2 Sheets--Sheet 1.

G. GILL & F. V. BEISEL.

Railway-Switches.

No. 166,604. Patented Aug. 10, 1875.

Fig. 1.

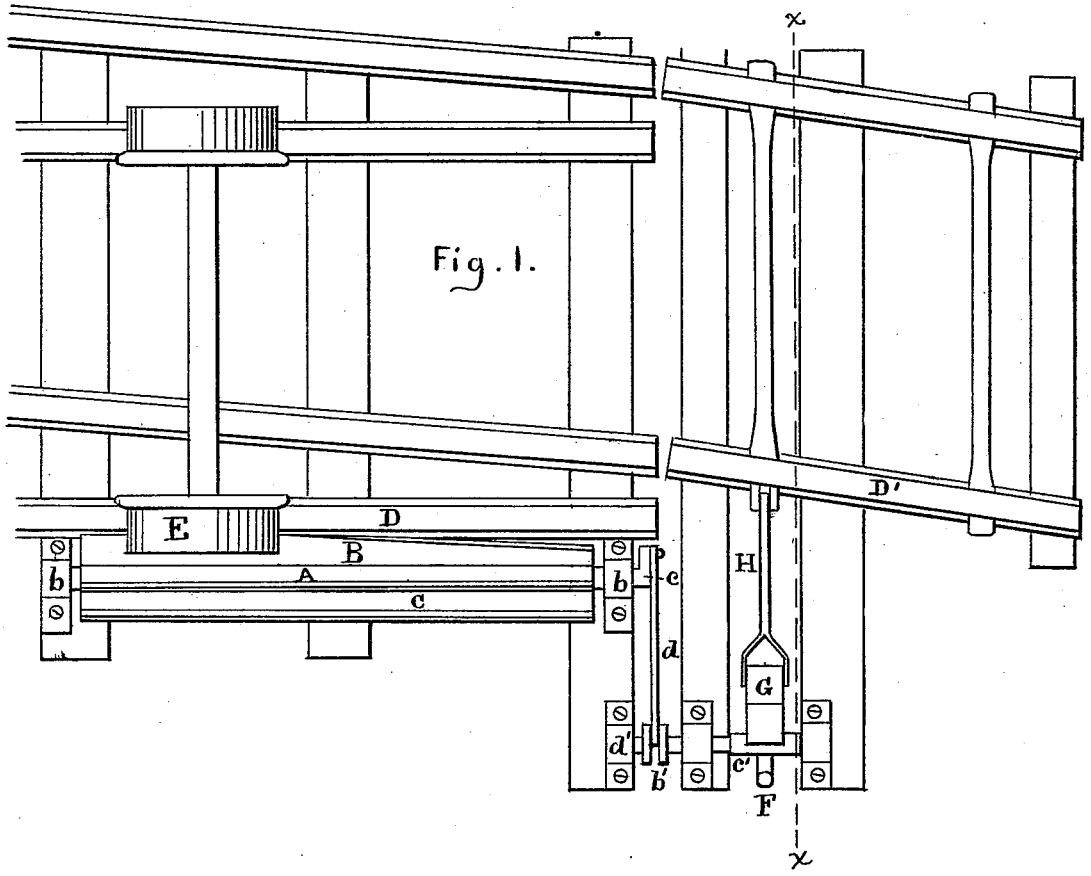
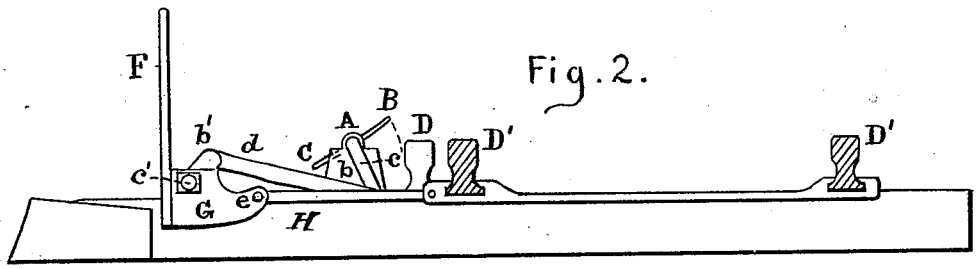


Fig. 2.



Witnesses:

R. B. Howard

H. Anthon

Inventor:

George Gill

Frederick V. Beisel

By W. Burris Atty.

2 Sheets--Sheet 2.

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Fig. 3.

