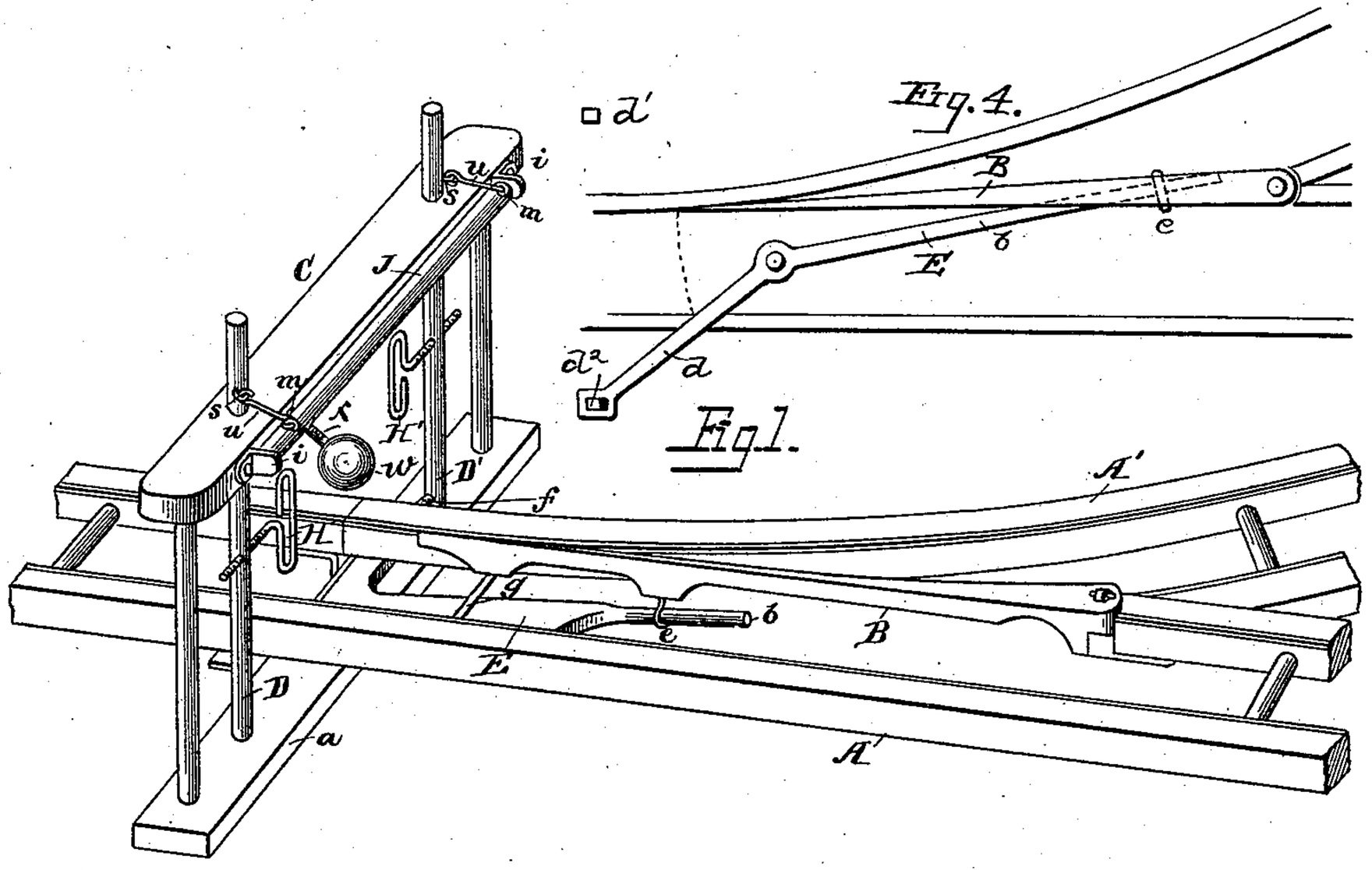
