O. H. WHITMAN.

CROSSING SIGNAL.

APPLICATION FILED JULY 20, 1914.

1,158,610. Patented Nov. 2, 1915

Fig. 1.

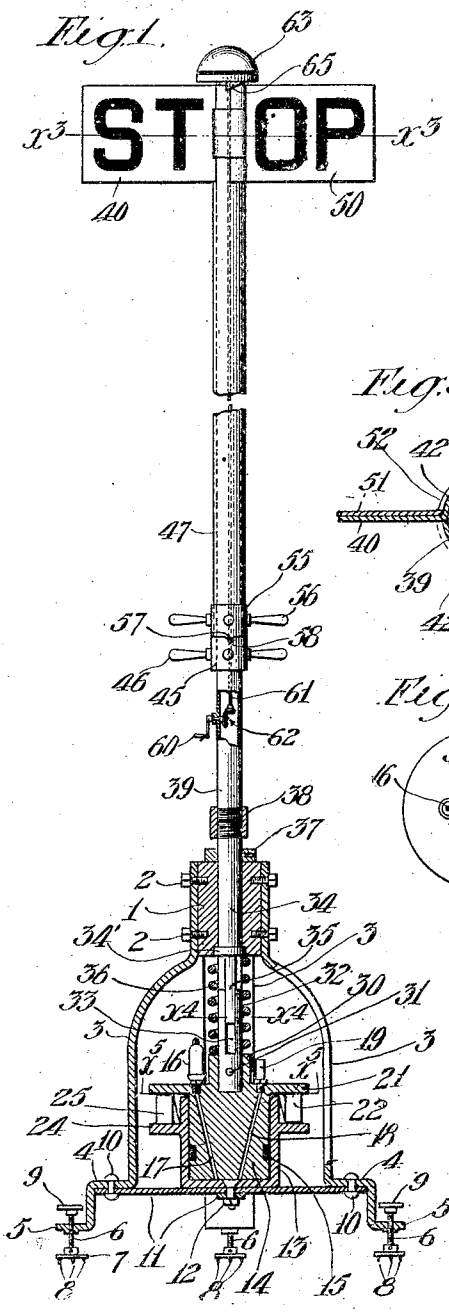


Fig. 2.

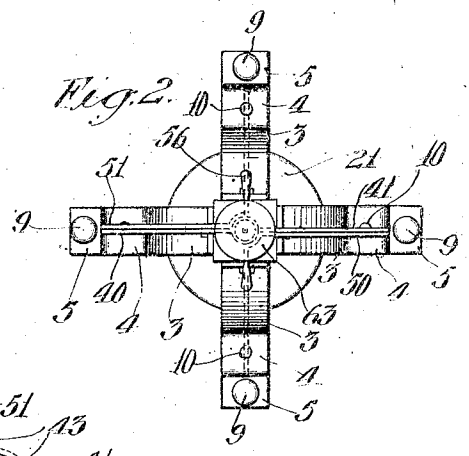


Fig. 3.

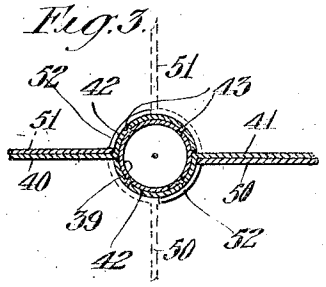


Fig. 4.

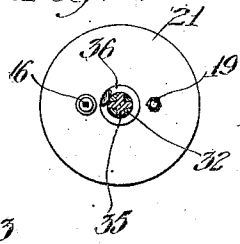


Fig. 5.

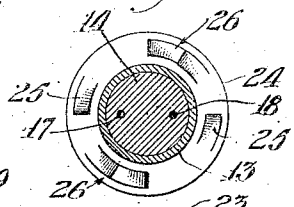


Fig. 6.

