

No. 679,189.

Patented July 23, 1901.

H. SAGE.
RAILROAD SWITCH.

(Application filed Mar. 13, 1901.)

(No Model.)

2 Sheets—Sheet 1.

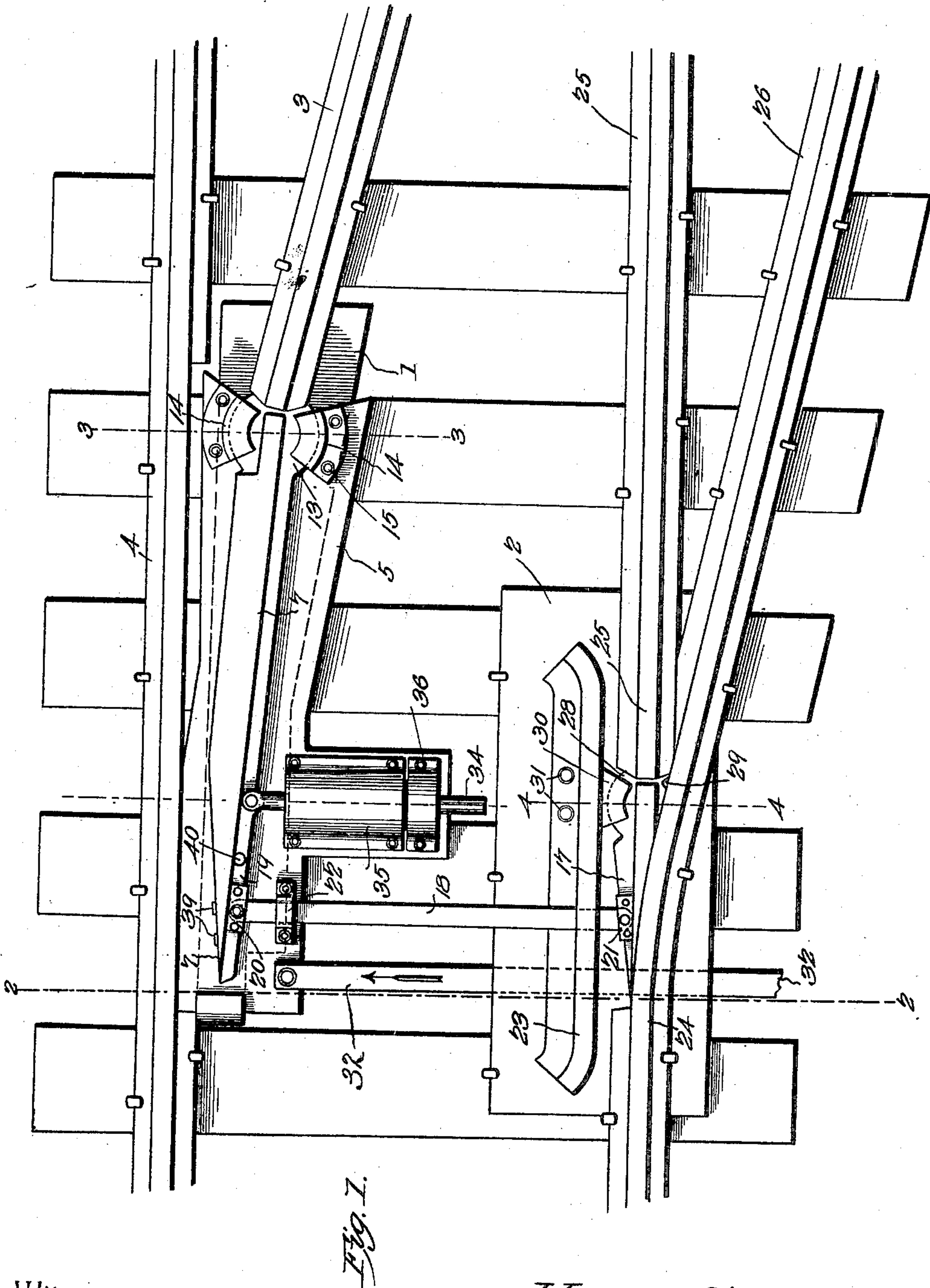


Fig. 1.

