

G. A. DAVIS.  
TRIP AND SIGNAL DEVICE.  
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930,356.

Patented Aug. 10, 1909.

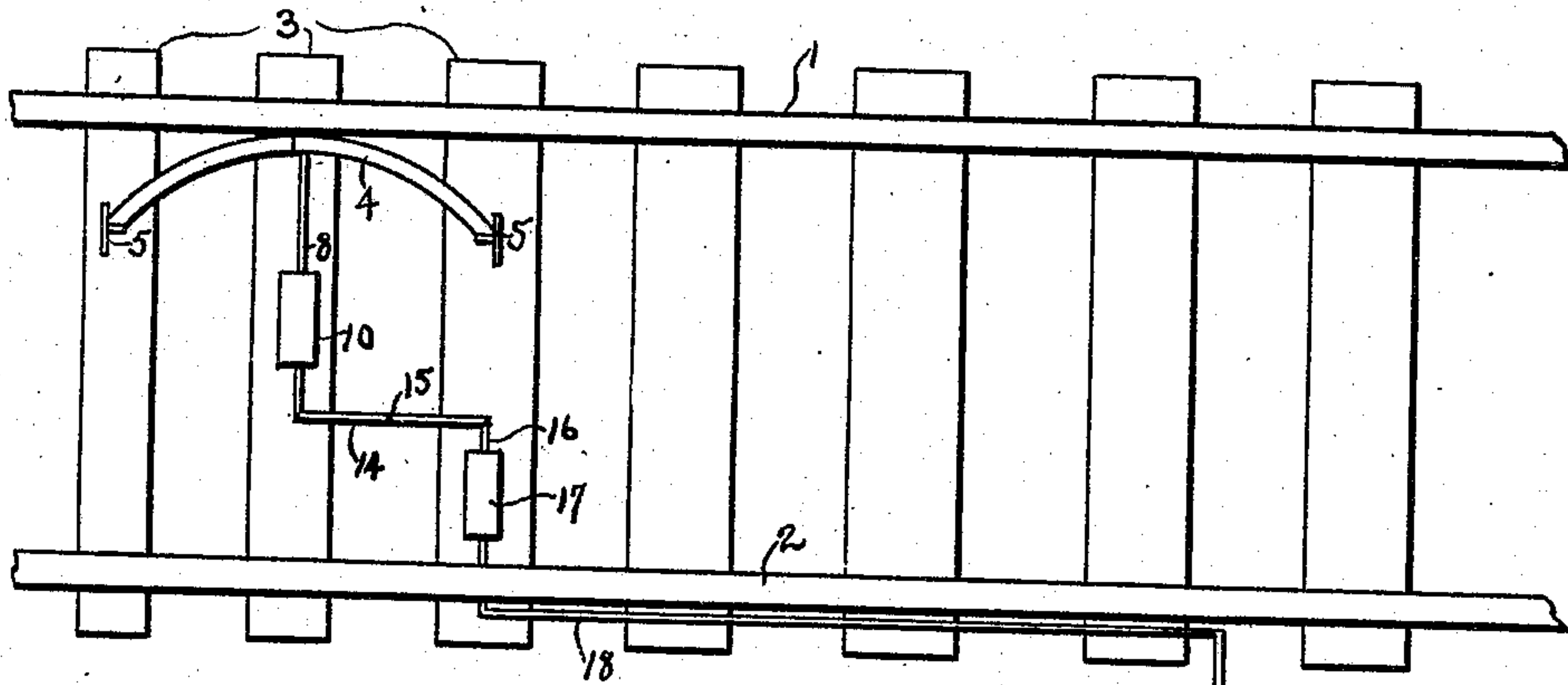


Fig. 1-

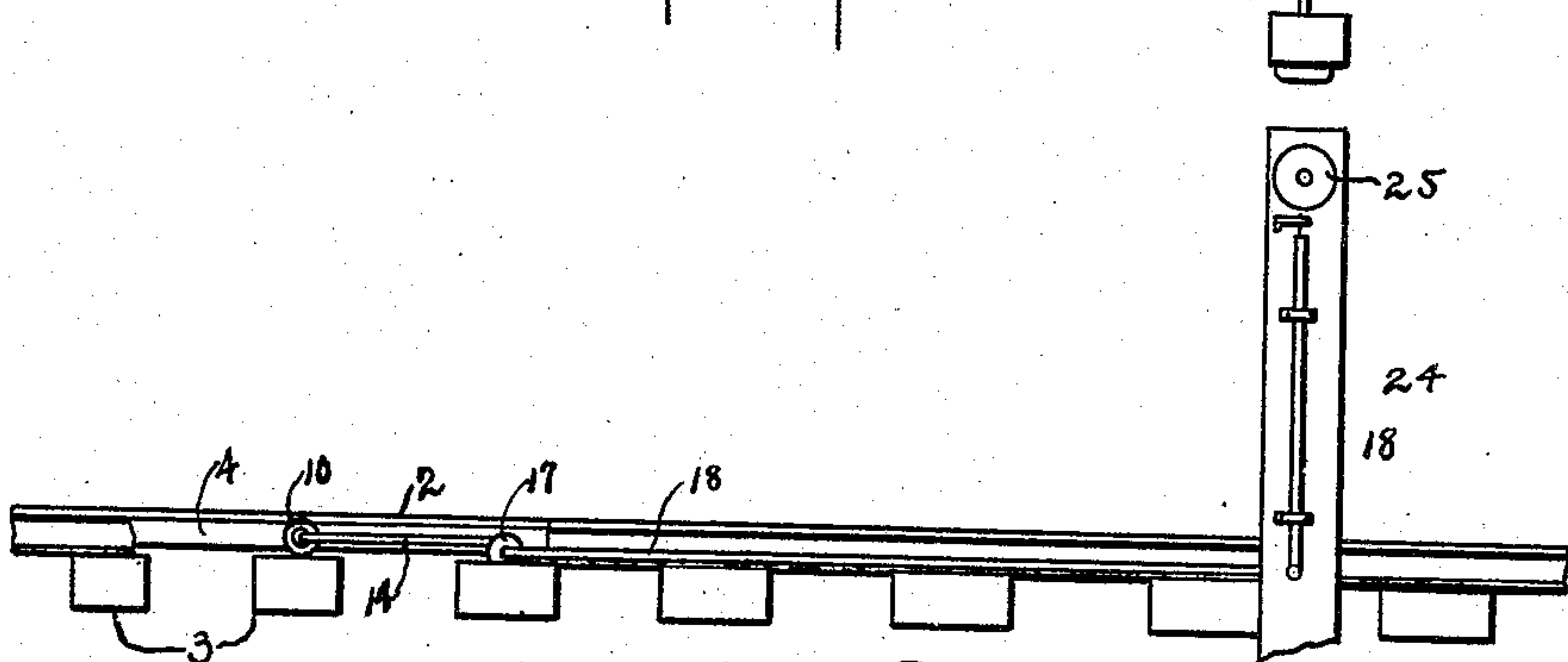


Fig. 2-

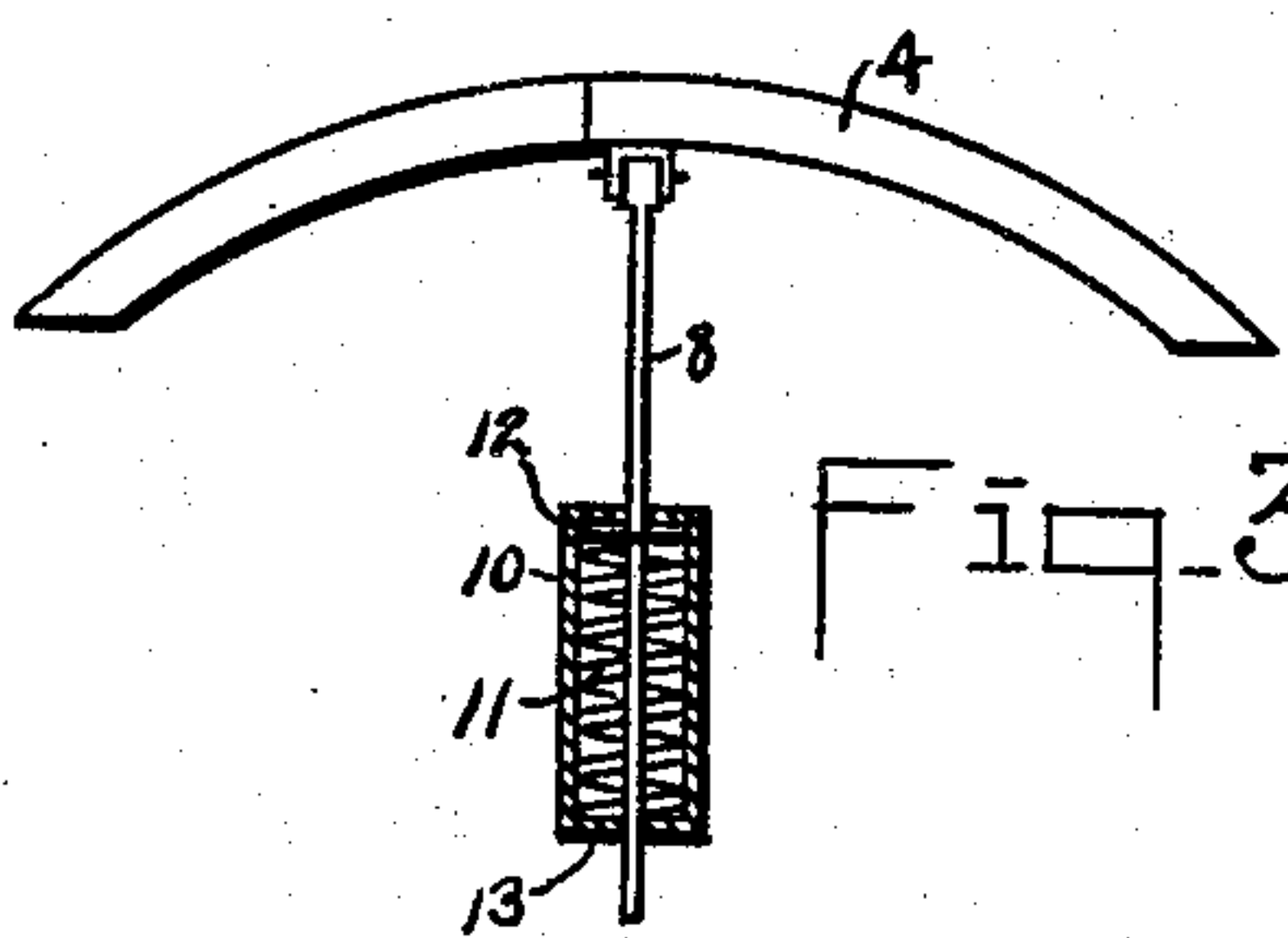


Fig. 3-

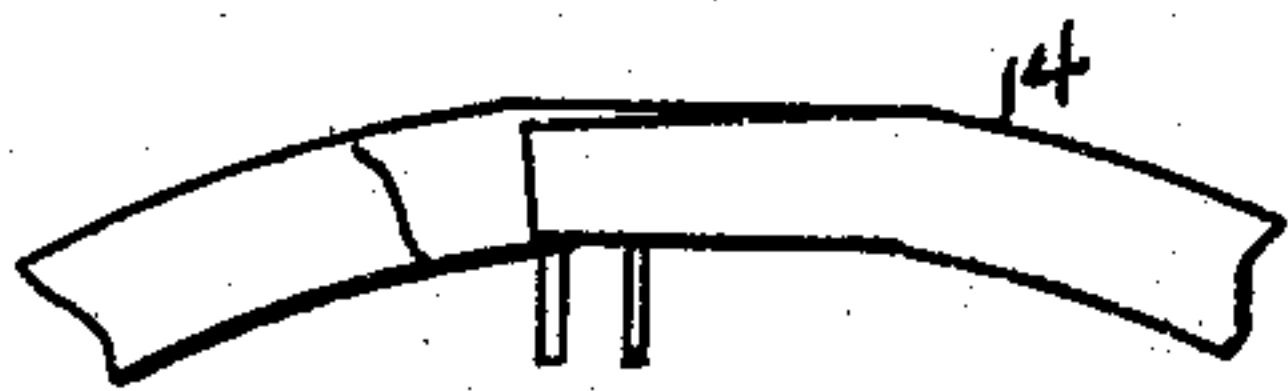


Fig. 8-

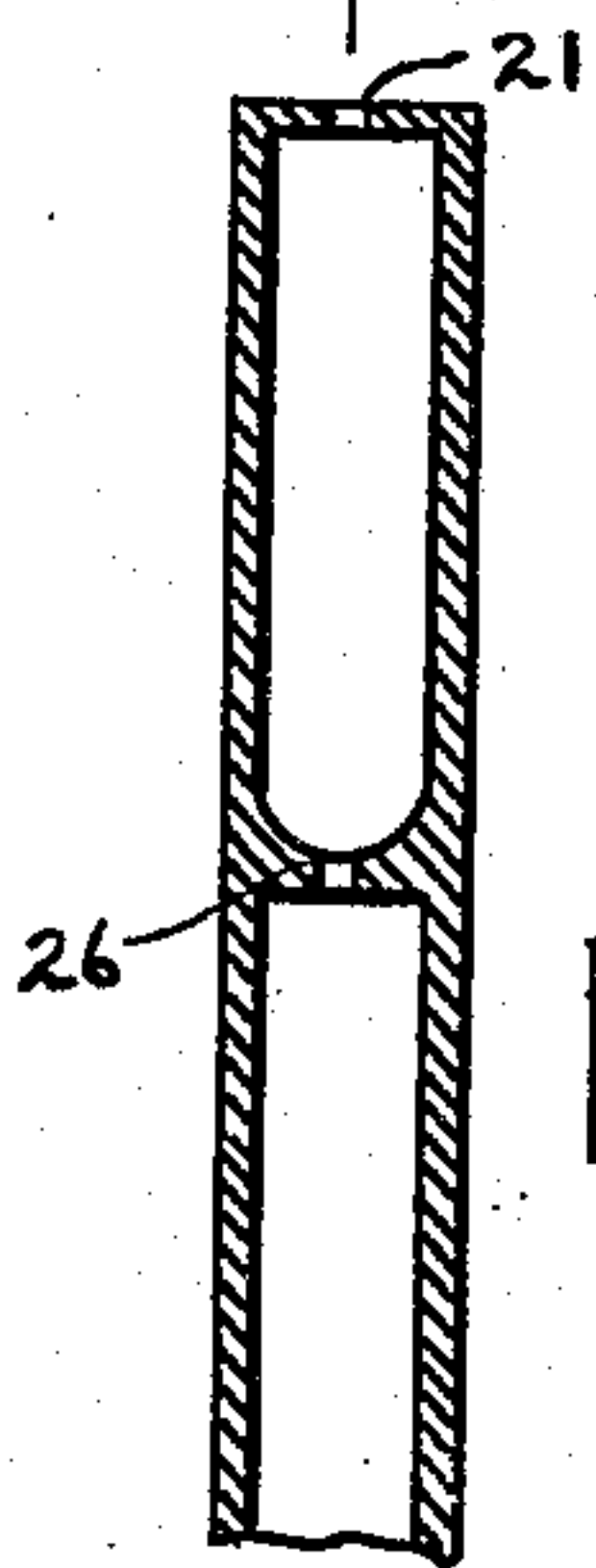


Fig. 6-

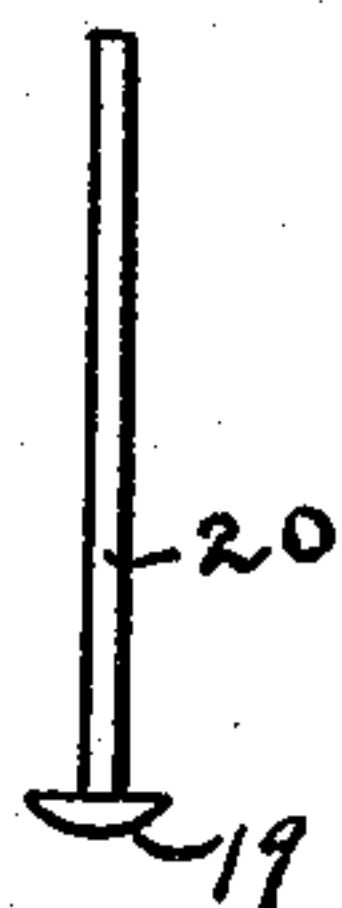


Fig. 7-

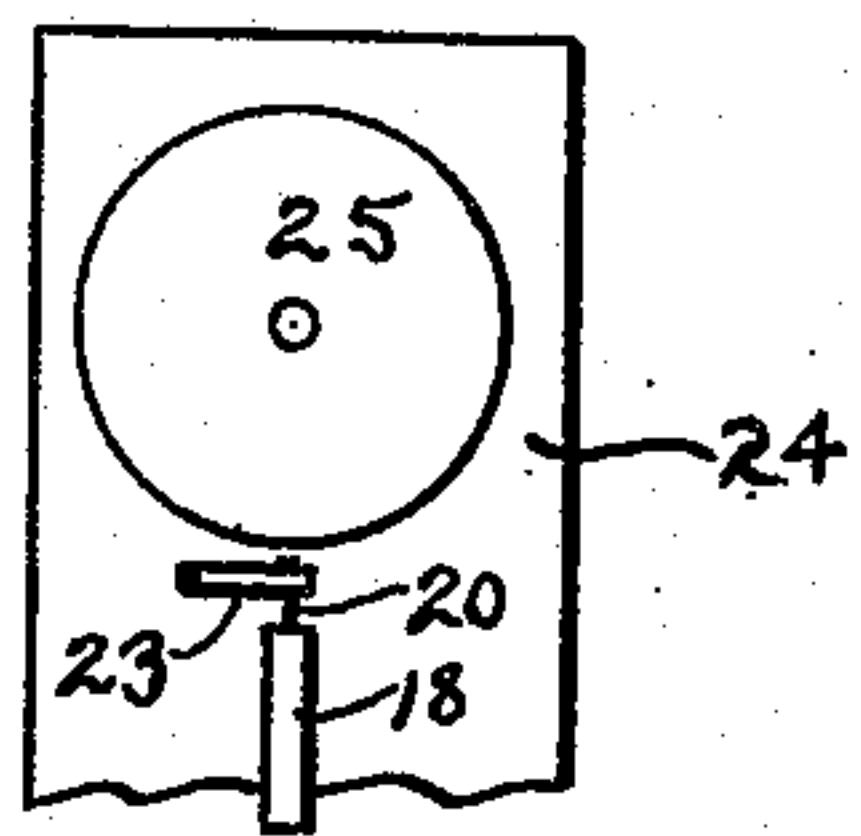


Fig. 5-

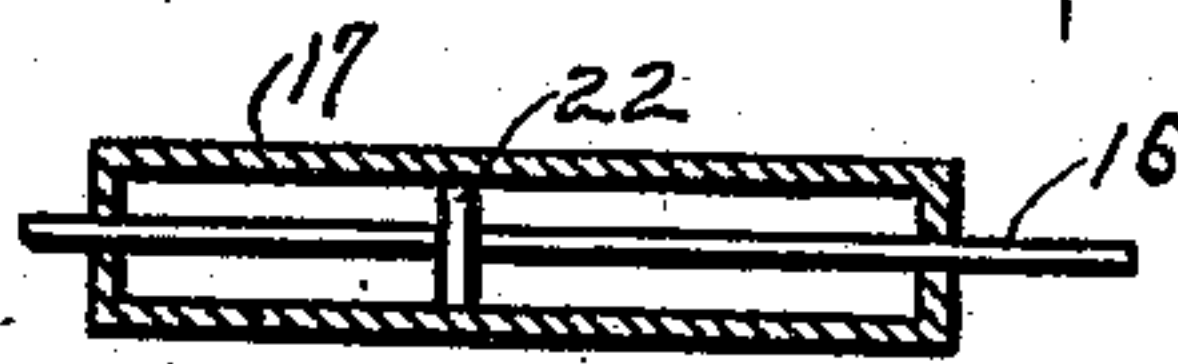


Fig. 4-

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# UNITED STATES PATENT OFFICE

GEORGE A. DAVIS, OF SAN ANTONIO, TEXAS.

## TRIP AND SIGNAL DEVICE.

No. 930,356.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed December 11, 1908. Serial No. 466,995.

