

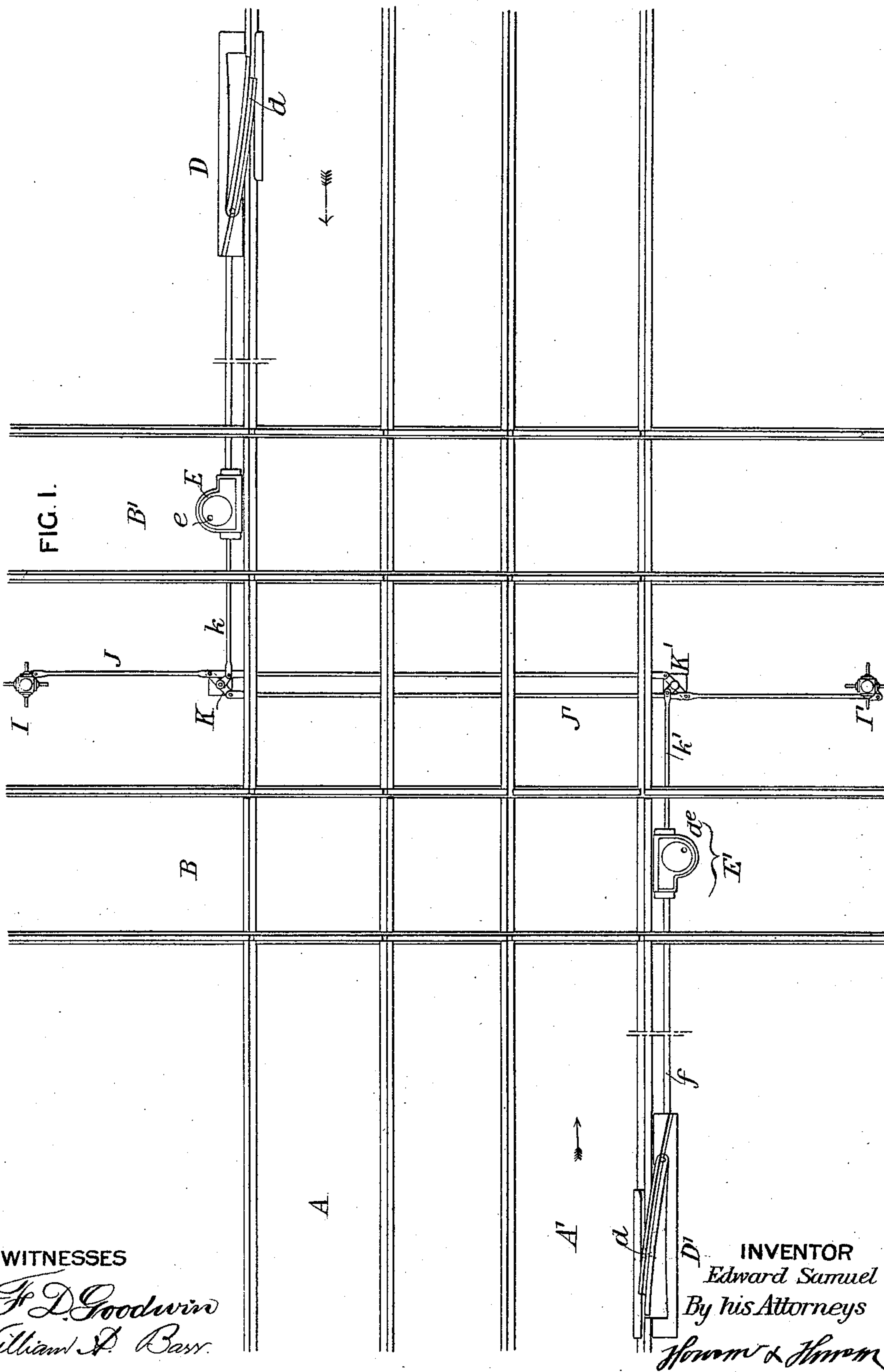
(No Model.)

4 Sheets—Sheet 1.

E. SAMUEL.
DERAILING SWITCH AND SIGNAL.

No. 534,522.

Patented Feb. 19, 1895.



WITNESSES

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William A. Barr.

