

W. H. McGEEVER.
RAILWAY STAFF.
APPLICATION FILED JULY 9, 1909.

982,082.

Patented Jan. 17, 1911.

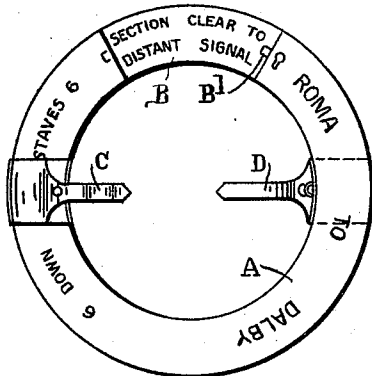


FIG. 1.

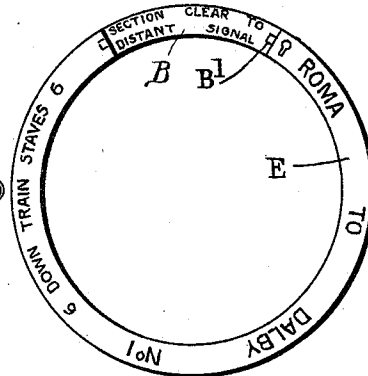


FIG. 2.

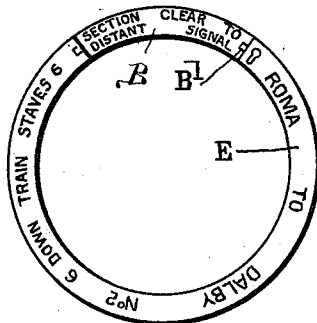


FIG. 3.

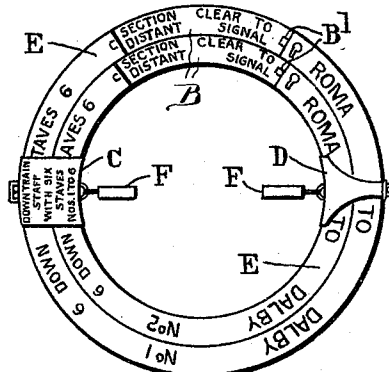


FIG. 4.

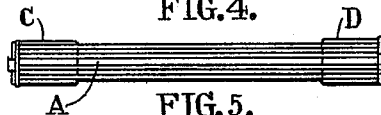


FIG. 5.



FIG. 6.



FIG. 7.

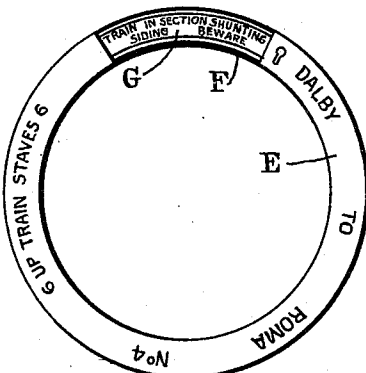


FIG. 8.



FIG. 9.

Witnesses
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RAILWAY-STAFF.

982,082.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM HENRY MCGEEVER, a subject of the King of Great Britain, residing at Greenmount, in the State of Queensland, Australia, have invented certain new and useful Improvements in Railway-Staves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the system of working trains and trams particularly on single lines of railways by what is called the staff working, and the object is to provide a staff and subsidiary staves and method of using same by which most if not all the disadvantages of the present systems are removed.

The following are some of the advantages obtained by the use of my device, viz:—Delays are reduced to a minimum; it is possible to have any number of trains (going in the same direction) on the one section without danger, each driver knowing the position of the trains ahead of him on that section; it is impossible to pass a train on after the section has been blocked and it is impossible for the driver or station master (or signalman) to tamper with the system without detection. These and other advantages will clearly show themselves when the invention is fully considered.

In carrying my invention into effect I provide a principal staff (which I will hereinafter refer to as the "staff") and a number of up and down train subsidiary staves (which I will hereinafter refer to singly or collectively as the case may be as the staff or staves) there being as many up and down train staves as the trains which are permitted to run in one direction before the passage of a train or trains in the other direction.

The staff is made of any suitable shape, and of suitable materials or combination of materials. It is provided with means whereby the staves may be detachably secured thereto, said means being such that they cannot be manipulated by the engine driver.

The staff has painted or otherwise marked on both sides thereof instructions as to the direction in which it is to be used. Any other message or instruction may be indicated on the staff or on simple means removably attached to the staff. Provision

may be made for the attachment of a number of padlocks for use in securing the staves to the staff, and the messages to either as the case may be.

The staves are made of similar shape and material as the staff. As before mentioned there is one set of staves for use with "down trains" and one set for the "up trains," they are therefore marked accordingly. Furthermore they are also each provided with an instruction tablet, ring or other device (having means for securing them in the desired position) as in the case of the staff. If desired the staves may be marked with the number allowed to be used on the section and with consecutive numbers indicating the order in which they are to be delivered.

In order that my invention may be clearly understood I will now describe it more fully with the aid of the accompanying drawings which illustrates two forms of staffs and staves.

Figure 1 is a view of the principal staff. Figs. 2 and 3 are views of two subsidiary staves. Fig. 4 shows the principal staff and subsidiary staves assembled together. Fig. 5 is a side elevation of same. Figs. 6 and 7 show one form of instruction tablet for attachment to the principal staff and subsidiary staves respectively. Fig. 8 illustrates another form of staff or stave, and Fig. 9 is a part section thereof (to a larger scale).