*To all whom it may concern:*

Be it known that I, GEORGE A. DAVIS, a citizen of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented certain new and useful Improvements in Trip and Signal Devices, of which the following is a specification.

My invention relates to trip and signal devices and more particularly to that class of such devices, designed to be operated by the flanges of car wheels, in such a manner as to operate a signal having connection with said device.

The object of my improved device is to obviate the constant "hammering" of the car wheels and it is so constructed that it will operate the signal and at the same time not receive the full stroke of the flange.

With the above and other objects in view my invention has particular relation to certain novel features of construction and operation, an example of which is described in this specification, which I do declare to be a full, clear, and exact description of my invention, reference being had to the accompanying drawings, and the figures of reference marked thereon which form a part of this specification, and wherein,

Figure 1 is a plan view of a section of a railroad showing the trip, the signal device and the intermediate operative mechanism. Fig. 2 is a side elevation of Fig. 1 having a portion of one of the rails broken away so as to show the trip. Fig. 3 is an enlarged view of the trip showing the mechanism for holding the same firmly against the rail. Fig. 4 shows a cylinder for compressing air or any suitable liquid. Fig. 5 shows the signal device. Figs. 6 and 7 show the apparatus which operates the bell clapper. Fig. 8 is an enlarged view of the intermediate portion of the trip showing the knuckle joint.

Referring now more particularly to the drawings, the numerals 1 and 2 designate respectively the railroad rails and 3 designates the ties upon which my improved tripping device is fastened. This device comprises the arcuate member 4, disposed laterally of the ties and hingedly mounted upon said ties by means of hinges 5. This member 4 is provided with an arm 8 which, is radial to the circle of which the said member 4 is an arc, and which is connected to the member 4 at its middle point. This arm 8 extends through a casing 10 and car-

ries within said casing a helical spring 11. This spring operates against a shoulder 12, integral with arm 8 and also against the end 13 of casing 10, which casing is secured firmly to the tie. By this operation of the spring the member 4 is normally held against the rail and the guide members 5 are of sufficient height to cause the member 4 to rest against the side of the tread of the rail, and be flush with the top of said tread.

The arm 8 extends through the casing 10 and has connection at its extremity with a lever 14 which is pivoted to the tie at 15. The other end of the lever 14 has connection with a piston rod 16 which operates piston 22 in cylinder 17. From this cylinder a pipe 18 extends to the signal which it is desired to operate. The portion of this pipe carrying the signal operative mechanism is shown in detail in Fig. 6. This portion of said pipe carries a collar 26 forming a cylinder head, upon its internal walls and is provided with a bearing 21 at its end for the piston rod 20, thus forming a cylinder. Upon collar 26 a piston 19, as shown in Fig. 7, rests. This piston carries a rod 20 which operates through the cylinder bearing 21. These two cylinders, at the respective extremities of pipe 18, have port connections with said pipe and said pipe and cylinders are filled, preferably, with some liquid, such as oil, the pistons 22 and 19 fitting closely in their respective cylinders so as to prevent the escape of the liquid.

