

No. 656,726.

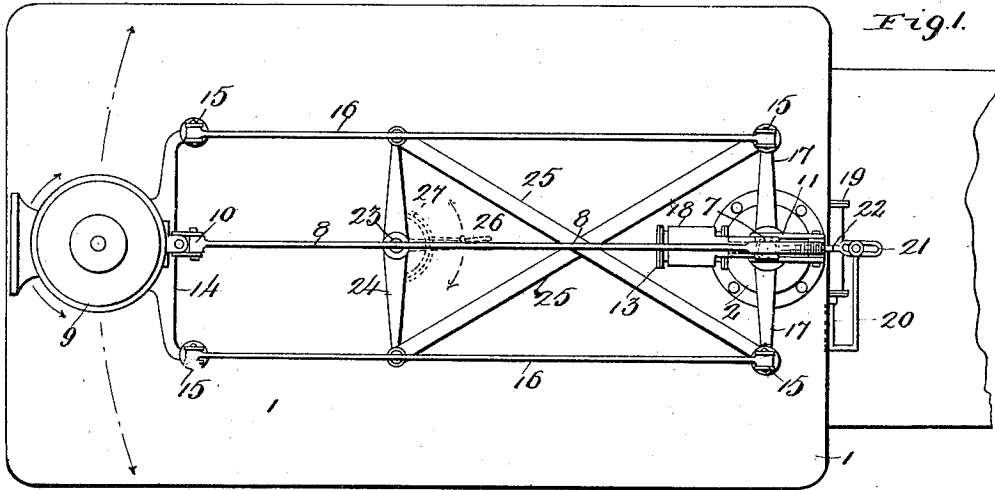
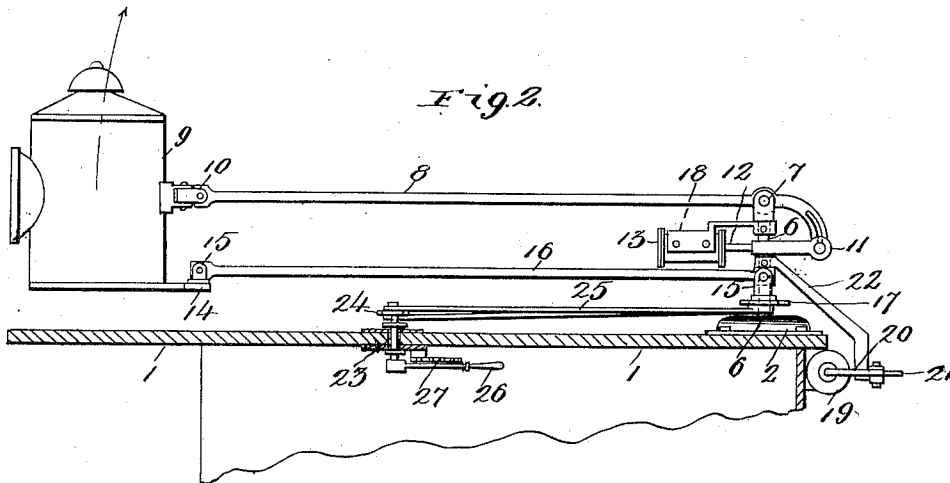
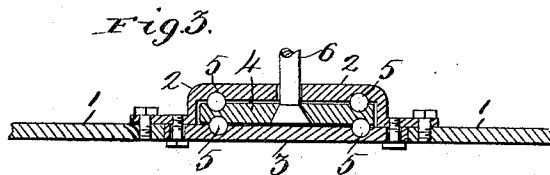
Patented Aug. 28, 1900.

E. B. POPE.

NIGHT SIGNAL FOR RAILWAY TRAINS.

(Application filed Apr. 23, 1900.)

(No Model.)



WITNESSES:

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NIGHT-SIGNAL FOR RAILWAY-TRAINS.

SPECIFICATION forming part of Letters Patent No. 656,726, dated August 28, 1900.

Application filed April 23, 1900. Serial No. 13,931. (No model.)

