

(No Model.)

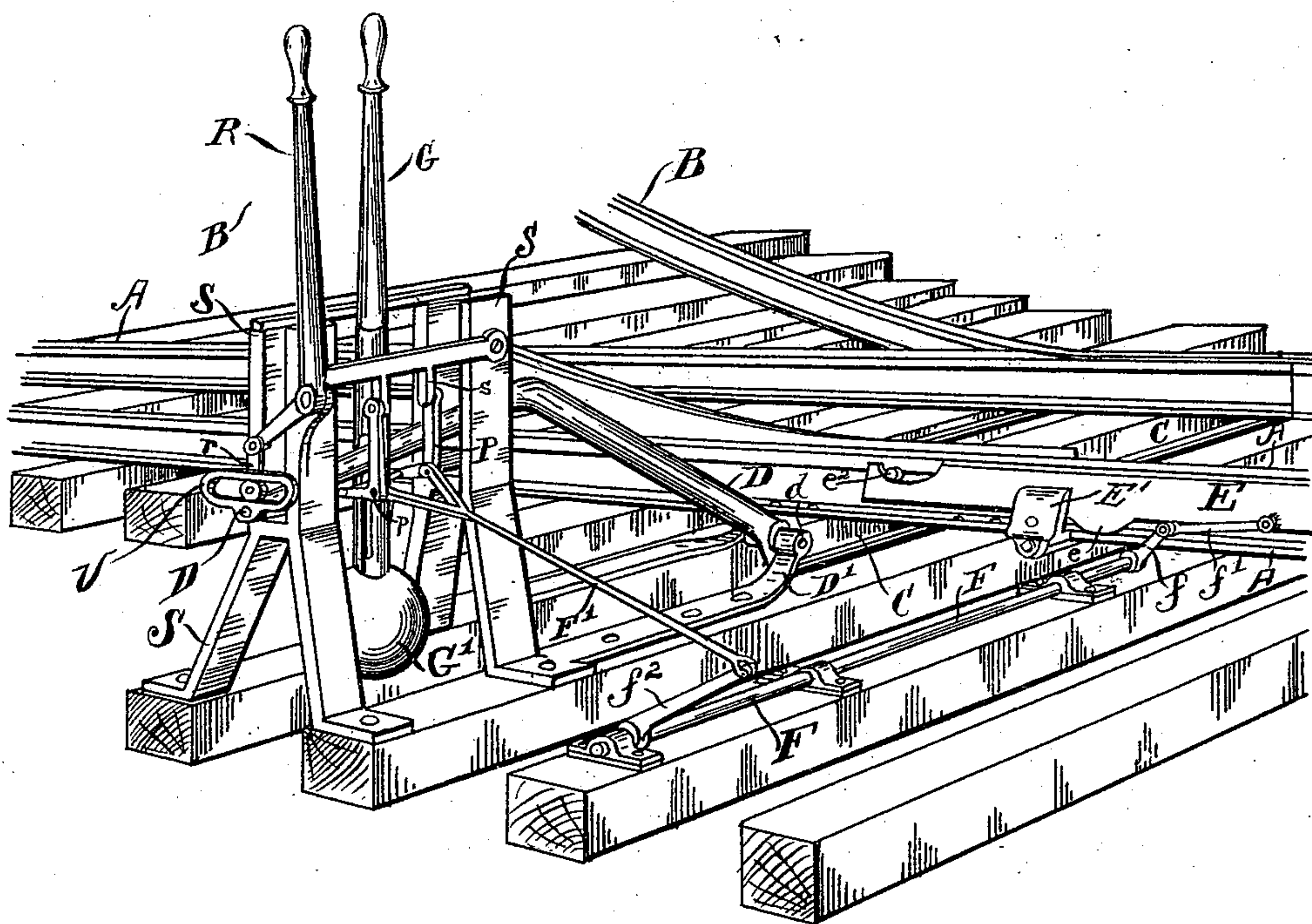
2 Sheets—Sheet 1.

C. N. & H. P. LENHART.
SELF CLOSING SWITCH.

No. 523,840.

Patented July 31, 1894.

Fig. 1.



