

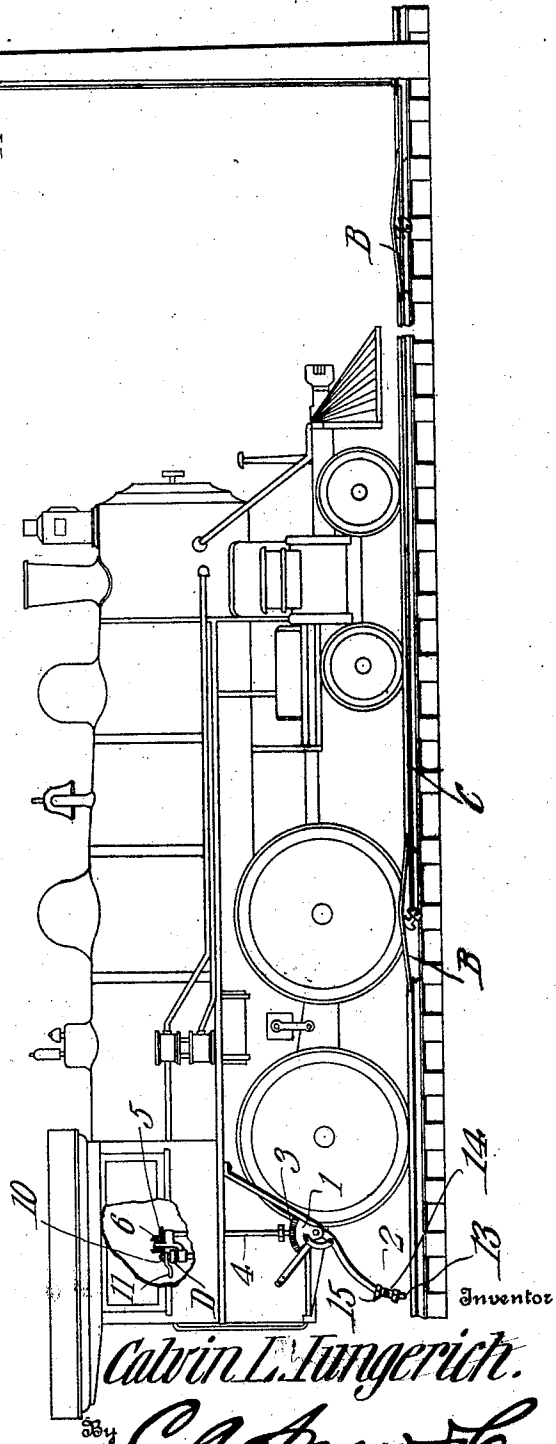
C. L. IUNGERICH.
 AUTOMATIC STOP-SIGNAL SYSTEM.
 APPLICATION FILED MAY 21, 1909.

955,406.

Patented Apr. 19, 1910.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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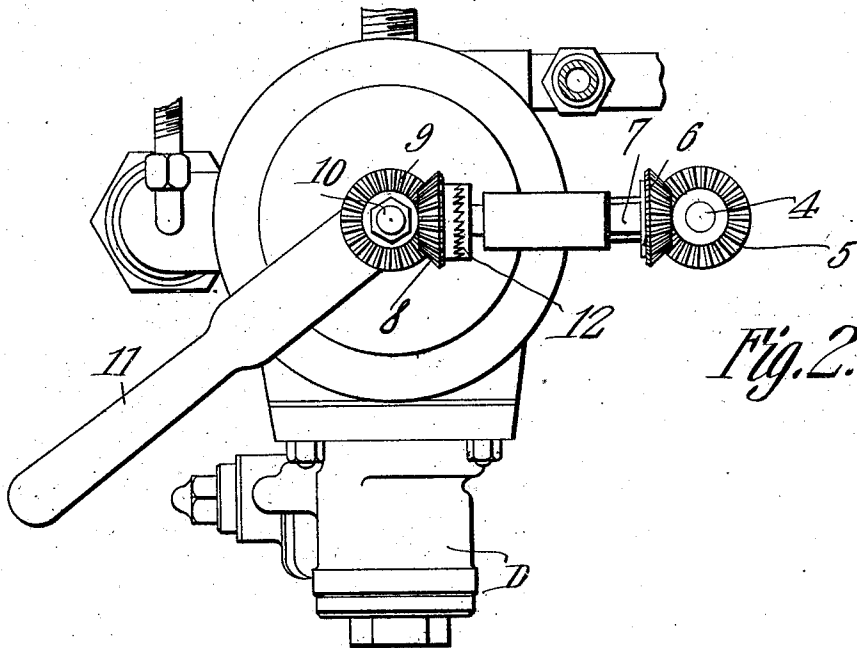


Fig. 2.

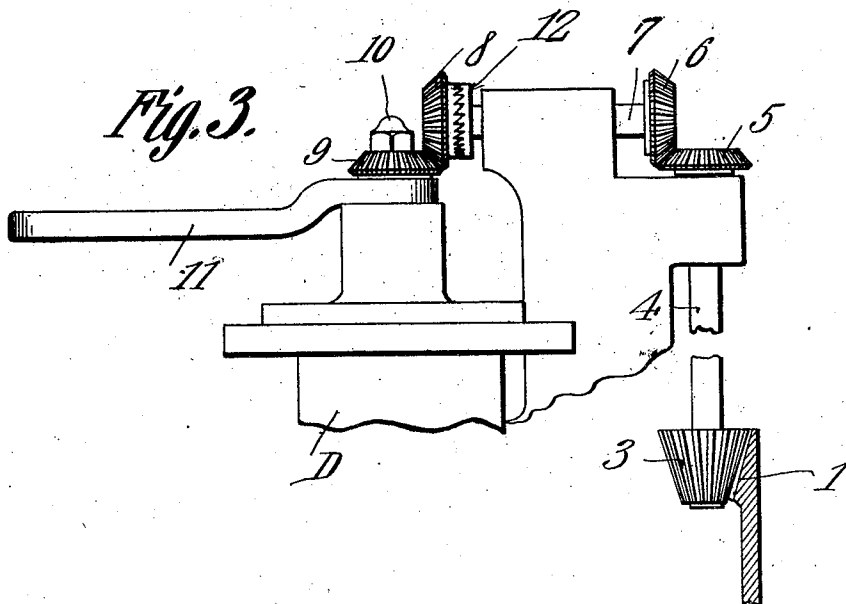


Fig. 3.

