(No Model.)

# A. C. HOFFMAN & E. S. COOK.

## RAILROAD SWITCH.

No. 535,760. Patented Mar. 12, 1895.

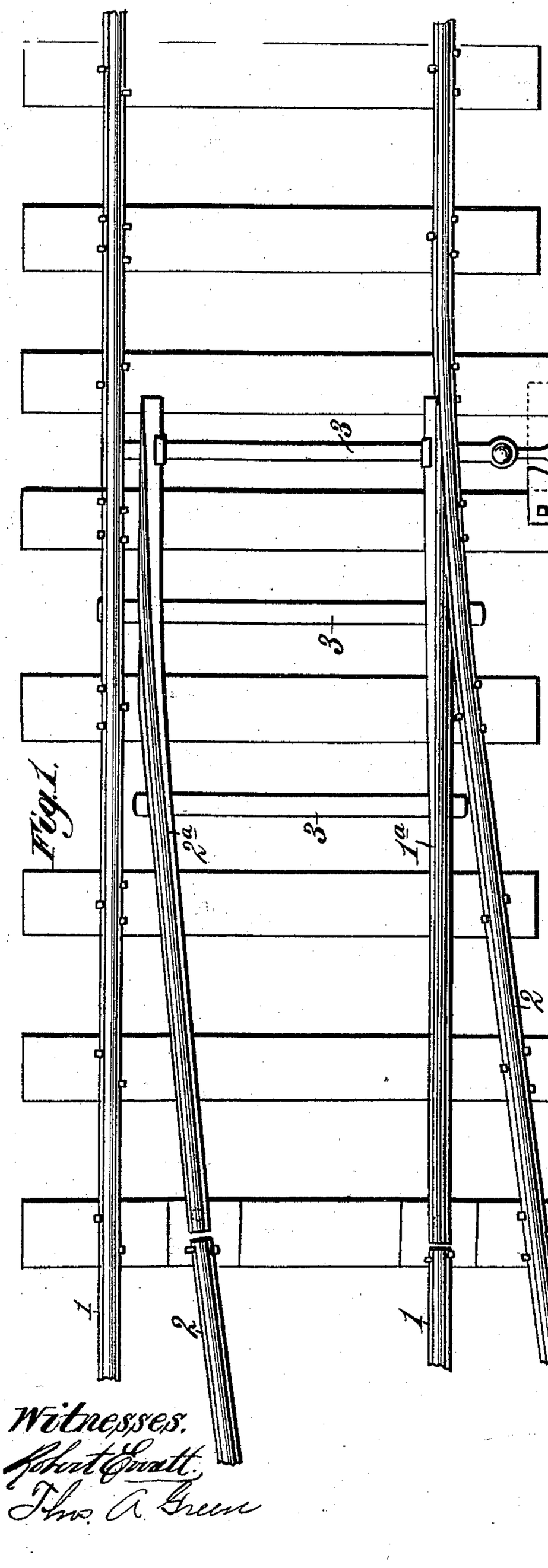


Fig. 1.

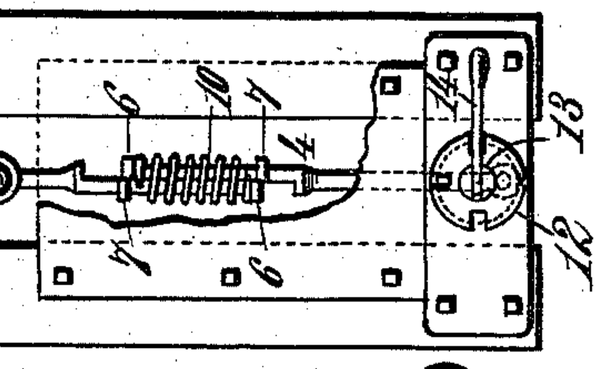



Fig. 2.

