

No. 670,044.

Patented Mar. 19, 1901.

D. N. WEATHERS.

RAIL SWITCH.

(Application filed Aug. 11, 1900.)

(No Model.)

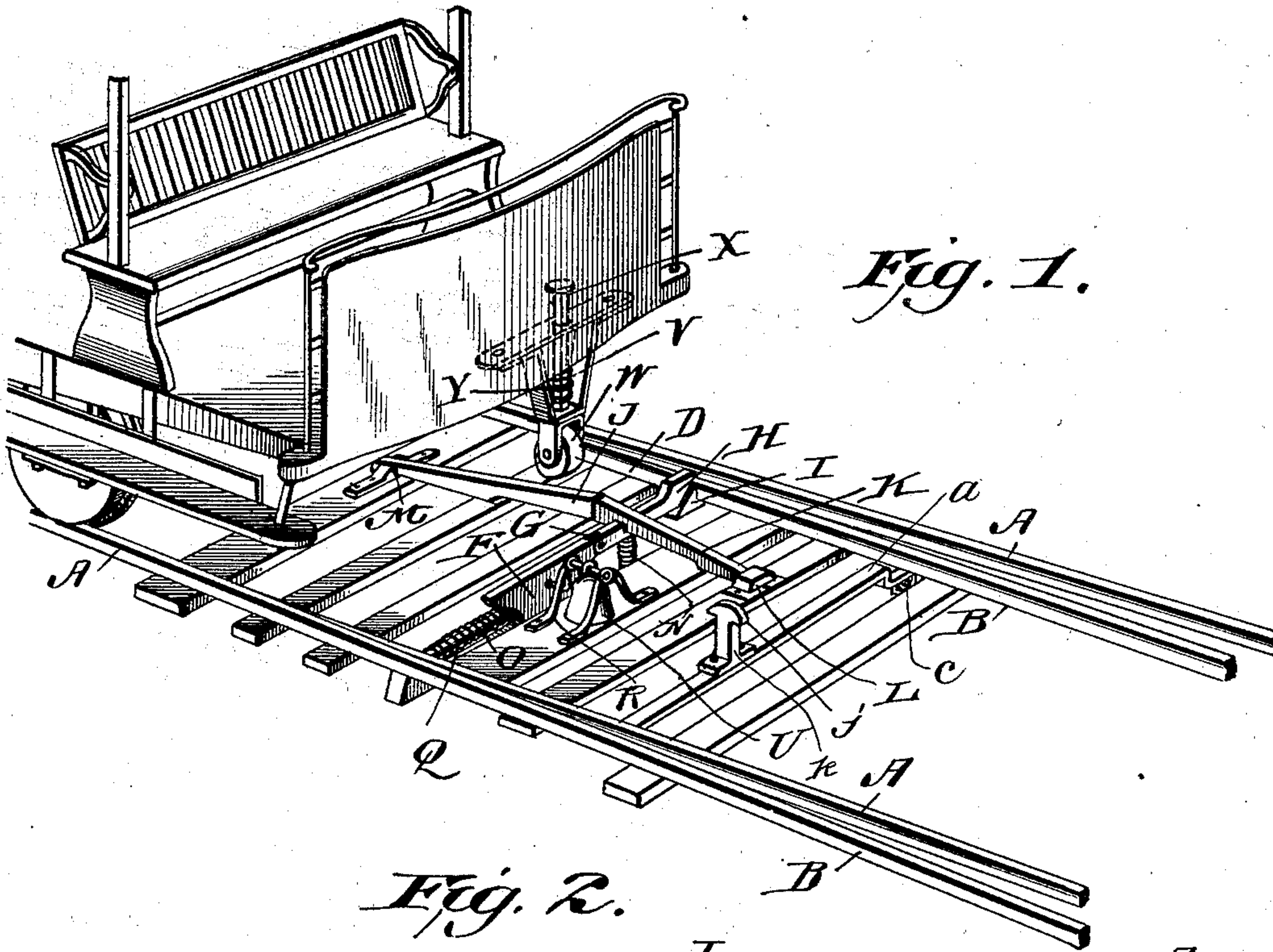


Fig. 2.

