(No Model.)

W. H. ALLEN.

SIGNALING DEVICE FOR RAILROADS.

No. 524,519. Patented Aug. 14, 1894.

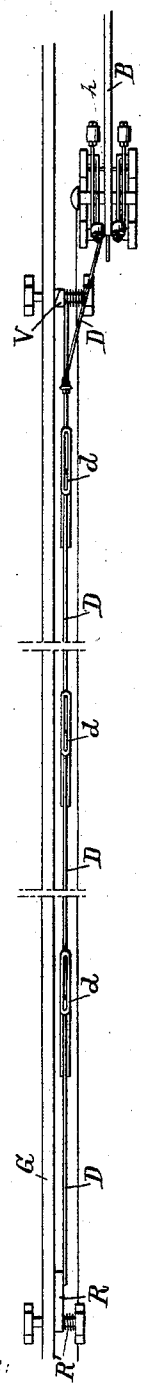

FIG. 1.

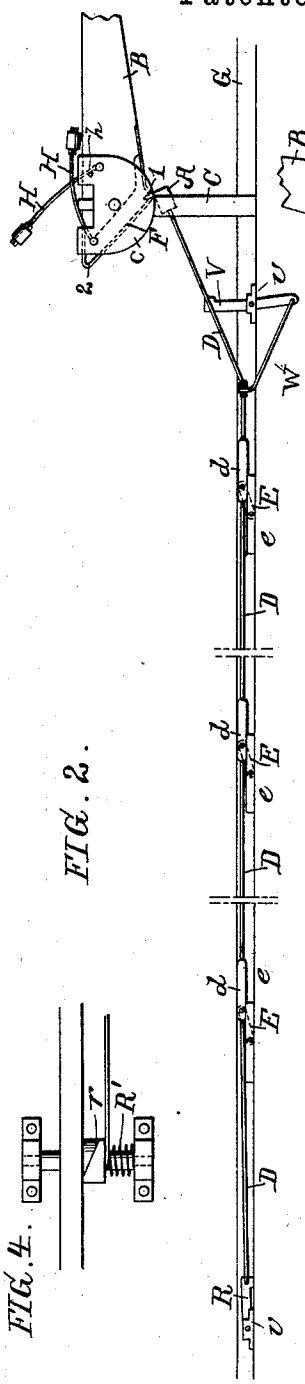

FIG. 2.

FIG. 4.

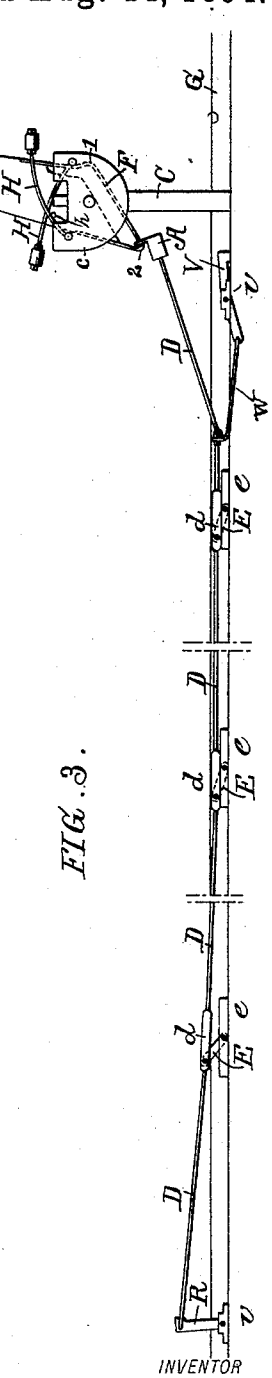

FIG. 3.

WITNESSES:

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SIGNALING DEVICE FOR RAILROADS.

SPECIFICATION forming part of Letters Patent No. 524,519, dated August 14, 1894.

Application filed August 11, 1893. Serial No. 482,889. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. ALLEN, a citizen of the United States, residing in the city of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Safety Devices for Railroads, of which the following is a clear and sufficient specification, reference being had to the drawings annexed.