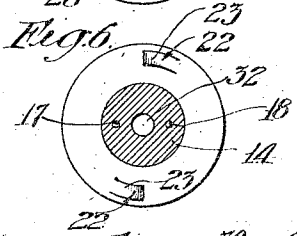
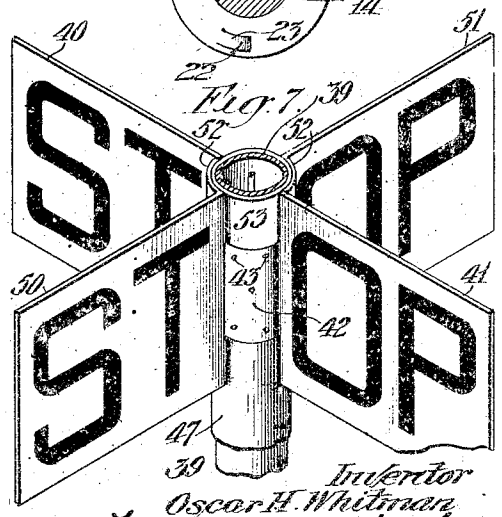


Fig. 7.



Witnesses:-
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UNITED STATES PATENT OFFICE.

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CROSSING-SIGNAL.

1,158,610. Specification of Letters Patent. Patented Nov. 2, 1915.

Application filed July 20, 1914. Serial No. 852,107.

To all whom it may concern:

Be it known that I, OSCAR H. WHITMAN, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Crossing-Signal, of which the following is a specification.

My invention relates to signal displays of the type placed at the intersection of streets for the purpose of controlling the movement of traffic, and one of the main objects of my invention is to provide a signal of the character described of simple form and construction, which warns the traffic by a simultaneous audible and visible signal.

Referring to the drawings, which are for illustrative purposes only: Figure 1 is a side elevation, partly in section, of a signal embodying a form of my invention. Fig. 2 is a plan view of the device shown in Fig. 1. Fig. 3 is an enlarged, sectional view on line x^3—x^3 Fig. 1. Fig. 4 is a sectional plan view on the line x^4—x^4 Fig. 1. Fig. 5 is a sectional plan view on line x^5—x^5 Fig. 1. Fig. 6 is an inverted sectional plan view of the piston. Fig. 7 is a perspective view, partly in section, of the upper portion of the signal.

1 designates a head to which is secured, by means of bolts 2, four downwardly depending legs 3 having an offset portion 4 terminating in a downwardly and outwardly extending foot 5, each foot 5 being provided with a bolt 6, to the lower end of which is secured a plate 7 provided on its under face with downwardly projecting prongs or teeth 8 adapted to rest on the surface of the street. The bolts 6 are each provided with a head 9 so that the height of the respective feet 5 above the street level may be regulated by turning the respective bolts, and by such adjustment the signal may be kept in vertical position, the parts heretofore described constituting the base or support for the signal. To the underside of the offset portion 4 of the respective legs 3 are secured, by means of rivets 10, cross plates 11. Centrally mounted on the plates 11 and secured thereto by means of a suitable bolt 12 is a cylinder or dash pot 13, the upper end of which is open to receive a piston 14 provided with suitable packing rings 15.