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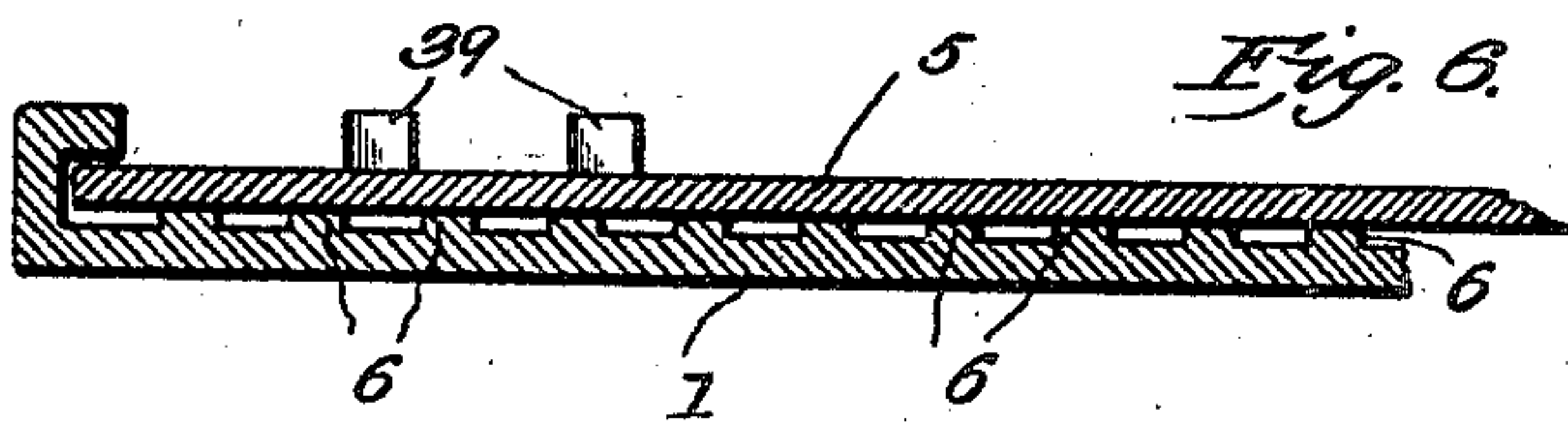