INVENTOR

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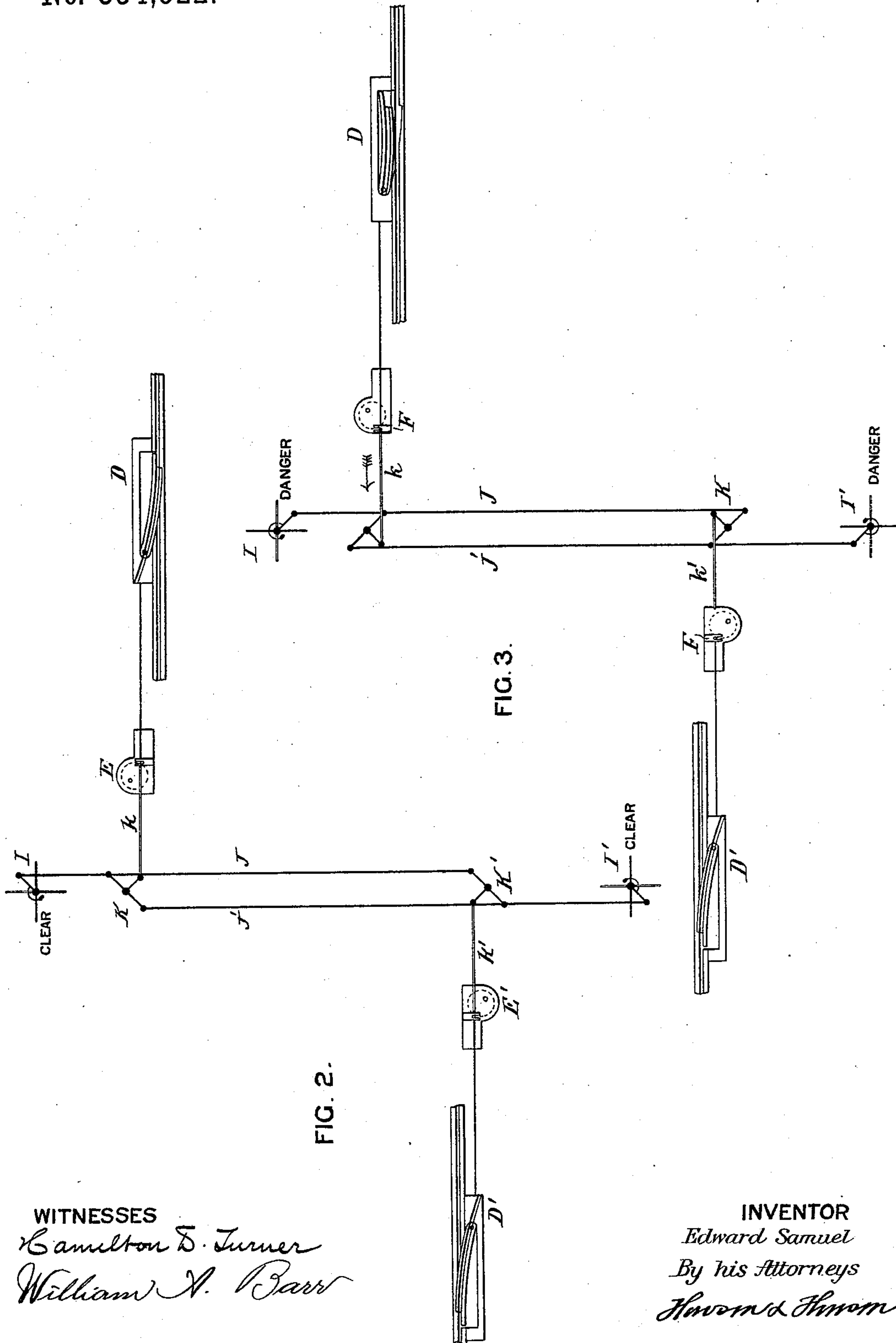
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4 Sheets—Sheet 2.

