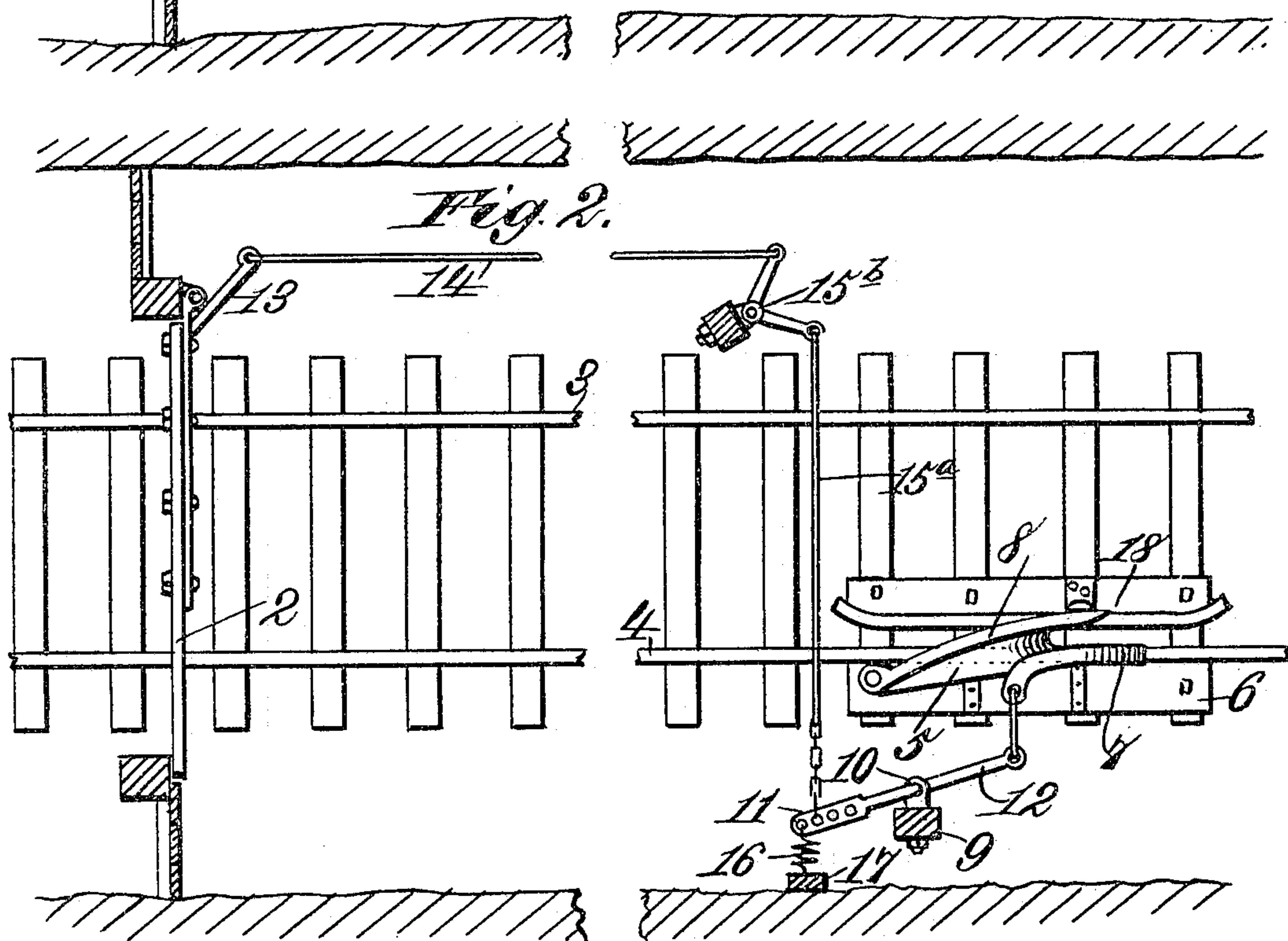
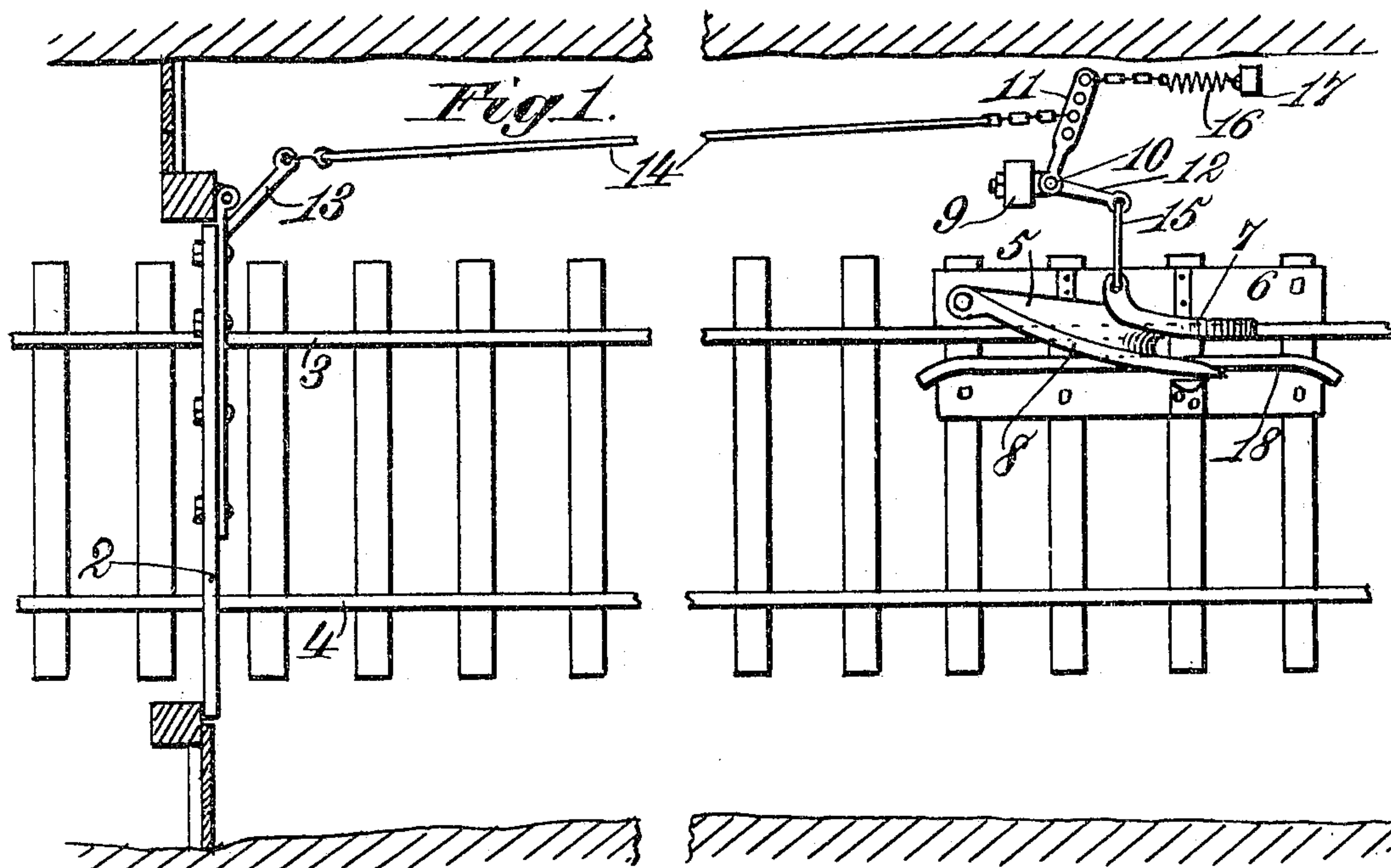


