

(No Model.)

2 Sheets—Sheet 1.

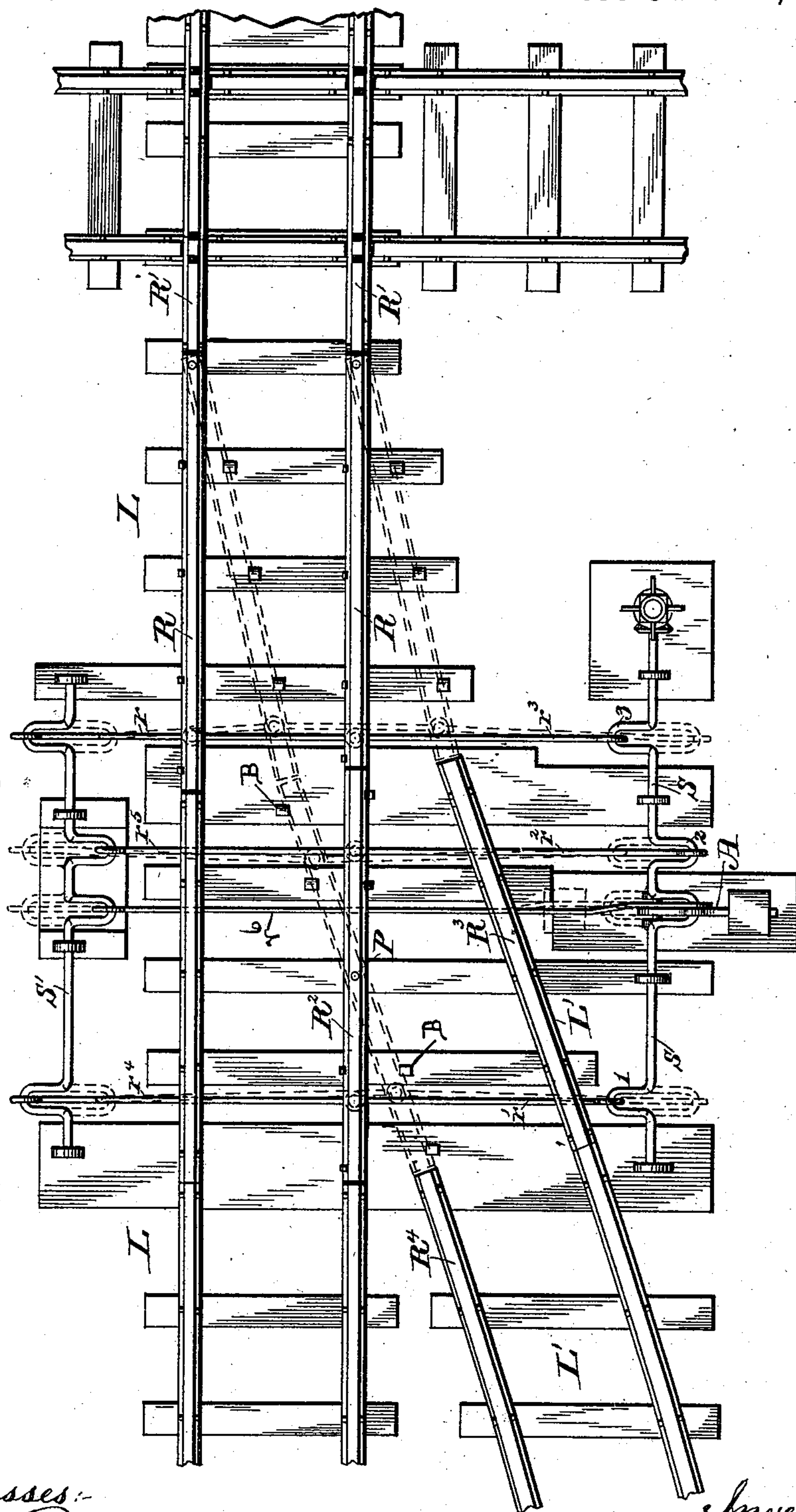
H. C. GEATTY.

RAILWAY SWITCH.

No. 376,772.

Patented Jan. 24, 1888.

Fig. 1



Witnesses:

W. C. Poulter
C. H. Hallahan.

Inventor:
Hamilton C. Geatty.
by *[Signature]*
his attorney

(No Model.)