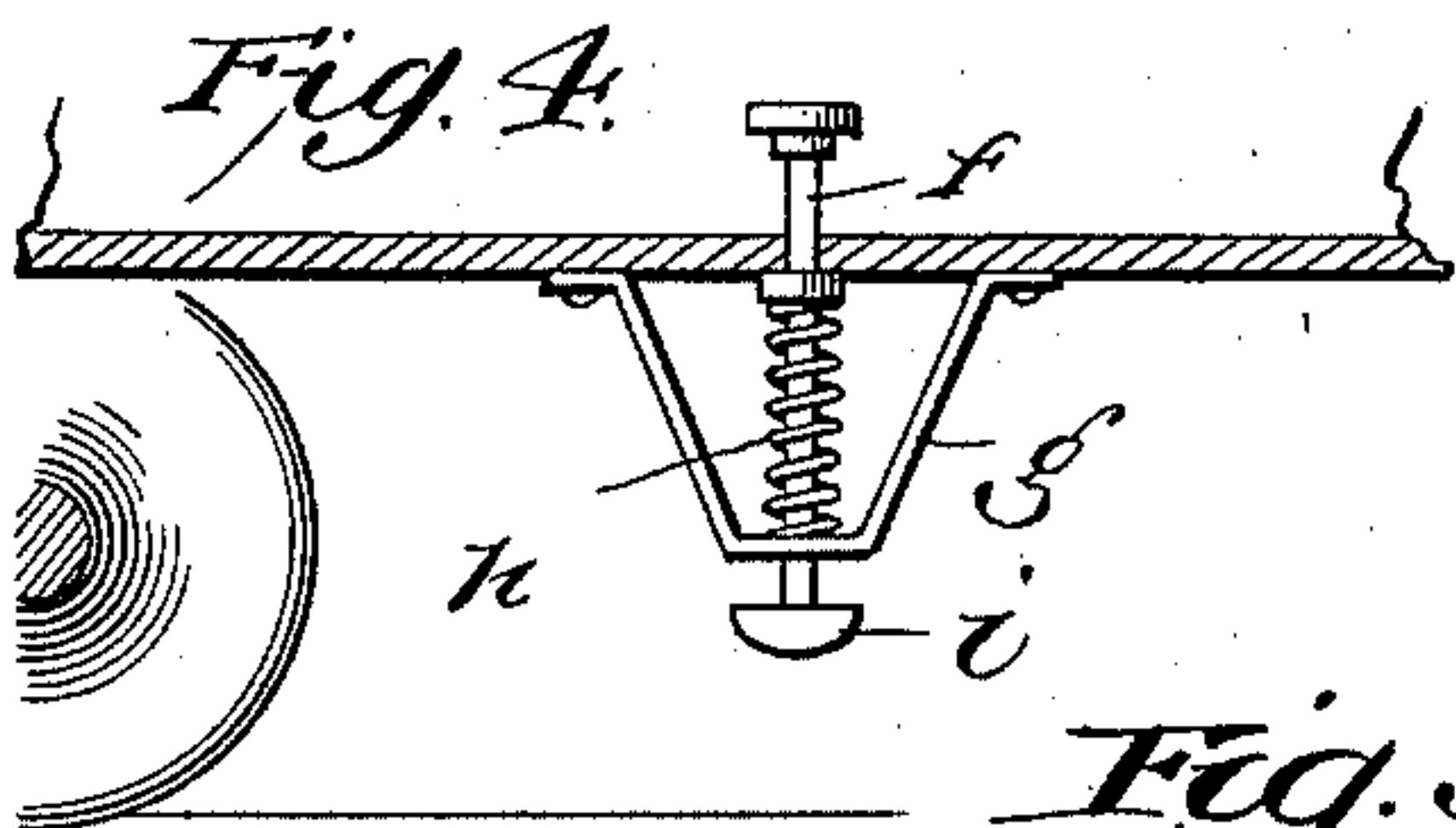
