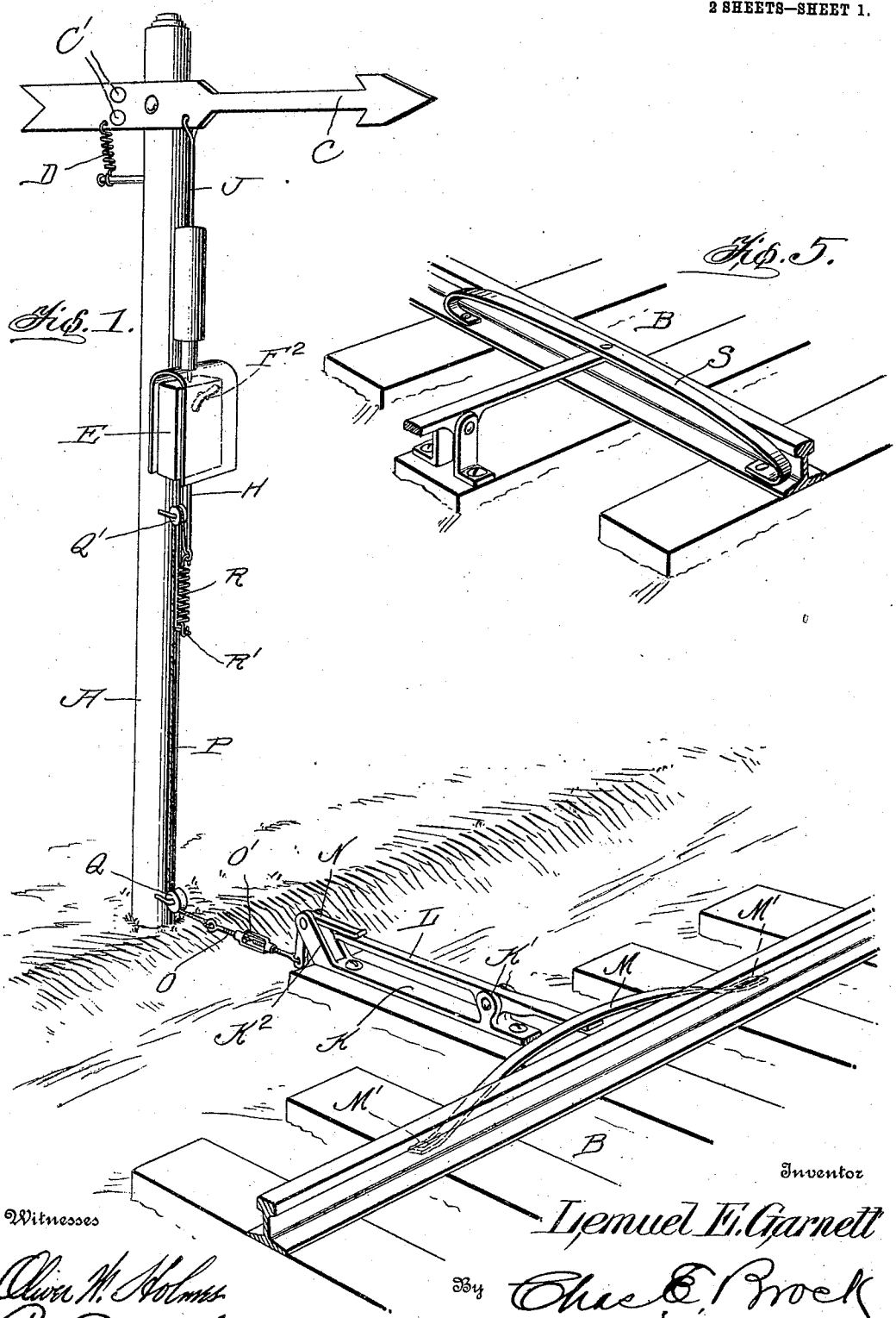


940,800.

