

C. H. KIRKENDALL.  
RAILWAY SIGNAL AND SAFETY DEVICE.  
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999,316.

Patented Aug. 1, 1911.

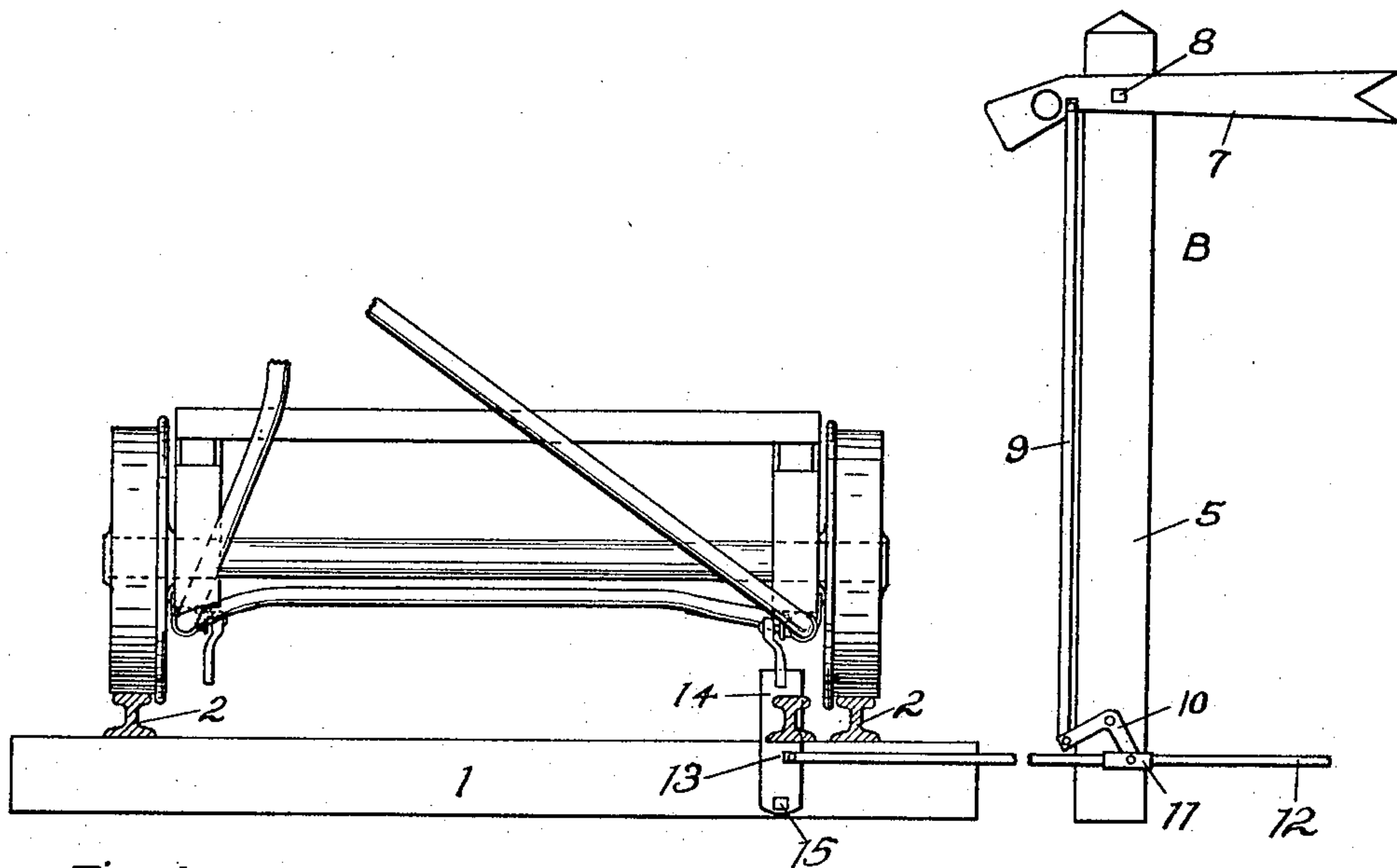


Fig. 1

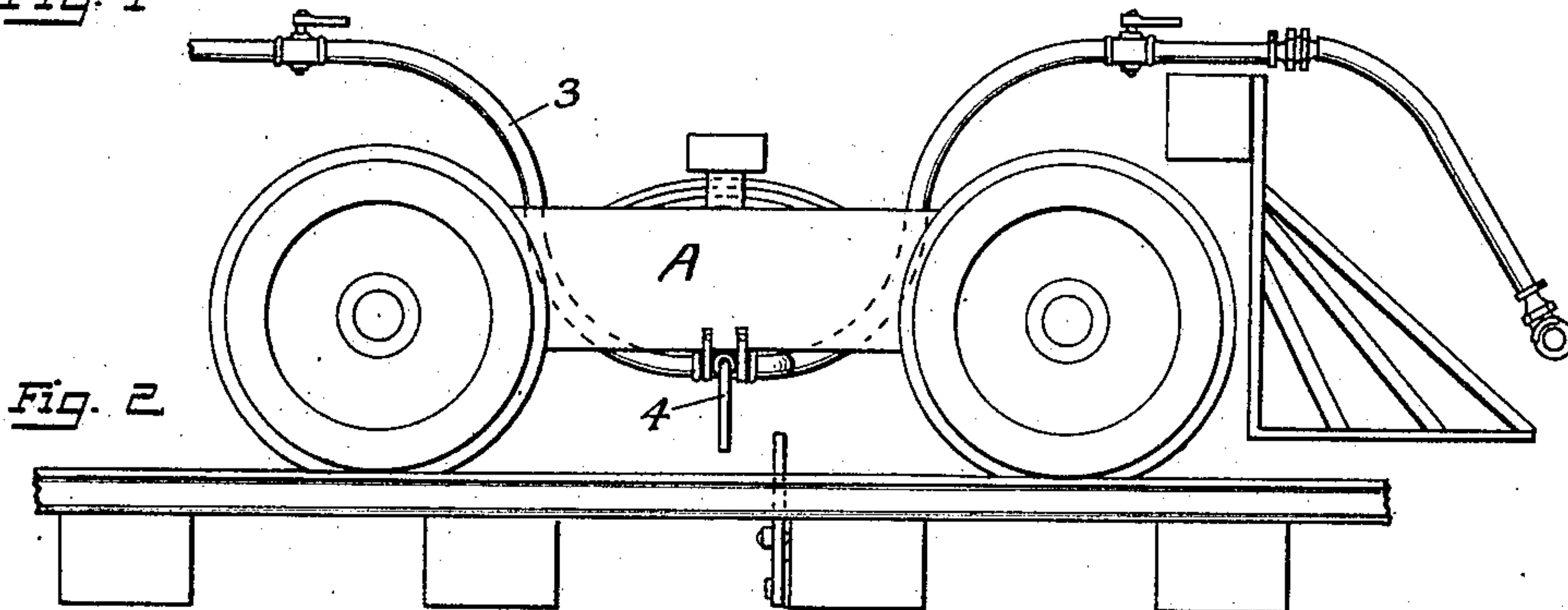


Fig. 2

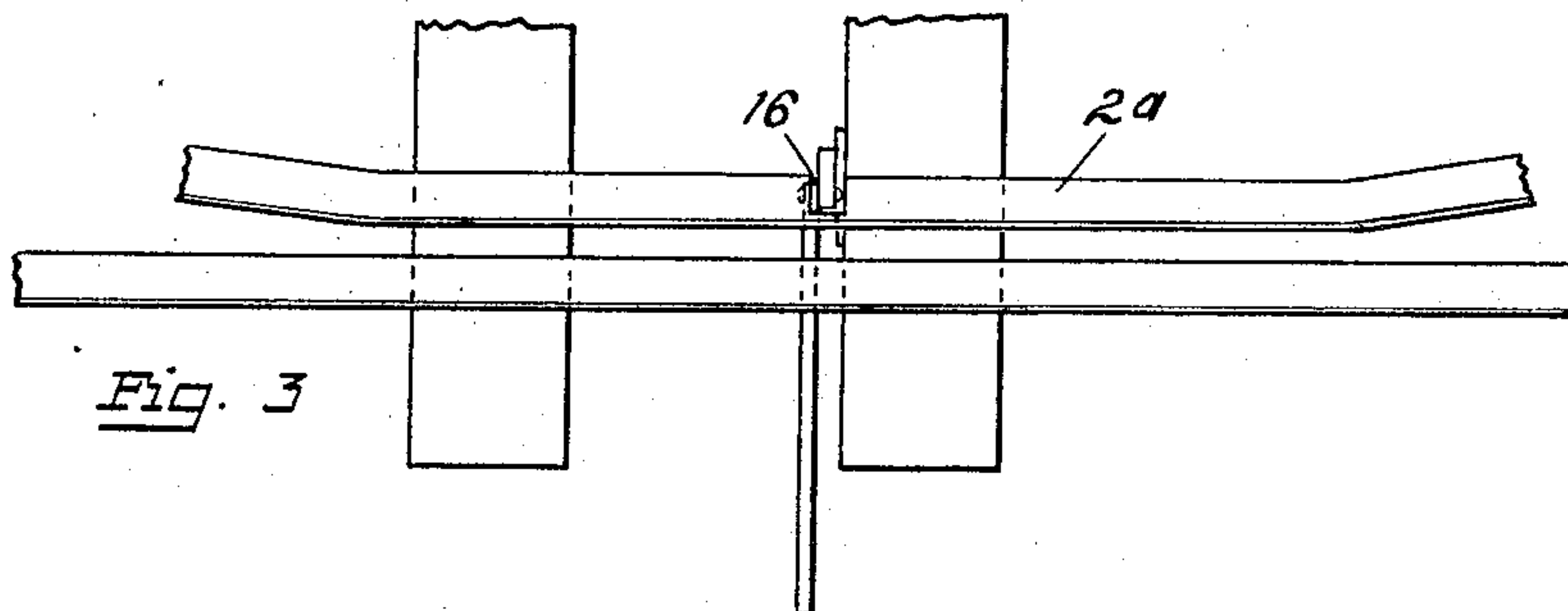


Fig. 3

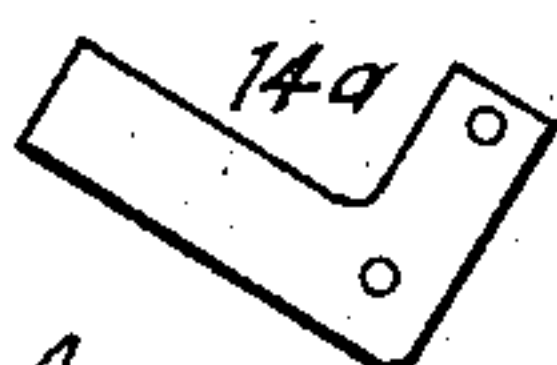


Fig. 4

Witnesses

Thos. G. Caywood  
A. L. Phelps

Inventor

Carl H. Kirkendall

By

C. C. Shepherd  
Attorney



# UNITED STATES PATENT OFFICE.

CARL H. KIRKENDALL, OF COLUMBUS, OHIO.

RAILWAY SIGNAL AND SAFETY DEVICE.

999,316.

Specification of Letters Patent.

Patented Aug. 1, 1911.

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*To all whom it may concern:*

Be it known that I, CARL H. KIRKENDALL, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Railway Signal and Safety Devices, of which the following is a specification.

This invention relates to certain novel and useful improvements in railway signal and safety devices.

