

Dec. 3, 1929.

A. K. PEHRSON

1,738,016

MARKER LIGHT FOR RAILWAY CARS

Filed Sept. 20, 1927

4 Sheets-Sheet 1

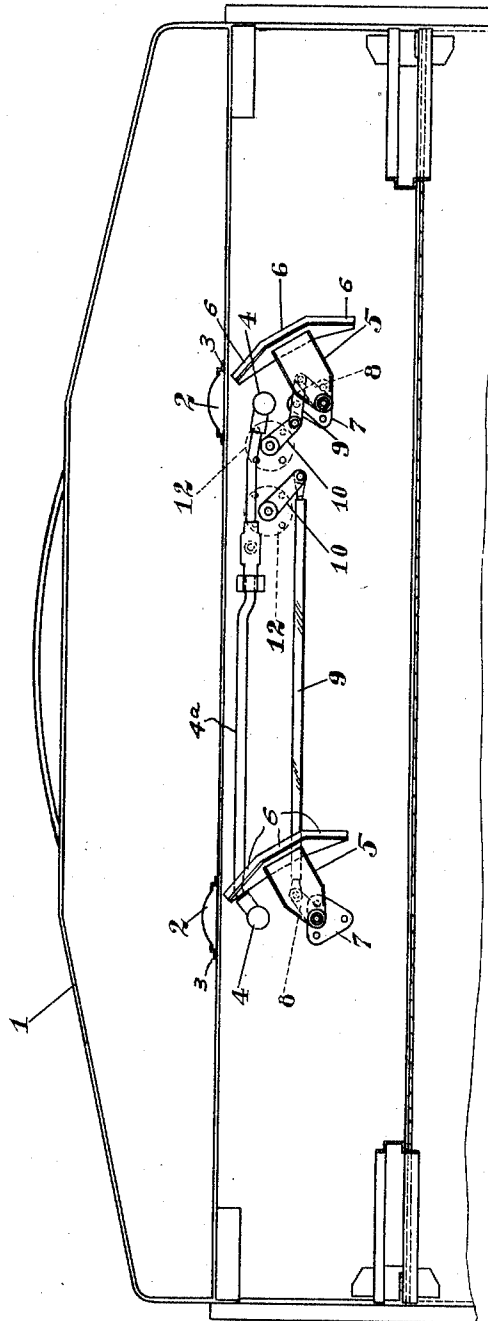


Fig. 1.

