F. P. AHMAN.

RAILWAY SWITCH.

APPLICATION FILED JULY 2, 1910.

971,236.

Patented Sept. 27, 1910.

2 SHEETS—SHEET 1.

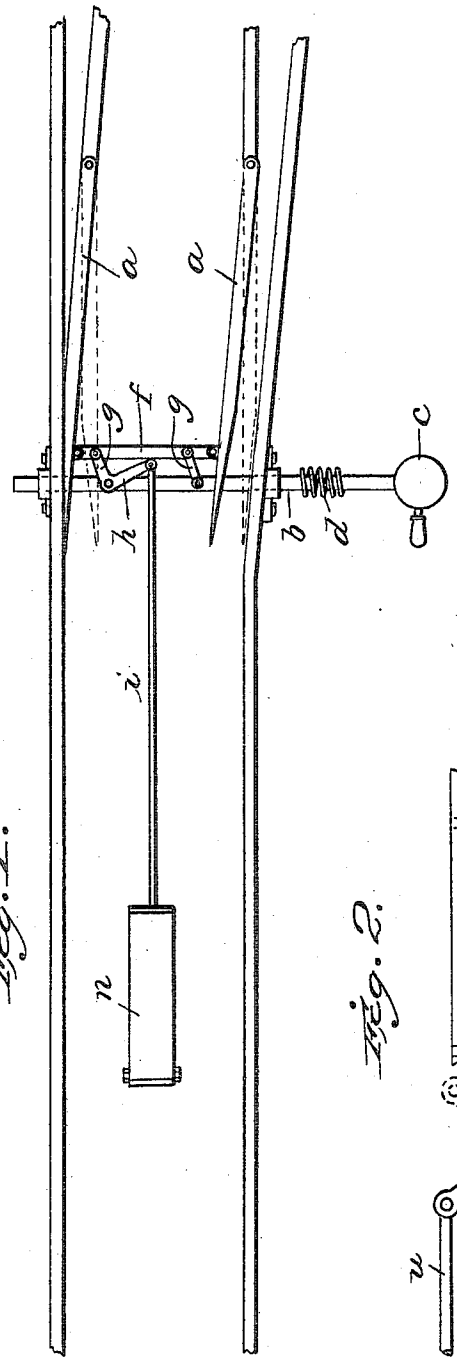

Fig. 1.

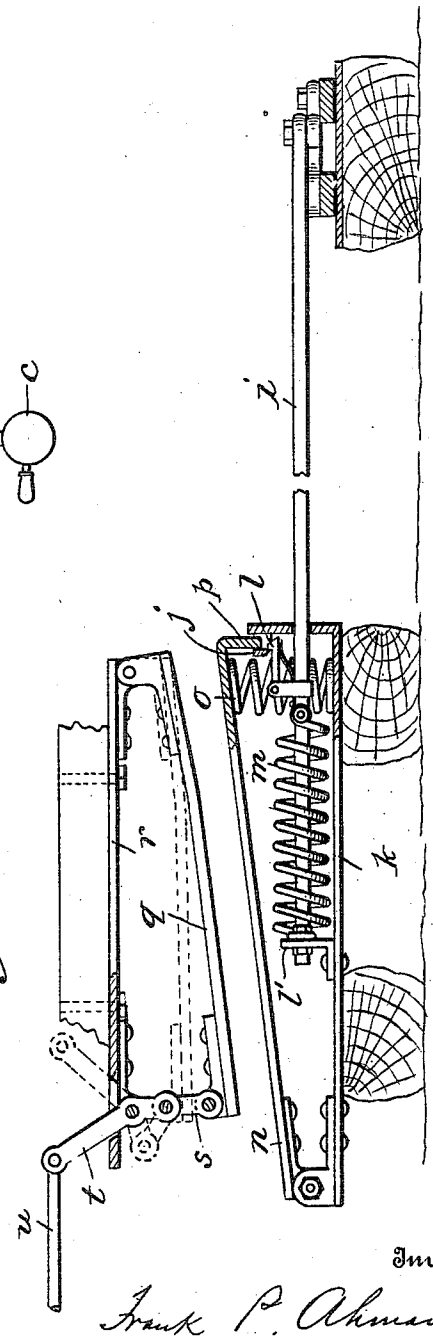

Fig. 2.

