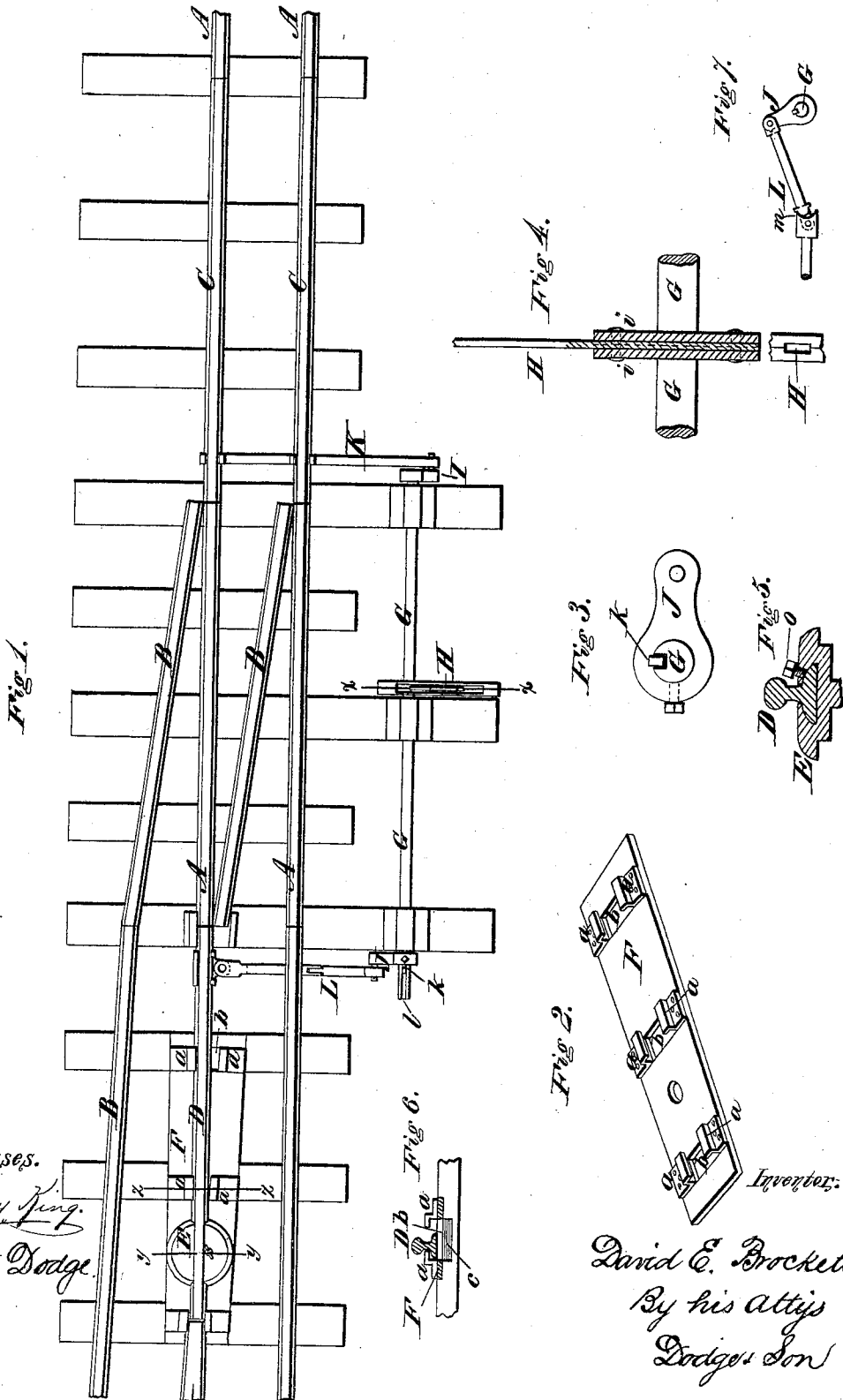


D. E. BROCKETT.
Railway Switches.

No. 142,673.

Patented September 9, 1873.



Witnesses.
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By his Attys
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UNITED STATES PATENT OFFICE.

DAVID E. BROCKETT, OF WHEELING, WEST VIRGINIA.

IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. **142,673**, dated September 9, 1873; application filed April 8, 1873.

To all whom it may concern:

Be it known that I, DAVID E. BROCKETT, of Wheeling, in the county of Ohio and State of West Virginia, have invented certain Improvements in Railroad-Switches, of which the following is a specification:

My invention relates to improvements in the switch for which Letters Patent were granted to me on the 13th day of August, 1872; and consists in making one of said cranks adjustable laterally to permit the use of rails of different lengths; in a peculiar manner of attaching the hand-lever, and in the use of a peculiar-jointed rod or pitman to move the tongue, all as hereinafter fully described.