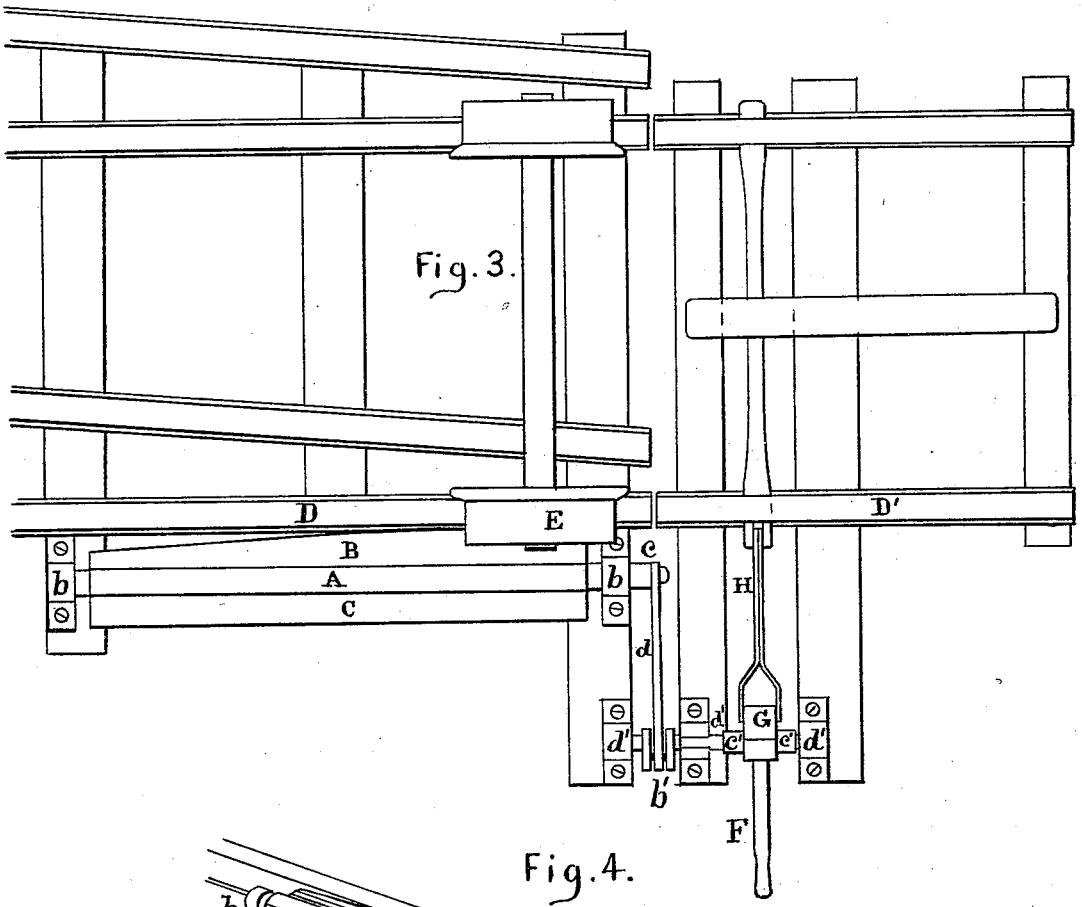
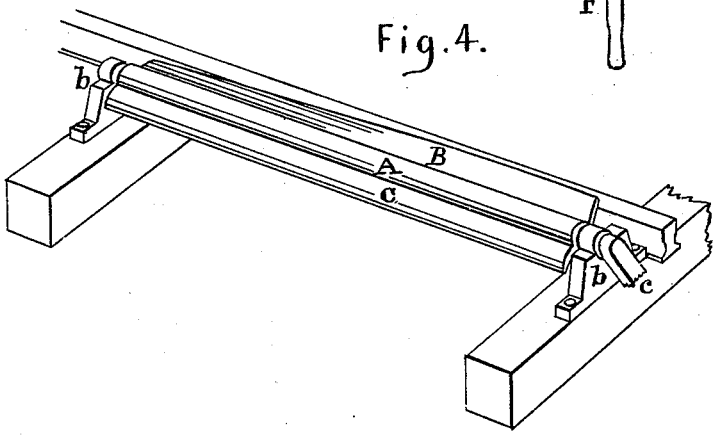


Fig. 4.



Witnesses:
R. B. Howard
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Inventor:
George Gill
Frederick V. Beisel
By W. Burris Atty.

UNITED STATES PATENT OFFICE.

GEORGE GILL AND FREDERICK V. BEISEL, OF ALLEGHENY, ASSIGNORS OF ONE-THIRD THEIR RIGHT TO WILLIAM J. KNELL AND LIZZIE H. KENNEDY, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. **166,604**, dated August 10, 1875; application filed April 16, 1875.

To all whom it may concern:

Be it known that we, GEORGE GILL and FREDERICK V. BEISEL, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Railroad-Switches; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a plan view, showing the switch open. Fig. 2 is a transverse section on line *x x* of Fig. 1. Fig. 3 is a plan view, showing switch closed by operation of locomotive-wheel. Fig. 4 is a perspective view of flanged roller.

Our invention relates to a safety railroad-switch, having a spiral-flanged roller arranged on bearings by the side of the track; and the invention consists in the combination of such a roller with the operating devices by which the switch is automatically operated, and of the peculiar construction and adjustment of the switch-lever fulcrum-block, to prevent the closing of the switch by the side pressure of the cars running in on the siding, as hereinafter described.

A is a roller, provided with a spiral flange, B, and a balance-flange, C, and arranged on bearings *b b* by the side of the rail D. The roller is connected, by a crank, *c*, and pitman *d*, with the double crank *b'* on a shaft, *c'*, having bearings *d'*, to which shaft is attached the switch-lever F and the fulcrum-block G, to the end of which is pivoted, at *e*, the arm H, connecting at the other end with the switch-rails D'. The roller is adjusted so that when the switch is open the forward part of the spiral flange will project above the top of the rail, as shown in the drawings; and when, by mistake or neglect, the switch may be left open, the pressure upon the flange of the forward wheel of the locomotive approaching the switch will turn the roller, and thus automatically close the switch. The flange C is for the purpose of balancing the weight of the spiral flange B, which is made of a thickness sufficient to secure the requisite strength to bear the sudden pressure and force of the locomotive-wheel. The pivotal connection of the arm H with the fulcrum-block G at *e*, being lower than the shaft *c'*, as seen in Fig. 2, prevents the closing of the switch by the side pressure of the cars running on the siding.

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

1. The fulcrum-block G, in combination with lever F and arm H, pivoted at *e* below the line of the lever-shaft *c'*, substantially as and for the purpose described.

2. The spiral-flanged roller A B, having crank *c*, in combination with pitman *d*, cranks *b'*, shaft *c'*, fulcrum-block G, and connecting-arm H, substantially as and for the purposes described.

In testimony that we claim the foregoing as our own invention we affix our signatures in presence of two witnesses.

GEORGE GILL.
FRED. V. BEISEL.

Witnesses:
W. C. BENINGER,
C. BENINGER.