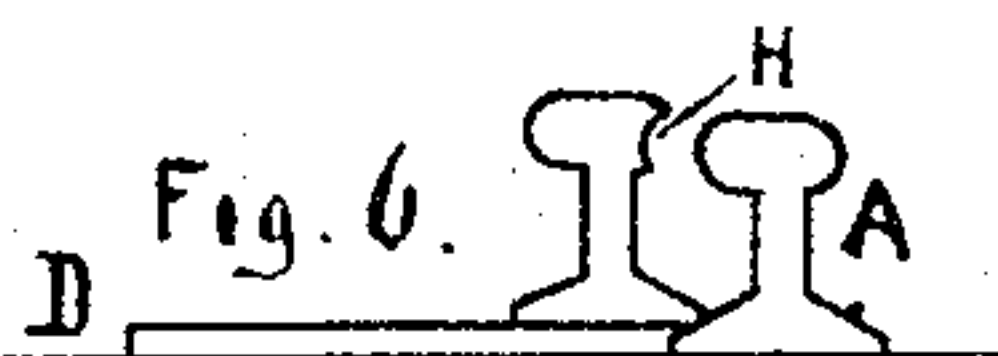
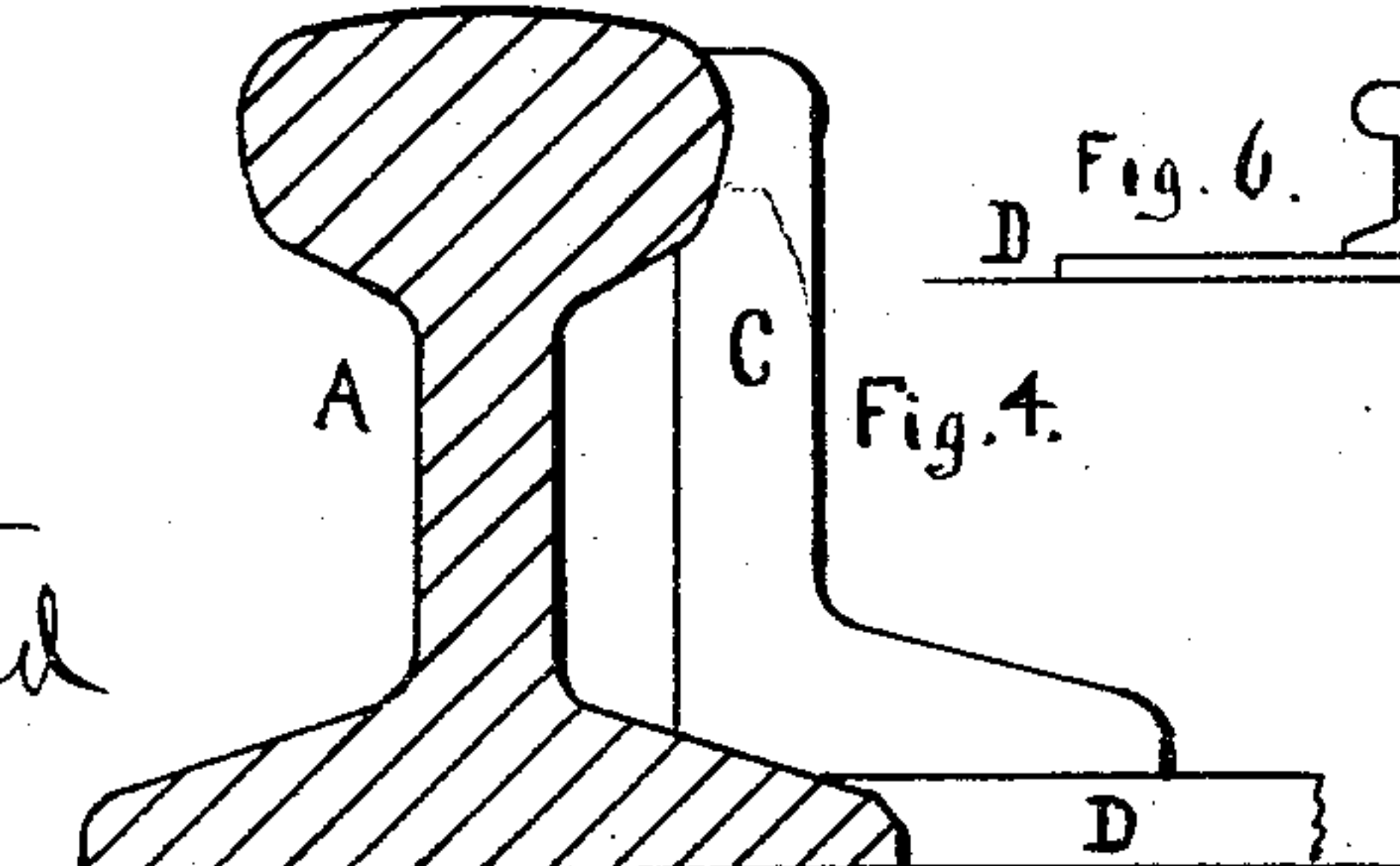