2 Sheets—Sheet 2.

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RAILWAY SWITCH.

No. 376,772.

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Fig. 2

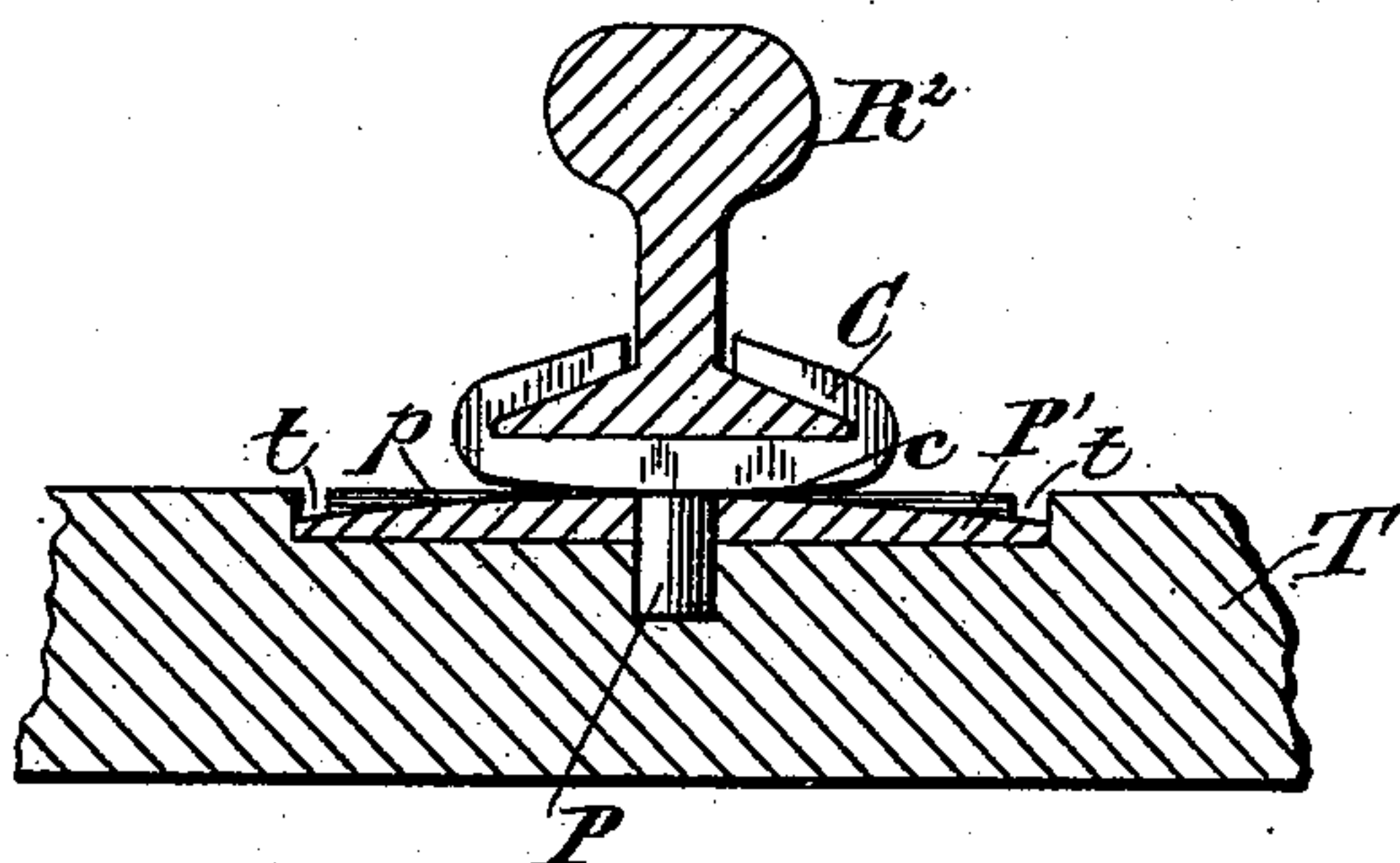


Fig. 3

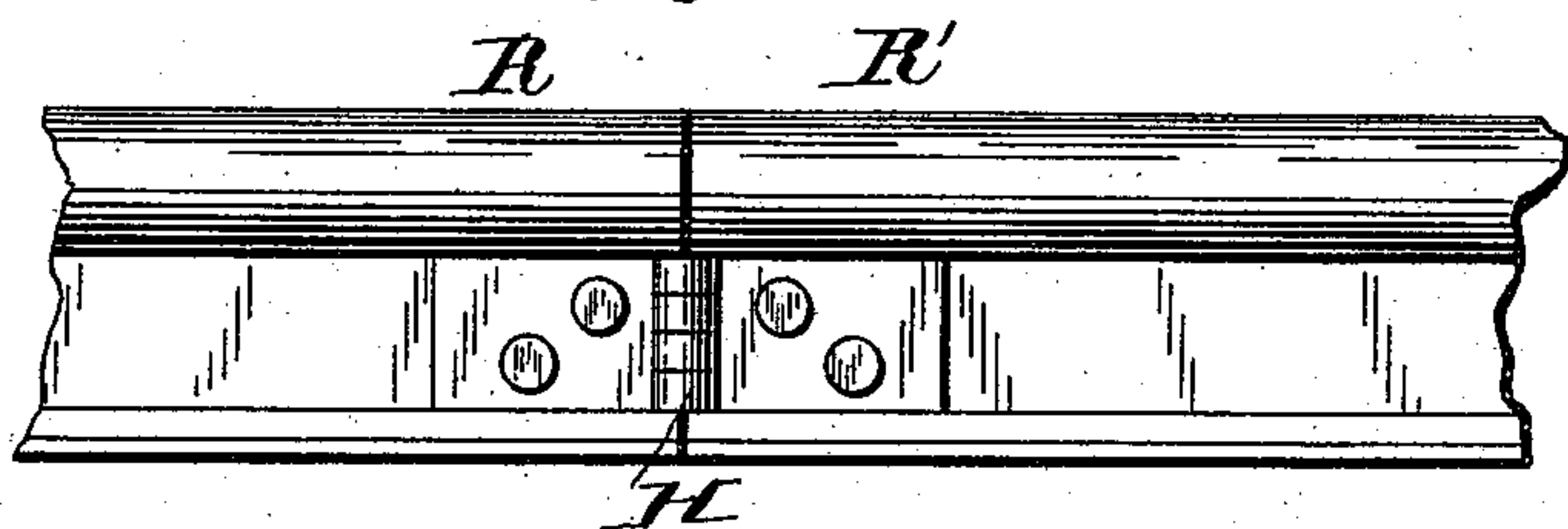
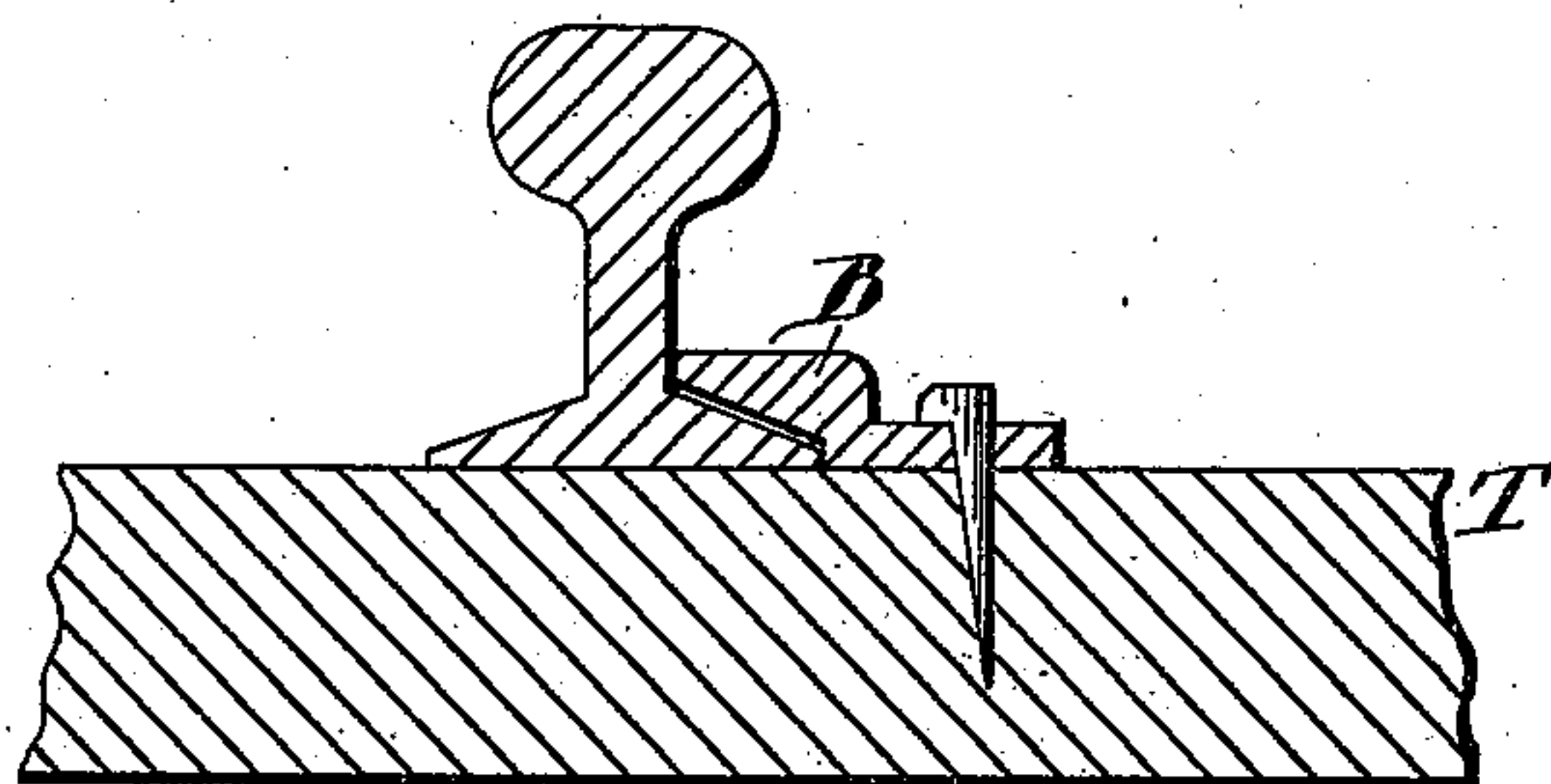