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UNITED STATES PATENT OFFICE.

CALVIN LUTHER IUNGERICH, OF HARRISBURG, PENNSYLVANIA.

AUTOMATIC STOP-SIGNAL SYSTEM.

955,406.

Specification of Letters Patent. Patented Apr. 19, 1910.

Application filed May 21, 1909. Serial No. 497,409.

To all whom it may concern:

Be it known that I, CALVIN L. IUNGERICH, a citizen of the United States, residing at Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented a new and useful Automatic Stop-Signal System, of which the following is a specification.

This invention relates to apparatus for automatically applying air brakes when a train, from any cause, passes a danger signal.

The invention is more particularly designed as an improvement upon the mechanism disclosed in Patent No. 841,403 issued to me on January 15, 1907.

One of the objects of the present invention is to provide improved mechanism designed to be actuated by the tripping plates or tappets located adjacent the track, said mechanism being of such a character as to reduce breakage to the minimum and insure the more positive actuation of the brake valve. It has been found that where a vertically movable actuating rod, a pitman, and a cross-head are utilized for actuating the valve, the parts are subjected to excessive lateral strains, particularly when the operation is carried out while the locomotive is traveling at a high speed. In order to overcome the objections incident to such a structure, the present structure has been devised.

The invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings, Figure 1 is a side elevation of an air brake signal apparatus embodying the present improvements. Fig. 2 is a plan view of the engineer's brake valve. Fig. 3 is an elevation of the mechanism utilized for transmitting motion from the tappet lever to the valve.

Referring to the figures by characters of reference A designates a standard on which is mounted a semaphore arm *a* designed to be actuated in any preferred manner, there being cam or tappet plates B located adjacent the track C and designed to be raised to different elevations, according to the position of the semaphore arm. These parts constitute no part of the present in-

vention but have been set forth in detail in the patent hereinbefore referred to.

The present invention resides in the means employed for actuating the brake valve which is located in the cab of the locomotive. This mechanism includes a segmental gear 1 mounted for partial rotation upon the cab of the locomotive, and having a tappet arm or lever 2 extending downwardly therefrom and designed to move against the tappet plates or cams B and to be actuated thereby, the degree of movement of the arm 2 being regulated by the elevation of the tappet plates or cams B. The segmental gear 1 meshes with a bevel gear 3 secured to the lower end of a shaft 4 which is journaled upon the cab, there being a gear 5 at the upper end of this shaft and which meshes with a gear 6 upon a second or driven shaft 7. Another gear 8 is secured to the shaft 7 and meshes with a gear 9 which is carried by the valve to which the usual operating lever 11 is secured.

The ordinary form of air brake valve has been indicated at D.

It is of course to be understood that the weight of the arm or lever 2 is sufficient to maintain the mechanism, including the valve, normally in a predetermined position. When the tappet plate or cam B is elevated however the arm or lever 2 upon reaching the same will ride thereover with a wiping action, said arm or lever 2 being thus caused to swing rearwardly and upwardly and causing the segmental gear 1 to actuate the gear 3. Motion is thus transmitted through the gears and shafts shown in Fig. 3 to the valve stem 10 and said valve is thus operated to partly or entirely apply the brakes, this being dependent upon the movement of the arm or lever 2 which, as heretofore pointed out, is controlled by the elevation of the tappet cam or plate B in the path thereof.

As shown at 12, the gear 8 may be provided with a clutch whereby it can be thrown into or out of operative relation with the shaft 7. Also if desired and as shown in Fig. 1, the lever 2 may be provided with a separate end portion 13 adjustably connected to it by a sleeve or turn-buckle 14 and jam nuts 15.

* By providing mechanism such as herein described, danger of breaking or otherwise

injuring the mechanism as a result of the sudden contact of the parts 2 and B, is reduced to the minimum, this being due primarily to the wiping action of the arm or lever 2 upon the cam or tappet B and to the fact that motion is transmitted from said arm or lever to the valve by means of revolvable elements.

It is of course to be understood that various changes may be made in the construction and arrangement of parts without departing from the spirit or sacrificing the advantages of the invention.

What is claimed is:—

1. The combination with an engineer's valve and a gear carried thereby, of a power transmitting shaft mounted for rotation adjacent the valve, a shaft interposed between the valve and the first mentioned shaft, gears upon the shafts for transmitting motion from one shaft to the other, and to the valves, a shifting element, a tappet arm movable against said element and arranged

to swing in a vertical plane, a segmental gear carried by and movable with the arm, and means for transmitting motion from said gear to the first mentioned shaft during the oscillation of the arm.

2. The combination with an engineer's brake valve and a gear thereon, of a revolvable shaft adjacent to the valve, gearing for transmitting motion from said shaft to the gear on the valve, means for shifting the gearing to uncouple the valve gear therefrom, a tripping element, a tappet arm movable thereagainst and arranged to swing in a vertical plane, an adjustable extension upon the arm, and means for transmitting motion from said arm to the shaft.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CALVIN LUTHER IUNGERICH.

Witnesses:

EDWARD M. WINTER.

M. B. O'DONNELL.