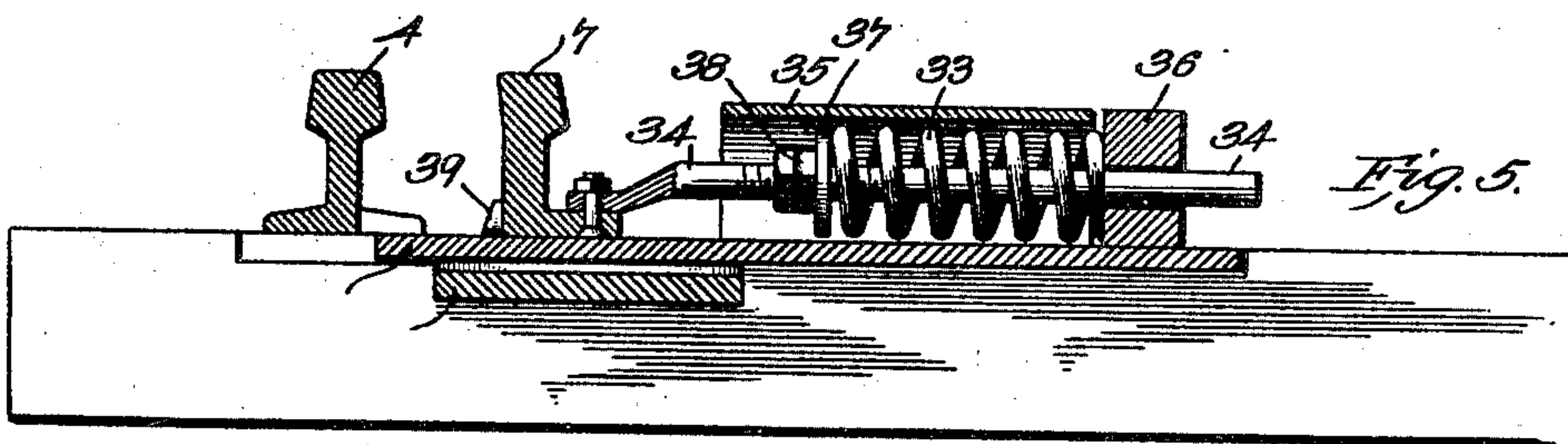
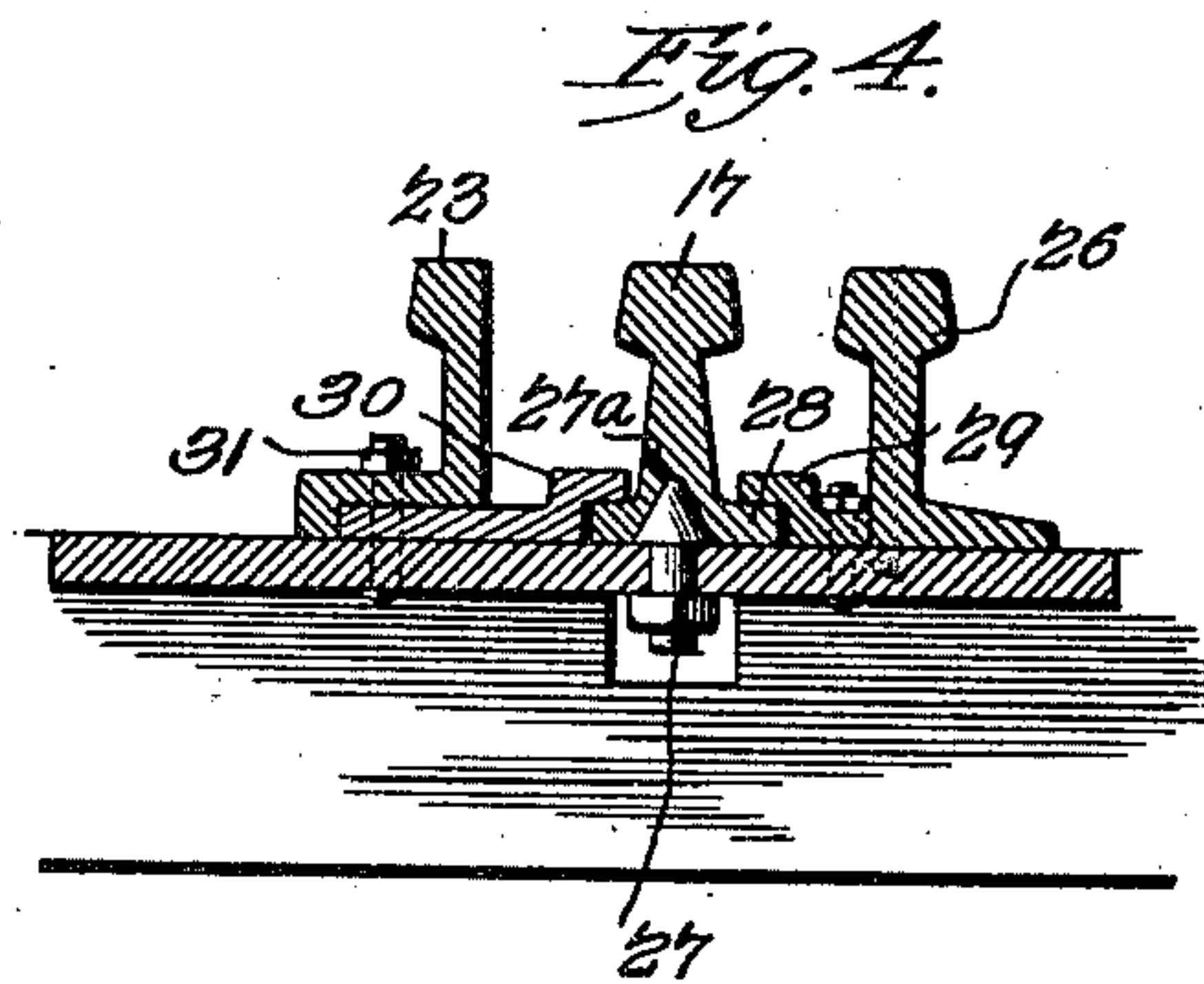
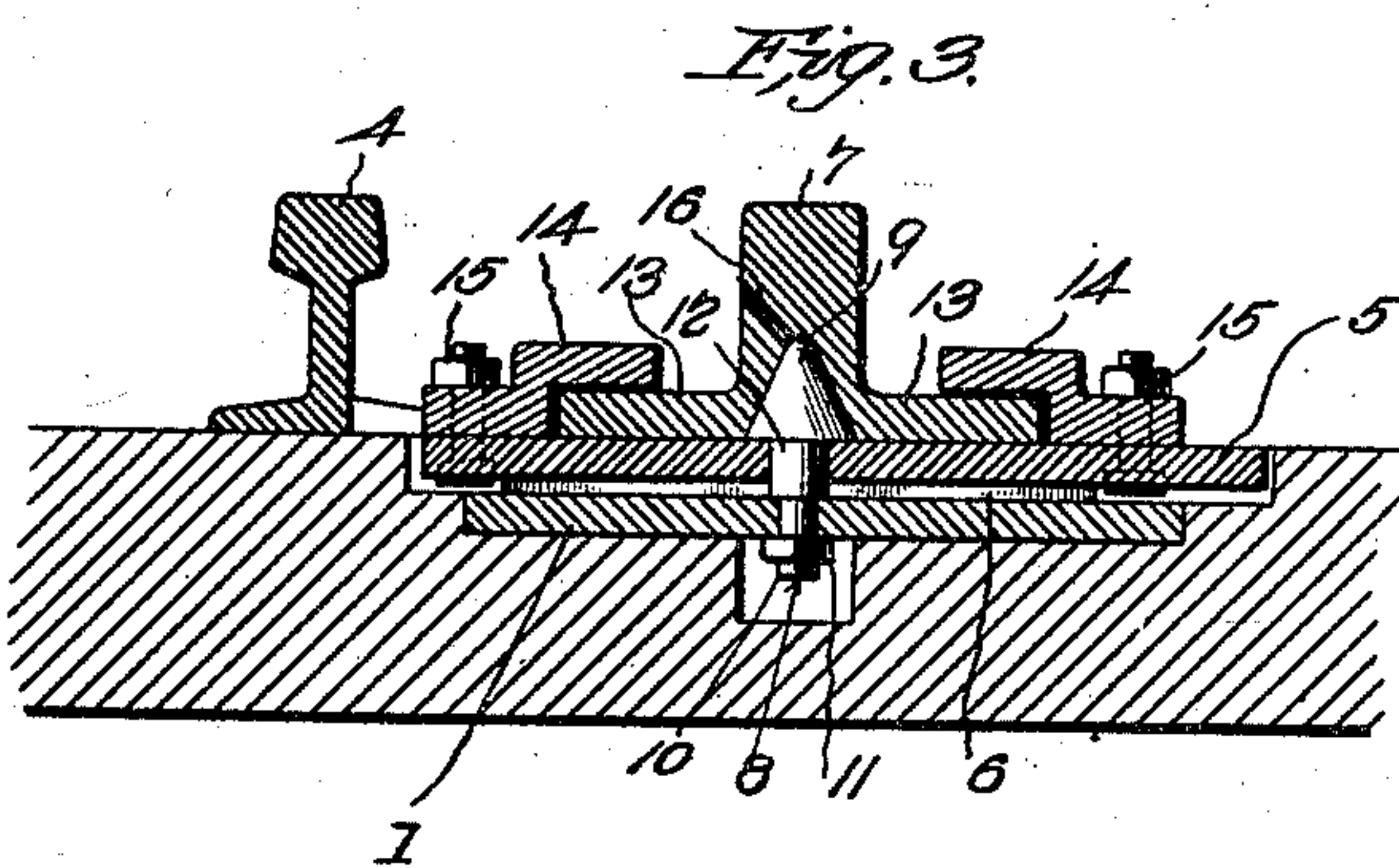
