Feb. 9, 1932. R. R. CHILDS 1,844,742

TRAFFIC SIGNAL

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Fig. 1.

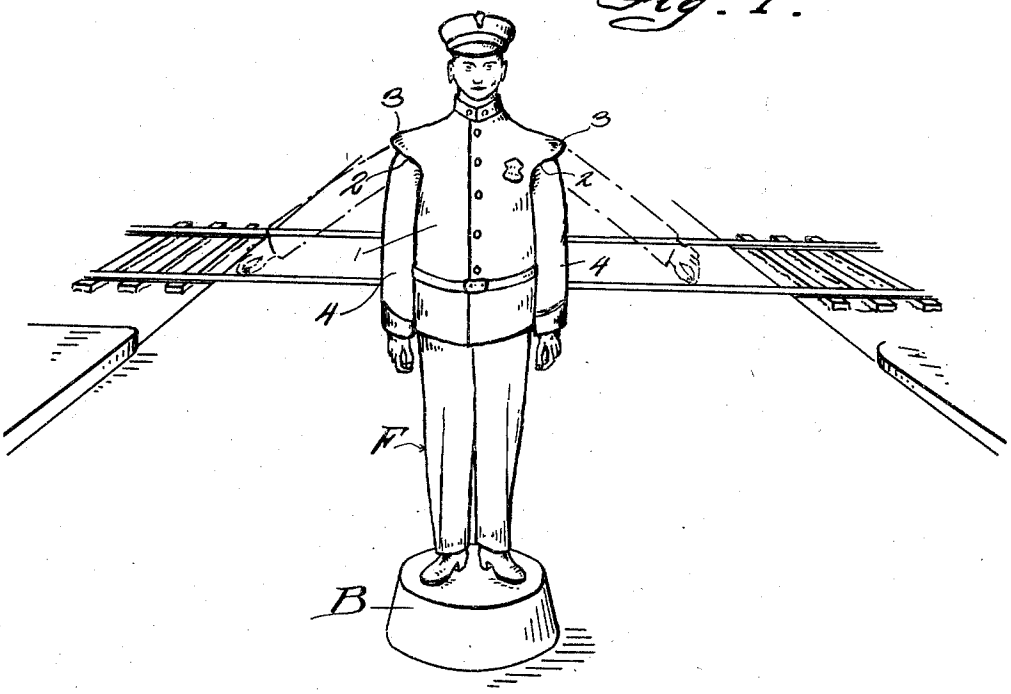
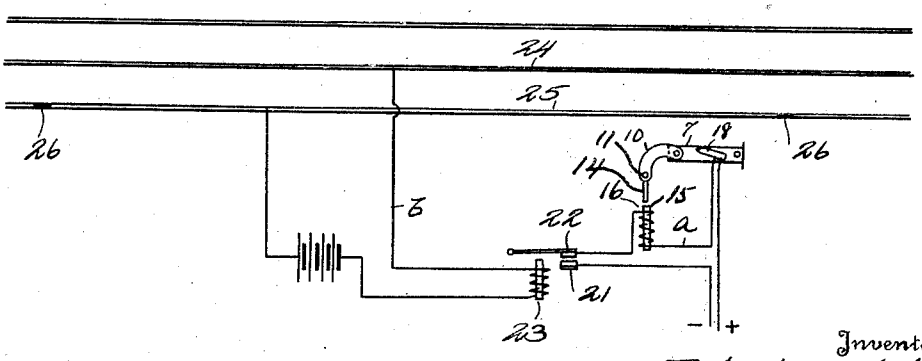



Fig. 2.




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Fig. 3.

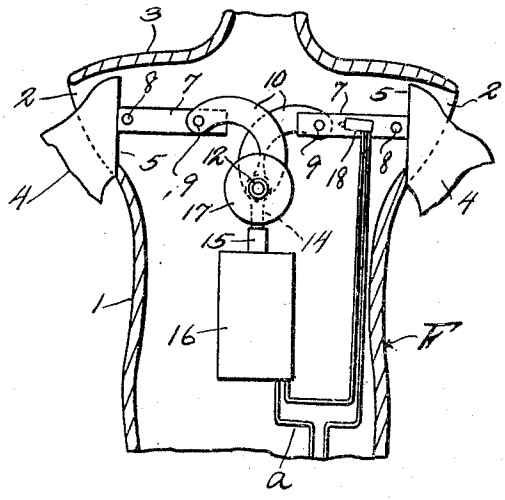



Fig. 4.

