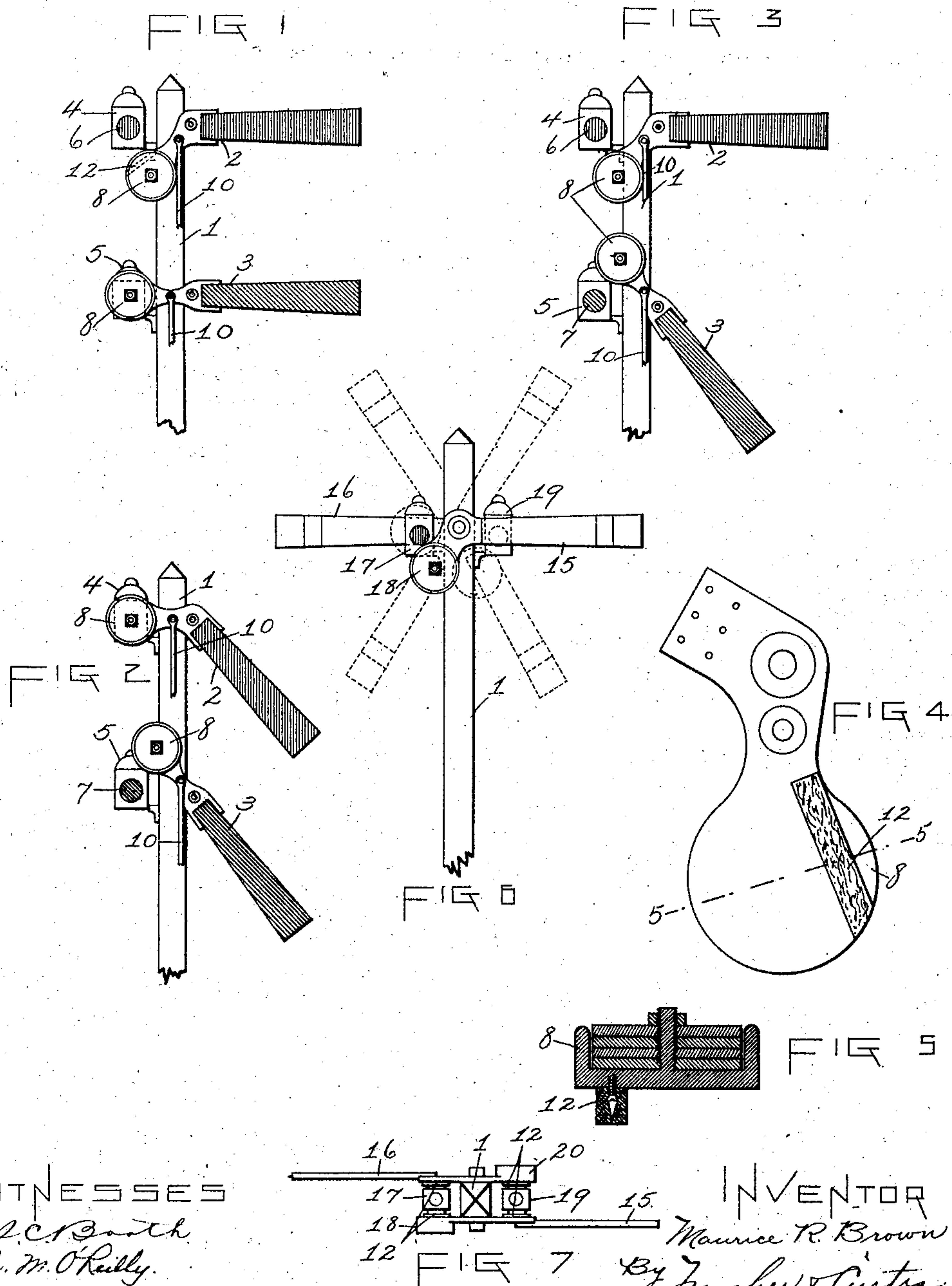


No. 772,607.

PATENTED OCT. 18, 1904.

M. R. BROWN.  
RAILWAY SIGNAL APPARATUS.  
APPLICATION FILED FEB. 11, 1904.

NO MODEL.





# UNITED STATES PATENT OFFICE.

MAURICE R. BROWN, OF COHOES, NEW YORK.

## RAILWAY SIGNAL APPARATUS.

SPECIFICATION forming part of Letters Patent No. 772,607, dated October 18, 1904.

Application filed February 11, 1904. Serial No. 193,048. (No model.)

*To all whom it may concern:*

Be it known that I, MAURICE R. BROWN, a citizen of the United States, residing at Cohoes, county of Albany, and State of New York, have invented certain new and useful Improvements in Railway Signal Apparatus, of which the following is a specification.

The invention relates to such improvements; and it consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the reference characters marked thereon, which form a part of this specification.

Similar characters refer to similar parts in the several figures.