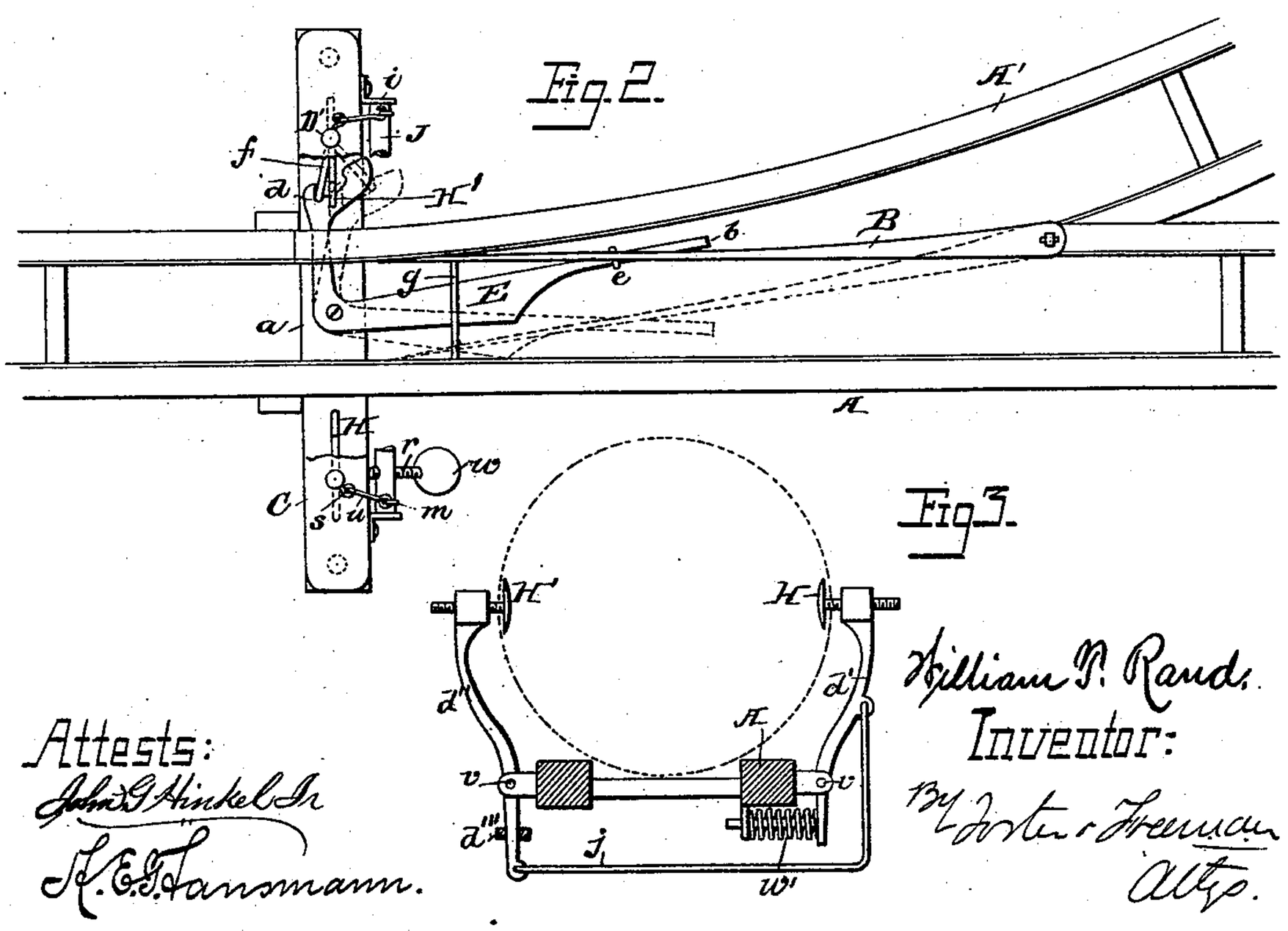
(No Model.)

