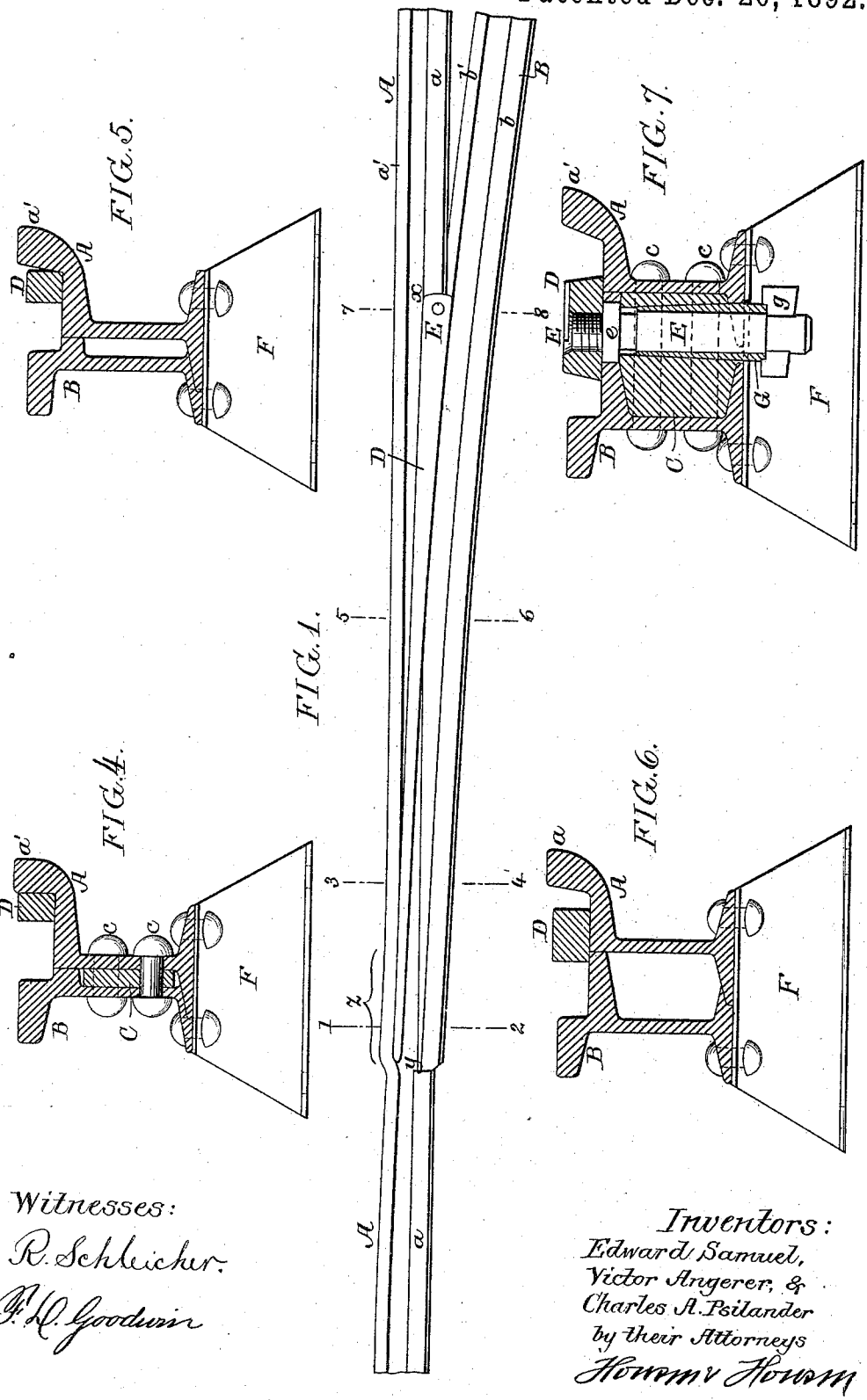
(No Model.) 2 Sheets—Sheet 1.

E. SAMUEL, V. ANGERER & C. A. PSILANDER.

SWITCH AND FROG.