Fig. 4



Witnesses:

O. C. Poulter.

C. W. Gallahue.

Inventor:

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by Henry O. H.
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UNITED STATES PATENT OFFICE.

HAMILTON C. GEATTY, OF KINGS DALE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JOHN G. BYERS, OF SAME PLACE.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 376,772, dated January 24, 1888.

Application filed October 25, 1887. Serial No. 253,333. (No model.)

To all whom it may concern:

Be it known that I, HAMILTON C. GEATTY, a citizen of the United States, residing at Kingsdale, in the county of Adams and State of Pennsylvania, have invented certain new and useful Improvements in Railway Switches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Referring to the drawings, Figure 1 is a top plan view of so much of a railway-track and siding as will be necessary to illustrate my invention, the switch being shown closed to the siding in full lines and open to the siding in dotted lines. Figs. 2 and 3 are detail views illustrating the means for pivoting and hinging the movable rails, and Fig. 4 shows by a like view a chair for holding one of the rails against lateral motion in one direction.

The invention relates to switches for railways, and has for its object to provide means whereby the usual frog is dispensed with, so that rolling-stock mounted on single or double flanged wheels may be moved over the lines.

It is well known that a car the trucks of which are mounted on wheels having two flanges is not so apt to derail as a car the truck-wheels of which have but one flange. In fact, I believe a car the truck of which is provided with double-flanged wheels will not derail even if a rail section were removed, the two flanges holding the wheels on one side of the truck securely on the rail while the wheels on the other side of the truck are running on the ties. The use of the ordinary frog at the switches with a wheel of this construction is not available, as the cars would be liable to derailment, as is well known.

My invention consists, essentially, in structural features and combinations of parts, substantially as hereinafter fully described, and as set forth in the claims.