The operation of my device is as follows: The tread of rail 1 being tangent to the arcuate member 4, the flanges of the passing car wheels will pass between said rails and said member, and as this member 4 rests firmly against the side of the tread of rail 1 the flange of each wheel will force said member 4 from the rail. When the car wheel has passed and the pressure of said flange is released, the member 4 will be forced against the rail by the action of helical spring 11. This operation will be repeated by the flange of each wheel passing along rail 1. When the member 4 is forced back from the rail by the flange, the action of arm 8, upon lever 14, operates to relieve the pressure of the piston 22 upon the contents of cylinder 17, and when the pressure of the flanges is relieved from member 4 and it is forced back against rail 1 by the action of spring 11 the action of the piston 22 is reversed, through the operation of arm 8, lever 14, and piston rod



16, and the liquid or contents of cylinder 17 is compressed. The cylinder 17 communicates with pipe 18 whose contents are similar to the contents of the said cylinder as above set forth, and by the compression of the contents of the cylinder 17 a vibratory motion passes along the contents of the pipe 18 and lifts piston 19 and piston rod 20. This rod 20 strikes against clapper 23, which is pivoted to support 24, and forces it against bell 25 also secured to said support. The cylinder 17, may be placed on the same tie as casing 10, and the arm 8 connected with the piston rod, direct. In that case lever 14 would be rendered unnecessary and the vibratory motion would be transmitted to the contents of pipe 18, and the signal consequently operated, by the direct stroke of the flange of the wheel against member 4.

It should be observed that the arcuate member, 4, is composed of two arcuate arms, the outer ends of which are hingedly secured to the ties by hinges 5, as above described, and which unite in a knuckle joint, 26, as shown in detail in Fig. 8. This joint, 26, should be a sliding joint, as shown, in order to prevent its arms from binding against each other when the trip is forced back from the rail.

It is to be observed that my device may be used to operate various forms of signal devices other than that shown and described, and is specially adapted to operate a signal similar to the one described herein, but in which the clapper is operated by means of a wire attached thereto, and after passing around a suitable number of properly disposed pulleys has connection with arm 8.

While I have shown and described one form of my improved tripping device I do not wish to limit myself to this specific form shown and described, but desire to vary the form and construction thereof, so long as the spirit of the invention is not departed from.

What I claim is:—

1. A tripping device including a trip, hingedly attached to a stationary body and having a yieldable joint at a point interme-

diating the ends thereof; a resilient mechanism operating against said trip and normally holding the same against an opposing stationary body; all in combination with a signal mechanism and a support therefor, and intermediate connecting means for transmitting motion from said trip to said signal mechanism.

2. A tripping device including a trip, hingedly attached to a stationary body and having a yieldable joint at a point intermediate the ends thereof; a mechanism for holding said trip yieldably against an opposing stationary body, said mechanism including a casing, a rod extending longitudinally therethrough, and a spring operating against said rod and casing, as described; all in combination with a signal device and a support therefor, and intermediate connecting means connecting said trip and signal devices and adapted to transmit motion from the former to the latter.

3. A device of the character described, including a trip hingedly attached to a stationary body and having a yieldable joint at a point intermediate the ends thereof; a resilient mechanism operating against said trip and normally holding the same against an opposing stationary body; all in combination with a mechanism to be operated by said trip and intermediate connecting means for transmitting motion from said trip to said mechanism.

4. A tripping device including a trip hingedly attached to a stationary body and having a yieldable joint at a point intermediate the ends thereof; a mechanism for holding said trip yieldably against an opposing stationary body, said mechanism including a casing, a rod extending longitudinally therethrough, and a spring operating against said rod and casing as described.

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

GEORGE A. DAVIS.

Witnesses:

ERNEST C. GUY,  
LA VERA MILLER.