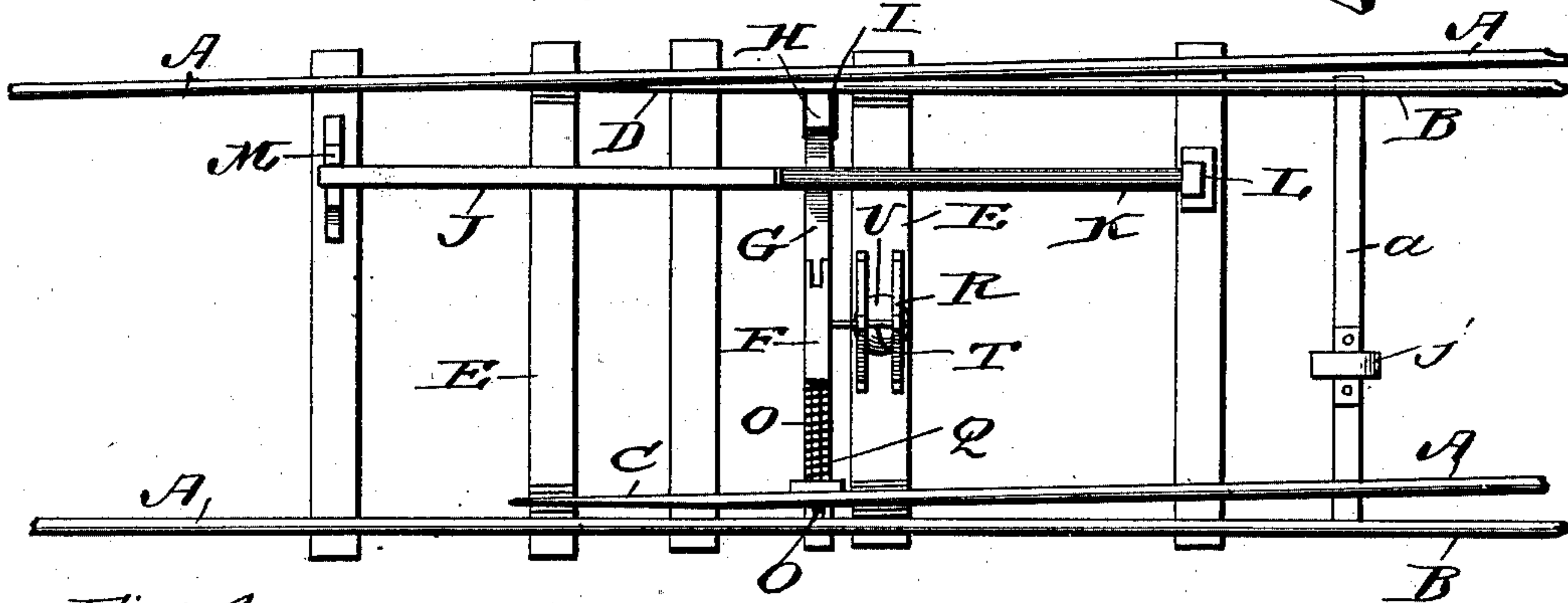