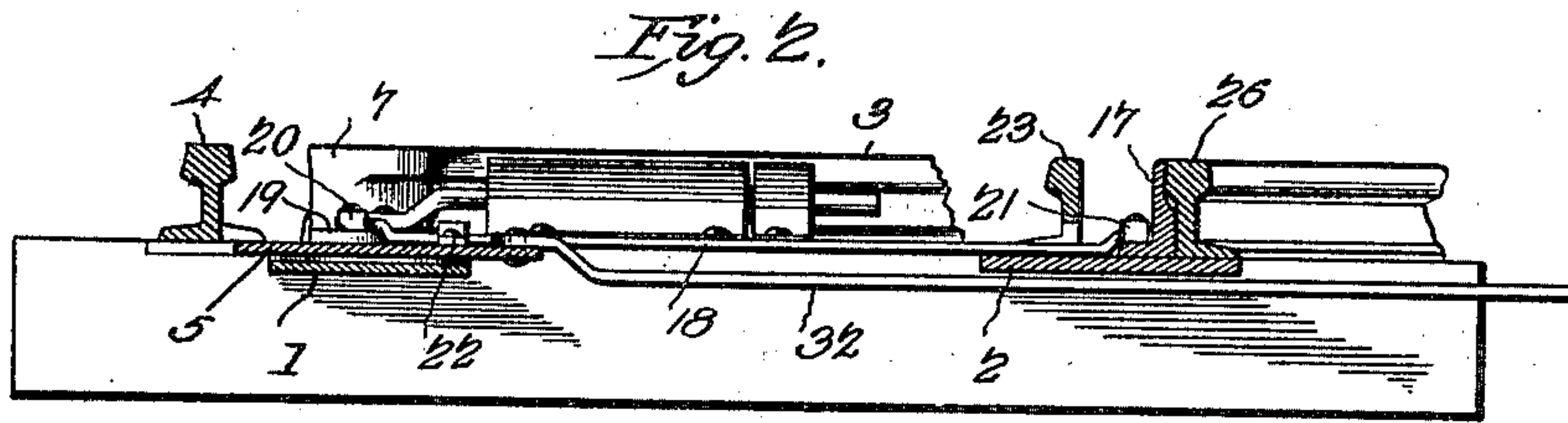
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

