

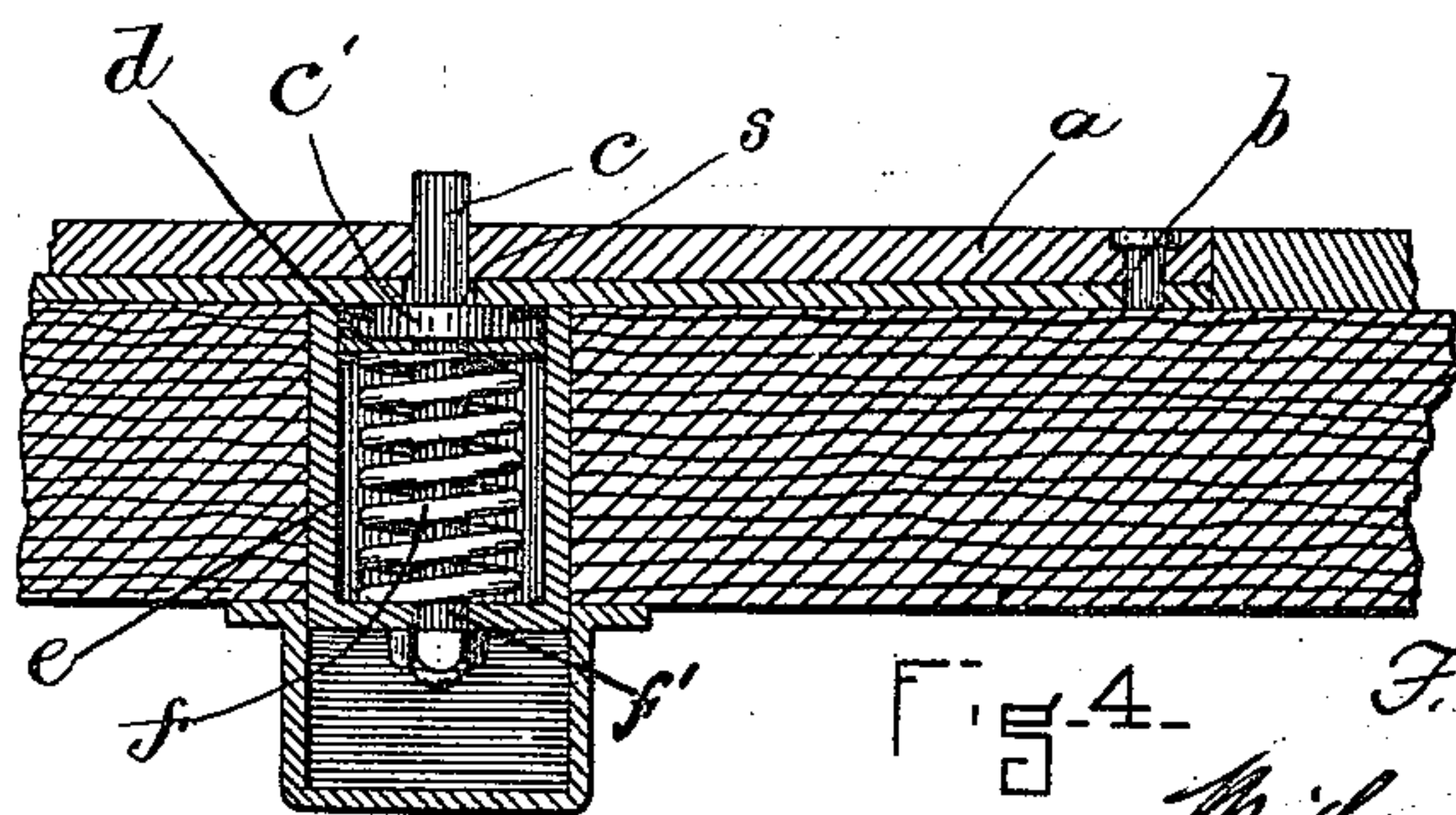
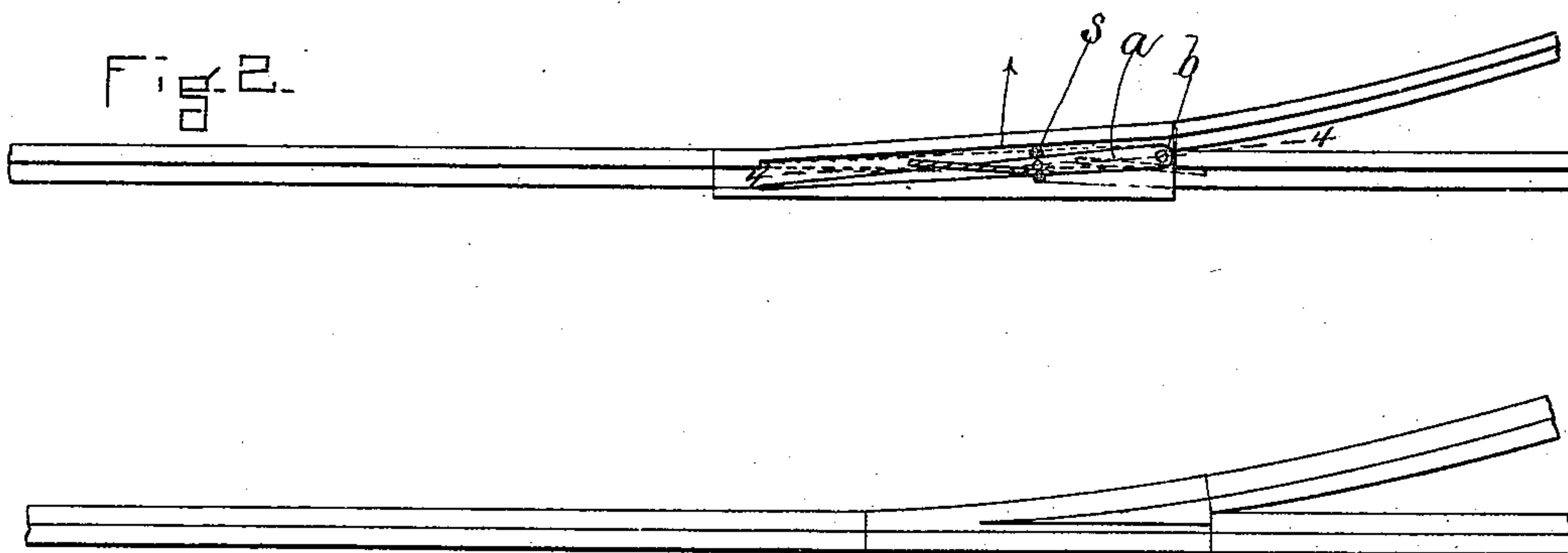