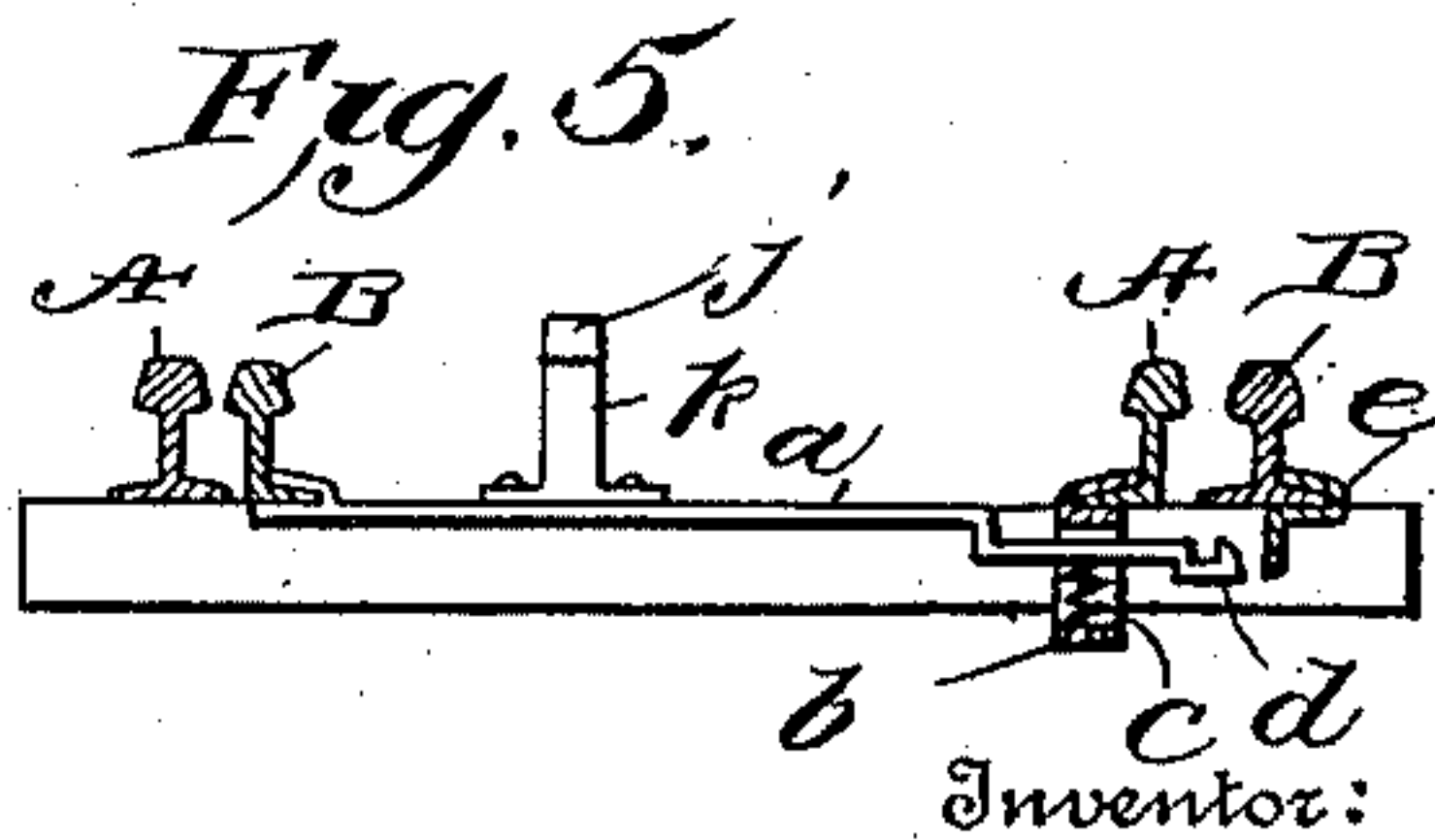