WITNESS

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4 Sheets-Sheet 2

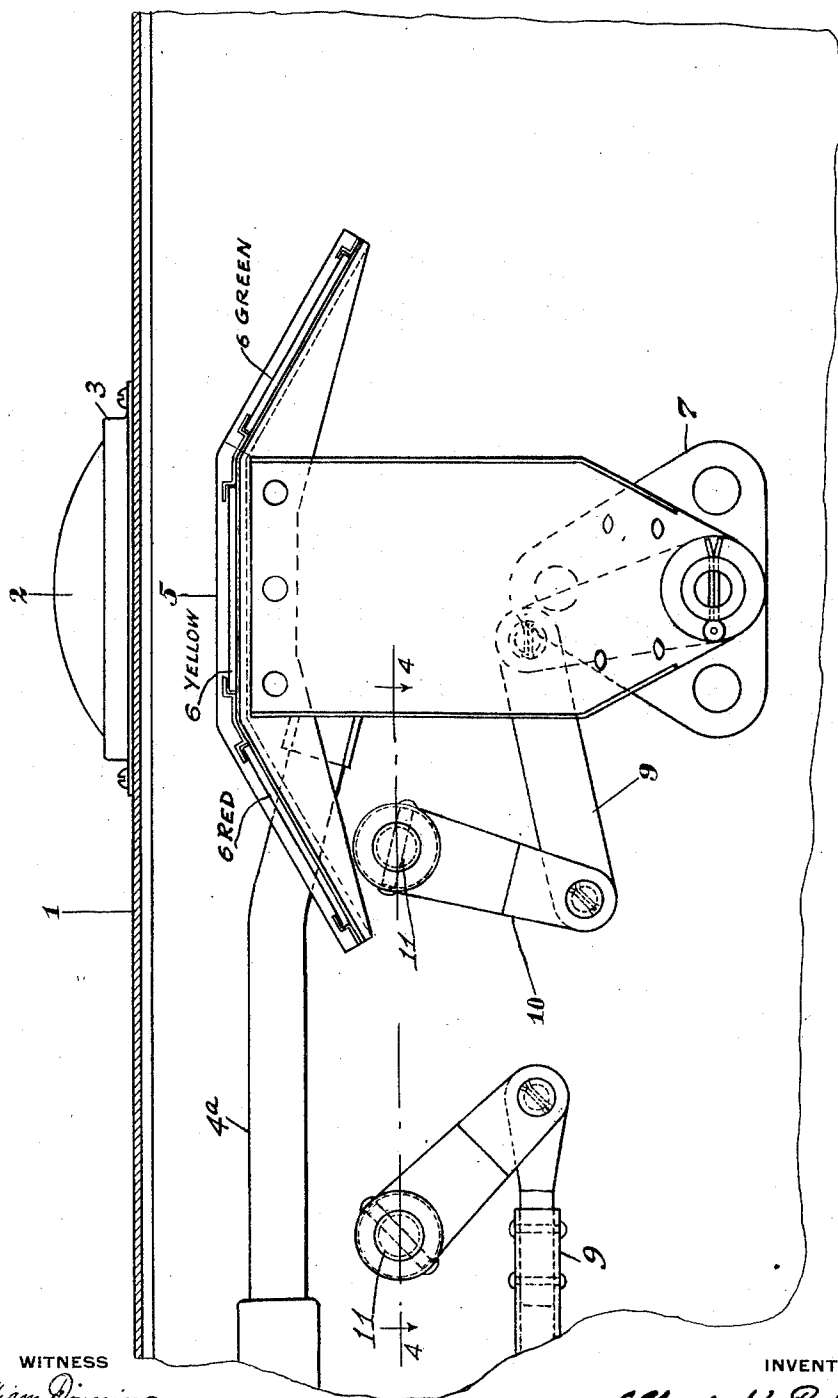


Fig. 2.

WITNESS

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4 Sheets-Sheet 3

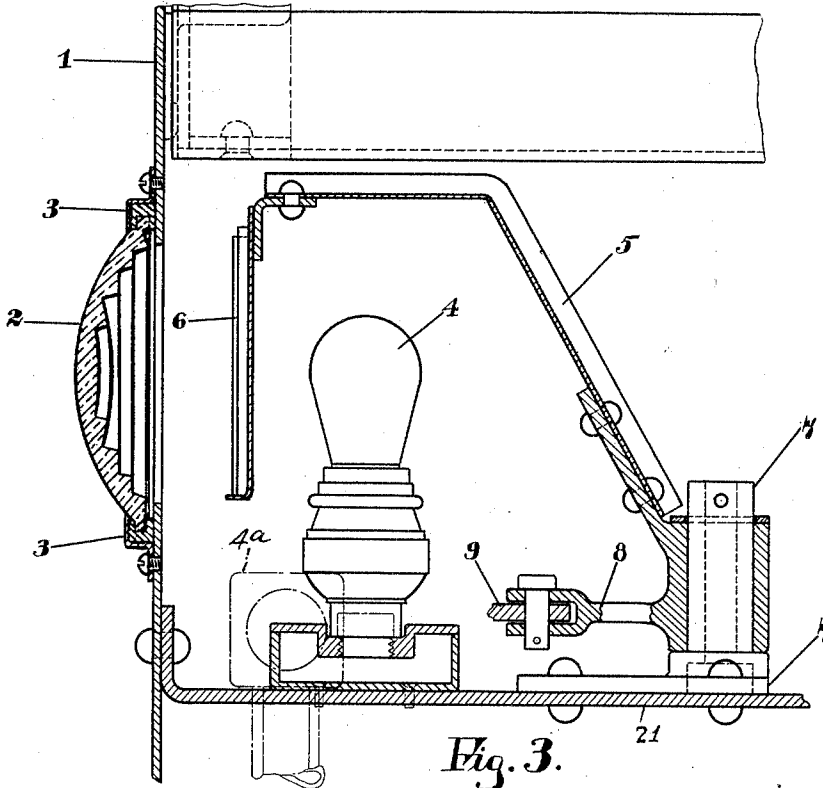


Fig. 3.