Witnesses

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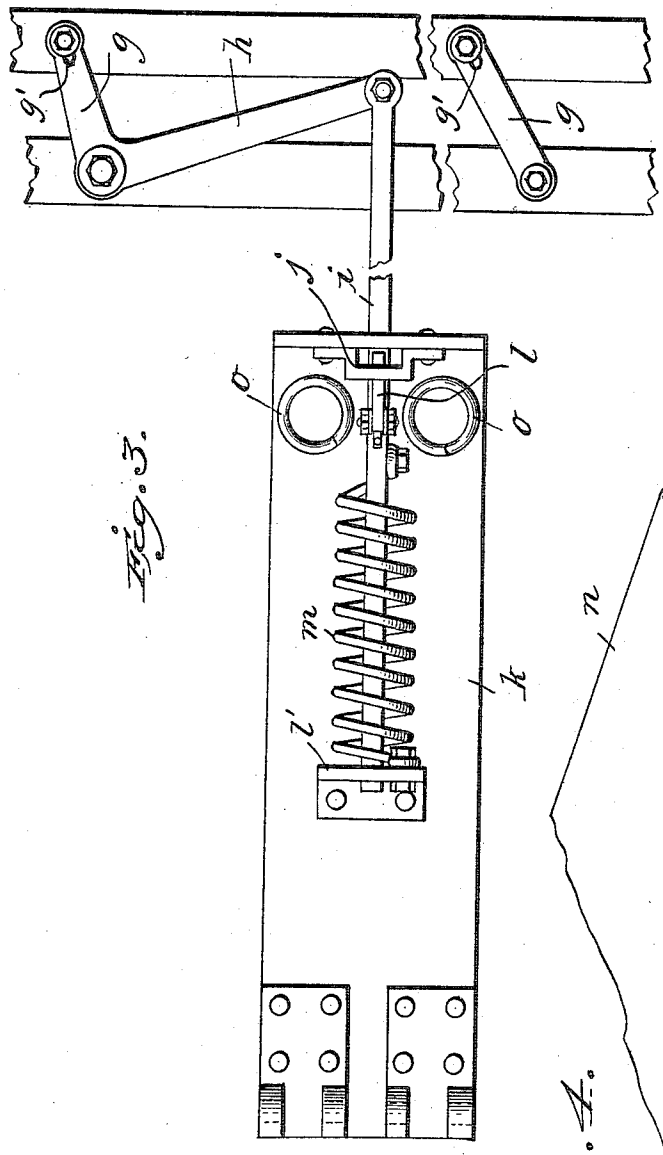

Fig. 3.

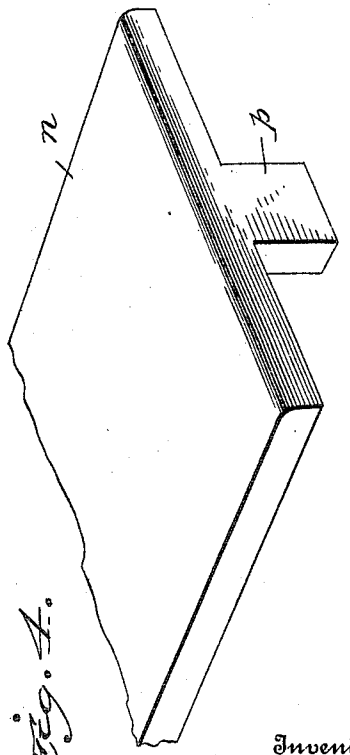

Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

FRANK P. AHMAN, OF NORFOLK, VIRGINIA.

RAILWAY-SWITCH.

971,236. Specification of Letters Patent. Patented Sept. 27, 1910.

Application filed July 2, 1910. Serial No. 570,169.

To all whom it may concern:

Be it known that I, FRANK P. AHMAN, a citizen of the United States, and a resident of Norfolk, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Railway-Switches, of which the following is a full and clear specification, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a railway switch provided with my invention; Fig. 2 is a side elevation partly in section showing the mechanism on the locomotive and on the road-bed for throwing the switch from the locomotive; Fig. 3 is a plan view of the road-bed mechanism with the top plate removed; Fig. 4 a detail perspective of the tripping end of the top plate.

The object of this invention is to provide means whereby the engineer may instantly and without dismounting from the locomotive put into action mechanism which will automatically close the switch which the locomotive is approaching, whereby should the engineer discover that a switch ahead of him is open he may by a simple operation automatically close the switch before his locomotive reaches it and thus avoid serious accident, as more fully hereinafter set forth.