WITNESSES:

F. W. Warner.
J. A. Walsh.

INVENTORS
Charles N. Lenhart
and Harry P. Lenhart,
BY

Chester Bradford,
ATTORNEY.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

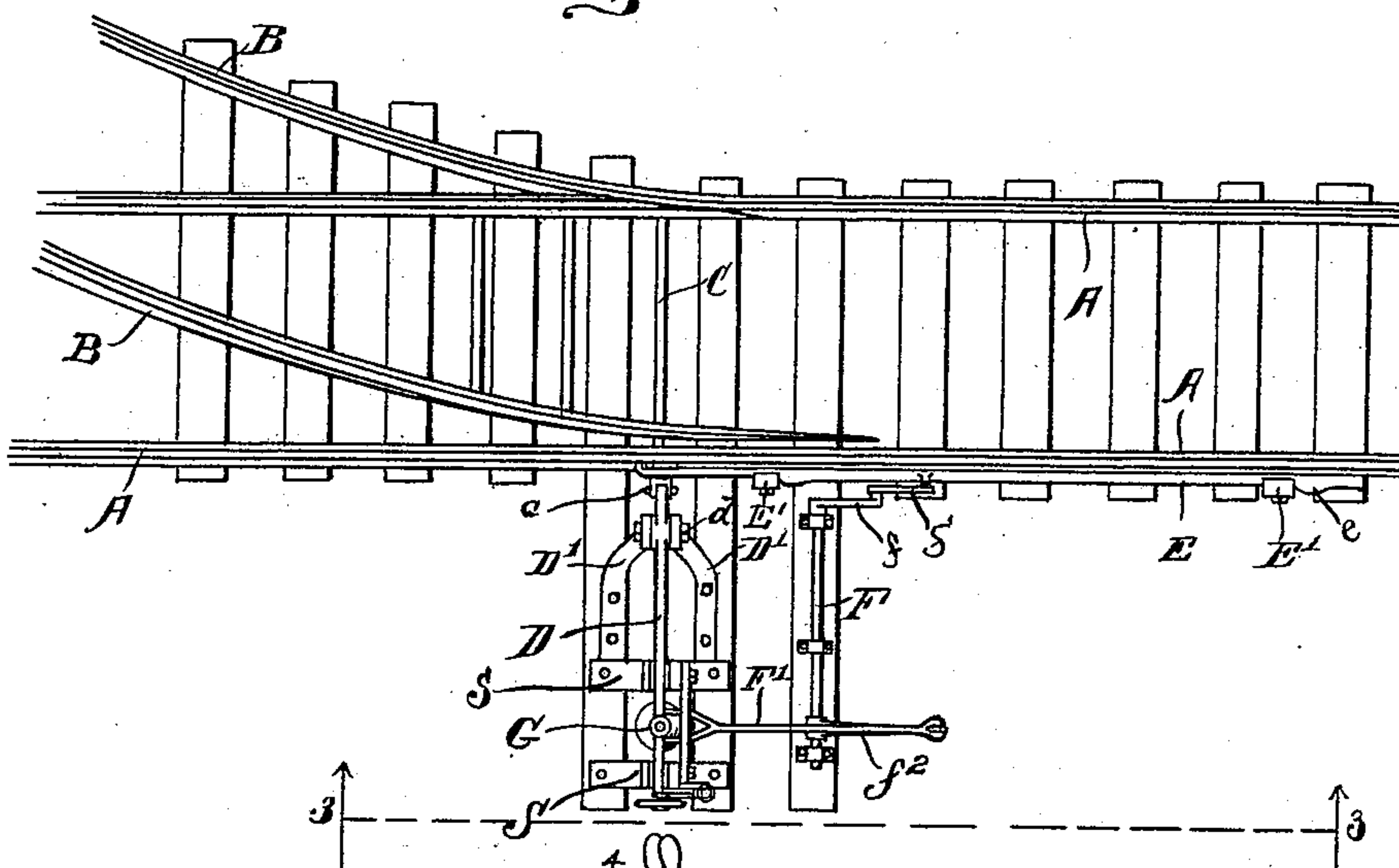


Fig. 3.