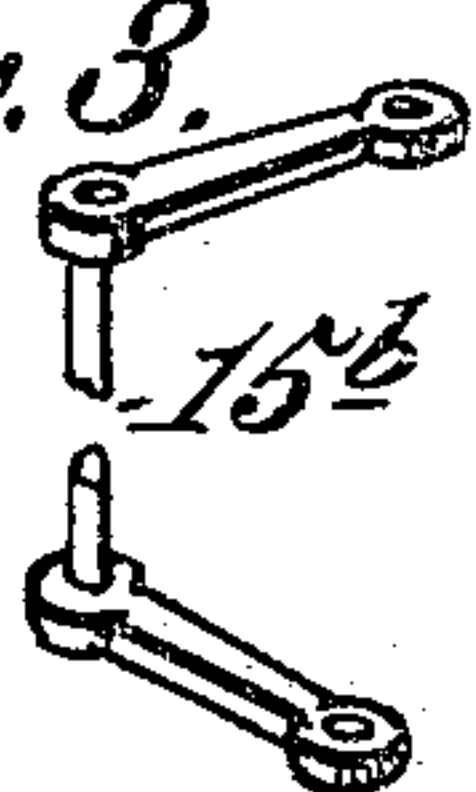
No. 801,732.

PATENTED OCT. 10, 1905.