In carrying out my invention, it is my purpose to provide a combined railway signal, and safety device, the latter being arranged at the trackway, and controlled by the operations of a block signal or semaphore, so that when the semaphore arm is extended horizontally, to indicate the fact that a block is occupied, the safety device at the track will be moved into position to trip the air valve or cock upon the air brake line, and thereby apply the brakes and prevent the train entering the occupied block.

A further object of my invention is to provide mechanism of the class described, which will embody the desired features of simplicity and durability, coupled with economy of installation and positiveness of operation.

With the above recited objects and others of a similar nature in view, my invention consists in the construction, combination and arrangement of parts set forth in and falling within scope of the appended claim.

Referring now to the accompanying drawings: Figure 1 is an end view showing the trip mechanism at the trackway, and the signal apparatus alongside the trackway and controlling the trip mechanism, Fig. 2 is a side view showing a section of track and the forward portion of a locomotive, conventionally, the trip being in its elevated or operating position, Fig. 3 is a top view of a section of track having my safety mechanism applied thereto, Fig. 4 is a view of a modified form of tripping mechanism.

Referring now to the accompanying drawings in detail, the numeral 1 designates the cross ties of a track, and 2—2 the rails thereof. Adapted to travel on the track is a locomotive A, equipped with an air brake system of any approved character, the pipe line of which is indicated at 3 and is provided at the locomotive with

a controlling valve 4. Arranged adjacent to the track in the usual position, is the standard 5 of the semaphore signal B, the numeral 7 designating the usual semaphore arm pivoted as at 8 to the post and operated through the vertical rod 9 connected through the bell crank 10 and collar 11 to the actuating rod 12 which leads to the switch tower or signal tower or other suitable point.

In carrying out my invention, I extend the operating rod 12 beyond the signal and connect the same as at 13 to any suitable form of trip 14, pivoted as at 15 to one of the ties of the track, said trip being adapted to be moved when in its operative position, into the recess 16 cut in the guard rail 2<sup>a</sup>.

From the above description, taken in connection with the accompanying drawings, the construction and operation of my improvement will be readily apparent to those skilled in the art.

When the operating rod 12 of the signal is drawn toward the right, in Fig. 1, the bell crank 10 swinging on its pivot, pulls the semaphore arm 7 through the vertical rod 9 into a horizontal position, thus indicating that a block is occupied. At the same time the trip 14 is pulled through the extension of the rod 12 into the position shown in the drawings, that is to say, vertically upward and into the recess 16 in the guard rail 2<sup>a</sup>. As the train then approaches, the trip contacts with the arm of the air cock in the pipe line, and actuates the same to permit the automatic application of the brakes. As soon as a block is clear, the rod 12 is pushed toward the track, thus lowering the semaphore arm and the trip 14 and permitting the train to proceed.

In Fig. 4 I have shown a slightly modified form of trip, in this instance the trip instead of being a straight bar, is in the form of an angle or bell crank lever, so that when the trip is thrown out of operation, it will drop down between the ties. In said Fig. 4, I have designated the trip by the reference numeral 14<sup>a</sup>.

It will be noted that I have provided an exceedingly simple yet effective form of safety device, and inasmuch as the major portion of the apparatus for operating the tripping member, such as the semaphore and its connections, are at hand and readily

available, the device may be installed economically and with the expenditure of a minimum amount of labor and time.

What I claim, is—

5 The combination with a trackway, a slotted guard rail, a signaling device alongside the trackway and including a pivoted semaphore arm, a pivoted trip located adjacent to the rails of the trackway and  
10 adapted when elevated to lie in the slot in the guard rail, and operating means con-

nected to said semaphore arm and trip whereby when the arm is moved to a horizontal position the trip is elevated into position to contact with and set the air brakes 15 of a train.

In testimony whereof I affix my signature in presence of two witnesses.

CARL H. KIRKENDALL.

Witnesses:

A. L. PHELPS,

R. B. CAVANAGH.

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