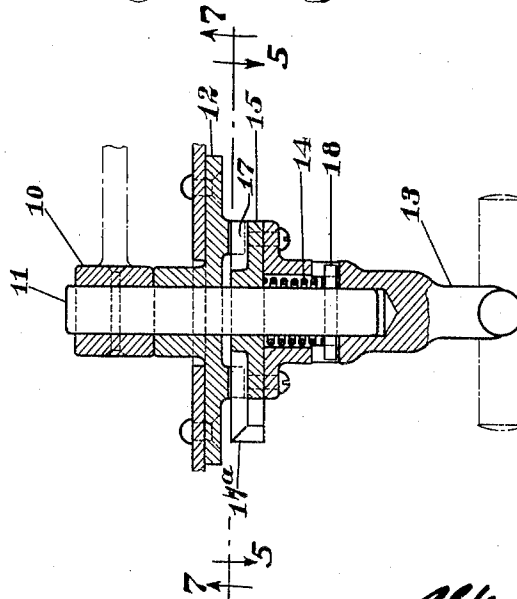


Fig. 4.

WITNESS

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4 Sheets-Sheet 4

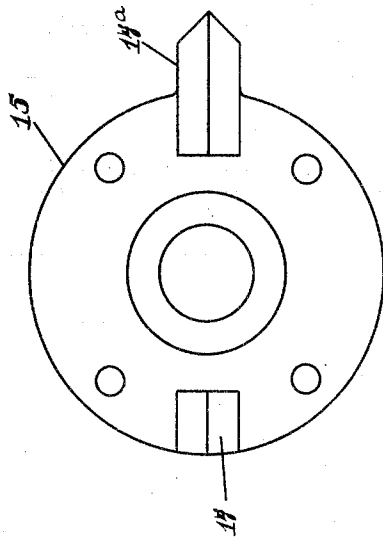


Fig. 5.

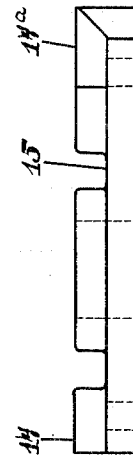


Fig. 6.

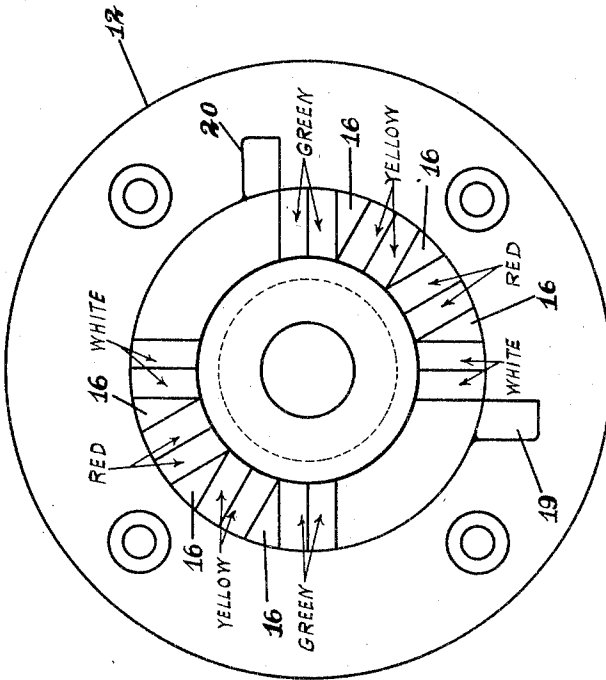


Fig. 7.