Mounted on the upper face of the piston 14 is a whistle 16 connected by means of a passage 17 through the piston 14 with the space between the piston and the closed end of the cylinder 13, a similar passage 18 being provided through the piston 14 which connects the space between the piston and the closed end of the cylinder with an intake valve 19 on the upper end of the piston oppositely disposed to the whistle 16 on the piston. The piston 14 is provided with a circular flange 21 having downwardly depending from the underside thereof two oppositely disposed lugs 22 provided with cam faces 23 adapted to ride over lugs on a flange 24 extending outwardly from the cylinder 13. The lugs on the flange 24 of the cylinder are six in number, single lugs 25 being oppositely disposed on one portion of the flange 24 and double lugs 26, or lugs arranged in pairs, are arranged intermediate the first named lugs 25, the respective pairs of lugs 26 being oppositely disposed to each other. The upper end of the piston 14 terminates in a boss 30 in which is secured, by means of a pin 31, the lower end of a shaft 32. The shaft 32 is slotted, as indicated at 33, to receive the lower end of a shaft 34. The lower end of the shaft 34 is cut away to form four ribs 35 which slidably extend into the respective slots 33 in the upper end of the shaft 32. A coil compression spring 36 is provided about the shaft 32 and the lower end of the shaft 34. The spring 36 abuts with its upper end against the underface of the head 1 and with its lower end against the upper end of the boss 30, the spring 36 tending to elastically hold the piston at the end of its stroke in the cylinder 13. The shaft 34 extends through and is rotatably mounted in the head 1, a collar 37 being secured to the shaft above the head 1 and the shaft 34 being provided with a circular flange 34′ which fits within a recess in the lower end of the head 1. The upper end of the shaft 34 is connected by means of a coupling 38 with the lower end of a pipe or standard 39, said pipe 39 being provided at its upper end with a spring controlled alarm bell of any of the well known forms in common use.

The display portion of the signal is constructed as follows: The pipe 39 has secured thereto at its upper end two oppositely extending plates or arms 40 and 41, which arms are each provided at their inner ends with plates 42 bent to conform to the exterior of the pipe 39 and secured thereto in any suitable manner, such as by rivets or

screws indicated at 43. For the purpose of a visible signal, in the present case I have shown the word STOP, the letters ST being on one side of the arm 40 and the letters OP being on the same side of the arm 41, the rear side of the respective arms 41 and 50 being similarly marked. Means are provided for turning the pipe 39 which consists of a collar 45 secured in any suitable manner to the pipe, which collar 45 has mounted thereon outwardly extending handles indicated at 46. Rotatably mounted on the pipe 39 is a sleeve 47 which extends from the upper face of the collar 45 to the lower face or edge of the plates 42 of the arms 40 and 41. Secured to the upper end of the sleeve 47 are oppositely disposed arms 50 and 51, the arms 50 and 51 being each provided with extensions 52, which extend slightly less than one-quarter of the circumference of the sleeve 47, being secured thereto in any suitable manner. The space above the plates 42 and between the pipe 39 and the respective extensions 52 on the arms 50 and 51 is filled by means of a collar 53 to which the upper portion of the extensions 52 are secured in any suitable manner.

From the above description, it will be readily understood that the sleeve 47 may be rotated on the pipe 39 in one direction slightly less than one-quarter of a revolution, the end of the extensions 52 abutting against the respective arms 40 and 41, as clearly shown in Fig. 7 of the drawing. The arms 50 and 51 are similarly marked to the arms 40 and 41 for the purpose more fully hereinafter described.

Means are provided for rotating the sleeve 47 on the pipe 39 which consists of a collar 55 secured to the lower end of the sleeve 47 in any suitable manner, which collar 55 is provided with upwardly extending handles 56. Means are also provided whereby the pipe 39 and the sleeve 47 may be rotated together, which means consists of a tongue 57 on the collar 55, which tongue 57 enters a depression 58 formed in the upper end of the collar 45.

60 designates a handle means mounted in the pipe 39 whereby a vertical shaft 61 is operated through bevel gears 62, the upper end of the shaft 61 being connected to the mechanism within the bell 63, whereby the spring in the bell may be wound when it is necessary to do so.