My invention belongs to that class of devices in which mechanical means set in motion by the moving vehicle operate the safety device, and has, while capable of being applied to various kinds of railroads, especial reference to such roads as have running on them comparatively slow-moving vehicles—such as electric or dummy roads—which run across country on the surface of the land, crossing the various cart roads at grade. These crossings have to be protected and the cost of so doing by hand worked apparatus would be enormous.

Figure 1 is a plan view of my invented device, of which Figs. 2 and 3 are side elevations in different positions. Fig. 4 is a view of the trip device.

At a point at the side of the rail at the requisite distance from the gate B, is placed the trip R, which is adapted to be struck or otherwise moved by the moving vehicle, and to convey the motion given to it, by the intermediate connections to the weight A which, in its various positions, acts gradually to move the gate B, as will be hereinafter described. This trip R, is best made in the form of a rocker arm mounted on a rock-shaft, which is in turn supported on bearings from a plate *v*,—which is set in practice, between adjacent ties. In order to permit the trip R, to get out of the way of the train or vehicle going in the reverse direction, I generally square off the portion of the rock-shaft on which the trip is mounted, and mount the latter slidingly thereon, so that it will be held yieldingly against the rail by the spring R′. The trip is provided with a sloping side *r*, which will encounter the moving vehicle and, the latter sliding along the same, the trip will be pushed away from the rail G, and will jump toward it under the impulse imparted by the spring when the part of the vehicle coming in contact with the trip has passed the same.

The best form of connections between the gate or other device and the weight A, I find to be as follows:—D, D, D, is a series of rods, supported on a series of cranks E, E, at various points. These cranks are mounted on the plates *e*, *e*, *e*, *e*, and the rods provided with double yoke pieces *d*, *d*, *d*, *d*, in which the cranks E, E, E, E, are set. One of the rods D, is secured to the trip R, and another to the weight. These parts are preferably so relatively arranged that the impulse given to the trip will only be required to move the rod so far that the crank shall be carried past its dead center and the weight of the rods will assure the carrying of the weight to the full end of its travel.

To return the weight to the other end of its travel, I use a second trip V, placed at a suitable distance from the first and provide it with connections by which the rods and the trip R, are put into position to be again acted upon by a vehicle approaching from the same direction as the first, contacting with the trip R. The best means of which I am aware for this is as follows:—I extend the trip V below the plate *v*, in which its shaft is journaled, and connect its downwardly projecting end with a rod D, through the rod W. This action of the device in setting and unsetting the signal causes it to act as an automatic block signal, since, if the distance between the trip R and the trip V be regarded as a block, the raising of the gate or other device will show that a moving vehicle is not in the block.

The best construction of the gate and the devices for moving the same of which I am at this time aware, are as follows:—I mount the gate on a shaft, between the standards C, C, having the heads *c*, *c*, the gate being generally of the balanced pattern; the most advantageous pattern being now described. To the gate proper B, which for convenience, has its lower portion cut slantingly, is attached a track formed in practice of a rod F, on which travels the weight A. This track has a slope of about forty-five degrees and is arranged so that the weight travels from one side of the center of gravity of the gate to the other. When the weight is toward the point 1, on the track, an impulse will be given to the gate tending to lower it and when it is toward the point 2 on the same it will tend to raise it.

To prevent the gate from stopping too sud-

denly I use the counterbalancing devices formed by the weighted arms H, H. These arms are attached to the head *c*, so that they are alternately lifted by the pin *h*, set in the gate thus forming levers of the third class. As the gate moves from one position to the other, it moves away from the fulcrum of one lever, the one tending to move it on in the direction of its motion, and toward the fulcrum of the other, that tending to check its movement.

My invention can be applied to other signals than gates, and many changes can be made in its construction by a mechanic of competent skill in the art without departing from the spirit of my invention.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination in a safety device, with a weight moving on a track attached to a gate, of a trip in position to be struck by a moving vehicle, a series of rods connecting said trip to said weight and supported at points intermediate between the same, and a trip having operative connections acting to move the rods in the reverse direction substantially as described.

2. In a safety device, the combination of a gate, supports therefor, an inclined track secured to said gate below the point of support, a weight traveling on said track, and means for moving said weight along said track substantially as described.

In token whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM H. ALLEN.

Witnesses:
GEO. W. REED,
M. W. COLLET.