The switch rails *a* are operable as usual by a switch rod *b* and this rod is connected as usual to means at the switch post *c* for shifting the switch rails manually, a spring coupling *d* of the usual type being employed to permit the switch rod *b* to yield endwisely sufficiently to permit the switch to be closed automatically by the wheels of a train coming from behind the switch, in the usual manner, my attachment being so constructed that it will not interfere with the automatic closing of the switch in his manner. The switch rails are connected together pivotally by a rod *f*, which lies parallel with the switch rod *b* and is connected thereto by parallel pivotal links *g*. One of the links is converted into an angle lever by having an arm *h* formed integral with it at one end. To the end of this arm *h* is pivotally connected a rod *i*, and this rod is long enough to extend a considerable distance ahead of the switch, its forward end passing through a hole in the up-turned end of a plate *k* fastened rigidly to the ties between the rails. The forward extremity of the rod *i* works loosely through an upstanding bracket *l'* fastened to the upper side of said plate *k*. A coil spring *m* surrounds the rod *i* and has one end attached to said bracket *l'* and the other end to said rod *i*. On the inner face of the up-turned end of the base plate is rigidly fastened a keeper *j*, and adapted to engage up under the lower edge of this keeper is a spring hook *l* carried by the rod *i*. It will be observed that when the rod *i* is pushed forward to the position shown in Fig. 1 the lever arm *h* and the links *g* will cause the switch rails to close. In this position the spring *m* is distended and thus exerts a strong tendency to pull the rod *i* forwardly. The rod *i* is held against this tendency by the catch *l* engaging the keeper *j*. When the catch *l* is disconnected from the keeper *j*, the spring *m* quickly pulls back the rod *i* and thus, through the medium of the arm *h* and the two links shifts the switch rails over to the other position, as shown in dotted lines in Fig. 1. It will be observed that this automatic shifting of the switch rails is accomplished without interference with the devices for manually shifting the rails, and it will also be observed that the switch rails may be shifted by the manual means without interference from the automatic devices, since upon sliding the rod *b* forwardly and backwardy the links *g*, the connecting rod *f* and the arm *h* are all bodily shifted with said rod, the flexibility of the rod *i* being sufficient to permit this to be done without releasing the catch *l*.

The catch *l* may be disconnected in any suitable manner from the locomotive. I prefer employing a plate *n* pivoted at the forward end of the base plate *k* and normally held up by a pair of upright coil springs *o* and provided with a down-turned lug *p* which enters the keeper *j*, so that when said plate *n* is depressed against the tendency of its springs *o*, said lug *p* will disconnect the latch *l* and thus allow the automatic devices to operate. These automatic devices may be reset by any suitable tool or appliance. To depress the plate *n* in the manner set forth, I employ a shoe *q* suitably mounted on the locomotive and adapted when depressed to strike the inclined face of plate *n* and depress the same as the locomotive passes along. The shoe *q* is pivotally connected at its forward end to a plate *r* suitably fastened to the frame of one of the trucks of the locomotive. The rear end of the shoe *q* may be raised and lowered by means of a link *s* pivotally connected to a

lever t, which lever may be operated by a rod n in any suitable manner by the engineer.

It will be observed that the switch rod b is not connected directly to the switch rails a, it being indirectly connected thereto through the medium of the links g and the rod f. In this way when the switch is shifted by the manual devices, the shifting of the rod b will bodily carry with it so much of the automatic mechanism as is attached to said rod b, the rod i being sufficiently flexible to permit this action without interfering with the lock and tripper mechanism mounted on plate k. When the rails are thus shifted manually pivotal movement of the links g is prevented by the rod i which has its forward end locked against endwise movement, no manual shifting of the rails being possible unless the rod i is locked in position ready for operation. It will be observed also that when the rails are shifted automatically, the rod b remains stationary and the rails are shifted by the swinging of the links g. In view of the fact that when the rails are thus shifted by the medium of the links g the distance between the connecting rod f and the switch rod b must change, it is obvious that the rod b may be so mounted in its guides that it may shift laterally a slight distance to prevent binding at the pivotal connections. The same result may be accomplished by elongating the holes through which the bolts pass which connect the links to the rod f, as shown at g' Fig. 3, and it is probable that this will be the more practicable way of giving the necessary lost motion.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is—

1. In a railway switch, the combination of a manually operable shifting rod extending across the road bed, a bar connecting the switching rails, a pair of pivotal links connecting said bar to the aforesaid rod, and automatic means on the road bed connected to the said links for automatically shifting the rails independently of the aforesaid shifting rod.

2. In a railway switch, the combination of a manually operable shifting rod extending across the road bed, a bar connecting the switch rails, links connecting said bar to the shifting rod, a flexible rod connected to one of said links and extending forwardly along the road bed, spring means for exerting a pull upon said rod, and latching means for holding said spring compressed, for the purpose set forth.

In testimony whereof I hereunto affix my signature in the presence of two witnesses this 30th day of June 1910.

FRANK P. AHMAN.

Witnesses:
ARTHUR H. SMITH,
J. J. MILLER.