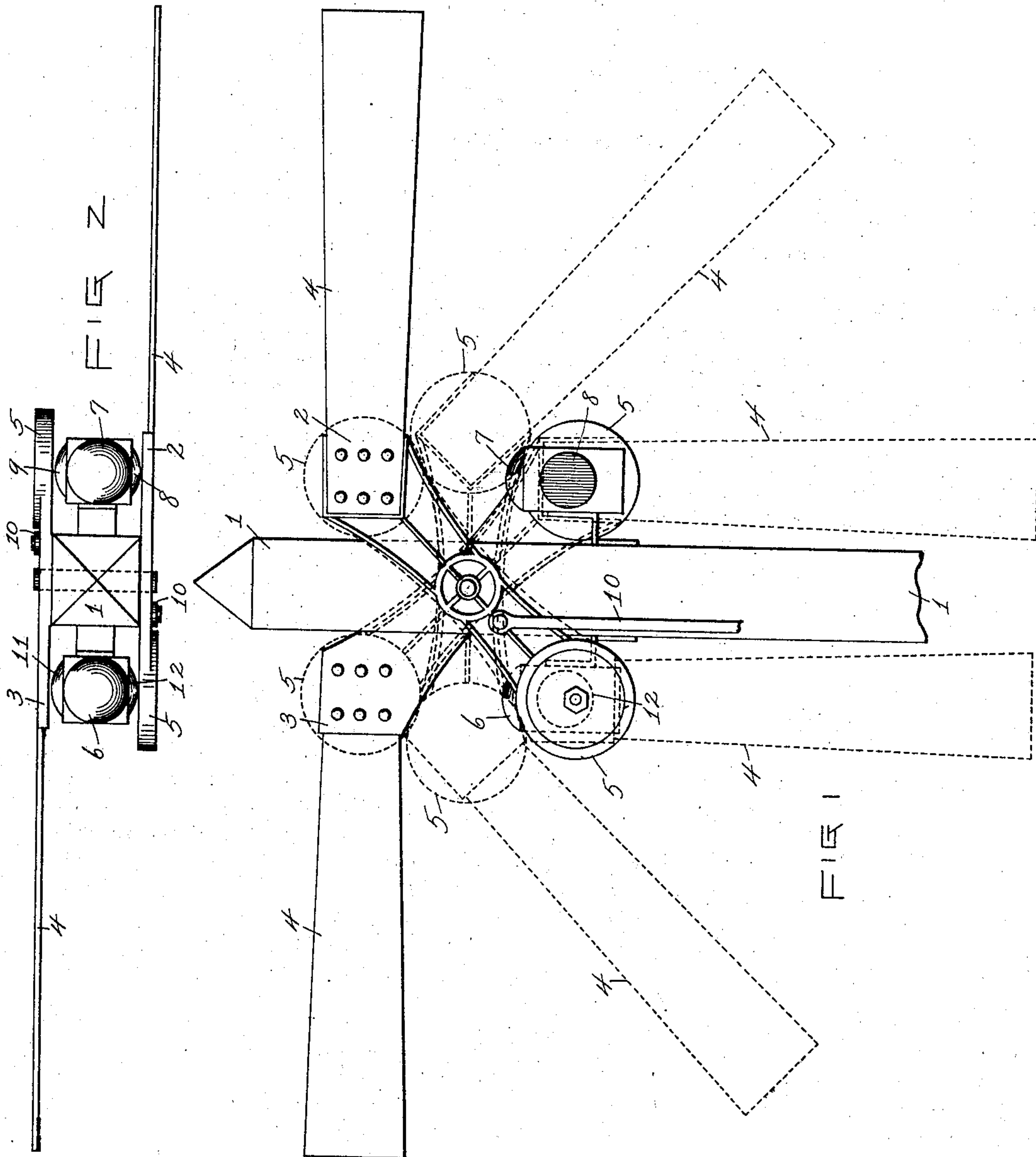


No. 772,608.

PATENTED OCT. 18, 1904.

M. R. BROWN.
SIGNAL APPARATUS.
APPLICATION FILED JUNE 28, 1904.

NO MODEL.



WITNESSES

E. M. O'Reilly

INVENTOR

Maurice R Brown,
By Frocher & Carter
Attys.

UNITED STATES PATENT OFFICE.

MAURICE R. BROWN, OF COHOES, NEW YORK.

SIGNAL APPARATUS.

SPECIFICATION forming part of Letters Patent No. 772,608, dated October 18, 1904.

Application filed June 28, 1904. Serial No. 214,504. (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 Signal Apparatus, of which the following is a specification.

The invention relates in 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 both figures.