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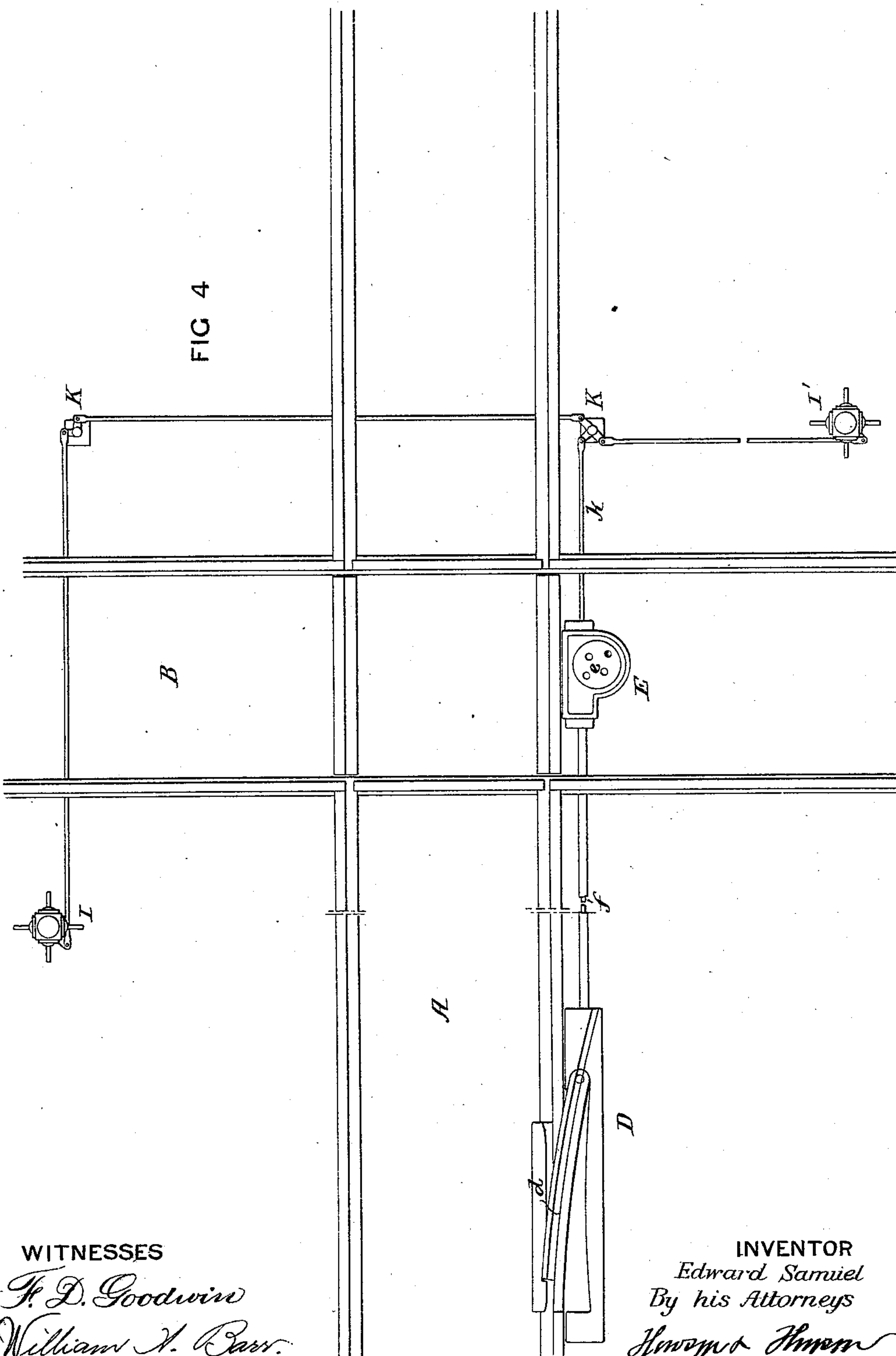
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4 Sheets—Sheet 3.