HORACE SAGE, OF RICHLAND, INDIANA, ASSIGNOR OF ONE-HALF TO
WILLIAM L. NEWBOLD, OF RUSHVILLE, INDIANA.

RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 679,189, dated July 23, 1901.

Application filed March 13, 1901. Serial No. 50,966. (No model.)

To all whom it may concern:

Be it known that I, HORACE SAGE, a citizen of the United States, residing at Richland, in the county of Rush and State of Indiana, have
5 invented a new and useful Railroad-Switch, of which the following is a specification.

The invention relates to improvements in railroad-switches.

The object of the present invention is to im-
10 prove the construction of railroad-switches and to provide a simple, durable, and efficient one of inexpensive construction adapted to reduce the friction to a minimum and capable
15 when closed of being operated by the wheels of a train on the main track to permit such train to pass through it from the rear without injury to the switch or the train.

The invention consists in the construction and novel combination and arrangement of
20 parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a plan view of a railroad-switch constructed in accordance
25 with this invention. Fig. 2 is a transverse sectional view of the same. Fig. 3 is a detail sectional view on the line 3 3 of Fig. 1. Fig. 4 is a similar view on the line 4 4 of Fig. 1. Fig. 5 is a detail sectional view illustrating the manner of mounting the spring for
30 yieldingly connecting the main switch point or tongue with the oscillatory plate. Fig. 6 is a detail sectional view of the oscillatory plate and the base-plate.