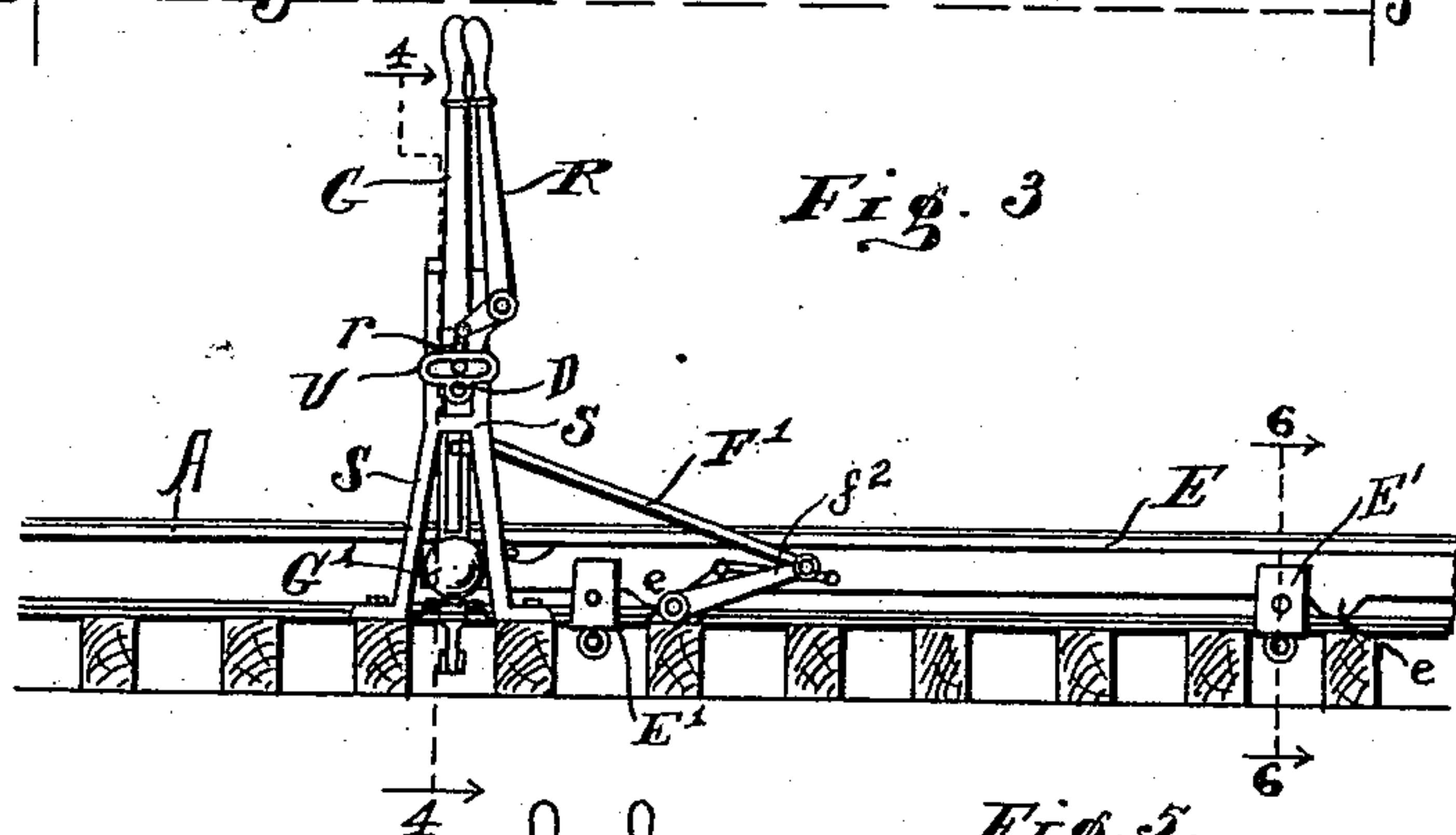


Fig. 6.

