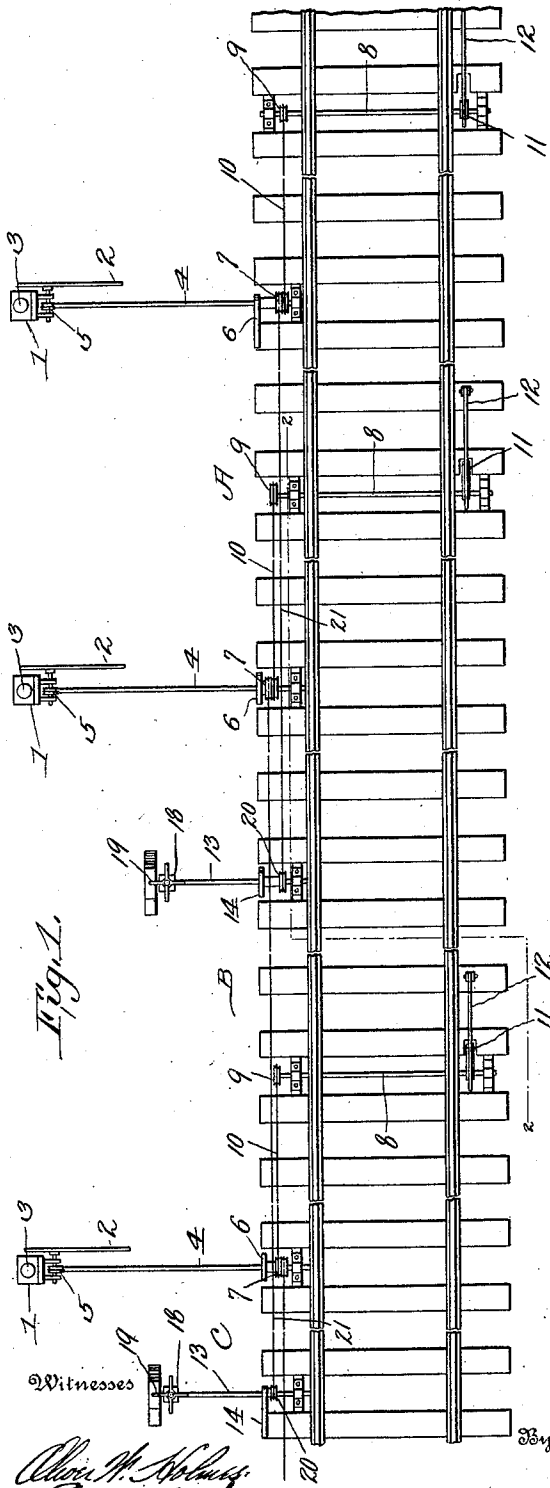


C. W. BALDWIN.
 AUTOMATIC RAILROAD BLOCK SYSTEM.
 APPLICATION FILED JULY 13, 1909.

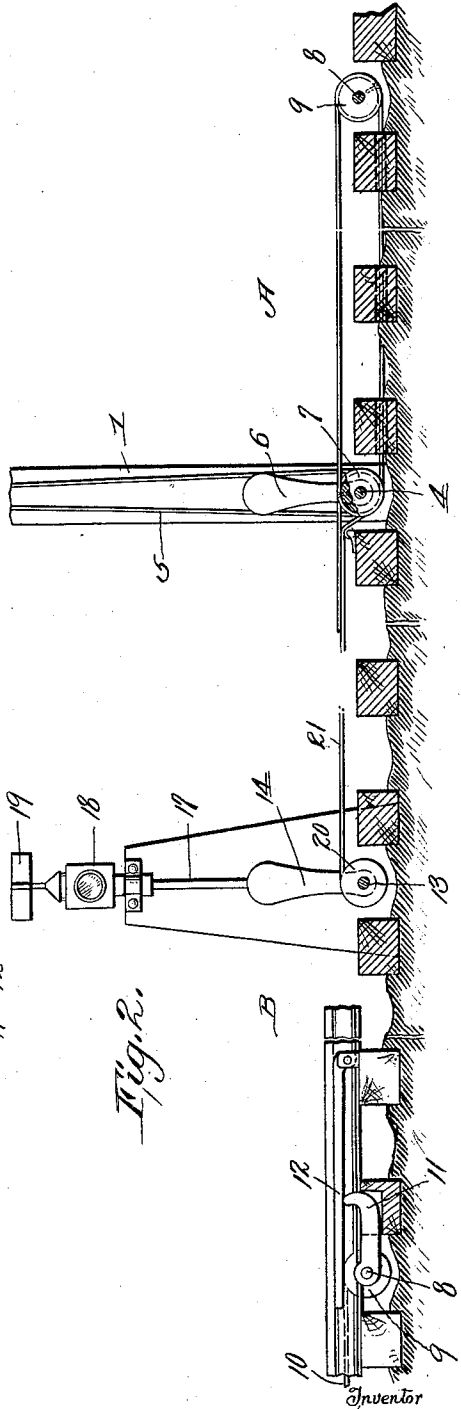
1,047,486.