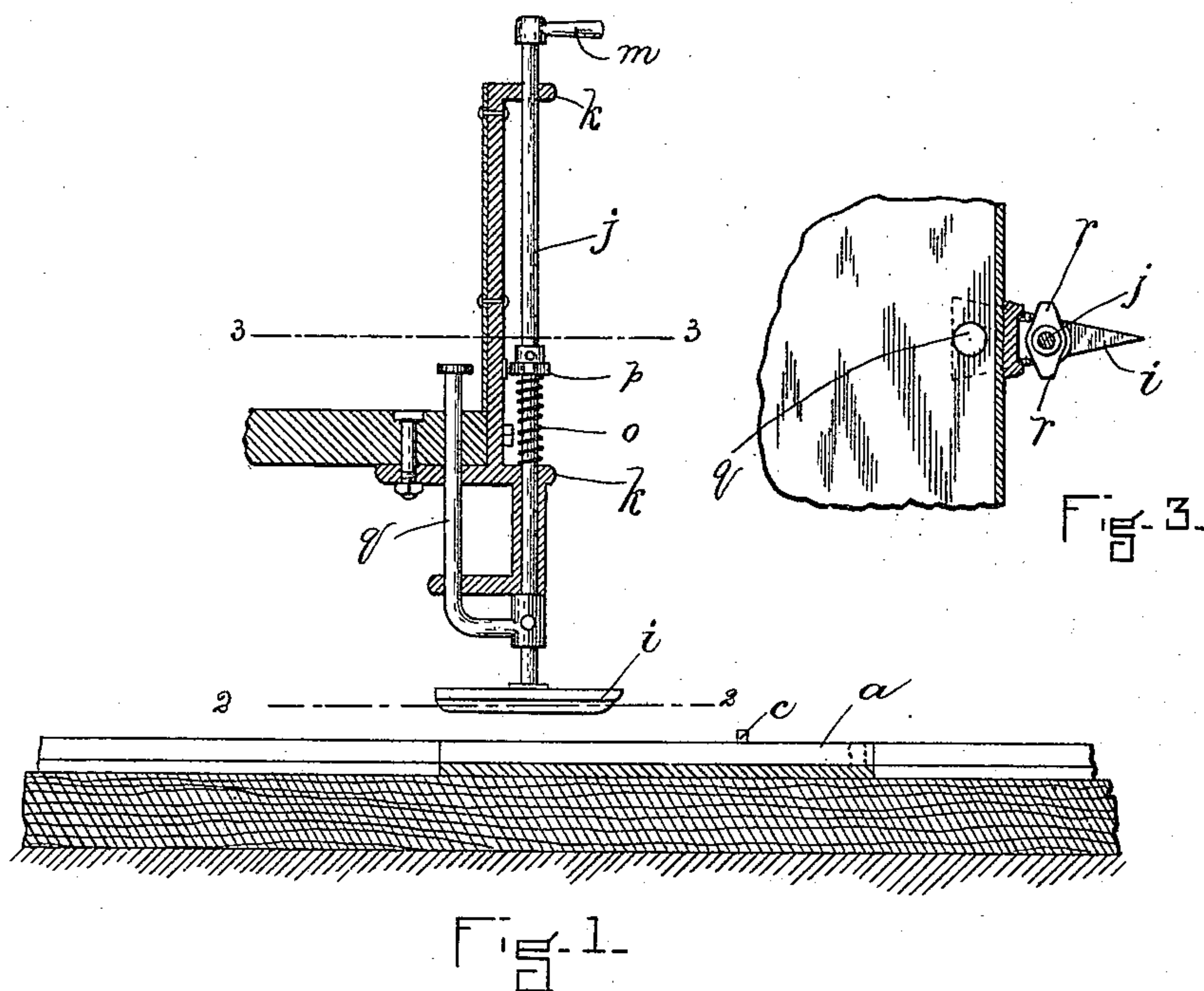
(No Model.)