No. 488,405. Patented Dec. 20, 1892.



Witnesses:
R. Schleicher.
F. H. Goodwin

Inventors:
Edward Samuel,
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by their Attorneys
Howson & Howson

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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SWITCH AND FROG.

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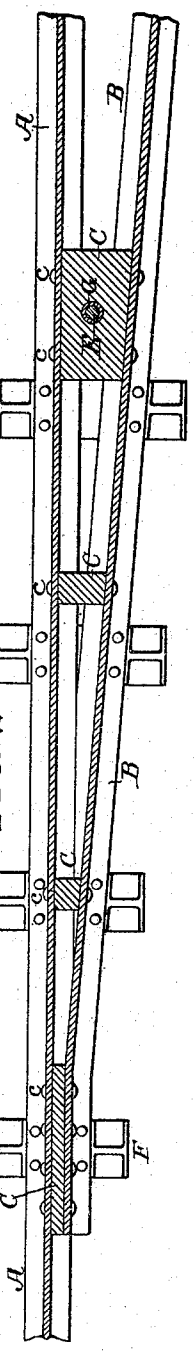

FIG. 2.

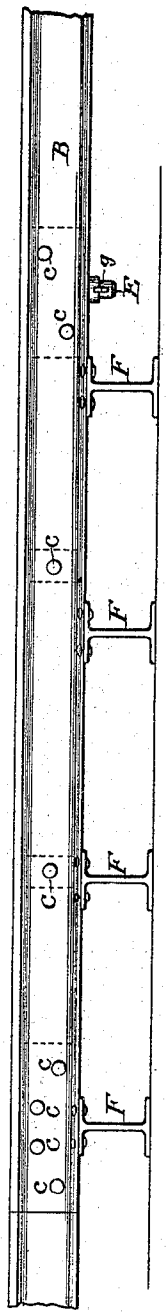

FIG. 3.

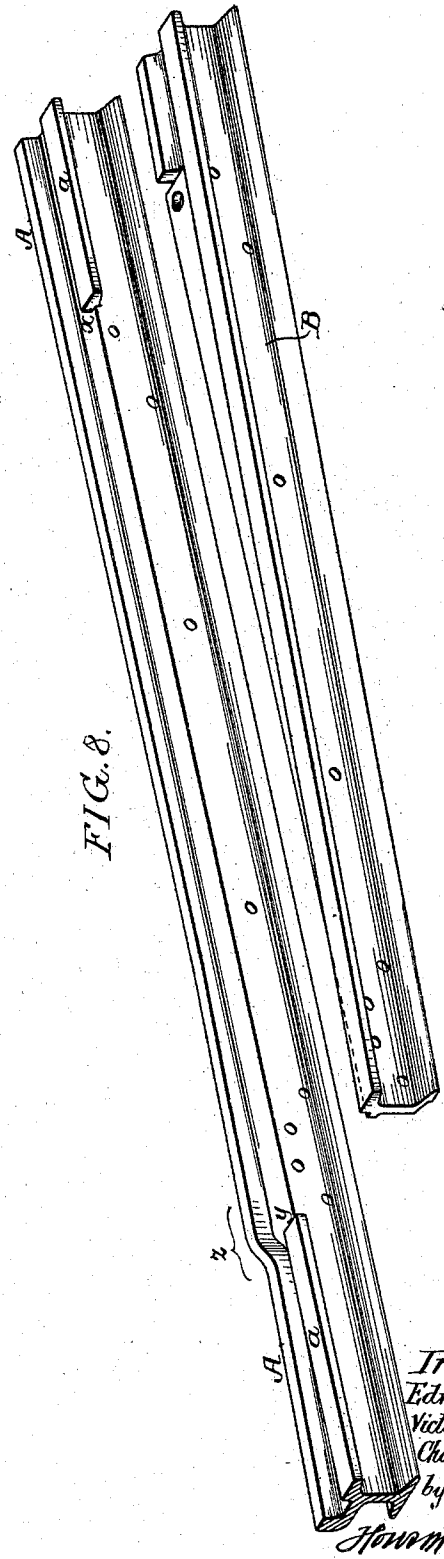

FIG. 8.

