No. 776,386. PATENTED NOV. 29, 1904.

S. D. CUSHING.

RAILWAY SIGNAL.

APPLICATION FILED JUNE 1, 1904.

NO MODEL.

Fig. 1.

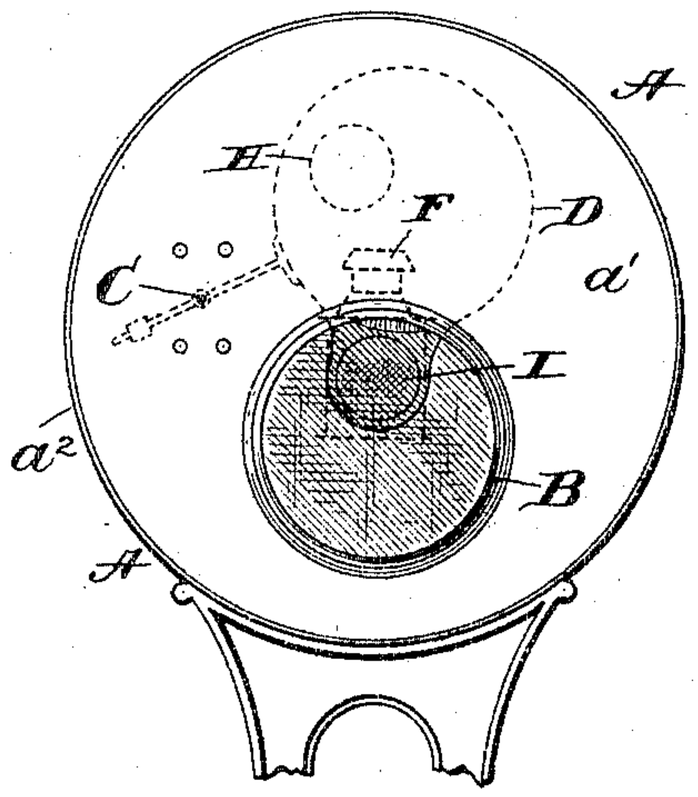


Fig. 2.

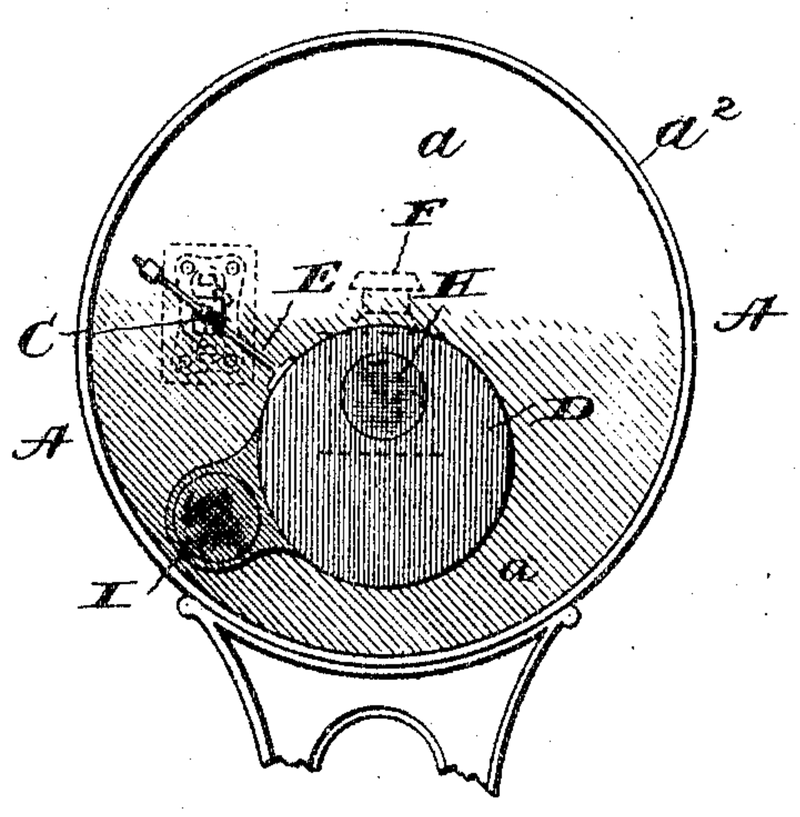


Fig. 3.