F. C. CASH.

RAILWAY SWITCH AND MEANS FOR OPERATING THE SAME.

No. 441,397.

Patented Nov. 25, 1890.



WITNESSES.
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UNITED STATES PATENT OFFICE.

FRANCIS C. CASH, OF LYNN, MASSACHUSETTS.

RAILWAY-SWITCH AND MEANS FOR OPERATING THE SAME.

SPECIFICATION forming part of Letters Patent No. 441,397, dated November 25, 1890.

Application filed March 27, 1890. Serial No. 345,508. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS C. CASH, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Railway-Switches and Means for Operating the Same, of which the following is a specification.

This invention has for its object to enable a pivoted switch-point forming a part of a railroad-track to be moved by an attachment on an approaching car, so that the car in approaching the switch will be enabled to turn the latter in either direction; and it consists in the several improvements, which I will now proceed to describe and claim.

In the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of a portion of a street-railroad track and a portion of a car running thereon, said car being provided with the switch-operating attachment. Fig. 2 represents a section on line 2 2 of Fig. 1 and a plan view of the track below said line. Fig. 3 represents a section on line 3 3 of Fig. 1. Fig. 4 represents a section on line 4 4 of Fig. 2 on an enlarged scale.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents a switch-point, of the usual form, pivoted at *b* to the base or support of one of the track-rails.

c represents a vertically-movable stud or pin, which passes through an orifice formed for its reception in the switch-point *a* between the free and pivoted ends thereof. Said stud has a head *c'* at its lower end, which bears upon a spring-supported plate *d*, which is vertically movable in a box or casing *e*, located under the track.

f represents a spring, which supports the plate *d*, said spring being located in the box *e*, as shown in Fig. 4. The head *c'* of the pin *c* bears upon and is adapted to slide upon the plate *d*, said plate and the spring which supports it holding the pin *c* in the raised position shown in Figs. 1 and 4, the upper end of said pin projecting above the thread-surface of the switch-point.

f' represents a bolt or pin, which is attached at its upper end to the plate *d*, and projects downwardly therefrom through a hole in the

bottom of the box *e*. Said pin is vertically movable with the plate *d* and serves as a core for the spring. It is not an essential part, however, and may be omitted, if desired.