In carrying out my invention, in its simplest and perhaps best form I make the principal staff A of suitable shape such as in the form of a ring, or oval, or approximating thereto. It may be made of any material, or combination of materials, that will suit the purpose, viz:—that which while light will not be knocked about by rough usage. For this purpose I may employ rubber, leather, thin sheet tin, brass or copper, wire or such like. This staff A has painted, impressed, embossed or otherwise marked or indicated upon it on the obverse side the words "Down train" and the respective stations between which it is used, or words to similar effect, while on the reverse side the words "Up train" and the respective stations, in the reverse order to that on the obverse side, or words to similar effect. Provision is made on this principal staff by which a small and convenient shaped tablet as B may be secured thereto on either side (such as by a lock B' or padlock,) so that it can only be removed by the station master or

signalman at either end of the section but not by the engine driver. A number of these tablets are provided (one only being affixed to the staff at a time) and they bear an instruction to the driver as to the state of the line ahead or other information, such as "Train in section 5 minutes ahead, beware." "Train in section shunting siding, beware" and so on. The part A is complete in itself and the tablet may be secured thereto in any convenient way. One method of securing the tablet to the ring is shown in Fig. 1, in which the ring has a sector shaped cut-away portion provided with a hole on one side. The tablet B has a projection to fit into said indentation and may then be locked in by the lock B'. The principal staff A has also means such as the straps and buckles C D by which the "down" and "up" subsidiary staves E are secured thereto. Locks or padlocks F (the keys of which are kept by the station master or signalman at either end of the section) should be provided in order to prevent the improper removal of the staves. The straps should indicate whether they are for securing "down" or "up" staves, the number of staves E that are to be affixed and how they are numbered. When straps and buckles are not used, this information should be embodied on the respective sides of the staff.

The subsidiary staves E may be made similar in form and of similar material to the principal staff A, with the exception that they need not be provided with straps and buckles C D. They have indicated thereon similar information to that contained on the principal staff A with the addition of a number to indicate the total number of staves to be issued and another number to indicate the order of issue. Like the principal staff A they are provided with means for securing instruction tablets B². The staves bear an instruction reading "Section clear to distant signal" or words to that effect, so placed that it can be covered over when the tablet B is locked on. The tablets B B², which could be interchangeable, would be colored red so as to attract the attention of the driver more readily. Receptacles (fitted with lock and key) may be provided at the end of each section, and in which the staff, staves, etc., may be placed.

As before mentioned separate staves should be used for the "down" and "up" lines (being affixed to their respective sides of the staff A) by the respective straps and buckles C D and locks or padlocks alone. A single set may however be sometimes used bearing the "Down" and "up" instructions on either side thereof.

The regulations applying to the use of my invention which can be used with the permissive as well as the absolute block system would be, as far as possible similar to

those in operation with the present staff system.

Assuming that it is desired to work a section, say, between Roma and Dalby with my staff A and staves E, the staff with all the staves (say 6) locked thereon would be at the former station in charge of the station master or signalman. Now, supposing it is desired to pass on one train only, on the down line, that is to Dalby and then allow one to return up, the staff A with all the six down and up subsidiary staves E on their respective sides would be handed to the engine driver, and he would take a note of the instruction on down stave No. 1 which, as described above, would be to the effect that the section is clear to the distant signal at Dalby. On reaching Dalby he would hand over the staff A and staves E just as he got them from Roma. It will be understood that on the whole staff and staves being handed to the driver at Roma the section would be "blocked" to all trains running "down" and when handed to the officer in charge at Dalby the "up" line would be opened. Supposing it is now desired to pass trains "up" from Dalby to Roma on the permissive system, that is to pass a number of trains (say 4) in the one direction before the section is blocked and then opened for traveling in the opposite direction, "up" stave No. 1 would be unlocked from the staff A and handed to the engine driver who on taking note of the instruction that the line is clear to the distant signal at Roma proceeds on his journey. "Up" stave No. 2 with an instruction such as "train in section 5 minutes ahead, beware" thereon would be handed to the engine driver of the second train and so on until four staves are passed out. Finally to the fifth driver, would be handed the staff A together with the remaining two staves E and the six down staves locked thereon, the driver taking his instruction from up stave No. 5) thus blocking the section to trains in the same direction. As each train reaches Roma the driver would hand over his stave or staff and staves as the case may be to the officer in charge who would replace the four staves previously handed to him.

Of course it is quite clear that my staff and staves can be used when the trains are running at a fair rate of speed past a station.

From the foregoing it will be seen that the working can be more or less elaborated according to circumstances and that my staff and staves may be worked in conjunction with either or both the electric and automatic systems, and with the aid of the telephone and telegraph.

In Figs. 8 and 9 one of several alternative methods of constructing my staff A or stave E is shown. In this case they are made hollow and of suitable material and are pro-

vided with a "sight F." Instead of having separate instruction tablets B as in Figs. 1 to 7, I indicate the instructions on a ring G sliding in the staff or stave which can be
5 locked in any position so that only one instruction is shown through the sight F. The method of working this staff or stave being practically the same as that described no further description is necessary.

10 It will be understood that the details of carrying my invention into effect can be varied without interfering with the essential features thereof.

I claim:—

15 1. The combination of a main staff provided on either side with instructions corresponding to the direction of movement of the train, annular subsidiary staves bearing on one side instructions to the engine driver,
20 tablets bearing instructions as to the state

of the line ahead, and means for securing said subsidiary staves and tablets to the main staff, substantially as described.

2. The combination of a main staff annular in form and provided on either side
25 with instructions corresponding to the direction of the movement of the train; annular subsidiary staves bearing on one side instructions to the engine driver; sector shaped tablets bearing instructions as to the state
30 of the line ahead; and means for securing said subsidiary staves and tablets to the main staff, substantially as described.

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

WILLIAM HENRY MCGEEVER.

Witnesses:

LEOPOLD FREDERICK BERNAYS,
ARTHUR EVELYN SYMES.