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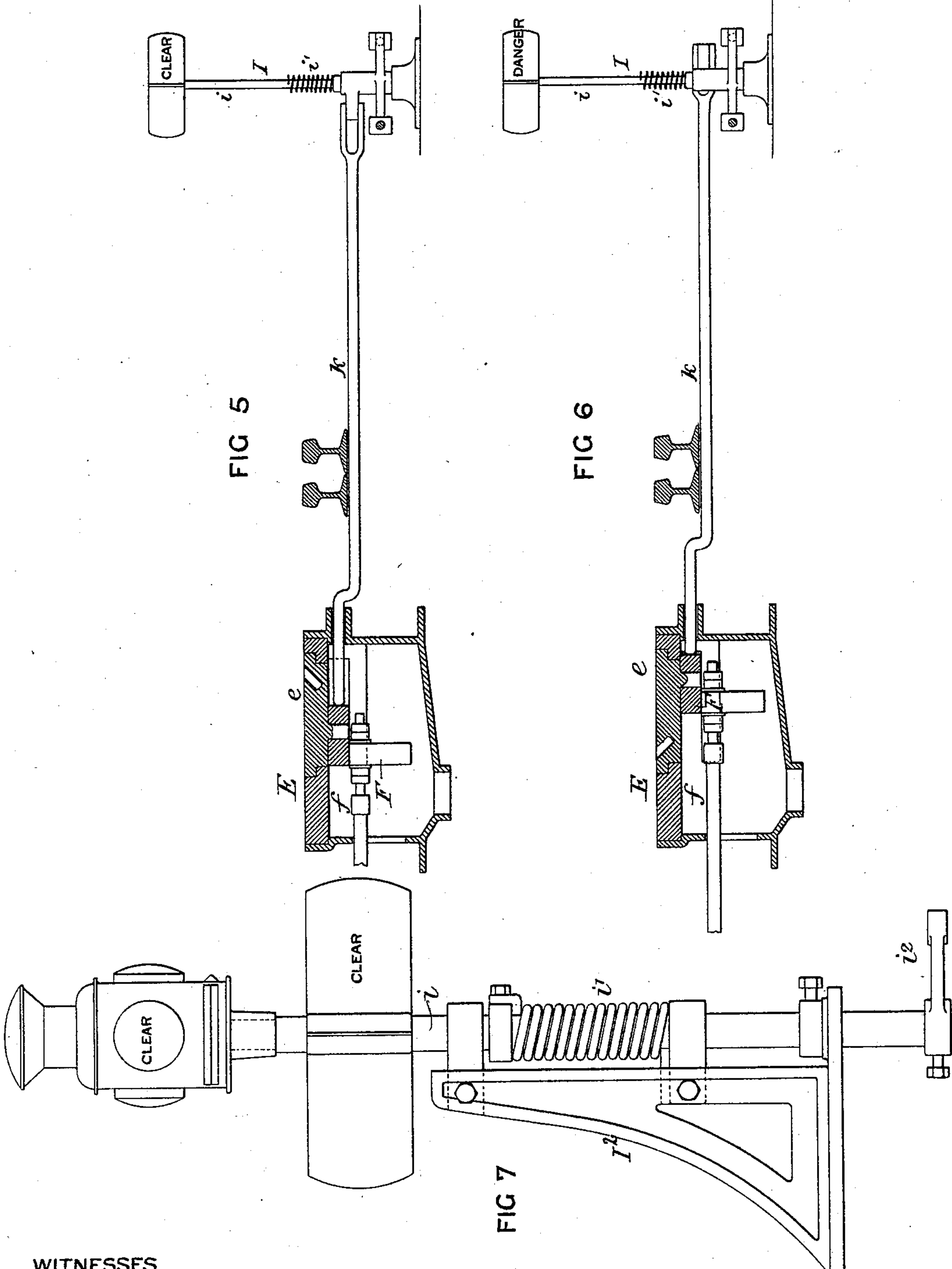
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UNITED STATES PATENT OFFICE.

EDWARD SAMUEL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
WILLIAM WHARTON, JR., & COMPANY, INCORPORATED, OF SAME PLACE.

DERAILING-SWITCH AND SIGNAL.

SPECIFICATION forming part of Letters Patent No. 534,522, dated February 19, 1895.

Application filed April 5, 1894. Serial No. 506,484. (No model.)

To all whom it may concern:

Be it known that I, EDWARD SAMUEL, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Derailing-Switches and Signals, of which the following is a specification.

The object of my invention is to so combine derailing switch mechanism with signaling mechanism that on the operation of the derailing switch the signal mechanism will be
10 actuated and expose the "danger" signal on a crossing road, for instance when the derailing switch is thrown clear of the track. The construction of the mechanism is such that
15 while the signals will be thrown by the man who throws the switch yet the signal mechanism is independent from the switch mechanism, so that the switch mechanism will not be affected should the signal apparatus get out
20 of order.

