

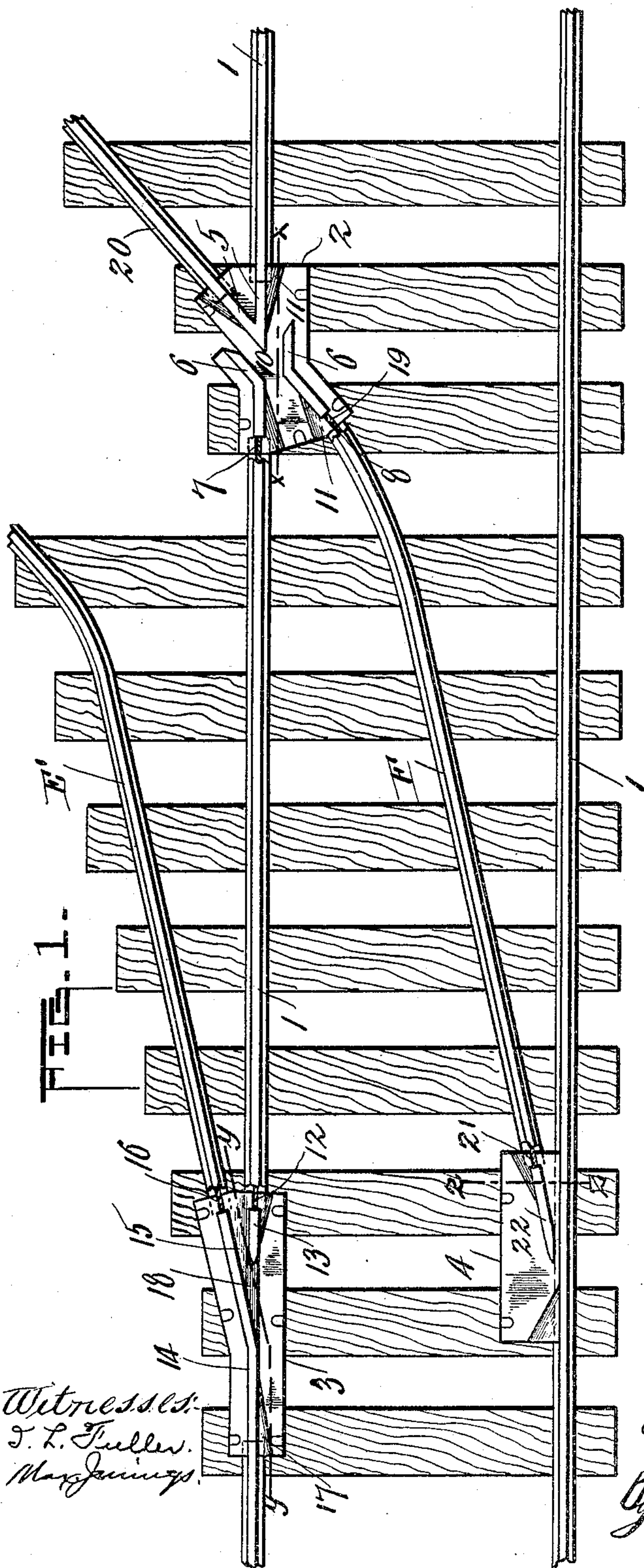
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