L. E. GARNETT.
RAILROAD SIGNAL.
APPLICATION FILED AUG. 14, 1908.

Patented Nov. 23, 1909.
2 SHEETS—SHEET 1.



Witnesses
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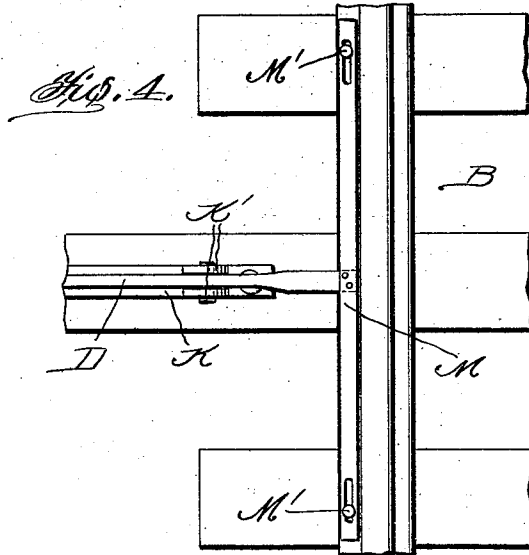
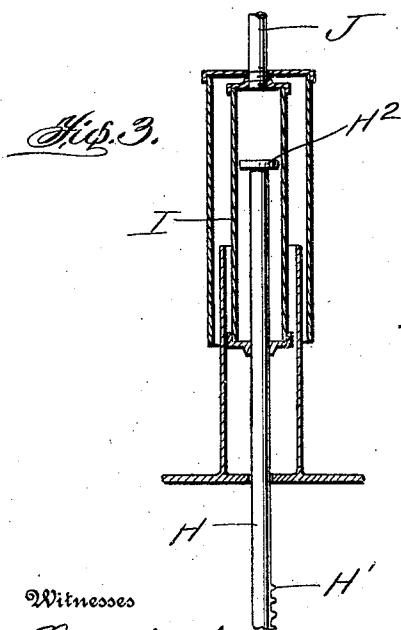
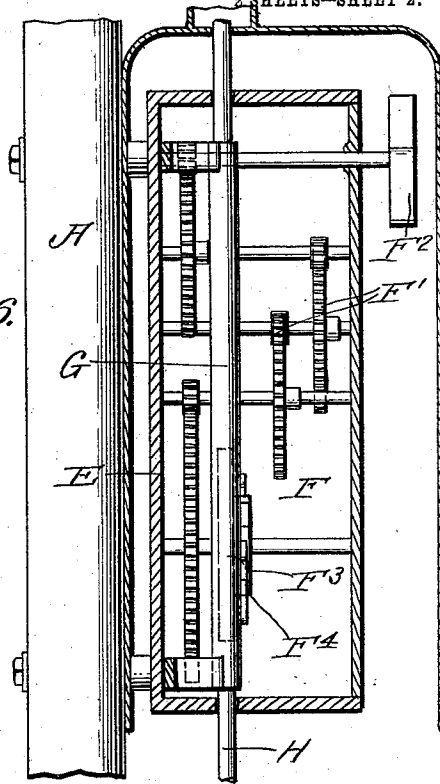
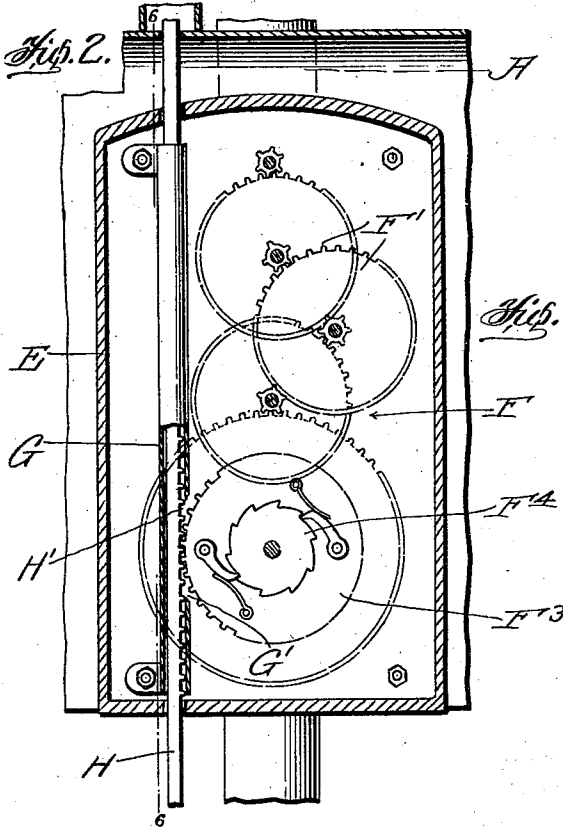
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UNITED STATES PATENT OFFICE.