To all whom it may concern:

Be it known that I, EDWIN B. POPE, a citizen of the United States, residing at Shrewsbury, in the county of St. Louis and State of Missouri, have invented new and useful Improvements in Night-Signals for Railway-Trains, of which the following is a specification.

My invention relates to improvements in night-signals for railway-trains; and it consists in the novel combination and arrangement of parts, as will be hereinafter more particularly described and claimed.

In the drawings, Figure 1 is a top plan view of my complete invention. Fig. 2 is a side view of the same, showing the cab of the locomotive in section; and Fig. 3 is a sectional view of the roof of the cab and the connecting portion of my invention to the same.

At present in order to attempt to prevent what is known as a "rear-end" collision of railroad-trains a flagman is sent back a sufficient distance from the train obliged to stop and exhibits a signal, which is either a hand-lamp or a red flag, to the engineer of the following train or the one in motion, thus warning him to stop his train, and in many instances the flagman for obvious reasons is absolutely unable to get a sufficient distance to signal the engineer of the train in motion in order to give him time to get his train under control to prevent a collision, which results in great loss of life and property.

The object of my invention is to construct a night-signal which affords a means of instantaneously notifying the engineer of a railroad-train that may be following another train that the preceding one has been obliged to stop, thus enabling the engineer of said following train to stop the same in time to prevent a collision under any and all conditions; and it consists of a lamp, which may be of the usual construction and adapted to throw the rays of light in one direction, and means for movably attaching the same to the locomotive or any car of the railroad-train, whereby said lamp may be elevated a sufficient height or moved to either side of the train a sufficient distance to cause the rays of light issuing from

said lamp to be directed in the proper direction, whereby said light is plainly visible from any point in rear of or on either side of the train, as may be found necessary in order to obtain the proper results.

My invention further consists of means for automatically operating the lamp, notwithstanding the position of the same, to throw the rays of light against a certain object, all of which mechanism is under the perfect control of the engineer.

Referring to the drawings, 1 represents the roof of the cab of the locomotive, which is of the usual construction and to which my invention may readily be applied, and formed in the said roof is an opening which is covered by a cap 2, which is bolted to said roof and covers said opening, and secured to the cap is a plate 3, whereby a space is formed for the disk 4, which is provided with grooves on its upper and lower surfaces for the reception of balls 5, the latter also being partially located in grooves formed in the cap and plate, respectively, whereby said disk is free to turn between the cap and plate, and secured to the disk is the lower end of a post 6, which loosely passes through the cap 2, the upper end of which is provided with a fork 7, to which is hinged the central lever 8, the long arm of which projects toward the rear end of the cab of the locomotive and having its free end connected to the lamp 9 in rear thereof and at a suitable distance from its base by universal hinged connection 10, said lever being centrally located in respect to the remaining parts of the operating mechanism. The short arm of the lever 8 is slotted and projects downwardly, to the end of which is movably secured the fork 11, forming the end of the piston-rod 12 of the cylinder 13, the latter being provided with the usual pipe connections leading from a suitable air-storage tank, whereby the piston-rod may be reciprocated or moved in either direction in a well-known manner, the said fork 11 spanning the post 6, so as to clear the same.

Secured to the rear portion of the lamp 9 is a bar 14, which is located below the universal connection 10, which connects the lever

8 to the lamp, and secured to the opposite ends of said bar by universal connections 15 are the ends of two parallel connecting-bars 16, the opposite ends of the latter being likewise secured to a bar 17, the medial portion of which is provided with an opening through which the post 6 freely passes, the latter having secured thereto a bracket 18, to which the cylinder 13 is fixed, whereby said cylinder will always be held in a suitable position for operating the lever 8 and will turn with said post, the mechanism thus described being employed for elevating the lamp 9.

Secured to the roof of the locomotive is a cylinder 19, which is operated in a similar manner in respect to the cylinder 13, the piston-rod 20 of which is movably attached to the slotted end 21 of the arm 22, the latter being rigidly secured to the post 6, whereby said post is turned when desired for throwing the lamp 9 on either side of the train or locomotive.