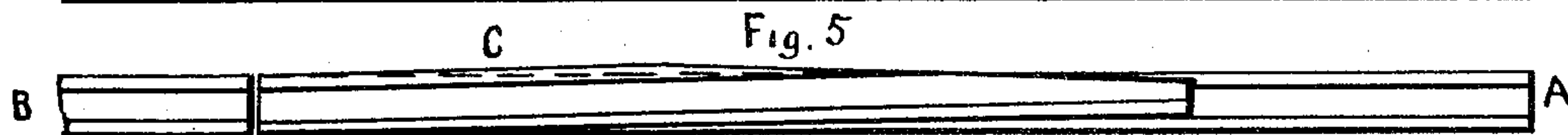
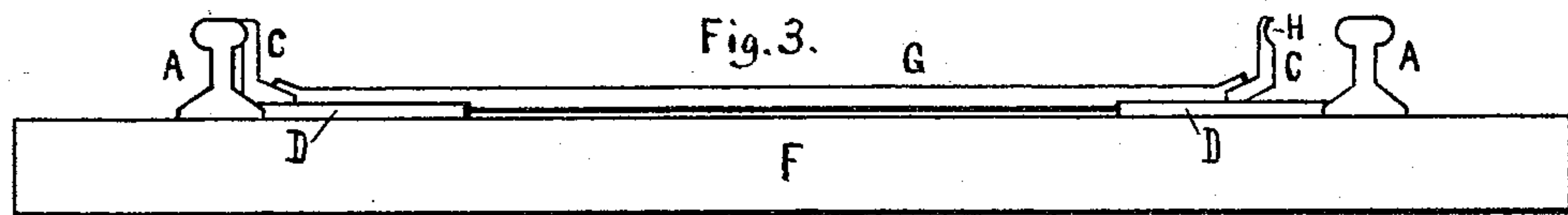
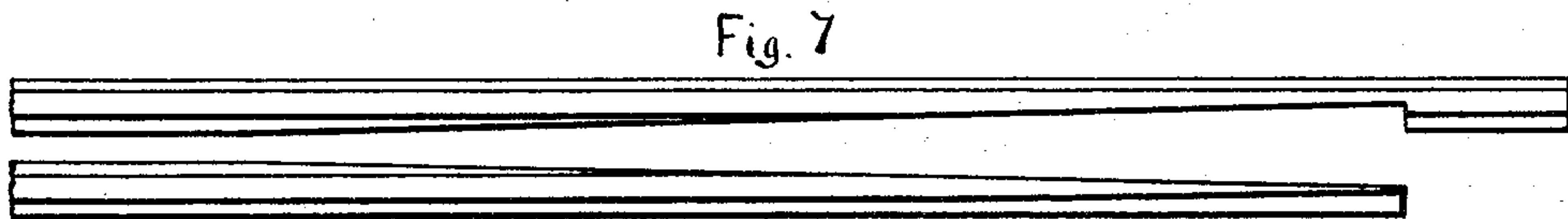