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RAILROAD-SIGNAL.

940,800.

Specification of Letters Patent.

Patented Nov. 23, 1909.

Application filed August 14, 1908. Serial No. 448,594.

To all whom it may concern:

Be it known that I, LEMUEL E. GARNETT, a citizen of the United States, residing at Chanute, in the county of Neosho and State of Kansas, have invented a new and useful Improvement in Railroad-Signals, of which the following is a specification.

This invention relates to railroad signals, and more particularly to automatic signals, the object being to provide a signal which will prevent the rear end collisions of trains by maintaining a certain time between the trains.

A further object of the invention is to provide a signal which is automatically set to danger by a train passing the same and held in that position for a certain length of time so that the next train will be held until the danger signal is released so that all danger of one train running into the rear of the train ahead is prevented.

A further object of the invention is to provide a clock mechanism in connection with the semaphore which is wound by the passing of the train when the signal is thrown up into a danger position, the signal being drawn down upon the unwinding of the clock mechanism.

A still further object of the invention is to provide a signal which is so constructed that the semaphore will be operated by a piston working in a cylinder connected to the semaphore so that the semaphore is only operated at the extreme limit of the stroke of the piston.

A still further object of the invention is to provide very novel means for winding the clock on the depression of a lever which is operated by the tread of the wheel.

Another object of the invention is to provide means for throwing the semaphore into a danger position if the mechanism should become out of order.

With these various objects in view, my invention consists in the novel features of construction arrangement and combination of parts hereinafter fully described, pointed out in the claims and shown in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved railroad signal. Fig. 2 is a detail vertical section through the casing inclosing the clock mechanism. Fig. 3 is a detail vertical section through the cylinder. Fig. 4 is a detail top plan view of a portion of a track

and the tripping lever. Fig. 5 is a perspective view of a modified form of a tripping spring. Fig. 6 is a section taken on the line 6—6 of Fig. 2.

In carrying out my improved invention, I employ a post A adapted to be arranged along side of a railroad track B and provided with an ordinary pivoted semaphore C having the usual bullseyes C' and normally held in a danger position by a coil spring D so that if the operating mechanism should become broken, the semaphore would be thrown into a danger position as will be hereinafter fully described.

Secured on the post A on the side adjacent the track is a casing E in which is mounted a clock mechanism F' comprising a plurality of intermeshing gears F' which is governed by a fan F² having flexible blades so that the speed of the mechanism can be controlled by adjusting the blades of the fan. Extending through the casing E is a tube G provided with a cut out portion G' in horizontal alinement with a gear F³ of the clock mechanism which is provided with a pawl and ratchet F⁴. Extending through the tube G is a piston rod H provided with teeth H' adapted to mesh with the gear F³ of the clock mechanism as it is moved upwardly or downwardly as will be hereinafter fully described. The upper end of the piston H is provided with a head H² which works in a cylinder I carried by a rod J connected to the semaphore by means of which the semaphore is raised and lowered.