It will be seen that the yielding pin *c*, supported as described is adapted to be depressed by contact with a wheel passing over the switch-point, said pin offering no material resistance to a downward pressure upon it. When lateral or horizontal pressure is applied to the pin *c*, the latter, fitting closely in the orifice formed for it in the switch-point, is enabled to move the switch-point laterally in one direction or the other, according to the direction of the pressure applied. It will be seen, therefore, that the switch-point may be moved in either direction by means of a suitable attachment on an approaching car when said attachment is brought into position to bear upon the pin *c* and exert lateral pressure thereon in the direction required to shift the switch-point from one position to another.

I have shown as the switch-operating attachment on the car a horizontal plate *i*, which is preferably wedge-shaped, and is attached to the lower end of a rod *j*, said rod being vertically movable in guides *k k*, attached to the platform and fender of a street-car. The rod *j* extends upwardly to a point above the fender, and is provided at its upper end with a handle *m*, whereby it may be turned by the driver or motor-man on the car-platform. A spring *o*, interposed between the lower guide *k* and a collar *p* affixed to the rod *j*, normally elevates said rod and the plate *i*, attached to its lower end, so that said plate stands higher than the upper end of the pin *c*, and will not therefore act on said pin under ordinary conditions.

q represents a bent arm attached to the rod *j* near the lower end thereof and passing upwardly through the car-platform, the upper end of said arm being formed as a pedal adapted to be depressed by the driver's foot, so that whenever the plate *i* is to be made operative the driver presses downwardly on the arm *q*, and thus depresses the plate *i* against the supporting-pressure of the spring *o* until said plate is in position for one of its sides to bear against the pin *c* when the plate *i* is passing the point where said pin is located.

The plate is thus caused to move the pin *c* and the switch-point in one direction or the other, according to the position of the plate, the latter being adapted to be turned by partial rotation of the rod *j*, so that its forward end will strike one side or the other of the pin *c*, according to the direction in which it is desired to move the switch-point.

If the switch-point is to be moved from the position shown in full lines in Fig. 2 to that shown in dotted lines in said figure, the plate *i* is turned to the position shown in the same figure, so that in passing the pin *c* it will exert a lateral pressure thereon in the direction indicated by the arrow in Fig. 2, thereby moving the switch-point to its dotted-line position. If the next car is to take a different course, requiring the return of the switch-point to the full-line position shown in Fig. 2, the plate *i* is turned so that its other side will bear against the pin *c*, and thereby move the switch-point from the dotted-line position to the full-line position.

The rod *j* is provided with two short projections or stops *rr*, Fig. 3, which are adapted to bear upon the front side of the car-fender or upon a plate thereon and limit the rotary movements of the rod *j*, so that the rod cannot be accidentally turned to throw the plate *i* too far in either direction.

The arm *q* is connected to the rod *j* in such manner as to impart vertical movements to said rod without interfering with the rotation thereof.

It will be seen that the described devices constitute simple and effective means for operating the pivoted switch-point, requiring no change in the switch-point excepting the provision of a hole therein to receive and permit the vertical movement of the pin *c* when the switch is to be moved.

I claim—

1. The combination of a pivoted switch-point, a fixed base supporting the same and provided with a slot *s*, a vertically-movable pin fitted to slide in an orifice in the switch-point and passing through the slot *s*, and a spring located in a holder or casing below the switch-point and adapted to exert an upward yielding pressure on said pin, as set forth.

2. The combination of a pivoted switch-point, a fixed base supporting the same and having a slot *s*, a pin *c*, adapted to slide vertically in an orifice formed for it in the switch-point and passing through said base, a box or casing *e* in the road-bed under the switch-point, a spring *f* in said box or casing, and a plate or follower *d*, yieldingly supported by the spring and interposed between the latter and the head of the pin *c*, said head being adapted to slide upon the plate *d*, whereby the said pin is yieldingly supported in any position to which it may be moved with the switch-point, as set forth.

3. The combination, with a car-platform, of the rod *j*, adapted both to move vertically and to rotate in guides attached to said platform, a plate *i*, attached to the lower end of said rod, a spring *o*, arranged to normally elevate said rod and plate, and an arm *q*, connected with said rod and projecting upwardly through the platform, so that it may receive downward pressure and thereby depress the rod *j* and plate *i*, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 14th day of March, A. D. 1890.

FRANCIS C. CASH.

Witnesses:

C. F. BROWN,

A. D. HARRISON.