Patented Dec. 17, 1912.

2 SHEETS—SHEET 1.



Chas. H. Baldwin
Esq. Mr. Bath



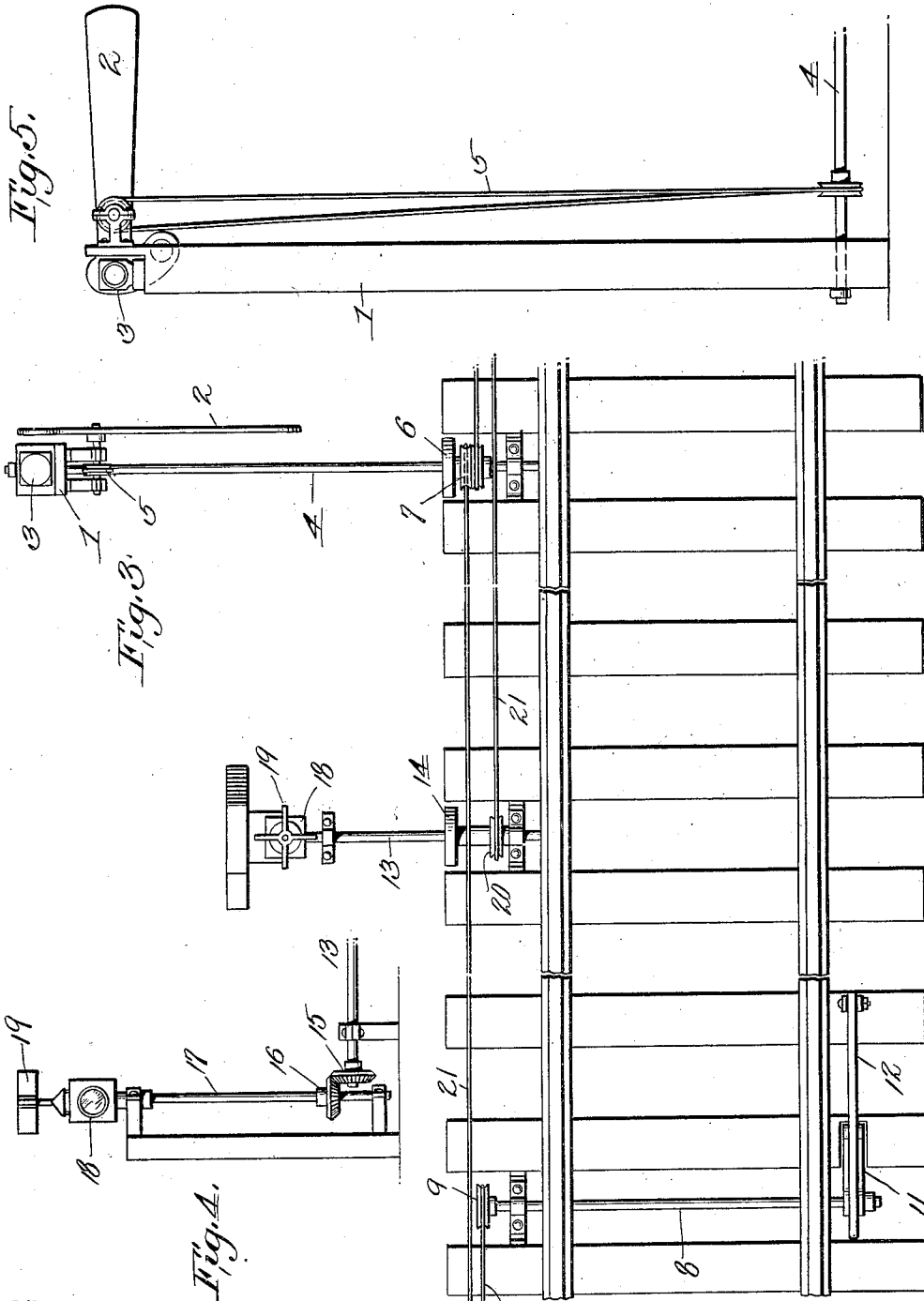
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2 SHEETS—SHEET 2.



Witnesses

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AUTOMATIC RAILROAD BLOCK SYSTEM.

1,047,486.

Specification of Letters Patent.

Patented Dec. 17, 1912.

Application filed July 13, 1909. Serial No. 507,398.

To all whom it may concern:

Be it known that I, CHARLES W. BALDWIN, a citizen of the United States, residing at Washington, in the District of Columbia, have invented a new and useful Improvement in Automatic Railroad Block Systems, of which the following is a specification.

This invention relates to a railroad safety appliance arranged mainly adjacent a track but carried partly by an engine and its tender, and the object of the invention is to automatically operate block signals, lifting a semaphore arm into danger position as a train enters a block, and when the train has left one block and has passed safely into a second block returning the semaphore arm of the first block to safety position.