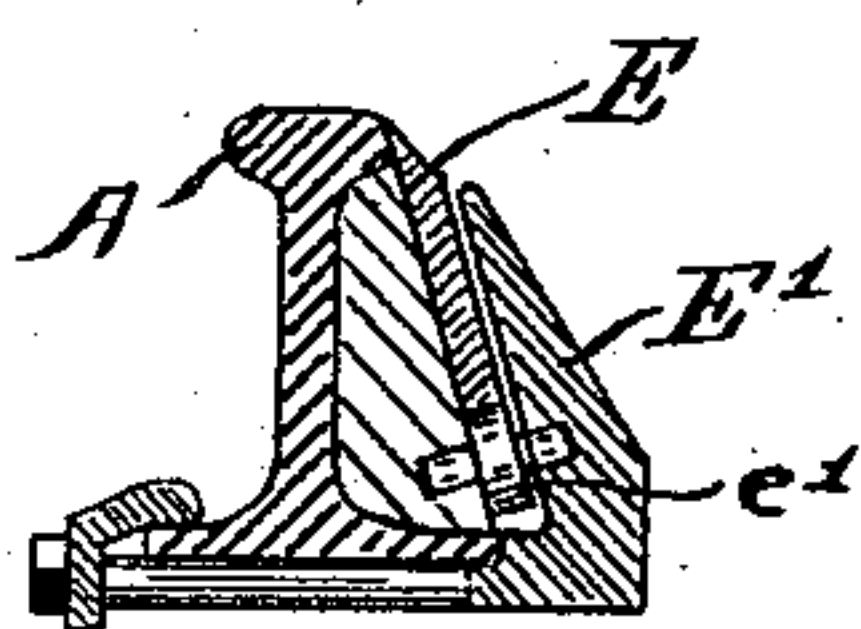


Fig. 4.