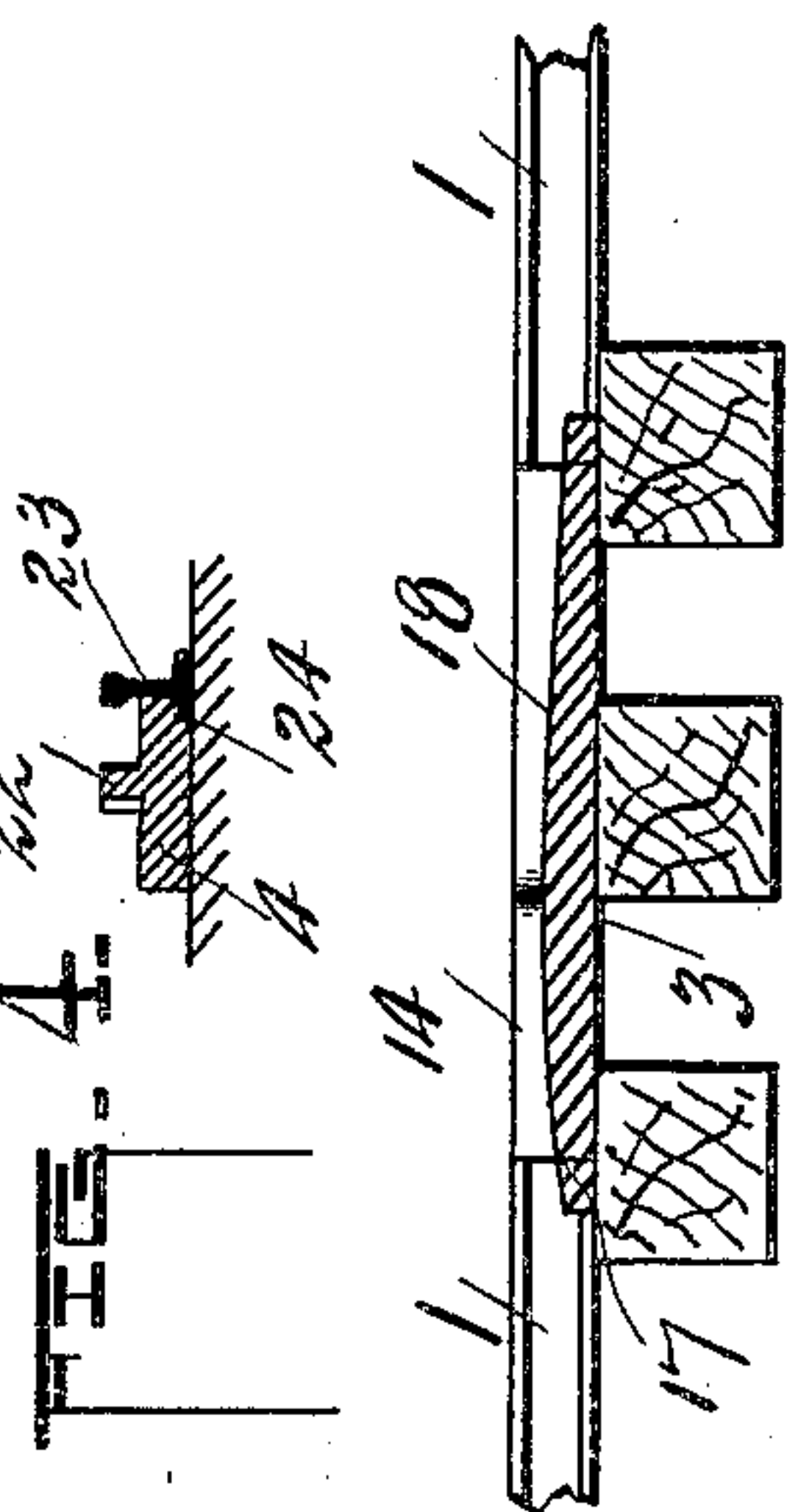
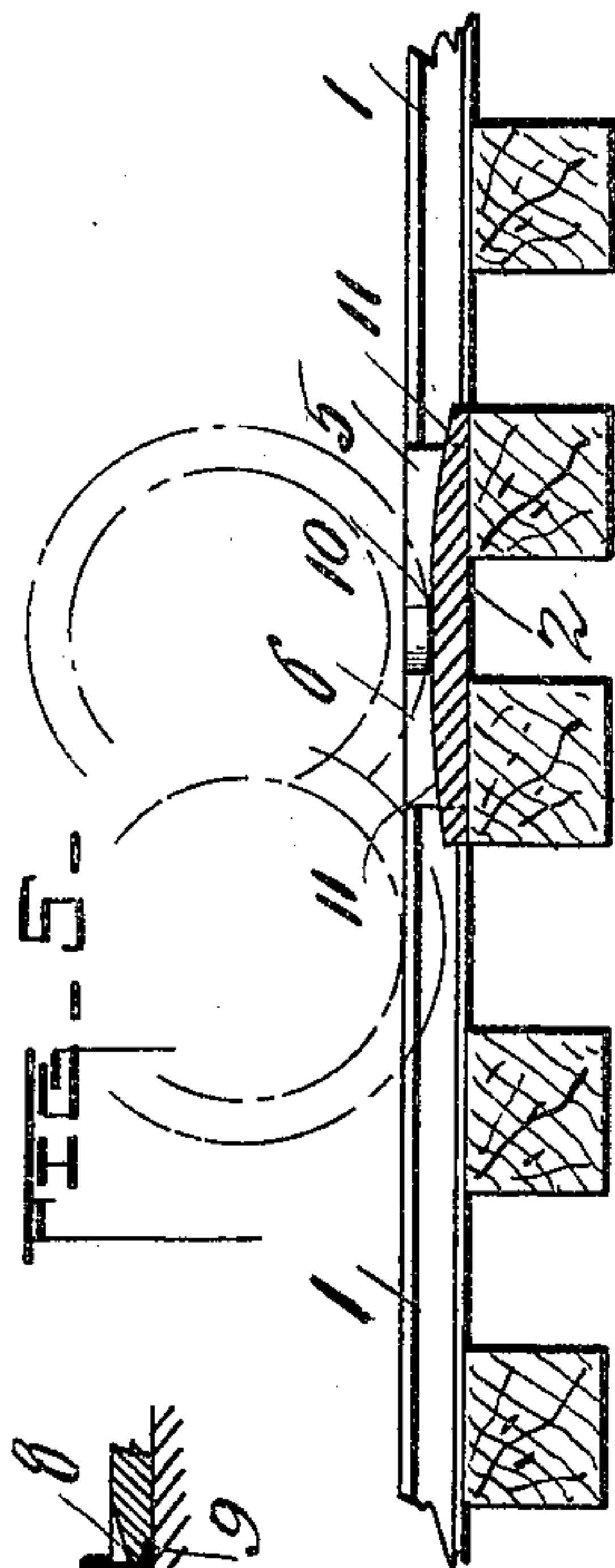
J. WHITEHEAD.
MINE TRACK SYSTEM.