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UNITED STATES PATENT OFFICE.

EDWARD SAMUEL, VICTOR ANGERER, AND CHARLES A. PSILANDER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO THE WILLIAM WHARTON, JR., & COMPANY, INCORPORATED, OF SAME PLACE.

SWITCH AND FROG.

SPECIFICATION forming part of Letters Patent No. 488,405, dated December 20, 1892.

Application filed May 16, 1892. Serial No. 433,162. (No model.)

To all whom it may concern:

Be it known that we, EDWARD SAMUEL and VICTOR ANGERER, both citizens of the United States, and CHARLES A. PSILANDER, a subject of the King of Sweden and Norway, and all residents of Philadelphia, Pennsylvania, have invented certain Improvements in Switches and Frogs, of which the following is a specification.

The object of our invention is to construct a point switch from girder rails by cutting away portions of the heads of the rails, as fully described hereinafter, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a movable point switch; Fig. 2, is a sectional plan view; Fig. 3, is a side view; Fig. 4, is a section on the line 1—2, Fig. 1; Fig. 5, is a section on the line 3—4, Fig. 1; Fig. 6, is a section on the line 5—6, Fig. 1; Fig. 7, is a section on the line 7—8, Fig. 1; Fig. 8, is a detached perspective view. The cross sections are drawn to an enlarged scale.

A is the main rail.

B is the siding rail which is coupled to the main rail by transverse bolts *c*, clearly shown in Figs. 2 and 3, spacing blocks C being inserted between the webs of the rails.

The tread *a* of the main rail A is cut away from the point *x* to the point *y*, as shown in the transverse sectional views, the guard *a'* however, extends throughout the length of the switch. This guard is expanded at *x* to receive the point of the tongue D, which is hung on the pivot E described hereinafter so that when the tongue is thrown over against the guard, as in Fig. 1, it will form a continuation of the guard.

The tread *b* of the rail B is not cut away but extends to the tread of the rail A, abutting said tread at the point *y*, the tread *b* at this point falls slightly back of the line so as to allow the point of the tongue D to swing in line with the main rail.

The guard portion *b'* of the rail B is turned down at the pivot end and then cut away from that point to its end at *y* on a taper and this portion abuts the rail A making a single line of contact between the two rails under the tongue D.

We preferably preserve both base flanges of the main rail A, and cut away a portion of one base flange of the rail B, and undercut the other base flange as shown in the transverse sectional views Figs. 4 and 5. We secure the two rails together, not only by the transverse bolts *c*, but we also attach to the base flanges of the rails at intervals, chairs F, formed of short sections of I-beams or flat plates, securing them to the base flanges of the rails by rivets or bolts.

The pivot pin E for the tongue D is screwed into the tongue and riveted as shown in Fig. 7, so as to make a firm connection between the pivot and tongue; a collar *e* on the pin gives pivotal bearing on the block C. Over the pivot E is slipped a tapered bushing G which is adapted to a tapered orifice in the block C; a wedge *g* is inserted into a slot in the pivot E, and is adapted to grooves in the bushing, so that the bushing turns with the pivot, and at the same time it can be adjusted to take up the wear.

We claim as our invention:—

1. The combination of the main rail and switch rail, the head portion of the main rail being cut away between the points *x* and *y*, the flange of the switch rail being turned down and cut on a taper to fit into the space in the main rail, substantially as described.

2. The combination of the main girder rail, having the head portion cut away between the points *x* and *y*, with a switch rail having its guard portion partly cut away and partly bent over and extended between the points *x* and *y*, said switch rail being secured to the main rail, a block between the two rails, a pivoted tongue, pivot for said tongue having its bearing in the block, the tongue resting directly upon the rails, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

EDWARD SAMUEL.
VICTOR ANGERER.
CHAS. A. PSILANDER.

Witnesses:
W. J. BURNS,
HARRY SMITH.