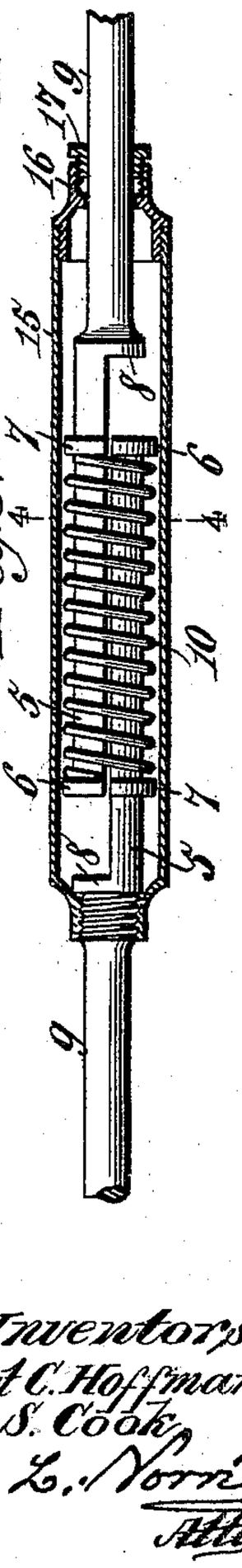


Fig. 3.


Fig. 4.

Witnesses.
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# UNITED STATES PATENT OFFICE.

ALBERT C. HOFFMAN AND ERASTUS S. COOK, OF HORNELLSVILLE, NEW YORK, ASSIGNORS OF ONE-THIRD TO CHARLES O. ROSE, OF SAME PLACE.

## RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 535,760, dated March 12, 1895.

Application filed July 19, 1894. Serial No. 518,033. (No model.)

*To all whom it may concern:*

Be it known that we, ALBERT C. HOFFMAN and ERASTUS S. COOK, citizens of the United States, residing at Hornellsville, in the county of Steuben and State of New York, have invented new and useful Improvements in Railroad-Switches, of which the following is a specification.

Our invention relates to railroad switches, and the purpose thereof is to provide a switch-shifting mechanism in which one of the main line rails and one of the rails of the siding, are connected and rendered movable, and to combine therewith simple and effective means whereby the ends of the movable rails are held with a permanent pressure in engagement with the rails with which they co-operate; the force exerted being capable of variation to any required degree.

It is one purpose of our invention, also, to provide and combine with the movable rails of a railway-switch and with the switch-stand, a duplex, spring-pressed switch-rod, having such construction that by the longitudinal movement of said switch rod an elastic pressure shall be exerted upon the movable rails in either direction, in order to compensate for wear, for the play of the connected parts, or for inaccuracies of construction, to preserve a permanent, close engagement between the ends of the movable switch-rails and the rails with which they co-operate and to prevent the rapid destruction of the ends of the movable rails of a switch which takes place in railway yards and other places where the switches are in constant use.

It is our purpose, finally, to combine with the rails of a main track and siding simple and efficient means whereby the movable rails of the switch may be operated in either of their two directions of movement by the flanges of the car-wheels, by which the switch may be opened and closed at, and immediately after the passage of each wheel thus providing a most valuable safeguard against accident from a misplaced switch and preserving the rails from rapid deterioration.

The invention consists in the several novel features of construction and in the novel parts and combinations of parts hereinafter fully explained and then particularly pointed out and defined in the claims which conclude this specification.

To enable others skilled in the art to which our said invention pertains to fully understand and to make and use the same, we will now proceed to describe said invention in detail, reference being had, for this purpose, to the accompanying drawings, in which—

Figure 1, is a plan view of a section of railway, including part of a main track and siding, showing our invention applied thereto. Fig. 2, is a detail view, upon an enlarged scale, showing the duplex-switch-rod and spring. Fig. 3, is a sectional view showing a modified construction. Fig. 4, is a transverse section upon the line 4—4, Fig. 3.

The reference-numeral, in said drawings, indicates the main track and 2 the siding of a railway. In the construction shown, the outer rail of the siding 2 is a continuation, integral or otherwise of the corresponding rail of the main track. Between said rail and the opposite rail of the main track are arranged the movable rails, denoted by the numerals $1^a$ and $2^a$, the former having a tapered end which is adapted to lie flat against the inner face of the main rail which is deflected to form the outer rail of the siding, while the end of the rail $2^a$, tapered in a similar manner, may be brought against the inner face of the rail on the other side of the main track, and is suitably curved that it may lie in substantial parallelism with the outer rail of the siding. Both rails $1^a$ and $2^a$ are mounted, pivotally or otherwise, at or near their other extremities, upon one of the sleepers. Their location is such that the tapered end of the rail $1^a$ may be brought against the inner face of the main rail at, or near, the point where said main rail is curved, or deflected, to form part of the outer rail of the siding, and when in this position the rail $1^a$ will form a continuation of the corresponding rail of the main track. The rails $1^a$ and $2^a$ are connected by bars 3, and move in unison, so that when either rail is in engagement with the fixed rail adjacent to it, the other movable rail will be withdrawn from the adjacent fixed rail. For example when the rail $1^a$ is in con-

tact with the inner face of the adjacent fixed rail, the end of the rail $2^a$ will be so far withdrawn from the inner face of the opposite rail that the flanges of the wheels of a car can pass.