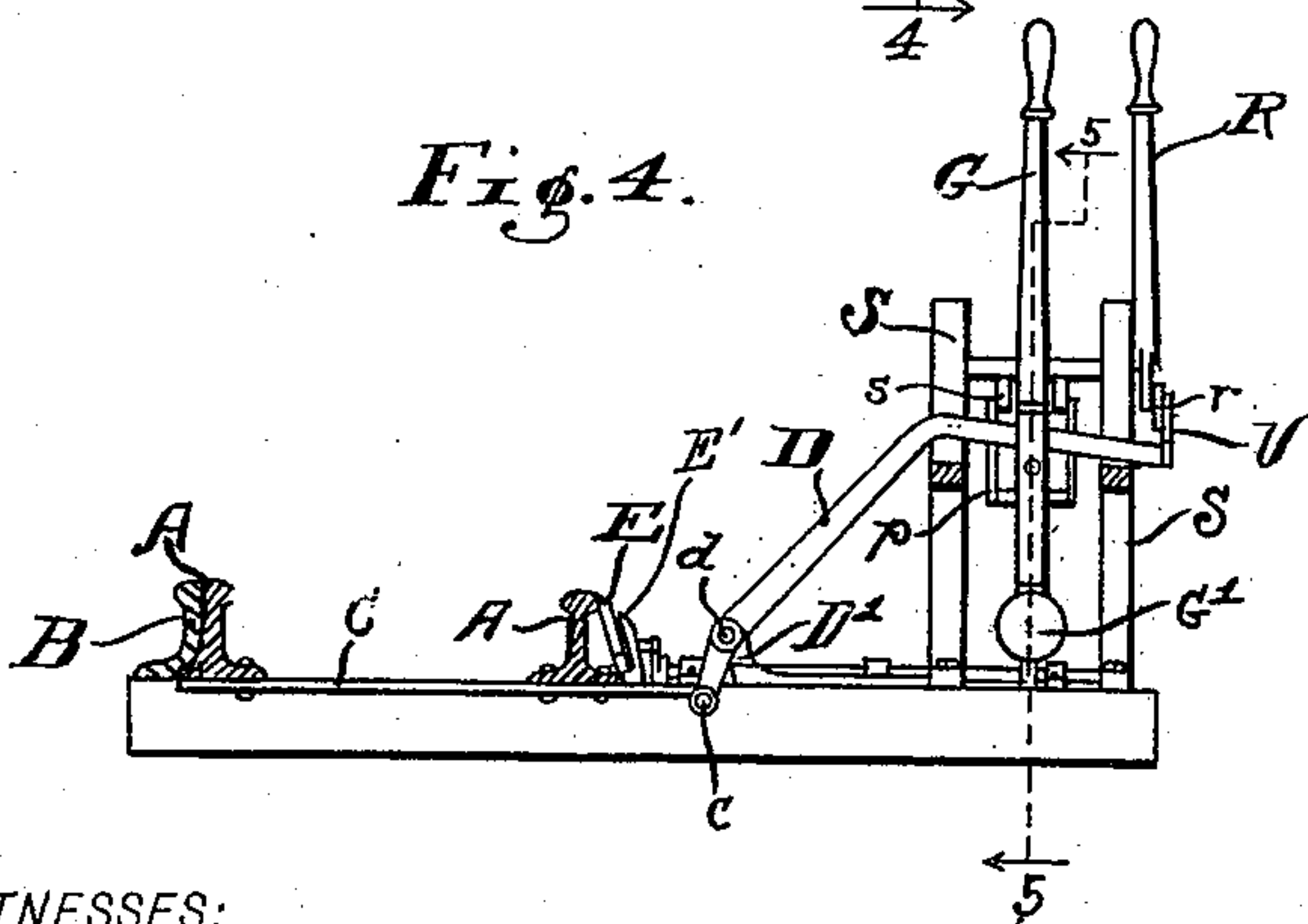
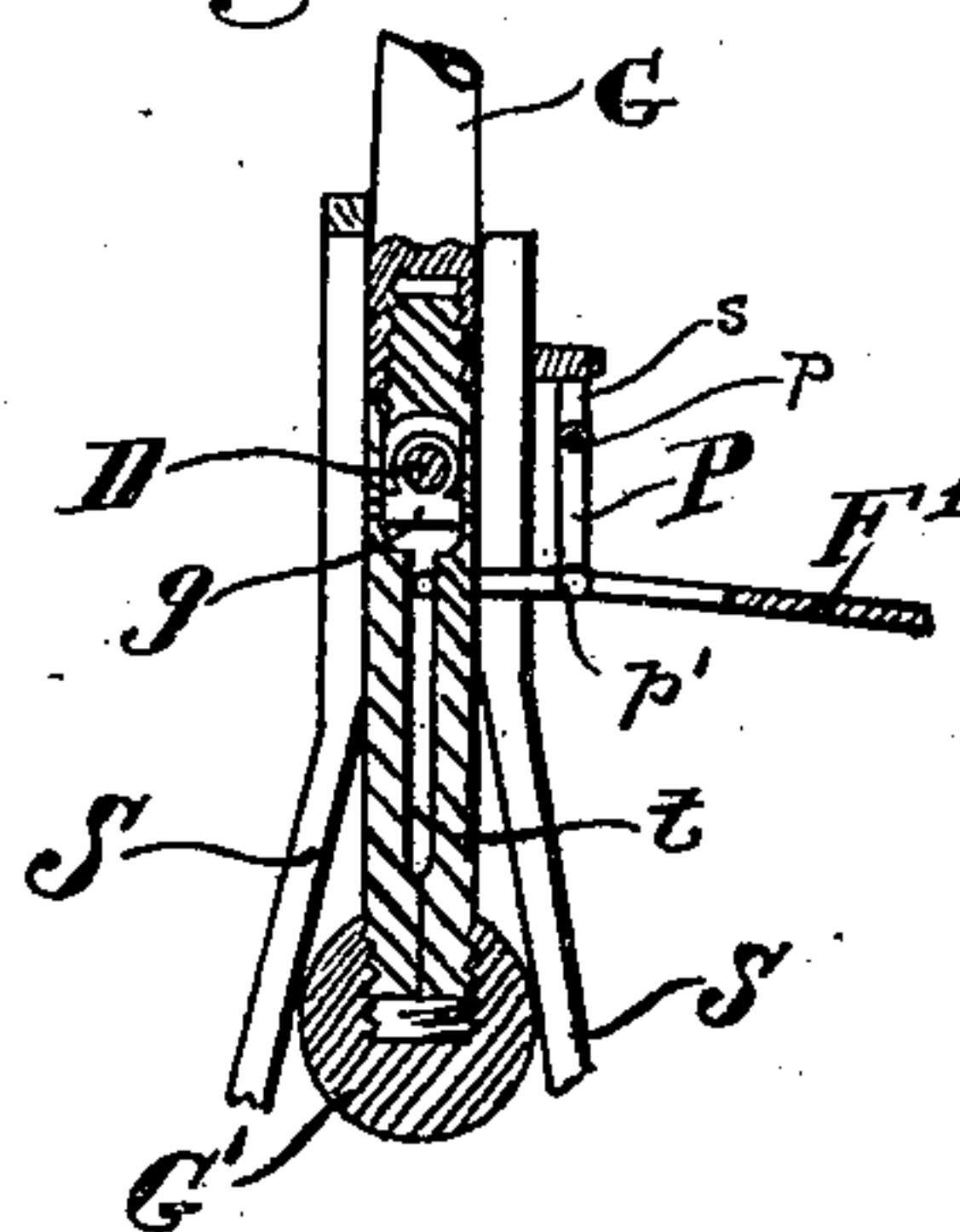