Figure 1 of the drawings is a view of a signal-post provided with my improved signal apparatus in position to indicate "danger." Fig. 2 is a similar view with the parts in position to indicate "safety." Fig. 3 is a similar view with the parts in position to indicate "caution." Fig. 4 is a plan view of the counterbalance portion of one of the semaphores. Fig. 5 is a cross-section of the same, taken on the broken line 5 5 in Fig. 4. Fig. 6 is a view in side elevation of a signal-post provided with a modified form of the signal apparatus. Fig. 7 is a top plan view of the same.

My invention relates to railway signal apparatus of the general type wherein are employed semaphores to convey certain information by day and colored lights to convey like information by night.

Certain objects of my invention are to secure a greater degree of safety in the operation of railroads employing such signals and to eliminate the use of glass in the movable parts of the apparatus.

Other objects will appear in connection with the following description.

Referring to the drawings, wherein the invention is shown in its preferred form, 1 represents a signal-post, upon which are rotatively mounted a pair of semaphores 2 and 3, the arm of the upper semaphore being colored red and that of the lower one green. Mounted upon said post also are a pair of

lamps 4 and 5, the upper of which is provided with a red glass or lens 6 and the lower with a green glass or lens 7. Each semaphore is provided with a counterbalance or weight 8, that of the red semaphore being fixed upon an arm offset, obliquely from the signal-arm of the semaphore, while that of the green semaphore is fixed upon an arm in line with the signal-arm of the semaphore. The arrangement is such that when the signal-arms of both semaphores extend horizontally the counterbalance of the green semaphore will occupy a position in front of the green lamp, so as to obstruct the rays therefrom, while the counterbalance of the red semaphore will lie below the red lamp in position to permit unobstructed transmission of the light from the red lamp, as shown in Fig. 1. When the red semaphore extends horizontally and the green semaphore obliquely, both counterbalances will be removed from in front of the respective lamps, permitting unobstructed transmission of the rays therefrom, as shown in Fig. 3, and when both semaphores extend obliquely the counterbalance of the green semaphore will occupy a position above the green lamp, while that of the red semaphore will occupy a position in front of the red lamp, causing the same to be obscured. The reading of the signals is as follows: A red light alone, or both semaphores extending horizontally, indicates "danger." A green light alone, or both semaphores extending obliquely, indicates "safety." Both red and green lights, or a red semaphore extending horizontally and a green semaphore obliquely, indicate "caution."

It will be apparent that a single semaphore, counterbalance, and lamp may be employed or that the counterbalances can be offset at different angles and the parts differently arranged, and lamps having differently-colored glasses or lenses from those shown may be employed in carrying out the invention, the signals being interpreted by a known code.

Any known means may be employed for causing the operation of the semaphores from a distance. I have shown links 10 connected with the respective semaphores, whereby they may be operated.



The counterbalance may be provided with a brush 12, of felt or other suitable material, adapted to be moved over the outer face of the lens to cleanse the same as the semaphore is operated. If desired, a separate shield may be fixed upon the semaphore-arm to obscure the light from the lamp instead of using the counterbalance or weight for that purpose, or the semaphore-arm itself may serve as a shield for a lamp properly placed. I prefer, however, the construction shown, wherein the counterbalance or weight serves as a shield or blind for the lamp.

As shown in Figs. 6 and 7, the apparatus is adapted for use for two tracks, a single semaphore being used in connection with the same pair of lamps adapted to show, respectively, red and green lights for each track. The semaphore 15 is adapted for reading from the position of an observer of Fig. 6 and the semaphore 16 from the position of an observer on the opposite side of the post facing the same. The lamp 17 is provided on the side toward the observer of Fig. 6 with a red lens adapted to be covered at certain times by the counterbalance 18 of the semaphore 15 and on the opposite side with a green lens adapted to be covered at certain times by the blade of the semaphore 16. In like manner the lamp 19 is provided on the side toward the observer of Fig. 6 with a green lens adapted to be covered at certain times by the blade of the semaphore 15 and on the opposite side with a red lens adapted to be covered at certain times by the counterbalance 20 of the semaphore 16.

It will be observed that the movable part of the apparatus contains no glass to become broken, the only glass employed being that in the lenses of the lamps, whereby risk of breakage is reduced to a minimum, as said lamps can be removed during the day and only used at night, and when so in use are covered, part of the time at least, by the heavy iron counterbalances, which protect them from injury.

The semaphore can be subjected to the most vigorous manipulation without danger of breakage of glass.

The shield or counterbalance can be made as large as desired to afford a liberal allowance for lost motion in the operation of the apparatus.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a signal apparatus, the combination with a pair of lamps adapted to show different colors; of a pair of semaphores each having a blind adapted in certain positions of the semaphore to obscure one of said lamps.

2. In a signal apparatus, the combination with a lamp; of a semaphore having a counterbalance offset therefrom and adapted in certain positions of the semaphore to obscure said lamp.

In testimony whereof I have hereunto set my hand this 8th day of February, 1904.

MAURICE R. BROWN.

Witnesses:

FRANK C. CURTIS,  
E. M. O'REILLY.