APPLICATION FILED NOV. 23, 1903.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

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MINE TRACK SYSTEM.

SPECIFICATION forming part of Letters Patent No. 770,882, dated September 27, 1904.

Application filed November 23, 1903. Serial No. 182,272. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH WHITEHEAD, a citizen of the United States, residing at Farmington, in the county of Fulton and State of Illinois, have invented certain new and useful Improvements in Mine Track Systems; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has reference to a system of and means for installing frogs and switches in mining-railways, and has for its object to simplify such railway structures and to reduce the time and expense in laying branch tracks or rails from a main entry to rooms leading off therefrom.

A further object of the invention is a frog having fixed rail portions and the tread of the base of the frog beveled or tapered from its central body portion to its opposite end portions.

A further object of the invention is a fixed switching-plate and a movable plate, both of which coact with the frog mentioned and each provided with beveled or tapered tread portions.

Further objects and aims of the invention will become apparent from the followingspecification, together with the drawings, forming a part thereof, in which—

Figure 1 is a plan enlarged, showing more in detail the frogs and switch-points employed. Fig. 2 is a cross-section on the line X X of the frog seen in Fig. 1. Fig. 3 is a cross-section on the line Y Y of the main switching-point. (See Fig. 1.) Fig. 4 is a cross-section on the line Z Z of the supplemental and movable switch-point. (See Fig. 1.) Fig. 5 shows in section the manner of interlocking the main rails to the frogs and switch-points.

The system now in vogue in placing and providing frogs and switch-points in the entries of mines in installing leads from the entry to rooms leading off therefrom is to lay a section of main track the length of the entry and as rooms are cut leading from such entry, and before a lead of track can be placed connecting with the main track of the entry the main track or a portion thereof at desired in-

tervals must be torn up, suitable frogs and switch-points laid, track-leads connected therewith, and the main track repaired. This occasions great loss of time, delay, and is expensive to the operator as well as to the miner, while the system I employ is constructed with a view of avoiding all delays, is convenient and desirable.

Fig. 1 shows main sections of a track 1 extending the length of such entry, and at intervals which will vary in some mines are laid as a part of the initial track the frogs 2 and switch-points 3, and if desirable the switch-points 4 may be installed with the first laying of the rails; but they are constructed with a view of being removable and may be laid at the time of cutting a room and putting in the leads from the main track.

Referring to the frog 2, the same is adapted to be of a casting with integral rail portions 5 and 6, so arranged as to permit the frog to be used for right or left, the ends of the rail portions 5 and 6 terminating at a point removed from the edge of the base of the frog, the remaining distance to the edge of the base, slotted, as at 7, forming a recess to adapt the interlocking or dovetailing of the adjacent ends of the rail-sections 1, as at 8, the lower faces of the frogs being beveled or recessed, as at 9, to follow the contour of the flanges of the rail 1 to insure a perfect juncture of the rail and frog. The tread 10 of the frog is of such a depth relative to the tread or ball of the main rails 1 that a mine-car wheel rolling therein the flanges only of such wheels will contact with the frog, raising the tread of the mine-car wheel above the tread of the rail portions of such frog, and the tread 10 of the base at points 11 are beveled or tapered from approximately the center of the frog to the edges thereof to permit the flanges of the mine-car wheels to gradually assume a position to bring the tread of the wheels to contact with the tread or ball of the main rail-sections. (See Fig. 2, illustrating this idea.)