Arranged alongside of the track B on one of the ties is a plate K provided with a standard K' provided with a bifurcated upper end in which is pivotally mounted a lever L one end of which extends under a bowed spring M and is secured thereto centrally. The bowed spring M is provided with slots at each end through which extend pins M' secured in the base of the rail which is adapted to be operated by the train as it passes over the same and it will be seen that as the spring is compressed the end of the lever will be forced downwardly with the same which will force the other end of the lever upwardly which is arranged under the end of a crank arm N pivotally mounted in a bracket K² of the plate K. A rod O is connected to the other arm of the crank N and is provided with a turn buckle O' for adjusting the same, the free end of the rod

being connected to a cable P which passes over pulley Q secured to the post A and a pulley Q' secured thereto, the free end of the cable P being connected to the end of the piston rod H, the pulley Q' being so arranged that when the cable P is drawn downwardly by the crank arm N, the piston will be forced upwardly. A coil spring R carried by a bracket R' secured to the post A has its free end connected to the end of the piston so that the piston will be drawn downwardly after being forced upwardly by the spring which will operate the clock mechanism as will be hereinafter fully described.

In Fig. 5 I have shown a slightly modified form of spring which comprises a bowed spring S having its ends turned under and adapted to be secured to the base of the rail for operating the lever.

The operation of the device is as follows:—Supposing that the semaphore is down as the train passes by the same, the wheel compresses the spring which forces the free end of the lever upwardly which operates the crank arm so as to cause the piston to be forced upwardly which throws the semaphore into a danger position and it will be seen that the piston travels in the cylinder at the first movement of the piston so as to prevent the semaphore from moving until the head of the cylinder is engaged by the piston head which forces the same upwardly as the rack portion of the piston rod engages the gear of the clock mechanism which causes the same to revolve without operating the mechanism as the pawls ride over the ratchet. After the train has passed by the signal, the piston is drawn downwardly by the coil spring which throws the rack portion into engagement with the gear of the clock mechanism which starts the mechanism which is governed by the fan so that the semaphore will be held into a danger position for a certain length of time and as the rack portion of the piston rod passes by the gear, the piston head will engage the ring of the cylinder and draw the semaphore down. It will be seen that by this arrangement the semaphore will be held in a danger position by the clock mechanism for a certain length of time so as to prevent any danger of a train running into the rear of the train ahead.

From the foregoing description, it will be seen that I have provided a railroad signal which is exceedingly simple and cheap in construction and one which is composed of a very few parts which are so arranged that they are not likely to get out of order when in use, the parts being protected from rain and snow by a casing. It will also be readily seen that I provide a spring for operating the semaphore in case of the mechanism becoming broken.

What I claim is:—

1. In a device of the kind described, the combination with a semaphore, of a clock mechanism, a piston provided with a rack portion for operating said clock mechanism and semaphore, a cable connected to said piston, a crank arm connected to said cable, a lever for operating said crank arm and a bowed spring arranged over the free end of said lever adapted to be compressed by the wheels of a train as it passes over the same.

2. In a device of the kind described, the combination with a semaphore, a clock mechanism, a piston provided with a rack portion engaging said clock mechanism, means for slidably connecting said piston to the semaphore, a spring for operating said piston and a cable connected to said piston operated by the passage of wheels over the track.

3. In a device of the kind described, the combination with a post carrying a semaphore, of a clock mechanism secured to the post provided with a fan governor, a piston provided with a rack portion meshing with said clock mechanism, said piston having a sliding connection with the semaphore, a spring for normally holding said semaphore in a raised position and means operated by the passage of a train over the track for operating said piston.

4. In a device of the kind described, the combination with a post adapted to be arranged alongside of a railroad track, of a semaphore pivotally mounted on said post, a clock mechanism carried by the post, a piston provided with a rack portion engaging said clock mechanism and provided with a head, a rod carried by the semaphore provided with a cylinder working over said head, a coil spring carried by the post connected to the lower end of said piston, a cable connected to the piston, and means arranged alongside of the rail for operating said cable by the passage of wheels over a track.