Figure 1 is a top-plan view of my improved switch; Fig. 2, a perspective view of the bed-plate; Fig. 3, an end view of the crank and shaft for moving the tongue; Fig. 4, a section on the line *x x*, showing the manner in which the hand-lever is secured in the shaft-coupling; Fig. 5, a section on the line *y y*; Fig. 6, a section on the line *z z*; Fig. 7, a side view of the jointed rod or pitman for operating the vibrating tongue.

In its general construction my present switch is substantially the same as the original—that is to say, it consists essentially of stationary line or track rails A and siding-rails B, shifting switch-rails C, and a vibrating tongue, D, which is supported in a pivot, E, mounted on a bed-plate, F, as shown in Fig. 1. The bed-plate is provided, as before, with lugs or stops *a*, to limit the movement of the tongue D, and to support it while the car-wheels are passing over it. Originally the bed-plate was made solid between the adjacent studs, and much difficulty was experienced from ice, snow, and other obstructions lodging on the plate against the inside of the studs, so as to prevent the tongue from moving. In order to remedy this difficulty I now make holes or openings, *b*, down through the bed-plate between the studs, as shown in Figs. 1, 2, and 6, so that all obstructions can pass down through and escape. When the cross-ties, or supports on which the bed-plate rests, are arranged under the openings *b*, the tie will be cut away, as shown at *c*, Fig. 6, to allow the escape of the obstructions which may fall or be forced through the openings.

Instead of operating the switch-rails and the tongue by means of the rods and levers before used, I now arrange a horizontal shaft, G, by the side of the track, and provide it at the middle with a hand-lever, H, and at the ends with cranks I and J, and then connect the crank I, by a pitman or rod, K, with the switch-rails, and the crank J, by a pitman, L, to the vibrating tongue, as shown in Fig. 1. The cranks extend in opposite directions, so that when the shaft is turned by the hand-lever the cranks and pitman move the switch-rails and tongue in opposite directions, as required. As that end of the shaft which operates the tongue receives more strain than the other end, the shaft is made in two parts or sections of different sizes, which are coupled together by plates or flanges *i*, which are formed or secured on their ends and bolted or riveted together. The hand-lever H has its end secured in place between the coupling flanges or collars *i*, as shown in Fig. 4, the two flanges being provided with recesses in their adjoining faces, so that the lever fits into them both, and compels them to turn together under all circumstances.

In order to adapt the shaft G and crank J for use in connection with rails of different lengths, I make the shaft of the greatest length ever required, and secure the crank thereon by a key or spline, *k*, which fits in a long groove, *l*, in the shaft, as shown in Figs. 1 and 3, so that the crank can be adjusted laterally on the shaft, and the pitman L thereby brought in the required position for either long or short rails. This arrangement of the shaft and crank is, in practice, a feature of great value, as it allows long or short rails to be used indiscriminately, and thus obviates the trouble, delay, and expense of cutting and fitting the rails in place.

The pitman or rod L, which connects the crank J with the vibrating tongue, is jointed at or near the middle, as shown in Figs. 1 and 7. A knuckle-joint is used, and it is so constructed that, although it allows the pitman to straighten out when the crank draws or pulls the same, it will only allow the pitman to bend to a limited extent when the crank pushes, so as to prevent the pitman from doubling up without moving the tongue, and from striking the ground. The pitman thus

jointed operates in a much better and more satisfactory manner than a rigid pitman, curved, as it must be, to pass under the rail or track; but the rigid pitman may, of course, be used when desirable. The inner end of the pitman is connected to a clip or plate on the tongue by a pivot, so that it will not be caused to bind by the swinging movement of the tongue.

Instead of making the bed-plate, as originally, of cast-iron, I now make it of a wrought-iron plate, having the studs *a* and a collar to support the pivot *E*, bolted or riveted thereto. I also employ a screw or bolt, *o*, in the pivot *E* to hold the tongue from moving endwise.

By means of the above-described improvements I produce a switch which is cheaper and better than my original, and which has

in practice shown itself equal to all requirements.

Having thus described my invention, what I claim is—

1. In a switch constructed substantially as herein described, the long shaft *G*, provided with the adjustable crank *J*, as and for the purpose set forth.

2. The hand-lever *H*, having its end secured between the coupling-flanges *i* of the shaft *G*, substantially as shown and described.

3. In combination with the vibrating tongue *D* and crank *J*, the knuckle-jointed pitman *L*, constructed as described.

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Witnesses:

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