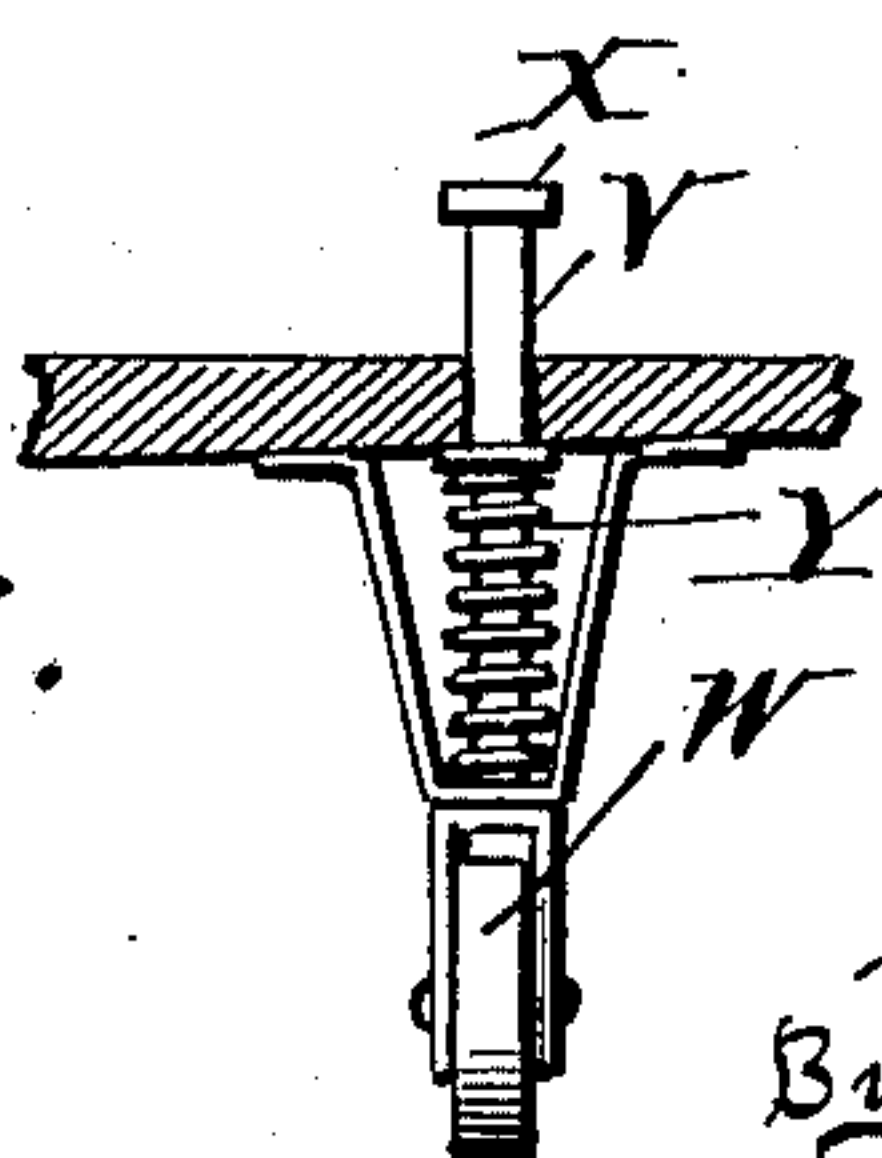