35 Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 and 2 designate supporting base-plates located at opposite sides of a track, as illustrated in Fig. 1 of the accompanying drawings, and arranged upon and secured to the cross-ties by spikes to form a solid structure for supporting the switch mechanism. The
40 plate 2, which is located adjacent to the inner siding rail 3 and the continuous main rail 4, is provided with a corrugated upper face and supports an oscillatory plate 5, and the said corrugations, which enable the plate 5 to slide back and forth with a minimum amount of
50 friction, has the corrugations formed by a series of transversely-disposed bars 6, which

are riveted or otherwise secured to the base-plate 1.

The oscillatory plate carries a main switch-point 7, which is pivotally mounted on and
55 yieldingly connected with the oscillatory plate by means hereinafter described to enable it to be automatically operated by the wheels of a train approaching the switch from the rear. The oscillating plate 5 is pivoted
60 to the base-plate by means of a vertical bolt 8, having a conical head 9, which is arranged in a corresponding bearing recess or cavity of the switch-plate 7. The bolt is provided with a lower reduced portion 10, having screw-
65 threads for the reception of a nut 11, and the upper portion 12 of the stem or shank of the bolt forms a pivot for the oscillatory plate. The lower curved portion of the bolt passes through a perforation of the base-plate 1,
70 which is engaged by the nut 11 and by the shoulder at the lower end of the pivot portion 12. The shoulder formed by the conical-headed bolt is arranged above the oscillatory plate, and the pivot portion 12 is of sufficient
75 length to permit the oscillatory plate to move freely without binding. The pivot end of the switch-point 7 is provided with a head formed by laterally-extending flanges 13, having curved edges and engaged by opposite clamps
80 14, consisting of plates curved to conform to the configuration of the head or pivot end of the point 7 and provided with jaws or engaging portions which are L-shaped in cross-section. The curved clamps 14, which are lo-
85 cated at opposite sides of the pivoted end of the switch-point, are secured to the oscillatory plate by bolts 15 or other suitable fastening devices, arranged as illustrated in Fig. 3 of the accompanying drawings. The switch-
90 point is provided above the pivot-bolt with an oil-hole 16, communicating with the bearing recess or socket to enable the bearing to be readily lubricated.

The main switch-point 7 is connected with
95 a short point 17 by a transverse bar 18, pivoted at one end to the point 7 to a bottom flange 19 thereof and similarly connected at its other end to a bottom flange of the point 17. The ends of the connecting-bar 18 are
100 preferably arranged in keepers 20 and 21, secured to the bottom flanges of the points and

provided with central perforations for the reception of fastening devices which pass through the ends of the connecting-bar and through the said bottom flanges. The connecting-bar passes through a guide 22 and through an opening of a guard-rail 23, which is located at the under side of the point 17 and which is suitably secured to the base-plate 2. The guide 22 is mounted on the base-plate 1.

The point 17, which is located between sections 24 and 25 of the adjacent main rail, is adapted to swing between the guard-rail and a siding or switch rail 26, arranged at the outer side of the track and forming a continuation of the section 25 of the adjacent main rail. When the point 7 is in contact with the main rail 4 and the point 17 is against the guard-rail 23, the switch will direct a train approaching from the front to the siding rails; but a train approaching in the opposite direction is adapted to automatically oscillate the points and pass the switch without injury to it or to the latter.

The base-plate 2 supports the guard-rail, and it receives the sections 24 and 25 of the adjacent main rail, and the point 17 is pivoted to it by means of a bolt 27, having a conical head arranged in a conical socket or recess of the point 17. The bolt 27, which passes through the base-plate 2, is provided at its lower end with a nut which engages the lower face of the base-plate. An oil-hole 27^a is formed in one side of the point 17 to permit the bearing to be lubricated. The point 17 is provided at its pivoted end with a head formed by bottom flanges 28, which have curved side edges and which are engaged by opposite clamps 29 and 30, constructed similar to those heretofore described. The clamp 29 has its outer portion arranged in a recess or cavity of the guard-rail and is secured by a bolt 31, passing through the guard-rail, the clamp, and the base-plate 2, as clearly shown in Fig. 2 of the drawings.