The connected rails are operated by a switch-bar, or switch-rod 4, having a duplex form and action. This switch-rod consists of two similar parts, each having a semi-cylindrical body 5, provided at one extremity with a half-collar 6, and at a little distance from the opposite end with a similar half-collar 7. Beyond the half-collar last mentioned, the semi-cylindrical body 5 is extended to, and united with a head 8, forming part of a rod 9; the two semi-cylindrical bodies 5 being brought together, in such manner that the half-collars 6 and 7 shall register, or coincide. A spring 10 is coiled upon the cylindrical body, between the circular collars formed by uniting the half-collars in the manner described. As the opposite ends of the coiled spring bear against these half-collars, it will be seen that the two semi-cylindrical bodies 5 may be adjusted in opposite directions, parallel with the line of their common axis, and that in both adjustments the spring 10 will be placed under tension, being compressed, in one direction of movement, by the half-collars 6, and in the opposite direction by the half-collars 7. The switch-rod 4, having this construction is pivotally connected at one end to the switch-stand 12, and at the other end to one of the bars 3 which connect the movable rail $1^a$ and $2^a$. The switch-stand may be of any construction, though we have shown a vertical axis 13, having a cam at its lower end to which the switch-rod is connected, the operating-lever 14 being secured to the upper end of said axis.

The overlapping portions together with the spring surrounding the same, are preferably inclosed by a casing, or housing 15, the ends of which are tapered, or shaped like truncated cones, the contracted ends closely surrounding the rods, or bars, 1. One of said rods is provided with a screw thread and the reduced, or contracted end of the housing is formed with a female thread to engage the same. At the other end, the contracted end of the housing is screwed upon its cylindrical body portion and in the open end of the same is provided a stuffing-box 16 and gland 17, of any ordinary form. By this construction the operative parts of the device are hermetically inclosed and a slip-joint provided in the stuffing-box for the longitudinal movement of the rod in either direction.

What we claim is—

1. In a railway-switch, the combination with the movable rails of a switch-rod, consisting of two similar portions, adapted to overlap and a spring coiled thereon and bearing against projections upon the extremities of said similar portions and against projections near the other ends of the same, substantially as described.

2. In a railway-switch, the combination with the movable rails of a duplex switch-rod, consisting of two similar semi-cylindrical body-portions, and a spring coiled thereon and bearing against half collars on the extremities and near the other ends of said body portions, the latter forming part of rods extending in opposite directions, substantially as described.

3. In a railway-switch, the two fixed rails of the main track, one of which is deflected to form part of the outer rail of a siding, of two connected movable rails arranged between the fixed rails, their ends being tapered, a duplex switch bar consisting of two semi-cylindrical body portions each having a half-collar at one extremity and a similar half-collar near the other end, and a spring coiled thereon between said half-collars, substantially as described.

4. The duplex switch-rod described, consisting of two substantially similar, overlapping body-portions, each having two projecting collars, and a spring coiled thereon between said collars, substantially as described.

5. The combination with two rods having semi-cylindrical parts provided with half-collars, of a spring surrounding said parts and abutting against the half-collars, and a cylindrical housing inclosing the same and having contracted ends which closely surround the rods, one of said ends being provided with a stuffing-box, substantially as described.

6. The combination with two rods having semi-cylindrical overlapping parts provided with half-collars, of a spring coiled on said parts between said half-collars, a cylindrical housing inclosing the same and having contracted ends, one of which is screwed upon a threaded portion of one of said rods and the other upon the externally threaded end of the housing, and a stuffing-box and gland in the latter, substantially as described.

In testimony whereof we have hereunto set our hands and affixed our seals in presence of two subscribing witnesses.

ALBERT C. HOFFMAN. [L. S.]
ERASTUS S. COOK. [L. S.]

Witnesses:
FRANK J. NELSON,
EDWARD L. ALLEN.