L. L. LOGAN.
DERAILING MECHANISM.
APPLICATION FILED JULY 7, 1905.



Witnesses. *Fig. 3.*
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By James L. Norris,
Att'y.

UNITED STATES PATENT OFFICE.

LAVALETTE L. LOGAN, OF JOHNSTOWN, PENNSYLVANIA.

DERAILING MECHANISM.

No. 801,732.

Specification of Letters Patent.

Patented Oct. 10, 1905.

Application filed July 7, 1905. Serial No. 268,700.

To all whom it may concern:

Be it known that I, LAVALETTE L. LOGAN, a citizen of the United States, residing at Johnstown, in the county of Cambria and State of Pennsylvania, have invented new and useful Improvements in Derailing Mechanism, of which the following is a specification.

This invention relates to a derailing mechanism, and while it may be employed with advantage in several connections it is of especial utility when used in conjunction with a mine.

The invention involves a door and a derailing device which coact with each other. I use the term "door" in a generic sense to include equivalent or substantially equivalent structures. In the case of a mine the door will be that common in such places, and it will be associated with the derailing device in such manner that when the door is opened the derailing device will be moved to an inoperative position, thereby to permit a car or train of cars to pass freely toward and then through the doorway. In case a mine-car or train of cars run away and in case the door should not be open the derailing device will throw the car off the track upon which it may travel before the door is reached, and should a horse or mule be in front of the car it cannot be jammed by such runaway car between the latter and the door.

In the drawings accompanying and forming a part of this specification I show a simple form of embodiment of the invention, which to enable those skilled in the art to practice such invention I will set forth in detail in the following description, while the novelty will be included in the claims succeeding said description.

In the drawings, Figure 1 is a top plan view of a derailing mechanism including the invention, showing the derailing device at one side of the track. Fig. 2 is a similar view with the derailing device at the opposite side of the track, and Fig. 3 is a detail of a spindle and its arms.

Like characters refer to like parts throughout the different views.

Referring to Fig. 1, I have shown part of a mine within which is a door, as 2. This door in practice may be of any suitable kind, although it is represented as being hingedly mounted to swing open in the direction of the arrow in said figure. The door-opening means may be of any desirable kind. As a matter of fact, no means need be provided, for the

door may be operated by directly swinging it. Extending through the doorway which said door controls is a track composed of rails, as 3 and 4, adjacent to one of which, as the rail 3, is a derailing device of some suitable kind. In Fig. 2 the derailing device is shown as located adjacent to the rail 4.

The derailing device includes in its make-up a plate, as 5, which in the present case is pivoted at one end to a supporting member, as 6, which may consist of a plank spiked or otherwise fastened to several ties at one side of the door and at a distance sufficient therefrom to prevent a car or cars when derailed striking against the door. The plate 5 is flat and normally extends diagonally or angularly across one of the rails—in Fig. 1 the rail 3 and in Fig. 2 the rail 4. Rigidly fastened to the upper side of the plate 5 are two strips, as 7 and 8, of metal. These strips may be riveted to the plate. The forward end of the strip 7 is flattened down, so that the tread of a car-wheel will readily run up on said strip. In other words, the upper surface of the latter is upwardly inclined from its front toward its rear end. The strip 8 extends entirely across the rail 3 when the derailing device is in its working position, its forward end being pointed and separated from the corresponding end of the strip 7, so that there will be between the two strips the mouth of a runway for a wheel, the runway converging toward its rear end. The major portion of the strip 7 is normally in line with the rail 3, above which it is located, while the strip 8 is, as will be understood, angular to said rail, so as to produce a wide entering-mouth between the two strips. The strip 8 is higher than the strip 7. It therefore follows that when the derailing device, consisting of the plate 5 and the strips 7 and 8, is in an operative position and that when a car travels toward and strikes the same the tread of the forward wheel of the car on the rail 3 will roll up the inclined surface of the strip 7, the higher strip 8 serving to derail such wheel, and consequently to throw such car off the track. The plate 5 is pivoted at one side of the rail 3, so that when the derailing device is in its inoperative position, to which position it is in the present case thrown by and on the opening of the door, the track will be clear for the passage of a car or train of cars through the open doorway.

Any suitable means may be provided for throwing the derailing device to an inopera-

tive position by the door when it is open. I will now set forth the means illustrated for this purpose.