Another object of my invention is to lift immediately in advance of each semaphore arm which is at danger position a bar which will trip certain mechanism carried by the engine and which will bring the train to a standstill at said danger signal, provided the engineer does not himself take the proper action upon seeing said signal, or in the event of his failing to see it.

A further object of the invention is to provide for the stopping of a train in a like manner in advance of an open switch, and a still further object of the invention is to connect the various parts together so that all of the various devices will be operated automatically both as to their setting and resetting, so that a train will always have a closed block behind that block which a train is just entering, the preceding block not being opened.

With these various objects in view, my invention consists in the novel features of construction, arrangement and combination of parts, all of which will be hereinafter fully described and pointed out in the claim.

In the drawings forming a part of this specification: Figure 1 is a plan view of a track section showing the two first blocks and a portion of the third block. Fig. 2 is an enlarged section on the line 2-2 of Fig. 1. Fig. 3 is an enlarged plan view of a portion of one block. Fig. 4 is a detail side elevation of a signal device arranged between the ends of the blocks. Fig. 5 is a detail side elevation of a semaphore post arranged at the end and beginning of the various blocks.

In these drawings A and B represent

blocks of any desired length and C a portion of a block, the block A being assumed to be the first block after leaving a terminal point. At the entrance of each of these blocks is arranged a semaphore post 1 which carries an arm 2 and a light 3, and from the post to the track extends a shaft 4, and a cable 5 runs from the shaft 4 to the stub shaft or pivot point of the arm 2, said belt being secured against slipping at either point, so that rotation of the shaft 4 in one direction will lower the arm, and rotation in the other direction will lift the arm. Upon shaft 4 adjacent the track and preferably along the line formed by the outer ends of the ties, which line is about eighteen inches from the track rails, I fix a blade 6. A double drum 7 is also fixed upon the shaft 4. This construction is duplicated at the entrance to each block. Upon the opposite side of the track and immediately in advance of the block entrance is arranged a device for stopping the train in case the engineer should fail to pay attention to the block signal. This device which is also duplicated in each block consists of a transverse shaft 8 extending under the track rails and carrying adjacent one end a pulley 9 which is connected to the drum 7 by an endless belt 10, the belt being fastened to both drum and pulley in order to insure positive action of the parts and avoid any possibility of the belt slipping. Upon the opposite end of shaft 8 is placed a cam arm 11 upon the free end of which rests a pivoted bar 12. A partial rotation of the shaft 8 in one direction will lift the cam arm which in turn will raise the bar 12. Opposite rotation of the shaft will lower the cam arm and the bar will drop by gravity.

In each block and at a suitable distance from the entrance of the block, I place also adjacent the track a shaft 13 which carries a blade 14, similar to the blade 6, and the shaft 13 as most clearly shown in Fig. 4 carries at its outer end a bevel gear wheel 15 which meshes with a bevel gear wheel 16 fixed on an upright shaft 17 which carries a signal light 18 and suitable signal blades 19. A pulley 20 is fixed upon the shaft 13 and a cable 21 passes over and is secured to the pulley 20 and this cable extends along the track, by and out of contact with the shaft 4 at the entrance of the block in which the blade 14 is placed, and continues the entire length of the preceding block and

passes under and is secured to the double drum carried by the shaft 4 at the entrance of the preceding block.

The operation of the device is very simple.
 5 As a train enters a block, as for example block A, suitable means, not shown carried by the train will throw down the blade 6 at the entrance of the block, thus rotating the shaft 4 and drawing the semaphore arm
 10 into danger position. This will also through the belt 10 and shaft 8 raise the bar 12 immediately in advance of the semaphore post guarding the entrance to block A. The parts will remain in these positions until
 15 the train passes the semaphore post at the commencement of block B, and the blade at this point will also be thrown down, the semaphore arm upon this post moved to danger position and the bar 12 adjacent said
 20 post lifted. The train is now protected by two danger signals on the posts and also by the two uplifted bars 12. But as soon as the train has fairly entered block B and has proceeded therein any desired distance the
 25 blade 14 will be struck and will be thrown into horizontal position. In Fig. 1 the parts are shown in a position which would be occupied by them with the train in block A. As soon as the train has passed the
 30 blade 14 in block B the entrance to the block A will be opened, as the downward move-

ment of the blade 14 in block B will through the connecting cable reverse the rotation of the double drum 7, on shaft 4 at the entrance to block A and will lift the blade 6, cause the 35 elevated bar 12 to be dropped and will also swing the semaphore arm into safety or clear-track position. The block A is then open for a following train, but block B will remain closed until the train has passed the 40 target 14 in block C.

What I claim is:—

In a signal system, a plurality of semaphore posts carrying signal devices, supplemental signal devices arranged between said 45 posts, train stopping devices arranged adjacent a track and off-set with respect to the said posts and supplemental signal devices, double drums arranged at said posts, the rotation of said drums controlling move- 50 ment of the signal devices carried by the posts, and cables extending in opposite directions from said drums, the cables from each drum operating respectively one of the train stopping devices and one of the sup- 55 plemental signals, and the cables of one drum overlapping the cables of adjacent drums.

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Witnesses:

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