Journalled in the roof 1 of the locomotive is a shaft 23, to the upper end of which is secured a lever 24, and to the opposite ends of said lever are attached the ends of two crossing bars 25, the opposite ends of said bars being movably attached to the bar 17, below the universal connection 15, and fixed to the lower end of the shaft 23 is a hand-lever 26, carrying the usual hand-operated pawl, which coöperates with a toothed segment 27, fixed to the roof of the cab of the locomotive, within the same, whereby when the said lever 26 is turned by the engineer within the cab the lamp 9 may be turned in either direction, as shown by the arrows in Fig. 1, whereby a motion or position may be given the said lamp independent of the raising, lowering, and side movement, as previously described.

From the foregoing description it will readily be seen that the engineer of the train that is obliged to stop can instantly light up the auxiliary light or lamp herein described and flash back to the following train the information that he has been obliged to stop his train, and this can be done before the speed of the train has even been slackened, if it is necessary, thus affording an absolute protection against a rear end collision from the following train. It is further to be noted that in many instances it is almost impossible for a flagman to go back any distance that would be effective on foot to render any assistance in preventing a collision on account of the weather, but by the employment of the lamp and the means herein described for adjusting the same the light issuing therefrom may be seen plainly for many miles under the most unfavorable conditions. The invention will also enable the engineer to throw the rays of light issuing from the lamp in any direction he may desire, lighting up instantly any prominent object at a distance, whereby a signal may be given before the following train

has approached around a curve, whereas the ordinary or well-known signals would be almost impossible to see, as they would be invisible to the engineer of the following train.

Having fully described my invention, what I claim is—

1. A railway-signal, comprising a lamp from which rays of light are adapted to issue, and means attached thereto for raising and lowering the same and bodily moving the lamp to either side of the train, whereby the light is visible from a point directly in rear or on either side of the train, substantially as described.

2. A railway-signal, comprising a lamp, means for raising, lowering and bodily moving the same to either side of the train, whereby the light issuing from the lamp is visible from a point directly in rear or on either side of the train, and suitable mechanism for operating said lamp independently of the first-named movements, as and for the purpose described.

3. A railway-signal, comprising a movable post, a lever hinged to the upper end of the same, a lamp, a universal connection for attaching one end of said lever to said lamp, means coöperating with the short end of said lever, whereby the long end thereof is elevated, parallel connecting-bars having one of their ends attached to said lamp below the said lever by universal connections, a movable bar located about said post, to the ends of which the opposite ends of the said parallel bars are attached by universal connections, and means for turning said post, as and for the purpose described.

4. A railway-signal, comprising a lamp, parallel bars, one end of each of which is secured to the lamp, a pivoted transverse bar to which the opposite ends of the parallel bars are secured whereby the lamp is bodily moved to either side of the train, a lever, one end of which is attached to said lamp, and means for operating said lever, whereby the lamp is raised and lowered, substantially as described.

5. A railway-signal, comprising a cap secured to the roof of the locomotive, a plate secured to the same, a disk located between said cap and plate and mounted upon balls, a post secured to said plate and freely passing through the cap, a fork forming the upper end of said post, a lever hinged to said fork, the long end of which is attached to a suitable lamp by universal connection, the short arm of said lever extending downwardly, means attached to said short end for elevating the opposite end of the lever, a transverse bar movable upon said post, parallel bars, one end of each of which is attached to the ends of said bar, and having their opposite ends movably attached to the lamp on either side of the lever, an arm, one end of which is secured to said post, means coöperating with the lower end of said arm for turning said post, a shaft

journaled in the roof of the cab of the locomotive, a lever secured to the upper end of the same, a hand-lever fixed to the lower end of said shaft, suitable mechanism for holding
5 said shaft in any position, cross-bars, one end of each of which is movably attached to the ends of the last-named lever, and having their opposite ends movably attached to the

transverse bar to which the parallel bars are attached, as and for the purpose described. 10

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

EDWIN B. POPE.

Witnesses:

C. J. ANDERSON,

C. F. KELLER.