5. In a device of the kind described, the combination with a post adapted to be arranged alongside of a railroad track, a semaphore pivotally mounted on said post, a clock mechanism supported by the post, a piston rod provided with a rack portion engaging said clock mechanism, a piston head arranged on said piston rod, a rod carried by the semaphore provided with a cylinder arranged over said piston head, a cable connected to said piston rod for forcing said piston rod upwardly and means for operating said cable operated by the passage of wheels over the rails.

6. In a device of the kind described, the combination with a semaphore, of a clock mechanism, a spring actuated piston rod provided with a rack portion engaging said

clock mechanism, slidable means connecting said piston rod to the semaphore and means for raising said piston rod operated by the passage of wheels over the rails whereby said semaphore will be held in a raised position for a pre-determined length of time.

7. In a device of the kind described, the combination with a pivoted semaphore, of a clock mechanism, a piston rod provided with a rack portion engaging said clock mechanism and slidably connected to said semaphore, a spring for normally holding said semaphore in a lowered position and means for raising said piston rod operated by the passage of wheels over the rails.

8. In a device of the kind described, the combination with a semaphore, of a rod connected to said semaphore provided with a cylinder, a piston rod provided with a head arranged within said cylinder, a rack portion formed on said piston rod, a clock mechanism operated by the rack portion of said piston rod, a governor carried by the clock mechanism, a spring connected to said piston rod and means operated by the passage of a train for raising said semaphore.

9. In a device of the kind described, the combination with a pivoted semaphore, of a rod connected to said semaphore provided with a cylinder, a clock mechanism provided with a fan governor, a piston rod provided with a head arranged within said cylinder, and extending through said clock mechanism, a rack portion formed on said piston rod engaging the clock mechanism, a coil spring for drawing said piston rod downwardly, and means for raising said piston rod operated by the passage of wheels over the rails.

10. In a signal device, the combination with a post adapted to be arranged alongside of a railroad track, of a spring actuated semaphore pivotally mounted on said post, a rod connected to said semaphore carrying a cylinder, a clock mechanism supported by the post, a piston rod provided with a head working in the cylinder and extending through the clock mechanism, said piston rod being provided with a rack portion engaging the clock mechanism, a spring for operating said piston rod and means for raising said piston rod operated by the passage of wheels over said track.

11. In a signal device, the combination with a pivoted semaphore, of a clock mechanism,

of a spring actuated piston rod provided with a rack portion for operating said clock mechanism on its downward stroke, means for connecting said piston rod to the semaphore, a cable connected to said piston rod, a rod connected to the lower end of said cable, a crank arm connected to said rod and a pivoted lever arranged alongside a track having one of its ends arranged under one of the arms of said crank arm and the other end under a bowed spring adapted to be compressed by the wheels of a train as it passes over the same.

12. In a device of the kind described, the combination with a pivoted semaphore, of a rod carried by said semaphore, a cylinder carried by said rod, a clock mechanism, a piston provided with a rack portion for operating said clock mechanism on the upward stroke of the piston rod, a head carried by the piston rod working within the cylinder, a spring for normally holding said piston rod in a lowered position and means for raising said piston rod operated by the passage of wheels over the rails.

13. In a signal device, the combination with a pivoted semaphore, of a clock mechanism, a spring actuated piston rod provided with a rack portion for operating said clock mechanism on its downward stroke, said piston rod having a loose connection with semaphore, means for raising said piston rod operated by the passage of wheels over the rails and a governor for controlling said clock mechanism.

14. In a signal device, the combination with a post, of a semaphore pivoted on the post, a clock mechanism carried by said post, a piston provided with a rack portion for operating said clock mechanism on its downward stroke, said piston rod having a slidable connection with the semaphore, a spring connected to the lower end of the piston rod for normally holding said semaphore in a lowered position, a cable for raising said piston rod and means operated by the passage of wheels over the track for raising said piston rod whereby said semaphore will be held in a raised position for a pre-determined length of time after the passage of a train.

LEMUEL E. GARNETT.

Witnesses:

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L. P. BURRIS.