Referring to the main switch-point 3, which is of suitable length, the same is installed in the main track a suitable distance from and coinciding with a section of the main rail 1, which connects with the frog 2, its opposite

end having the web thereof engaging a recess 12 in manner similar to the connection, as at 8, with the frog and abutting with an integral guiding-block or rail-section 13 of the base of the switch 2, it being adapted to cast such switch-plate and its rail portions in one piece. The same is further provided with the longitudinally and diagonally carried integral rail portion 14, leaving a channel 15 between the same and portion 13, the ends of said rail portion 14 terminating a short distance from the edge of the plate 3 and the plate slotted or recessed at 16 to permit the main rail-section 1 and lead to an adjoining room to engage such slot in manner, as at 8, with the frog, the lower face of the switch-plate also being recessed or beveled similar to 9 of the frog to follow the contour of the flange of the rail. The upper face or tread of the switch-plate 3 is tapered or beveled at 17, sloping downwardly and outwardly, while at 18 the upper face of the plate 3 is beveled or tapered laterally, outwardly, and forwardly downwardly to the edge of said plate. The tread of the upper surface of the plate 3 is proportioned to the main rail similar to the frog 2, adapting the mine-car wheels to ride up onto the switch from the main rail and to revolve on the flange thereof with the tread of such wheels raised above the portions 14.

The leads from the main track of an entry to an adjoining room are indicated as E and F, the former connecting with the switch-plate, its end coinciding with the portion 14 thereof, while lead F connects with the frog at 19 in manner similar to the other rail-sections and emerges from the opposite side in the rail 20, joined to the frog in manner described for the other rail-sections. The forward end of lead F is adapted to be joined by its web in a recess 21 in the switch-plate 4, which locks the rail and plate. This plate is a casting having the switching-point 22 coinciding with the end of the rail F, bearing at an angle to correspond to the portion 14 of the plate 3, with its free end removed from the rail portion 1 a short distance. The plate 4 is a movable plate and may be placed at any time, its inner edge lying adjacent to the web of the rail 1, as at 23, and beneath the tread thereof, with its lower face beveled, as at 24, to conform to the flange of the rail and is provided with tapered or beveled face portions leading to the edge of the plate similar to the tread of the frog and opposite switching-point. It will thus be seen that with frogs 2 and switch-plates 3 laid when rails 1 are placed to install a switch or converging lead-rails E and F from the entry to a room the placing of the switch-point 4 is of small moment, while the sections of rails E and F

may be laid with as much ease and interlocked in manner shown with the switch-plate 3 and frog 2 and plate 4.

With an unbroken entry a car may be run over the rails 1 without interference from the frogs and switch-points, as the wheels of a car will follow a straight course with comparative ease. After a lead has been laid from the main track to a room, such as at E, as the team approaches the plate 3 and the wheels of the car ride thereon the animals hauling the car are guided to follow the lead to the room, and as the flanges of the wheels reach the tapered portion 18 of the plate 3 the car will swerve sufficiently to cause the wheels to follow the drop in the plate 3 and cause the opposite wheels of the car to travel adjacent to the inner edge of the rail portion 22 of plate 4 and direct the car to the rails E and F, leaving the plates 3 and 4 traveling over the tapered or beveled portions of both plates until the tread of the wheels are riding on the ball or tread of such rails.

By providing a frog or switch-point over the tread of which is designed to travel or roll the flanges of a car-wheel and not the tread of such wheels I obviate the jar and jog of the wheel by falling in ruts or depressions, which increases the pulling strain on the animals drawing such cars, and facilitate the handling of the cars to much better advantage.

What I claim is—

1. In a mine track system, the combination of a rail, a switch-plate located intermediate the ends of such rail and provided with slotted portions, a short rail-section integral with the switch-plate and abutting with one end of the main rail, an integral rail-section formed upon the switch-plate having a straight portion and a converging portion, and the switch-plate between its integral rail portions having a beveled or tapered upper face in the manner and for the purposes specified.

2. In a mine track system, the combination with the main rails of switch-plates fixed in the initial laying of the rails, having slotted portions, short rail-sections formed integral with the switch-plates and engaging the main rails, integral rail-sections formed upon the switch-plates having straight and converging portions, and supplemental switch-plates adapted to interlock with one of the rails upon laying a lead, provided with rail-sections and tapered upper faces therebetween.

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

JOSEPH WHITEHEAD.

Witnesses:

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