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

DAVID N. WEATHERS, OF MARENGO, INDIANA.

RAIL-SWITCH.

SPECIFICATION forming part of Letters Patent No. 670,044, dated March 19, 1901.

Application filed August 11, 1900. Serial No. 26,625. (No model.)

To all whom it may concern:

Be it known that I, DAVID N. WEATHERS, a citizen of the United States, residing at Marengo, in the county of Crawford and State of Indiana, have invented a new and useful Rail-Switch, of which the following is a specification.

This invention relates to improvements in switches; and the object is to provide a simple and effective switch mechanism which may be readily operated by means carried by the car.

With the above object in view the invention consists in the novel features of construction hereinafter fully described, particularly pointed out in the claims, and clearly illustrated by the accompanying drawings, in which—

Figure 1 is a perspective view of my invention, showing a portion of a car carrying the operating means, the switch being set for the main line. Fig. 2 is a top plan view showing the switch set for the branch line, the car being omitted. Fig. 3 is a sectional detail view illustrating the operating means carried by the car. Fig. 4 is a similar view of the operating means carried by the car for releasing the switch-rails. Fig. 5 is a sectional view of the switch-locking device.

Referring more particularly to the drawings, A A designate the rails of the main track, and B B those of the branch track. One of the rails of the branch track is connected with one of the rails of the main track, while one of the rails of said main track and branch track has a section removed. Thus the main and branch tracks have each one continuous rail and one interrupted rail.

C designates a movable switch-rail adapted to connect the ends of the interrupted rail of the main track and form a continuous rail thereof, while D designates a movable switch-rail performing a similar function for the interrupted rail of the branch track. The switch-rails C and D are connected together by cross-bars E, so as to move together, and so arranged that when the rail C is in line with rail A of the main track rail D is out of line with rail B of the branch track, and vice versa.

F designates a block rigidly attached to one of the ties and located between the switch-

rails, as clearly illustrated. To this rail a transversely-extending arm G is pivotally connected at one end and at its opposite end formed with an inclined engaging portion H, adapted to engage the inclined face of a block I, secured to the inner side of switch-rail D.

J and K designate two inclined longitudinally-extending depressible arms pivotally connected at their opposing ends, arm K being cut out on its under side to receive the arm H, which passes therebeneath. Said arm K has its end reduced to fit in a socket L, which socket prevents lateral movement of the end of said arm, but permits the same to move longitudinally. Arm J at its outer end is pivotally mounted in a block M. A coiled spring N holds arm H and arms J and K normally raised.

O designates a transversely-extending rod which extends through a switch-rail C and a bearing-block P, attached to said rail, and upon this rod said rail moves when the switch-rails are operated. Coiled about this rod is a spring Q, which serves to hold switch-rail C in line with the ends of the interrupted rail of the main track and switch-rail D out of line with the end of the interrupted rail B of the branch track and also to return switch-rail C to its normal position when the mechanism has been operated to open communication with the branch track.

Attached to one of the cross-bars E are supporting-loops R, formed with central eyes, in which a crank-shaft T is mounted, said shaft being connected at its crank end with block F. Attached to this shaft is a bell U. As the switch-rails are moved to establish communication with the branch track this bell is operated to indicate that the switch has been set for said branch track.

Movable vertically in a square opening formed in a platform of a car is a depressible rod V, carrying on its lower end a roller W and provided at its upper end with a knob or head X. This rod is held normally raised by coiled spring Y and is prevented from turning by its cross-sectional shape and that of the opening in which it moves.

The operation of my invention is as follows: Through the medium of the coiled spring before referred to switch-rail C is held in position, connecting the ends of the interrupted

rail of the main track and forming a continuous rail. When it is desired to switch the car from the main track to the branch track, the depressible rod is moved downwardly by
 5 the foot of the motorman and held in that position, the roller carried by said rod moving upon one of the inclined arms, depressing the same gradually and moving the switch-rails to bring rail D in line with the rail of
 10 the branch track. This is accomplished when said roller has reached the inner end of said arm, and this fact is announced by the ringing of the bell. The car then passes onto the branch track, the roller moving downwardly
 15 upon the other inclined arm. This downward movement of the inclined arms causes arm H to be depressed, said arm engaging the inclined block attached to rail D and causing the rails to be moved. As soon as
 20 the car has passed upon the branch track the coiled springs which have been compressed return to their normal positions, raising arm H and the inclined arms and opening the main track and closing the branch track.