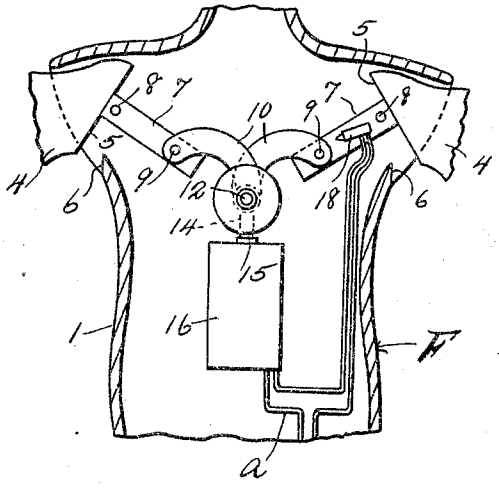



Fig. 5.

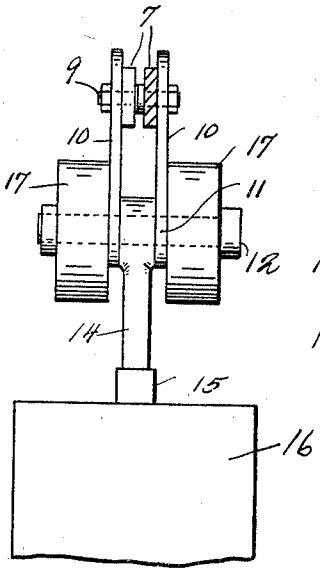
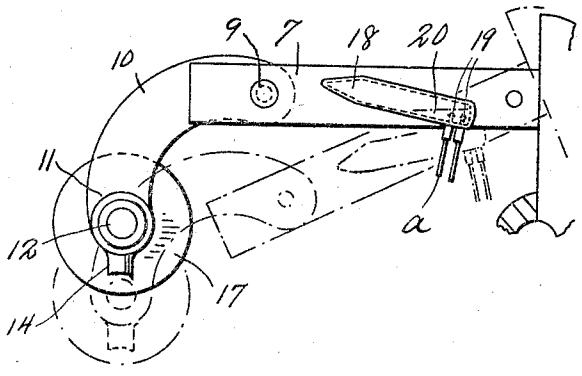



Fig. 6.




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# UNITED STATES PATENT OFFICE

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## TRAFFIC SIGNAL

Application filed June 26, 1928. Serial No. 288,508.

This invention relates to a traffic signal and it is an object of the invention to provide a device of this kind comprising a member in simulation of a traffic policeman or a railroad guard and which figure includes arm members adapted to be automatically operated to raise and lower upon the approach of a train at a highway crossing to give warning of the coming train to the traffic on the highway.

Another object of the invention is to provide a device of this kind comprising a body member and an arm or arms carried thereby for swinging movement in a vertical direction, together with electrically operated means to effect the desired raising or lifting movement of the arm or arms and also means for breaking the circuit when said arm or arms are raised or lifted to a predetermined height to permit the same to drop by gravity.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved traffic signal whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:—

Figure 1 is a view in perspective illustrating a signal constructed in accordance with an embodiment of my invention and arranged upon a highway adjacent to a rail road crossing, a second position of the arms being indicated by broken lines;

Figure 2 is a diagrammatic view illustrating an operating circuit for my improved signal;

Figure 3 is a fragmentary view partly in vertical section and partly in elevation illustrating the mounting of the arms and the operating means therefor, said arms being in a lowered position;

Figure 4 is a view similar to Figure 3 showing the arms raised;

Figure 5 is an enlarged fragmentary view partly in section and partly in side elevation of the operating mechanism herein employed;

Figure 6 is an enlarged detailed fragmentary view illustrating the means for opening and closing the operating circuit for the signal.