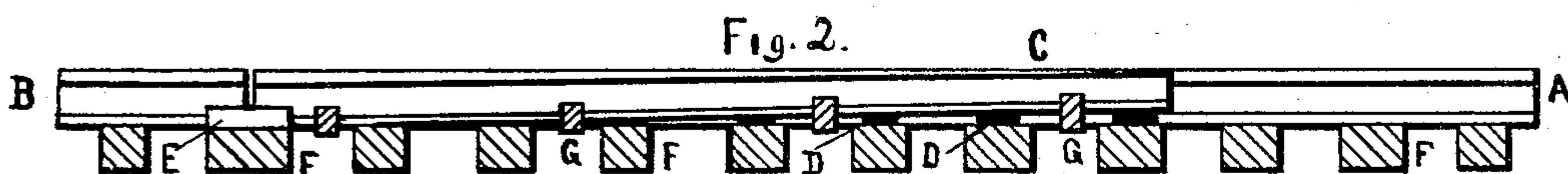
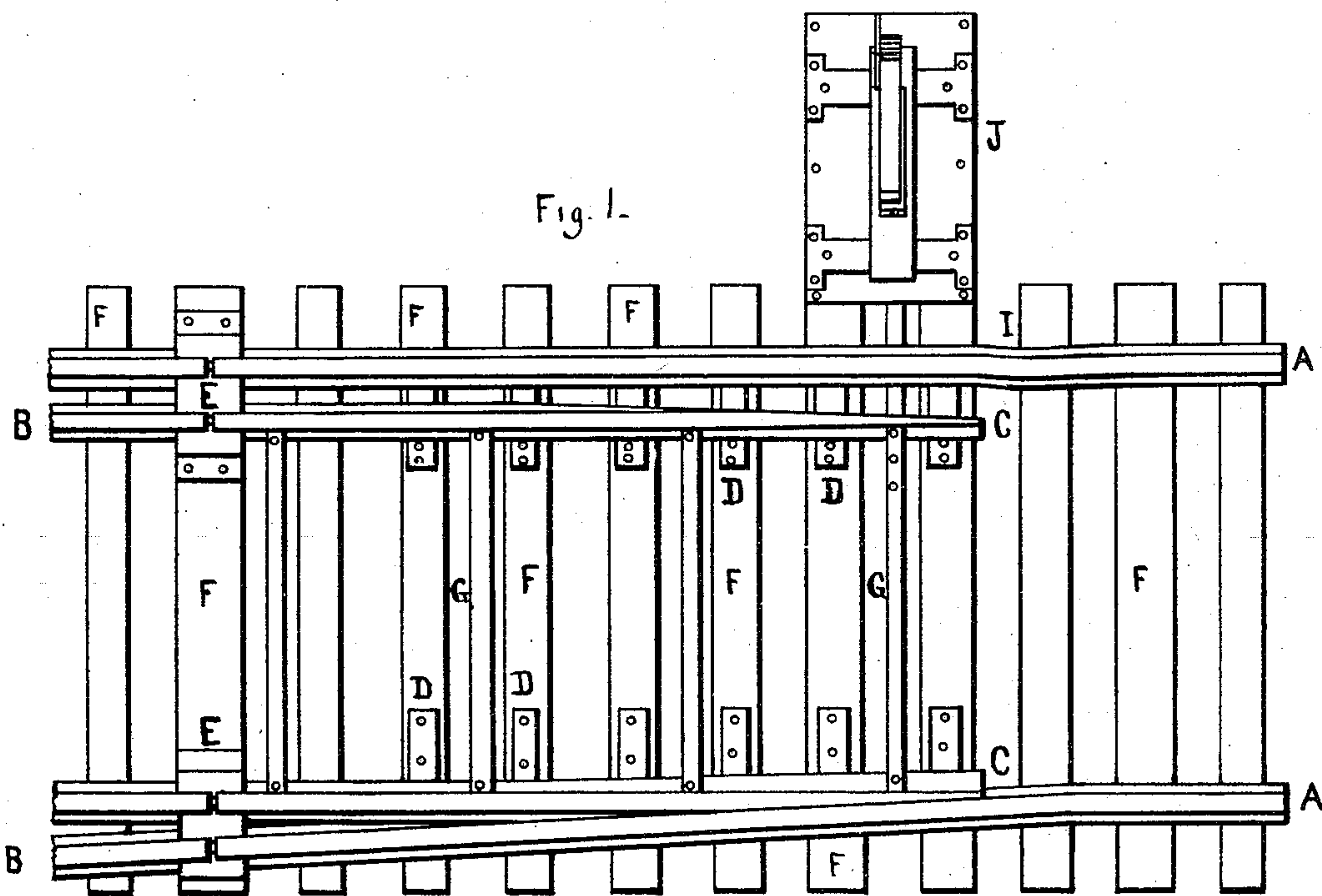