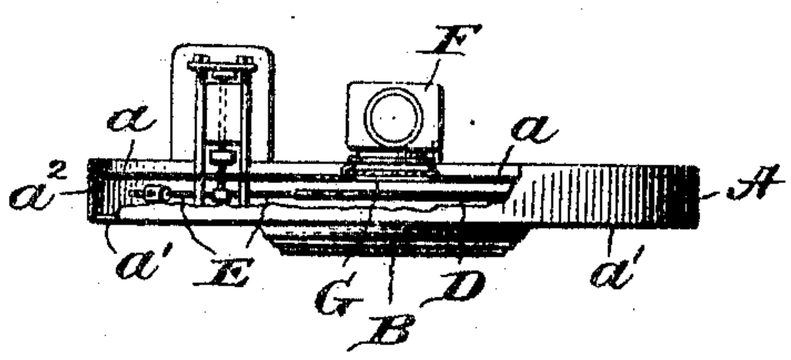
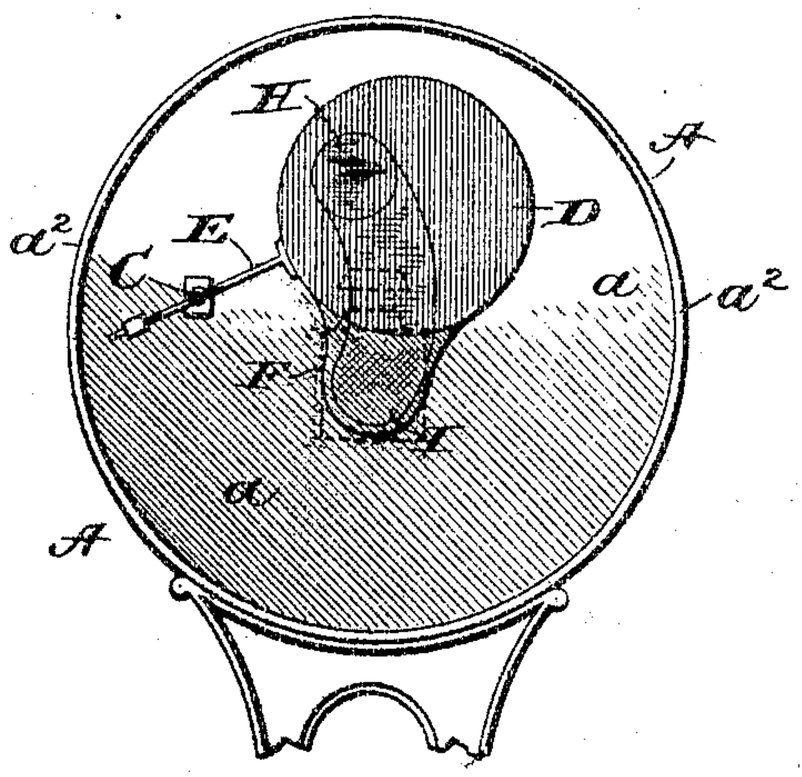


Fig. 4.



Witnesses:

Jas. E. Hutchinson.

J. L. Laylor.

Inventor:

Samuel D. Cushing,

by Pindl & Williamson Attorneys:

No. 776,386. Patented November 29, 1904.

UNITED STATES PATENT OFFICE.

SAMUEL DEWEY CUSHING, OF WASHINGTON, DISTRICT OF COLUMBIA.

RAILWAY-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 776,386, dated November 29, 1904.

Application filed June 1, 1904. Serial No. 210,623. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL DEWEY CUSHING, of Washington, in the District of Columbia, have invented a certain new and useful Improvement in Railway-Signals; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of a signal embodying my invention. Fig. 2 is a view similar to Fig. 1, the front of the case being removed. Fig. 3 is a plan view of the signal shown in Fig. 1, and Fig. 4 is a front elevation of another embodiment of my invention.

The object of my invention has been to provide a railway-signal which shall be capable of displaying signals in lights of two colors at night as well as by day, which signal shall be simple, inexpensive, and efficient; and to such ends my invention consists in the signal hereinafter specified.

In carrying my invention into practice I provide a case A of any desired description, the said case being supported in any desired manner. I prefer to make the case A circular in form for compactness and ease of construction. The case consists of a back plate a, a front plant a', and an annular plate a^2, formed integral with or connecting the said front and back plates. In the lower portion of the front plate a preferably circular opening B is formed, the said opening being preferably closed with glass or other transparent media. At a convenient point in the case, preferably about the level of its center and to one side thereof, a shaft C is journaled, the said shaft being provided with means of any desired description whereby it may be turned. The said means may be the motor described in the patent to Schreuder, No. 550,535, November 26, 1895. A preferably circular disk D is supported by an arm or arms E from the shaft C, the said arm or arms being of such length that the said disk can be swung behind the opening or window B. A lamp F is secured in any desired manner to the casing in position to throw light through an opening G, formed in the rear wall of the case within the portion exposed through the window B. The said lamp is preferably placed near the upper portion of the said opening or window. An opening is formed in the disk D in such position as to be in line with the lamp-opening in the rear wall of the casing when the disk coincides with the window-opening, which opening is covered with a sheet H of transparent or translucent material of the color selected to indicate "danger," and the disk is likewise painted or otherwise given the same color—for instance, red. The disk D is provided with a plate of transparent or translucent material I, the said plate being secured to the edge of the disk or otherwise directly connected therewith and in such position that when the disk is swung upward by the motor, so as not to cover the window-opening, the plate or lens I will cover the lamp-opening. The plate or lens I is given the color—for instance, green—which it is desired to use to indicate that the track is clear, and the back wall of the casing opposite the window-opening is similarly colored.