Fig. 5.



WITNESSES:

F. W. Warner
J. A. Walsh

INVENTORS
Charles M. Lenhart
and Harry P. Lenhart,
BY

Chester Bradford
ATTORNEY.

UNITED STATES PATENT OFFICE.

CHARLES N. LENHART, OF MATTOON, ILLINOIS, AND HARRY P. LENHART,
OF TERRE HAUTE, INDIANA.

SELF-CLOSING SWITCH.

SPECIFICATION forming part of Letters Patent No. 523,840, dated July 31, 1894.

Application filed May 8, 1894. Serial No. 510,487. (No model.)

To all whom it may concern:

Be it known that we, CHARLES N. LENHART, residing at Mattoon, in the county of Coles and State of Illinois, and HARRY P. LENHART, residing at Terre Haute, in the county of Vigo and State of Indiana, citizens of the United States, have invented certain new and useful Improvements in Self-Closing Switches, of which the following is a specification.

The object of our said invention is to produce a switch for railways, which, after it is opened, will be held open by the passing train until said train has entirely passed, when it will automatically close, thus leaving the main track again open and ready for trains to pass thereon.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a perspective view of a switch embodying our said invention; Fig. 2 a top or plan view illustrating the relative position of the track, switch and switch mechanism; Fig. 3 a side elevation; Fig. 4 a transverse view on the dotted line 4 4 in Fig. 3; Fig. 5 a detail sectional view on the dotted line 5 5 in Fig. 4, and Fig. 6 a transverse section across the track on the dotted line 6 6 in Fig. 3.

In said drawings the portions marked A represent the rails of the main track; B the rails of the switch track; C the switch bar; D a lever by which said switch bar is operated; E a bar alongside the track by means of which the train is enabled to hold or lock the switch open; F a rock-shaft for operating said bar, and G a weighted lever pivoted upon the lever D and connected to and operating said rock-shaft.

The track rails A and B and the switch-bar C each are or may be of an ordinary form, and need no especial description, and the switch is operated by the switch-bar C in the ordinary and well known manner.

The lever D is secured by a pivot *d* upon a suitable bearing D', and its short arm, extending beyond said bearing, connects directly with the switch bar C, while its long arm extends between the upright standards of the switch-stand S. This lever D moves vertically (its pivot being horizontal), and may be operated directly by hand, or, as

shown, it may have a second lever R, by which it may be operated with greater power. When the latter is used it is connected thereto by a link *r*, as will be readily understood; and said link preferably connects with a roller in a transverse slot in a head-piece V on the lever D, as shown. This lever D is so arranged that (however it is operated) when it is raised it opens the switch, and when it is lowered it closes the switch.