25 For holding the switch set until the car has passed to the branch or side track a transversely-extending spring locking-bar *a* is provided, said bar being attached at one end to one of the switch-rails and having its opposite end projecting through and movable in
 30 an opening formed in a plate *b*, depending from the other switch-rail. A coiled spring *c* holds said end of the bar normally upward. This projecting end of the bar is formed with
 35 a hook *d*, having a cam outer end wall, and as the switch-rails are moved by the plunger to establish communication between the main and branch tracks said hooked end is depressed by the engagement of the cam-wall
 40 thereof with the lower edge of a plate *e*, depending from one of the track-rails, until the opening of the hook is reached, when said bar will spring upwardly, receiving the lower edge of the depending plate in the hooked portion
 45 and securely holding the switch set until said bar is disengaged.

For automatically disengaging the locking-bar from the depending plate after the wheels of the car have passed from the main to the
 50 side or branch track the car carries in rear of the wheels a plunger *f*, movable vertically through the floor of the car, and a bracket *g*, depending from the under side of the floor, said plunger being held normally raised by a
 55 coiled spring *h* and carries on its lower end a shoe *i*, having inclined end surfaces. This shoe engages a head *j* upon a standard *k*, secured to the locking-bar and having inclined end surfaces and depresses the bar, causing
 60 its hooked end to disengage the depending plate, and thus releasing the switch-rails, which are returned to their normal positions by the spring before referred to.

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

1. In a switch mechanism, the combination

with a movable rail, of a pivoted arm for actuating said rail, depressible arms pivotally connected at their opposing ends and operating said first-mentioned arm, and means carried by the car for operating said depressible arms, substantially as described. 70

2. In a switch mechanism, the combination with a movable switch-rail, of an arm pivotally mounted at one end and at its opposite end engaging said switch-rail, depressible arms pivotally connected at their opposing ends adapted to operate said first-mentioned arm, one of said depressible arms being pivotally mounted and the other mounted to have a longitudinal movement, and means carried by the car for depressing said depressible arms, substantially as described. 75 80

3. In a switch mechanism, the combination with a movable switch-rail having an inclined block secured thereto, of an arm pivotally mounted at one end and having its opposite end inclined to engage said block, a pivotally-mounted depressible arm adapted to actuate said first-mentioned arm, and means carried by the car for depressing said depressible arm, substantially as described. 85 90

4. In a switch mechanism, the combination with a movable switch-rail, of mechanism for actuating the same, means carried by the car for operating said mechanism, and a bell connected with said mechanism, substantially as described. 95

5. In a switch mechanism, the combination with a movable switch-rail, a crank-shaft carried thereby, and a bell mounted upon said crank-shaft, of a block fixed relatively to said movable rail and with which said crank-shaft is connected, an arm pivoted at one end of said block and at its opposite end adapted to engage the movable rail, a depressible arm for actuating said first-mentioned arm, and means carried by the car for depressing said depressible arm, substantially as described. 100 105 110

6. In a switch mechanism, the combination with a movable switch-rail, of means carried by the car for operating the same, a spring-arm carried by said switch-rail and formed with a hook at one end, a keeper carried by one of the fixed rails to receive said hook, and means carried by the car for disengaging said hooked arm from said keeper, substantially as described. 115

7. In a switch mechanism, the combination with a movable switch-rail, of means carried by the car for operating the same, a spring-arm carried by said switch-rail and having a hook formed at its free end with a cam end, a keeper carried by one of the fixed rails to receive said hook, and means carried by the car for disengaging said hook from the keeper, substantially as described. 120 125

8. In a switch mechanism, the combination with two movable switch-rails connected to move together, of means carried by the car for operating said rails, a spring-arm secured to one of said switch-rails and projecting through a vertical opening formed in a plate 130

depending from the other switch-rail, and
having a hook formed on its projecting end,
a coiled spring positioned in the vertical open-
ing in said plate and holding the hooked end
5 of the arm normally raised, a keeper-plate
depending from one of the fixed rails, and re-
ceiving the hooked end of said arm, and

means carried by the car for depressing the
end of said arm and disengaging the hook
from said keeper, substantially as described. 10
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Witnesses:

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