The signal operates in the following manner: Ordinarily east and west bound traffic is permitted to move while the north and south bound traffic is held, and vice versa, and the signal heretofore described in its ordinary operation is placed in position so that the signal is in the middle or intersection of the streets and the signal arms placed in the position shown in Figs. 1, 2 and 3. That is, the arms 40 and 51 lie parallel or flat against each other, and the arms 41 and 50 lie parallel or flat against each other, the letters ST on one side of the arm 41 and the letters OP on one side of the arm 51 forming the word STOP, and the letters ST on one side of the arm 40 and the letters OP on one side of the arm 50 forming the word STOP, so that the word STOP appears as the case may be either to the north and south bound traffic or to the east and west bound traffic, there being no signal display visible to the east and west bound traffic when the display is seen by the north and south bound traffic, and vice versa. When the display has been made to the east and west bound traffic and it is desired to stop the north and south bound traffic, the collars 45 and 55 by their respective handle means are rotated together, thereby causing the arms at the top of the pipe 39 and the sleeve 47 to rotate together and thereby expose the display to the north and south bound traffic. A quarter turn of the pipe 39 and the sleeve 47 thereon, by means of the lower end of the shaft 34 being rotated therewith, causes the shaft 32 to turn and rotate the piston 14 on the lever end thereof. The rotation of the piston 14 causes the lugs 22 to ride over the lugs 25, thereby raising the piston and drawing air into the cylinder through the intake valve 19. The lugs 22 passing over the lugs 25 permit the piston to be forced downwardly by the spring 36 and expel the air thereunder through the whistle 16, thereby giving a single blast to the whistle. When the pipe 39 is again rotated a quarter of a turn, the lugs 22 on the piston side over the double lugs 25 on the cylinder 13, thereby causing the piston 14 to rise and fall twice, and in the manner heretofore described taking air into the cylinder and expelling the same through the whistle causing two blasts of the whistle, it being understood that the parts may be so arranged that a single blast is given when the arms at the top of the signal device are moved to permit east and west bound traffic to move, and a double blast, or two whistles, given when the arms at the top of the device are moved to permit north and south bound traffic to move. Occasions arise, such as when emergency ambulances or fire engines are about to cross the intersection of the street, when it is desired to stop traffic in all directions, and when such is the case the pipe 39 is held stationary and the sleeve 47 is rotated thereon, causing the arms at the upper end of the signal to separate and extend in all four directions, as indicated in Fig. 7, in which case the arms 50 and 51 move away from the arms 40 and 41 and extend at right angles thereto. The arm 50 after it reaches the position shown in Fig. 7, engages a trigger 65 on the bell 63 and causes the bell to

ring as long as the arm 50 remains in that position, the word STOP being displayed to the traffic in both north and south and east and west.

I claim as my invention:—

1. A crossing signal comprising a base, a standard rotatably mounted in said base, a display secured to the upper end of said standard, a cylinder, a piston in said cylinder, a whistle, and means whereby said piston is reciprocated in said cylinder by the rotation of said standard to operate said whistle.

2. A crossing signal comprising a base, a standard rotatably mounted in said base, display means on the upper end of said standard, a cylinder supported in said base, a piston in said cylinder, means for rotatably connecting said piston to said standard, means for raising said piston when said standard is rotated, means for elastically holding said piston at the end of its stroke in said cylinder, and a whistle adapted to be operated by the exhaust from said cylinder.

3. A crossing signal comprising a base, a standard rotatably mounted in said base, display means on the upper end of said standard, a cylinder supported in said base, a piston in said cylinder, means for rotatably connecting said piston to said standard, a plurality of lugs on said cylinder, lugs on said piston adapted to ride over the lugs on said cylinder to raise the piston, elastic means for returning said piston from its raised position, an intake valve for said cylinder, and a whistle adapted to be operated by the exhaust from said cylinder.

4. A crossing signal comprising a base, a standard rotatably mounted in said base, a display secured to the top of said standard, a sleeve on said standard, a display on said sleeve, means whereby said standard and said sleeve may be moved independent of each other, means whereby said standard and said sleeve may be moved simultaneously, a whistle, and means whereby said whistle is operated by the rotation of said standard.

5. A crossing signal comprising a base, a standard rotatably mounted in said base, a pair of oppositely disposed arms connected to the upper end of said standard, a sleeve on said standard, a pair of oppositely disposed arms on the upper end of said sleeve in the same plane as said first named arms, and means whereby said sleeve may be rotated on said standard to bring the arms on said sleeve against the arms on said standard.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 14th day of July, 1914.

OSCAR H. WHITMAN.

In presence of—

FRED A. MANSFIELD,

FORD W. HARRIS.