The bar E is located alongside one of the track rails A, and is held in place by stirrups E', as most plainly shown in Figs. 3 and 6, and anti-friction rollers *e'* are preferably secured to these stirrups, and upon these the bar E rests. Said bar E has one or more projections *e* on its lower side, which are arranged to be positioned on one side of the rollers *e'* when the switch is open, and on the other side when it is closed. As the bar E stands normally at the same height as the track A, and as it is compelled to rise above that height when the projections *e* pass over the rollers *e'*, obviously, if a train is passing over it, said bar will be held by the wheels of the train from moving from the side where it is positioned when the train begins to pass. Thus, this bar being connected to the switch operating mechanism, if the switch is open when the train begins to pass, it will be held or locked open until it has entirely passed, after which the switch operating mechanism is free to work, as will be presently described. Guide stops *e*² prevent the bar E from being thrown out of place.

The rock-shaft F is an ordinary rock-shaft, mounted in suitable bearings, and is connected by means of an arm *f* and link *f'* to the bar E at one end, and has an arm *f*² at the other end, from which the rod F' runs to the switch-operating mechanism.

The lever G is mounted upon the lever D (and is adapted to swing transversely thereof) by means of a trunnioned eye *g* secured within an opening in said lever G, as shown most plainly in Fig. 5, and carries a weight G' at the bottom. A slot *t* extends longitudinally of the lower portion of this lever G. Obviously, when the lever D is raised, the lever G will be raised with it, but said lever G will have no effect upon the bar E until said lever

is swung over to one side, as the connection is made by means of the slot *t*. A bent stirrup *P* is secured by means of a pivot-bolt *p* to ears *s* depending from a cross-bar upon the standards *S*, as shown, and at the other end this stirrup passes through the slot *t* in the lever *G*. At the angle of said stirrup *P* the connecting rod *F'* is secured by means of pivots or a pivot bolt *p'*, and thus connection is established through said rod *F'* and stirrup *P* between the arm *f*² on the rock-shaft *F* and the lever *G*. After the switch has been opened, the top of the lever *G* is swung over toward the right (when the devices are in the position shown in the drawings) which operates, through the parts just described, to rock the rock-shaft *F* and slide the bar *E* endwise until the projections *e* are on the sides of the rollers *e'* nearest the switch-stand. This is usually done just before the train comes onto the switch, and as soon as it has entered the switch the operator may leave the switch mechanism, which generally need be given no further attention. When the train has fully passed onto the switch, the weight *G'* will operate to return the lever *G* to upright position, thus rocking the rock-shaft *F* in the reverse direction and returning the bar *E* to its former position. At the same time the weight of the apparatus operates, through the lever *D*, to close the switch, as will be readily understood.

When it is desired to lock this switch so that it cannot be tampered with or operated by unauthorized persons, we apply an ordinary switch lock in the usual manner.

Having thus fully described our said invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the ordinary movable rails and bar of a switch, of a vertically moving lever connected to the switch bar, a

transversely moving lever mounted upon said vertically moving lever, a locking bar arranged alongside the track, a rock-shaft connected to said locking bar, and a connection therefrom to said transversely moving lever, whereby the switch when opened may be automatically held open by the train until said train has completely passed said switch, substantially as set forth.

2. The combination, with the ordinary rails and switch bar, of a vertically moving lever connected to said switch bar, a transversely movable lever mounted upon said vertically moving lever and provided with a heavy weight at its lower end, a locking bar alongside the track, and connections running from said last named lever to said locking bar, whereby the passing train is enabled to hold the switch mechanism in position, said weight being arranged as described to close the switch after the train has passed, substantially as set forth.

3. The combination, in a railway switch, of the lever for operating the switch, a locking bar alongside the track, a second lever mounted upon the first for operating said locking bar, said lever being provided with a slot, a swinging stirrup passing through said slot and suspended to the frame-work or standards, and a connecting rod connected to said stirrup at one end and to the operating rock-shaft at the other, whereby the levers may be elevated when desired without moving the locking bar, substantially as set forth.

In witness whereof we have hereunto set our hands and seals, at Indianapolis, Indiana, this 2d day of May, A. D. 1894.

CHARLES N. LENHART. [L. S.]
HARRY P. LENHART. [L. S.]

Witnesses:

CHESTER BRADFORD,
JAMES A. WALSH.