In the operation of my signal in the daytime "clear" is indicated by the exposure of the color on the back of the casing through the window-opening, the color of the signal then being green in the instance chosen for illustration. When the disk is swung to its lower position, it appears through the window-opening and the danger color, or red, is exposed. So much is the usual operation of well-known railway-signals. At night if the disk D were removed from the casing the lamp would shine white, and when the disk is in its lower or danger position the light of the lamp passing through the sheet H, covering the opening, is transformed to red, indicating "danger." When the signal is in its upper position, however, the plate or lens I stands over the lamp-opening and the light of the lamp is transformed to green, indicating "safety." It is obvious that the lower position of the disk might be taken to represent "clear," the colors merely being transposed; but I prefer to use the lower position for "danger," since that is the position to which the disk drops by gravity if the current is cut off from the motor or the signal is rendered inoperative in any manner.

I can, as illustrated in Fig. 4, arrange the

plate or lens I so that it is practically continuous with the sheet H of translucent or transparent material over the opening in the disk D, so that some portion of light-transmitting medium will always be directly in front of the lamp and there will be no time at which light will not show from the lamp, the engineer thus having a way of determining whether or not the lamp is lighted.

It will be seen that all of the moving color-indicating devices are attached to or form a part of the disk D and that the said disk is operated in the simplest possible manner, it being rigidly connected to the rock-shaft. The mechanism of my signal is thus reduced to the lowest possible terms, and there is consequently the least possible danger of its getting out of order, which is an exceedingly important consideration in railway-signals. This condition also results in my signal being inexpensive. My signal has the further advantages that only one window is employed, the danger of breakage of windows being thus smaller than where two or more windows are employed; that the signal is compact and the casing can be small, thereby presenting small area to the wind; that there is only one lamp and lens; that the danger and clear signals are secured together so that neither one can be put out of order, owing to the bending of the support from the rock-shaft, without the other also being out of order, and disagreement between the signals is thus prevented.

It is obvious various changes can be made in the above illustrated construction which will be within the scope of my invention.

Having thus described my invention, what I claim is—

1. A railway-signal consisting of a casing, having a window therein, a disk adapted to cover said window, means for moving said disk from a position covering said window to a position not covering said window, a lamp adapted to shine through said window, and light-transmitting media of different colors smaller than, and carried by said disk.

2. A railway-signal consisting of a casing, having a window formed therein, a colored disk, means for moving said disk from a position visible through said window to a position not visible through said window, a lamp adapted to shine through said window, light-transmitting media of different colors, said media being smaller than and carried by said disk, one of said media being so placed as to cover said lamp when said disk is in position to be seen through said window, and the other of said media being so placed as to cover said lamp when said disk is in position not to be seen through said window.

3. A railway-signal consisting of a casing, having a window formed therein, a colored disk, means for moving said disk from a position visible through said window to a position not visible through said window, a lamp adapted to shine through said window, light-transmitting media of different colors, said media being smaller than and carried by said disk, one of said media being so placed as to cover said lamp when said disk is in position to be seen through said window, and the other of said media being so placed as to cover said lamp when said disk is in position not to be seen through said window, the portion of said disk between said media which, in the travel of said disk, passes over said lamp, being also of light-transmitting material.

4. A railway-signal consisting of a casing having an opening or window formed in the front wall thereof, a disk adapted to cover said window or lamp, a rock-shaft journaled in said casing, a rigid connection between said disk and said rock-shaft, a lamp so placed as to be adapted to shine through said window, light-transmitting media of different colors carried by said disk, one of said media being within the portion of the disk that is adapted to be seen through the window, and the other of said media being without the said portion of the said disk.

5. A railway-signal comprising a single disk, having a plurality of transparent media carried thereby, and a lamp over which either of said media can be positioned, said media not being separated by a distance greater than the diameter of the light-emitting opening in said lamp, whereby the light from said lamp can be seen through said disk in an intermediate as well as in an extreme position.

6. A railway-signal, comprising a single disk having a plurality of transparent media carried thereby, and a lamp over which either of said media can be positioned, said media being practically continuous of each other.

In testimony that I claim the foregoing I have hereunto set my hand.

SAMUEL DEWEY CUSHING.

Witnesses:
C. W. GENNET, Jr.,
C. S. HACKET.