Referring to Fig. 1, L indicates the main line, and L' a siding. R R indicate the two rails of a section of main line, hinged to the corresponding rails, R' R', of the adjacent sec-

tion of the line, or pivotally secured to the tie at their ends adjacent to said rails R' R'. This section of the main line is moved bodily by the switch-lever on the hinged or pivotal connections, as hereinafter described. The rail R², next to the siding L' and adjacent to the rail R of the movable section of the track, is revoluble on a pivot, P, which may be a pin passing through the rail into a socket in the tie, as shown in Fig. 1, or, as preferred, a pin, P, cast with a chair, C, in which the rail is seated. In practice I prefer to seat the chair on a plate, P', bolted to the tie T, Fig. 2, and form the bearing-surface *cp* of the chair and plate, respectively, slightly convex to reduce friction and also to better shed water, the tie being grooved at *t* to allow the water to run off when the plate is countersunk in the tie, though this is not necessary when the said plate is bolted to the upper face of the tie.

The rails R of the movable main-line section may be pivoted at their ends on pins passing through the rails, as shown in Fig. 1; or they may be seated on pivotal chairs, like that described in reference to Fig. 2; or they may be connected by a hinge-joint, H, with their respective rails R' of the adjacent main-line section.

The rails R³ R⁴ of the end section of the siding L' diverge toward the main line, so that in moving the rails R of the main-line section toward said rails R³ R⁴, and simultaneously therewith swinging the section R² on its pivot, the outer rail of the movable main-line section will coincide with one end of the pivoted rail R², whose other end will coincide with the outer short diverging rail, R⁴, while the inner rail of the movable main-line section will coincide with the longer outer diverging rail, R³, of the end section of the siding, thus opening the line to the siding. At the same time the danger-signal will be set, as hereinafter described, the reverse taking place when the movable parts are shifted back into their normal relative positions. The operation of shifting these movable parts is effected by a switch-lever, A, that operates a crank-shaft in the usual manner, to the reversed cranks 1 and 2 of which the opposite ends of the pivoted rail R² are connected by rods *r' r*², while the outer or free ends of the rails R R of the movable main-line

section are connected by a rod, r^3 , to a crank, 3, on the crank-shaft S. The signal is operated by a bevel-pinion at one end of the crank-shaft meshing with a like pinion on the staff 5 that carries both the night and day signals, as usual. In order to prevent lateral motion of the movable rails when shifted from one position to another, I employ a second crank-shaft, S' , to the cranks of which the opposite ends 10 of the pivoted rail R^2 and the free ends of the rails R are connected by rods r^4 , r^5 , and r , respectively, the arrangement being precisely the same as at the operating-shaft S. To facilitate the operation of the crank-shaft S' , the 15 latter may be connected by a rod, r^6 , with an arm on the switch-lever or with the switch-lever crank on the shaft S. The lateral movement of the movable rails is further prevented by spikes driven into the ties, so that the 20 rail-foot will pass under the head thereof, the rail R^2 being held against movement toward the right on one side of its fulcrum and in a reverse direction on the opposite side of said fulcrum by spikes s , driven into the ties on 25 the respective sides of said rail. In a similar manner the rails R of the movable section are also held against motion to either the right or left by spikes.

Instead of spikes I preferably employ a 30 clamp or stop plate, B, bolted or spiked to the ties in proper position.

When the rolling-stock is provided with double-flanged wheels, the rails at crossings

are necessarily provided with corresponding grooves. In rails of usual construction the 35 web is comparatively thin, and when such grooves are cut through the tread into the web in close proximity to each other the metal between the grooves is apt to break out. To avoid this I use at crossings a rail-section hav- 40 ing a web of substantially the same thickness as the tread.

Having described my invention, what I claim is—

1. The combination, substantially as de- 45 scribed, with the rails R R, fulcrumed at one end, and the pivoted rail R^2 , and a crank-shaft on one side of the track, having its cranks connected, respectively, with the free end of the rails R R and with the rail R^2 on opposite sides 50 of its pivot, of a similar crank-shaft on the opposite side of the track similarly connected to said rails R and R^2 , for the purpose specified.

2. As a means for pivoting the rail R^2 , the combination therewith of the chair C, pro- 55 vided with a pivot-pin, P, and a bearing-plate, P', said chair and plate having their bearing-faces formed slightly convex, substantially as and for the purpose specified.

In testimony whereof I affix my signature in 60 presence of two witnesses.

HAMILTON C. GEATTY.

Witnesses:

JOHN F. KRUG,
EPHRAIM BOOSE.