Figure 1 of the drawings is a view in side elevation of a signal-post provided with my improved signal apparatus in position to indicate danger when read from the direction in which said figure is viewed and to indicate safety when read from the opposite direction, other positions to give other indications being represented in dotted lines. Fig. 2 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 opposite sides of which are rotatively mounted a pair of semaphores 2 and 3, each having a blade 4 and a counterbalance 5. Mounted upon said posts also are a pair of lamps 6 and 7.

The apparatus in its preferred form is adapted for producing signals for a double-track railway, the two semaphores operating in parallel planes on opposite sides of the post and at right angles to the lines of track, the sig-

nals produced by means of one semaphore being adapted to be applied in the operation of trains on one track and those produced by the other semaphore in the operation of trains on the other track. The lamps are arranged on opposite sides of the post in the same plane transversely of the tracks, and each of said lamps is adapted to emit light on one side along the approach of one track and on the opposite side along the approach of the other track, as by providing the same with front and rear bull's-eyes or lenses. By providing lenses of suitable colors permanent lights of desired colors can be produced. I have thus shown lamp 7 provided on one side with a red lens 8 and on the opposite side with a green lens 9 and the lamp 6 provided on one side with a red lens 11 and on the opposite side with a green lens 12, the green lens of each lamp being on the same side with the red lens of the other lamp. When none of the lights is obscured, both the red and green lights can be seen when the signal apparatus is viewed from either direction. By providing means for obscuring either or both of said lamps at certain times a variety of signals can be produced.

Any known means may be employed for causing the operation of the semaphores separately from a distance. I have shown links 10 connected with the respective semaphores, whereby they may be operated. In the preferred form of my invention shown in the drawings the semaphores are adapted to be thus operated to occupy three different positions, in certain of which positions the semaphore-blade is adapted to obscure one of said lamps and the counterbalance connected therewith another of said lamps. As shown in Fig. 1, a semaphore-blade extending horizontally to the right of the post indicates danger, and the lamps are so arranged and the relative angular positions of the counterbalance and semaphore-blade are such that when the semaphore-blade is thus in danger position the green light on the side of the apparatus from which the signal is to be read is obscured by the counterbalance connected with said blade, while the red light on that side is unobscured. Thus when the apparatus is in position to indi-

cate "danger" by the position of its semaphore-blade as a day-signal it is also in position to indicate "danger" by exposing a red light only as a night-signal. When the apparatus is operated to extend the semaphore-blade downwardly in safety position for the day-signal, said blade obscures the red light, while the counterbalance connected with said blade is moved out of line with the green light, exposing the same as a safety night-signal. In the intermediate position of the semaphore-blade indicating "caution" as a day-signal both the red and green lights are unobscured and exposed to indicate "caution" as a night-signal. It will be understood that it is intended that the signals should be read from either side of the post as applied to the right-hand track relatively to the observer who is facing the post and that only the semaphore-blade which projects at the right-hand side of the post is considered in reading the signal.

The construction above described permits of the indication of "danger," "caution," or "safety" in relation to both tracks by the use of a single post and a single pair of lamps.

As shown, both the semaphore-blade and the counterbalance have the function of blinds for obscuring the light from the lamps at certain times; but I do not wish to be limited to the use of either the blade or the counterbalance for this purpose, as the semaphore apparatus may be provided with any known form of blind and with any desired number of blinds adapted to cooperate with the pair of lamps shown or any desired number of lamps, it being possible to indicate by different combinations of colored lights different signals at night which correspond with signals indicated by different positions of the semaphore-blade by day.

The semaphore on one side of the post may be omitted, if desired, in which case the lamps may be closed on that side, if desired.

If desired, the lights emitted in opposite directions may be used for producing signals for the same track, to be read in one direction

as the fore signal and in the opposite direction as a rear signal, in which case the blind mechanisms on opposite sides of the post can be operated simultaneously to produce the same display of lights in either direction.

Any known means may be employed for producing differently-colored lights in place of the lamps shown. The colors of lights employed may be varied to meet the conditions of different signal systems employed on different railways.

This invention enables me to avoid the use of glass in the moving parts of the apparatus.

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

1. In a signal apparatus, the combination with means for producing a plurality of lights of different colors; of a semaphore having a blade and a counterbalance each adapted in certain positions of the semaphore to obscure certain of said lights.

2. In a signal apparatus, the combination with a lamp adapted to emit light in different directions; of semaphore apparatus having blinds adapted in certain positions to obscure said lamp on different sides.

3. In a signal apparatus, the combination with a lamp adapted to emit light in different directions; of a plurality of semaphores having blind mechanisms adapted to obscure said lamp on different sides.

4. In a signal apparatus, the combination with a plurality of lamps adapted to emit in one direction lights differing in color one from another, and in another direction lights differing in color one from another; of a plurality of semaphores having blind mechanisms adapted in certain positions of the semaphores to obscure certain of said lights.

In testimony whereof I have hereunto set my hand this 17th day of June, 1904.

MAURICE R. BROWN.

Witnesses:

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