At one side of the supporting member 6 is a post, as 9, which has suitable bearings for supporting for rocking movement the spindle 10, vertically disposed, and having arms 11 and 12 at its opposite ends, shown as arranged in the present case at right angles to each other. The upper arm 11 is directly connected with a lever, as 13, on the door 2 by a connection denoted in a general way by 14. The lower arm 12 is shown as having connected with it one end of a link, as 15, the opposite end of said link being jointed to a lateral outward extension on the rear end of the strip 7, constituting a part of the derailing device. It therefore follows that when the door 2 is swung open the derailing device, made up in the present case of the plate 5 and strips 7 and 8, is moved to a position to the side of and free of the rail 3, so that the track of which said rail 3 forms a part is clear for the passage of a car or train of cars. In practice I prefer to fasten the lever 13 to the door 2, and the derailing device and the mechanism associated with it are above the rail 3, so as to be free from dirt, which might interfere with the ready operation of said derailing device.

I provide means for positively holding the derailing device in its operative position, a spring, as 16, being shown for this purpose, said spring being connected with the upper arm 11 and with a post or standard 17. When the derailing device is moved to its inoperative position on the opening of the door, the spring is stretched or tensioned, so that when the door is closed the spring by reaction can return the derailing device promptly to its original and operative position.

The only difference between the mechanism shown in Figs. 1 and 2 is that in Fig. 1 the derailing device is at one side of the track, while in Fig. 2 it is at the other. In the latter case I would have to provide a long link 15^a and a spindle 15^b to adapt the mechanism to the change. The link 15^a will be placed high enough for the cars to pass under. On the inside of the rail 3 or 4 adjacent to the derailing device I show a guard-rail, as 18.

The derailing device is adapted to be operated automatically by a mine-door, whether the latter be opened by an attendant or otherwise, and in practice will be placed on the high side of the door at any distance therefrom. In case a mine-car should get beyond the control of an operator and the door not be opened such car will be positively derailed by the derailing device and will be thrown onto the outside of the track. The door is protected, whereby the ventilation of the mine is not affected. When the door is opened, the derailing device is moved to an inoperative position automatically, leaving the track clear for the passage of a car or cars.

By the construction described I secure in addition to the advantages pointed out safety to drivers, horses, or mules and prevent demolition of doors.

Should a car pass through the doorway and be traveling toward the derailing device, one of the leading wheels of such car will roll against the strip 8, thereby to move said derailing device to an inoperative position by the power of the car. When the car releases the derailing device, the latter is of course promptly returned to its normal position by the power of the spring 16. The derailing device, therefore, in no case interferes with free traffic through the mine.

It is evident that instead of the derailing device constructed as hereinbefore described a butt-switch, or a switch with latches, or an ordinary latch or latches, could be used to derail a car or cars; but I prefer the derailing device or latch described, as it is above the rail and leaves an unbroken road for cars to run upon and is less liable to be blocked with dirt.

Having thus described the invention, what I claim is—

1. The combination of a derailing device, and a door coöperative with and adapted to shift said derailing device.

2. The combination of a derailing device normally occupying an operative position to derail a car, and a door coöperative with the derailing device, the door being adapted when opened, to positively shift the derailing device to an inoperative position.

3. The combination of a derailing device, a door coöperative with and adapted, when opened, to shift the derailing device to an inoperative position, and means independent of the door for returning the derailing device to its operative position.

4. The combination of a track, a derailing device normally extending across one of the rails of the track, and a door coöperative with the derailing device and adapted, when opened, to move the derailing device from off said rail to leave the track clear.

5. The combination of a track, a derailing device coöperative with one of the rails of the track, a door coöperative with and adapted when opened, to shift the derailing device into an inoperative position, and a guard-rail next the rail with which said derailing device is coöperative and adjacent the latter.

6. The combination of a derailing device normally occupying an operative position, and a door coöperative with and adapted to cause the movement of the derailing device into an inoperative position automatically when the door is opened.

7. The combination of a derailing device normally occupying an operative position, a door having a lever, and a shaft provided with arms, one of which is operatively connected with the lever and the other with the derail-

ing device, whereby the door when opened, through said connections, can move the derailing device to an inoperative position.

8. The combination of a derailing device
5 normally occupying an operative position, a door having a lever, a shaft provided with arms, one of which is operatively connected with the lever and the other with the derailing device, whereby the door when opened,
10 through said connections, can move the derailing device to an inoperative position, and means independent of the door for returning the derailing device to its operative position.

9. The combination of a derailing device
15 normally occupying an operative position, a door having a lever, a shaft provided with

arms, one of which is operatively connected with the lever and the other with the derailing device, whereby the door when opened, through said connections, can move the derailing device to an inoperative position, and
20 a spring connected with one of said arms for returning the derailing device to its operative position.

In testimony whereof I have hereunto set
25 my hand in presence of two subscribing witnesses.

LAVALETTE L. LOGAN.

Witnesses:

W. P. TOWNSEND,
RILEY SICKLER.