L. H. CLARKE, E. T. JEFFERY & S. STEWART.

Railway-Switches.

No. 157,375.

Patented Dec. 1, 1874.



Witnesses
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O. W. Bond

Inventors:

Leontie H. Clarke
Edward T. Jeffery.
Shaw Stewart

UNITED STATES PATENT OFFICE.

LEVERETT H. CLARKE, EDWARD T. JEFFERY, AND SHAW STEWART, OF
CHICAGO, ILLINOIS.

IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. **157,375**, dated December 1, 1874; application filed
May 18, 1874.

To all whom it may concern:

Be it known that we, LEVERETT H. CLARKE, EDWARD T. JEFFERY, and SHAW STEWART, all of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Railway-Switches, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a top or plan view with switch-stand attached; Fig. 2, a longitudinal section; Fig. 3, a cross-section at front end of switch-rails; Fig. 4, a cross-section near the point of movable rail C, Fig. 1, enlarged; Fig. 5, view showing the crowning of the switch-rail; Fig. 6, a cross-section at highest point of rail C, Fig. 1; and Fig. 7 an illustration of the old or usual mode of making a split switch.

Our invention relates to railway-switches, having for its object to improve the construction and operation of the same; and consists in making the switch-rail grooved, and to rest upon the flange of the main rail, being raised or crowned above the main rail, as will be hereinafter more fully set forth.

In the drawings, A represents the main rails; B, the rails continuing the switch or side track; C, the switch-rails; D, metal plates upon which the switch-rails are supported and slide; E, the chairs; F, ties; G, bars connecting the switch-rails; H, groove in the side of the switch-rails at the front end; I, bend in the main rails, and J any suitable switch-stand for operating the switch.

This switch is more especially adapted to steel rails and steel-rail switches, as the cutting of a steel rail produces greater injury, and makes it more liable to break, than the cutting of an iron one does; but it will be found advantageous even for iron rails. We are enabled to bring the switch into proper position, without any cutting of the main rail, by planing off so much of the flange and head of the switch-rail as prevents it from coming in contact with the main rail, and raising it so that it will pass onto, and be supported by, the flange of the main rail, as shown at Fig. 4; and, in order to make the contact closer without weakening the switch-rail, we groove it out at the side, as shown at H, so that when

brought in contact each rail, to a certain extent, supports the other, instead of making the main rail as when cut to receive the front end of the switch-rail. The switch-rails are planed off or otherwise reduced at the front end, so as to be slightly below the tread of the main rail at that point, and are then raised or crowned up so as to be slightly—say, three-eighths of an inch—above the main rail. This raising or crowning extends far enough back to clear the main rails when they are all brought to the same level, and we thereby get rid of the grinding and shearing of the main rails by the car-wheels as they are turning and passing off.

The switch-rails can be made of the same-sized rails as the main ones, and be planed at the sides and top to fit; or they can be made of a size smaller by using a step-chain instead of a common chair, E, and then they will only require planing at the sides, and a slight crowning.

The switch-rails rest upon plates D, which are simple flat bars placed directly upon the cross-ties at the rear end, and are made thicker or raised gradually toward the front end, so as to raise the rail sufficiently high to allow it to pass onto the flange of the main rail, as shown; but when a rail of less depth is used they will then be all of the same thickness, or nearly the same.

The graduation for a rail planed off at the top may be made by cutting proper gains in the ties.

The bend at I in the main rails is made to be just sufficient to preserve the gage, and on the side opposite the switch-stand it is a simple bend, bringing the main rail in line with the switch-rail when in contact. On the other side it is a slight curve or projection inward, to prevent the flange of the wheels from striking against the ends of the switch-rail.

By this arrangement we are able to make a safe and perfect switch without cutting or weakening the main rails, and to protect the main rails at the point of their greatest wear. A considerable portion of the advantages may be obtained by planing off the head of the main rails at one side; but we do not recommend this, especially in steel rails.

The switch-stand J and connecting-bars G are of the usual form, and do not require any

particular description; and we have not given the operation, as that will be apparent from the description.

What we claim as new, and desire to secure by Letters Patent, is—

The switch-rail C, constructed to rest upon the flange of the main rail, and grooved at H, and raised or crowned above the main rail,

and the bent main rails A A, all combined substantially as and for the purpose set forth.

LEVERETT H. CLARKE.

EDWARD T. JEFFERY.

SHAW STEWART.

Witnesses:

E. A. WEST,

O. W. BOND.