As disclosed in the accompanying drawings, B denotes a base of desired dimensions and constructed in any preferred manner and upon which is mounted a figure F, herein disclosed as in simulation of a traffic officer. It is to be understood, however, that this figure F may be in imitation of a railroad policeman or otherwise as the requirements of practice may prefer.

The body portion 1 of the figure F is hollow and at the opposite sides of its upper part or shoulder portion are provided the openings 2. It is to be noted that the top or shoulder walls 3 of the body 1 project beyond the lower ends of the openings 2 whereby sheds are provided to prevent rain and the like entering within the hollow body 1 through the openings 2. The upper or inner end portions of the arms 4 extend inwardly a slight distance of the body 1 through the openings 2 and the downward movement of the arms 4 is limited by the upper end edges 5 of said arms having contact with the lower edge 6 of the openings 2. Extending from the edges 5 at substantially the transverse centers thereof are the elongated members 7 pivotally connected with the body 1 at points immediately adjacent to the arms 4 as indicated at 8. The inner or free end portions of these members 7 are pivotally connected, as at 9, to the upper or free end portions of the arcuate arms 10. These arms 10 are disposed inwardly and downwardly and

have their opposite or lower end portions pivotally engaged, as at 11, with an end portion of a pintle or bolt 12. This bolt 12 is directed through the upper portion of an upstanding rod 14 constituting a continuation of the core 15 associated with a solenoid 16, the windings of which being such that when the solenoid 16 is energized the core 15 will be retracted.

The arms 10 are engaged with the pintle or bolt 12 at opposite sides of the rod 14 and mounted upon the pintle or bolt 12 outwardly of each of the arms 10 is a balancing weight member 17. These members 17 serve to facilitate the requisite raising and lowering of the arms 4, yet the total weight of such members 17 together with the parts directly associated therewith is insufficient to overcome the gravital movement of the arms 4 although such gravital or downward movement of the arms 4 is retarded with the consequent lifting movement facilitated. This results in the operation of the arms 4 being raised and lowered in a manner effective in attracting the attention of traffic to an approaching train crossing.

One of the elongated members 7 has disposed lengthwise thereof but on a transverse vertical incline an elongated tube 18 the lower portion of which being provided with spaced contacts 19 which are connected by the mercury 20 in the tube when the associated member 7 is in its substantially horizontal position or when the arms 4 are lowered. These contacts 19 are interposed in the operating circuit *a* for the solenoid 16 and which circuit leads to any suitable source of E. M. F. When the arms 4 are in their lowermost position, the circuit *a* will be closed resulting in energizing of the solenoid 16 and resultant retraction of the core 15 and which operation will lift or raise the arms 4 until the circuit *a* is broken by the flow of the mercury 20 away from the contacts 19, whereupon the arms 4 will drop by gravity and so on during the period the signal is intended to be functioning.

As is particularly illustrated in Figure 2, the circuit *a* has interposed therein a normally open circuit closer comprising a stationary contact member 21 and a movable contact member 22. Associated with the movable contact 22 is an electric magnet 23 which, when energized, maintains the contacts 21 and 22 closed but when the magnet 23 is deenergized the contact member 22 automatically returns to open position. The magnet 23 is interposed in a local circuit *b* in which are included the rails 24 and 25 of a trackway, the portion of the rail 25 interposed in said circuit *b* constituting an insulated section, the insulation being indicated at 26. Upon a train entering the block 25 the magnet 23 will be energized, thus holding the contact members 21 and 22 in contact until after the train passes from said block. During the time the train is upon the block 25 the arms 4 will continue to raise and lower to give the requisite warning to approaching traffic.

From the foregoing description it is thought to be obvious that a traffic signal constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:—

A traffic signal comprising a structure including a hollow body, a wall of said body having an opening, an arm disposed outwardly of the body and pivotally mounted on the body for vertical swinging movement, an extension carried by the arm and extending inwardly of the body, a solenoid mounted in the body, a core movable longitudinally of the solenoid, a link connected at one end to said extension, a pivot for pivotally mounting the other end of said link on said core, a weight mounted on said pivot, an operating circuit for said solenoid, and means actuated upon reciprocation of said arm whereby to open and close said circuit.

In testimony whereof I hereunto affix my signature.

ROBERT R. CHILDS.