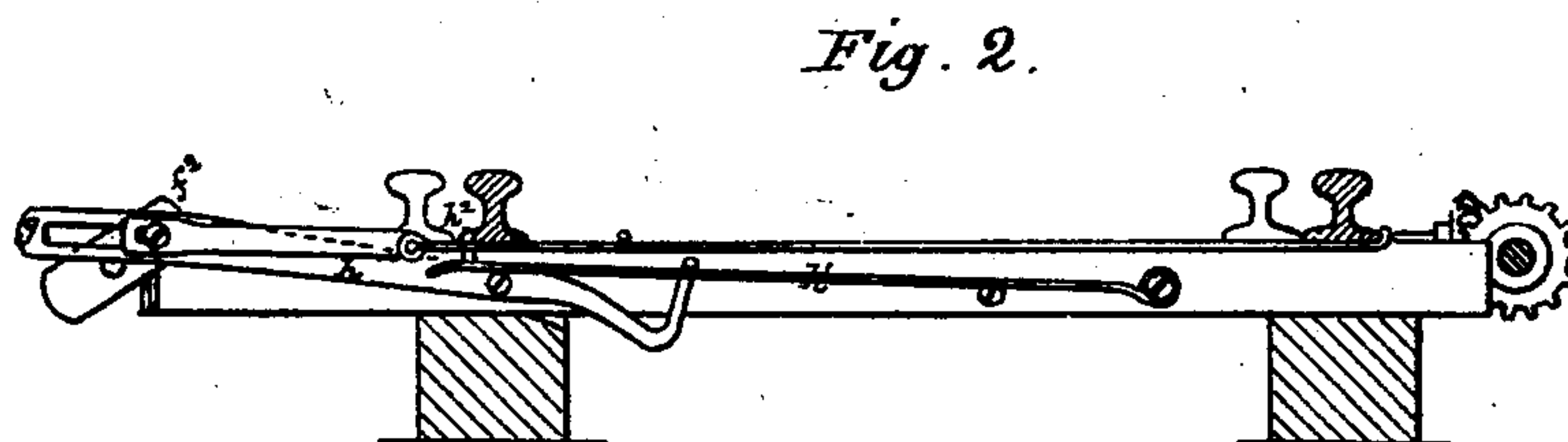
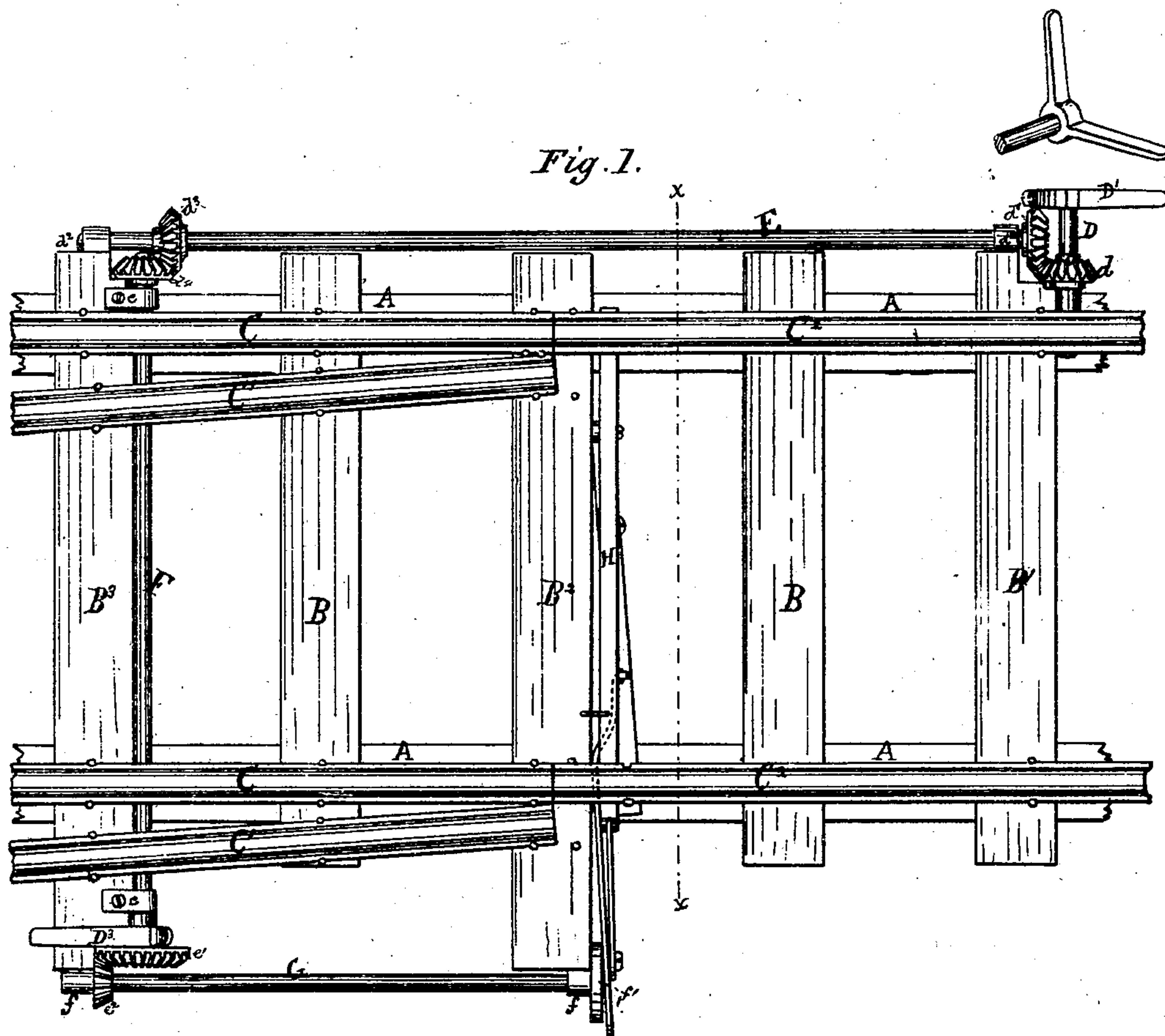


W. H. CLARK & P. CHANEY, Jr.

Railway Switches.