The oscillatory plate is connected by a transverse bar 32 with a switch-stand, (not shown,) and it is adapted to be moved back and forth to operate the switch, and the point 7 is yieldingly connected with the oscillatory plate by a coiled spring 33, disposed on a short transverse rod 34 and housed within a suitable casing 35. The casing is mounted on an extension of the oscillatory plate and it passes through a guide 36 also secured to the said oscillatory plate and forming a stop for the coiled spring. The other end of the spring engages a washer 37, which is secured at the desired adjustment on the rod by a pair of jam-nuts 38, arranged on a threaded portion of the rod. The spring holds the point 7 normally against a pair of pins or studs 39 of the oscillatory plate, and it permits the points to be moved independently of the operating mechanism to enable a train to pass the switch without injuring the same or being injured thereby. The studs or pins

project from the upper face of the oscillatory plate, as clearly shown in Fig. 5 of the accompanying drawings. The point 7 is provided with a perforation 40, adapted to register with a corresponding perforation of the oscillatory plate to enable the said point to be rigidly bolted to the plate in case of emergency should the spring become broken or otherwise inoperative. The base-plate 1 is provided with a lip or flange 41, formed integral with it and extending inward over the inner end of the oscillatory plate to prevent the same from rising.

What I claim is—

1. In a railroad-switch, the combination of the opposite pivoted points connected together, an oscillatory plate yieldingly connected with one of the points and adapted to permit the latter to move independently of it, and operating mechanism connected with the oscillatory plate and adapted to move the same and the points, substantially as described.

2. In a railroad-switch, the combination of the pivoted points, a transverse bar connecting the points, an oscillatory plate supporting one of the points, a spring connected with the oscillatory plate and the adjacent point, and operating mechanism connected with the oscillatory plate, substantially as described.

3. In a railroad-switch, the combination with the opposite rails, of the pivoted points located adjacent to the rails and connected together, an oscillatory plate supporting one of the points, a rod connecting the said point, a spring disposed on the rod and engaging the same and the oscillatory plate, and operating mechanism connected with the latter, substantially as described.

4. In a railroad-switch, the combination with the opposite rails, of the pivoted switch-points 7 and 17 arranged adjacent to the rails, an oscillatory plate supporting the switch-point 7, the transversely-disposed rod connected with the switch-point, a guide receiving the rod and mounted on the oscillatory plate, a spring arranged on the rod and engaging the same and the said guide, means for connecting the points, and operating mechanism connected with the oscillatory plate, substantially as described.

5. In a railroad-switch, the combination with the main rail 4 located at one side of the track, the main-rail section located at the opposite side of the track, and the siding rails, of the pivoted points 7 and 17, located at opposite sides of the track, the point 17 being located between the said main-rail sections, the guard-rail arranged at the inner side of the point 17, the transverse bar connecting the points, the oscillatory plate supporting and yieldingly connected with the points 7, and operating mechanism connected with the oscillatory plate, substantially as described.

6. In a railroad-switch, the combination of a base-plate provided at its upper face with corrugations, an oscillatory plate connected with the base-plate and supported by the

same, a point pivotally mounted on the oscillatory plate and yieldingly connected with the same, and operating mechanism for actuating the oscillatory plate, substantially as described.

5 7. In a railroad-switch, the combination of a base-plate, a pivoted point provided at its bottom with a cavity, a bolt mounted on the base-plate and having a head extending into
10 the said cavity and forming a pivot for the point, and clamps engaging the point and holding the same on the pivot, substantially as described.

15 8. In a railroad-switch, the combination of a base-plate, an oscillatory plate, a bolt hav-

ing a tapering head and passing through the said plates and provided with a pivot portion receiving the oscillatory plate and forming a shoulder for engaging the base-plate, a point having a cavity at its bottom to receive 20 the head of the bolt, and clamps engaging the point, substantially as described.

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

HORACE SAGE.

Witnesses:

FRANK MOCK,

WILL M. NEWBOLD.