In the accompanying drawings:—Figure 1, is a plan view showing the arrangement of my improved mechanism with a double track crossing. Fig. 2, is a diagram showing the derailing switches and signals in the position
25 shown in Fig. 1. Fig. 3, is a diagram showing one of the derailing switches moved clear of the track and the signals set to "danger." Fig. 4, is a plan view showing a single track crossing a single track. Fig. 5, is a sectional
30 view through the switch operating box, with the switch in the position shown in Fig. 2. Fig. 6, is a section through the switch operating box, with the switch in the position shown in Fig. 3. Fig. 7, is a view in elevation drawn to an enlarged scale of the signal stand.

Referring in the first instance to Figs. 1, 2, and 3, A A' are the two tracks of a street railway and B B' are the two tracks of a steam
40 railroad, crossing the tracks of the street road as clearly shown in Fig. 1. The street cars traverse the street railway tracks in the direction indicated by the arrows, Fig. 1.

DD' are the derailing switches, which are
45 normally set at derailing position, so that a car traversing either track will have to be stopped before it reaches the derailing switch, and the conductor must precede the car and turn the disk *e* of the switch operating mechanism E so as to move the derailing switch
50 clear of the track before the car can proceed.

The disk *e* in the present instance is connected to a slide F which is attached to a rod *f* extending to the derailing switch, so that on turning the disk for instance a quarter of a
55 revolution the switch tongue *d* will be moved out of line with the track and as soon as the disk is released by the conductor after the car has passed the derailing switch, the switch tongue and the disk are returned to their normal positions by weights or springs.

The details of this switch mechanism are fully illustrated in the application filed by me December 8, 1893, Serial No. 493,041.

In order to warn an approaching train, traversing either of the steam railroad tracks B B', I mount at suitable distances from the crossing, danger signals I I', one on each side of the crossing. The signal stands are constructed as shown in Fig. 7. Mounted in the
65 frame I² is a vertical shaft *i* around which is a coiled spring *i'*, one end of which is attached to the shaft and the other end attached to the frame, the spring being so coiled that the signal will return to "clear" when released. A weight may be substituted for the
75 spring in some instances. On the upper end of the shaft are the blades and above the blades is the usual lamp. An arm *i*² on the shaft of the signal I is connected to an operating rod J and the arm *i*² on the shaft of the signal I' is connected to an operating rod J'. The operating rods J, J' are pivoted to bell
80 crank levers K K', one on each side of the street railway track and extending from each bell crank lever are rods *k k'*. Each rod extends into a switch operating box and rests against the end of the slide F in the box, as clearly shown in Fig. 5. The rods *k k'* are not attached to the slide but simply rest
85 against the slide, so that in the event of the signal mechanism getting out of order the switch mechanism will not be affected.

As shown in the diagram, Fig. 2, both derailing switches are set in derailing position
95 and the rods *k, k'* press against the slides F, as shown in Fig. 5, by the action of the spring *i'* on the signal stands, but when the derailing switch D is moved clear of the track, as shown in the diagram Fig. 3, the rod *k* is
100 pushed in the direction of the arrow by the slide moving the signals to the "danger" po-

sition, as indicated in said figure; the rod *k'* being simply drawn away from its slide *F*.

In Fig. 4, I have shown a single track crossing a single track and one derailing switch with two signals, one on each side of the street railway track and connected together by rods and levers and to a rod which extends into the switch operating box and which rests against the slide.

One, two or more signals may be operated in the manner described above without departing from my invention and the device may be used whereby two street railway tracks cross each other.

I claim as my invention—

1. The combination in a railway crossing, of the derailing switch, operating mechanism therefor situated some distance in advance of the switch, a signal or signals, a rod connected to the signal mechanism and resting against the switch operating mechanism so that as the switch mechanism is operated it will push the rod and throw the signals, substantially as described.

2. The combination in a railway crossing, of the derailing switch, the operating disk, the slide connected to the disk and to the switch, a rod resting against the slide, a signal connected to the rod so that as the slide is operated to move the derailing switch it will push the rod and throw the signals, substantially as described.

3. The combination in a double track crossing, a derailing switch for each track, switch operating mechanism for each derailing switch situated at the crossing, danger signals on each side of the double track connected together and to operating rods, said operating rods adapted to be operated upon by the switch operating mechanism, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD SAMUEL.

Witnesses:

WILLIAM A. BARR,
JOSEPH H. KLEIN.