No. 142,837.

Patented September 16, 1873.



Witnesses,  
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# UNITED STATES PATENT OFFICE.

WILLIAM H. CLARK AND PHINEAS CHANEY, JR., OF OREGON, ASSIGNORS  
TO THEMSELVES AND JOHN H. WHITE, OF ILLINOIS.

## IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. 142,837, dated September 16, 1873; application filed  
May 8, 1873.

*To all whom it may concern:*

Be it known that we, WM. H. CLARK and PHINEAS CHANEY, Jr., of Oregon, in the county of Ogle and State of Illinois, have invented a new and useful Improvement in Railway-Switches; and we do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Figure 1 is a plan or top view of a section of track with our improvement applied. Fig. 2 is a transverse section of the same through line *x x*, Fig. 1.

The invention consists in an arrangement of devices for switching the track, adapted to be operated by arms or levers controlled by the train men on the moving train, in such manner that the switch can be moved from one line of track to the other as the train approaches, and returned to its original position after the rear car has passed over the switch, or allowed to remain as switched; also, in certain devices for locking the switch in either position to guard against accidental displacement, all as hereinafter explained.

In the accompanying drawing, A represents the sleepers; B B<sup>1</sup> B<sup>2</sup> B<sup>3</sup>, the cross-ties; C C<sup>1</sup>, the stationary rails; C<sup>2</sup>, the movable rails or switch; D, the shaft which is connected to the cross-tie B<sup>1</sup>; D<sup>1</sup>, the forked lever secured upon the end of the shaft D; *d*, a bevel-pinion, which is secured upon the shaft D, and meshes with a similar pinion, *d*<sup>1</sup>, mounted upon one end of a longitudinal shaft, E. This shaft E is secured in bearings upon the end of the ties B<sup>1</sup> B<sup>3</sup>, (shown at *d*<sup>2</sup>,) and is provided at its opposite end with a bevel-pinion, *d*<sup>3</sup>, which meshes with a similar bevel-pinion, *d*<sup>4</sup>, mounted upon a transverse shaft, F, said shaft F being secured in bearings *e* upon the cross-tie B<sup>3</sup>, and passing under the rails C C<sup>1</sup>. The shaft F has secured upon its end a forked lever, D<sup>3</sup>, and also a bevel-gear, *e*<sup>1</sup>, the bevel-gear *e*<sup>1</sup> meshing with a pinion, *e*<sup>2</sup>, secured upon another longitudinal shaft, G, said shaft G being secured in bearings *f* upon the ends of ties B<sup>2</sup> B<sup>3</sup>. The other end of shaft G is provided with a crank-head, *f*<sup>1</sup>, and wrist-pin, *f*<sup>2</sup>, Fig. 2, said crank-head and wrist-pin being connected by a slot-

ted pitman, *g*, Fig. 2, with a metal tie, H. The metal tie H is secured to the movable rails C<sup>2</sup>, and is made to operate the same by the partial rotation of the shafts E F G, said shafts being caused to rotate by means of the forked levers D<sup>1</sup> D<sup>3</sup>. Connected with the wrist-pin *f*<sup>2</sup> is a slotted bent lever, *h*, Fig. 2, which operates a leaf-spring, *h*<sup>1</sup>, said leaf-spring being placed beneath the track, and having secured to it a spur, *h*<sup>2</sup>, Fig. 2, which engages with the side of one of the movable rails, C<sup>2</sup>, and thereby prevents any lateral displacement of the said rails.

The operation of our improved device may be described as follows: The engine and the rear or caboose car are each provided with suitable bars and levers to be operated by the train men. When it is desired to change the switch it is simply necessary to thrust out a bar from the forward end of the locomotive, the said bar engaging with one arm of the forked lever D<sup>3</sup>, thereby carrying down or forward the said lever, and causing the same to rotate the transverse shaft F, which in turn causes the longitudinal shaft G to rotate by means of the bevel-gear *e*<sup>1</sup>, which meshes with the pinion *e*<sup>2</sup> mounted upon said shaft G. The rotation of the shaft G causes the crank-head *f*<sup>1</sup> to rotate, and, as the said crank-head is connected with the bent lever *h* by the wrist-pin *f*<sup>2</sup>, it causes the metal tie H to move laterally. The said metal tie, being fastened to the movable rails C<sup>2</sup>, causes them to move in line with the rails upon which the train is moving. After the train has passed over the rails, the lever which is attached to the rear end of the hind car comes in contact with the forked lever shown at D<sup>1</sup>, and causes the shaft E to rotate in the reverse direction, thus acting upon the various parts described, and causes the movable rails to be brought back to their former position.

It will be observed that the switch can be moved from either direction at will without stopping the train, or can be run over without being changed at all.

The gearing, shafts, spring, &c., can be covered in order to protect them from snow, dirt, &c.

Having now described our invention, what

we claim as new, and desire to secure by Letters Patent, is—

The combination, with the switch  $C^2$  and its locking-spur  $h^2$ , of the levers  $D^1$   $D^3$ , with their connecting devices, arranged and operating as described, whereby, while the switch is locked in either position, it is at the same time placed under the control of the moving train, as set forth.

This specification signed and witnessed this 24th day of March, 1873.

WILLIAM H. CLARK.  
PHINEAS CHANEY, JR.

Witnesses:

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