W. T. RAND.

SWITCH FOR STORE SERVICE APPARATUS.

No. 414,780. Patented Nov. 12, 1889.





Attests:
John G. Hinkel Jr
L. E. G. Tansmann.

William T. Rand.
Inventor:
By Dexter Fremon
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM T. RAND, OF LOWELL, ASSIGNOR TO THE LAMSON CASH RAILWAY COMPANY, OF BOSTON, MASSACHUSETTS.

SWITCH FOR STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 414,780, dated November 12, 1889.

Application filed December 26, 1884. Serial No. 151,216. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. RAND, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Switches for Store-Service Apparatus, of which the following is a specification.

My invention relates to switches for store-service apparatus; and it consists in the combination, with the switch-rail, of certain operating devices, whereby the rail is moved with certainty and without risk of derailing the carrier.

In the drawings, Figure is a perspective view showing parts of the main and branch tracks of a store-service apparatus and a switch device embodying my invention. Fig. 2 is a plan of Fig. 1, with a portion of the frame C and shaft J broken away for the sake of perspicuity. Fig. 3 is a cross-section showing a modification. Fig. 4 is a diagram illustrating a mode of moving the switch-tongue.

A and A′ represent the main and branch tracks of a store-service way, which may be upon the same plane or in different planes, as shown in the switch device patented to W. S. Lamson on the 5th of February, 1884, No. 292,923.

B is the switch, consisting, in the arrangement shown, of a tongue or rail pivoted at the intersection of the inner rails of the two tracks; but when the tracks are on different planes a different form of switch-rail will be employed, as in the Lamson switch already referred to. The free end of the switch-rail rests on a cross-bar *g*, on which it slides freely, and the switch-operating device is preferably constructed as follows.

In suitable supports or bearings—for instance, a frame C—are supported two upright shafts D D′, and to a cross-piece *a* of the frame is pivoted at the corner an L-shaped lever E, one arm *b* of which extends through an eye *e* of the switch-tongue B, while the other arm *d* is notched to receive an arm *f*, projecting from the shaft D′, the arrangement being such that the turning of the shaft D′ will cause the lever to swing on its pivot and alter the position of the switch-rail, as shown by dotted lines, Fig. 2. An arm H′ extends from the shaft D′ to a position adjacent to the track, to be struck by the carrier as it passes toward the switch, the shaft D′ being situated at such a distance from the latter as to insure the striking of the arm H′, the turning of the shaft, and the complete adjustment of the switch-rail just as the carrier reaches a position to pass onto the switch-rail, by which it is guided, according to the arrangements of the parts, onto the main or branch track.

A spring or weight is properly applied, as described hereinafter, to insure the return of the switch-rail to its position after the passage of the carrier.

The arm H′ is preferably adjustable on the shaft D′, so that it may be set to be struck only by such of the carriers as are to be deflected, and are of the proper size to operate the switch.

As a single-switch-rail-operating device at one side of the track might have the effect of throwing the carrier to and sometimes off of the opposite side of the track, I use the second shaft D, which I gear or connect with the shaft D′, so that both will move together, and also provide the shaft D with an arm H, so set that the carrier will strike both arms H H′ simultaneously, and will be thereby held centrally on the track, the arms having the further effect, as the carrier passes between them, of slightly retarding the speed of the carrier, so that it will not pass onto the switch with undue rapidity, thereby reducing the danger of jumping from the track as the direction of motion is changed.

As one of different effective means of connecting the shafts and maintaining the switch-rail in place, I have shown in the drawings a rock-shaft J, turning in ears *i i* of the frame, and provided with eyes *m*, connected by links *u* with eyes *s* on the shaft, arranged, as shown, so that the turning of the vertical shafts will rock the cross-shaft. On an arm *r*, projecting from the shaft J, is secured a weight *w*, adjustable to and from the shaft, so as to reduce or increase the leverage, and acting to turn the shafts D D′ to normally maintain the arms H H′ in position to be struck by the carriers and the switch-rail in line with the main track.

It will be obvious that different connections may be used to insure the simultaneous movement of both arms or bearings H H′, and that differently-constructed operating devices for moving the switch-rail may be arranged on opposite sides of the track to bear on opposite sides of the carrier simultaneously and center it on the track in the act of actuating the switch. For instance, the arms or bearings may be carried by levers *d′ d″*, pivoted at *v* and connected by a bar *j*, as shown in Fig. 3, which also shows a spring *w′* instead of a weight for restoring the parts to position.

The operation of the levers *d′ d″* in moving the switch-tongue B will be apparent upon reference to Fig. 4, wherein the lever E has its arm *d‴* (corresponding to the arm *d* in the other figures) slotted to embrace the lower end of the lever *d″*, (see Fig. 3,) the rocking of which latter lever will rock the lever E, and cause its arm *b* to rock the switch-tongue, as is the case with the structure previously described.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. The combination, in a switch for a store-service apparatus, of a movable switch-rail and a switch-operating device provided with arms connected and arranged to be struck simultaneously by the opposite sides of the carrier as it passes between them, substantially as described.

2. The combination, with the main and branch rails and switch, of a switch-operating device provided with arms arranged at opposite sides of the track in position to be simultaneously struck by the carrier and connected to the switch-rail, substantially as described.

3. The combination of the switch-rail maintained normally in one position by a spring or weight, and arms connected to operate the rail and arranged upon opposite sides of the track in position to be struck by a carrier, and connecting devices between the arms and the switch-rail, substantially as described.

4. The combination of the vertical connected shafts carrying arms extending toward the track, a switch-rail, and connections between the switch-rail and one of the shafts, substantially as described.

5. The combination of the vertical shafts and weighted rock-shaft and connections, arms carried by the vertical shafts, lever E, and switch-rail, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM T. RAND.

Witnesses:
ISAAC FITTS,
AUGUSTIN I. DAVIS.