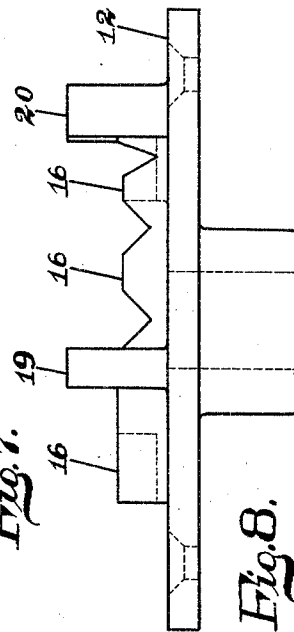


Fig. 8.

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UNITED STATES PATENT OFFICE

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MARKER LIGHT FOR RAILWAY CARS

Application filed September 20, 1927, Serial No. 220,695, and in Great Britain April 16, 1928.

My invention relates to marker lights on the exterior of railway cars and has for an object the provision of mechanical means for changing, from the interior of the car, the colors displayed by said marker lights.

Another object is the provision of an automatic locking device for preventing the accidental changing of the colors displayed by the marker lights.

A further object is the provision of means for indicating to the operator, in the interior of the car, the colors displayed by said exterior marker lights.

These and further objects will be apparent from the following specification.

Referring to the drawings, Fig. 1 is a plan view of a portion of the end of a railway passenger car with the roof removed and showing the arrangement of marker lights and operating mechanism; Fig. 2 is an enlarged detail of the marker lights and operating mechanism; Fig. 3 is a section through the marker lights along the lines 3—3 of Fig. 2; Fig. 4 is a section through the operating handle and indicating mechanism on the interior of the car along the lines 4—4 of Fig. 2; Fig. 5 is a view taken along the lines 5—5 of Fig. 4 showing in enlarged detail the locking plate; Fig. 6 is a side view of the locking plate; Fig. 7 is a view taken along the lines 7—7 of Fig. 4 showing an enlarged detail of the color plate and engaging teeth; Fig. 8 is another view of the color plate.

In the practice of my invention the color of the marker lights on the exterior of the car may be changed quickly and easily without the operator leaving his station on the interior of the car, and by the use of an indicating mechanism the colors displayed by the lights are indicated on the interior of the car. Another advantage lies in the combining of the indicating mechanisms and operating handle with a device which automatically locks the operating mechanism in place when the handle is released. Since the usual practice is to display at least two lights on each end of the car and the colors of such lights are not always the same, I have supplied separate control and operating mechanisms for each light. The invention is illustrated in the drawings

as being embodied on a car of the subway type where the motorman is stationed in a cab to one side of the end of the car and the individual details are made to suit this type or construction, this being the reason the locking and indicating mechanisms, as will be later described, are located at one side of the car. However, it is to be understood that the location of the locking and indicating mechanisms can be arranged to suit the requirements of any particular type of car on which the invention is embodied and various changes can be made in the detail parts of the invention and still remain within the scope of the invention.

Referring now in detail to the drawings where like reference characters refer to like parts, reference character 1 indicates the end portion of a railway car with the roof sheets removed to show the marker light operating mechanisms. Near each side of the end of the car and secured to the car near the roof sheets are clear glass lenses 2 held in suitable holders 3. Behind the lenses 2 and spaced so that the light will shine through the lenses suitable lighting elements 4 are placed, having suitable wiring 4—A connected thereto. To one side of the lighting element is a frame 5 having a plurality of colored glasses 6 contained thereon. The frame 5 is rotatably mounted on a pivot member 7 and may be rotated so as to singly interpose the colored glasses between the lighting element 4 and clear glass lens 2. The relation of the lighting element 4 and the colored glasses 6 to the lens 2 is such that when one colored glass is between the lighting element 4 and lens 2, the rays of light passing through the other colored glasses are not visible from the exterior of the car. The preferred arrangement of lens 2, lighting element 4 and frame 5 is shown in Figs. 2 and 3 of the drawings. Extending outward from the base of the frame 5 near the pivot 7 is an arm 8 which connects to one end of the lever 9. The lever 9 extends from the arm 8 of the frame 5 to an arm 10 mounted on one end of the rod 11, which extends into the interior of the car body. These members constitute that part of the mechanism which is not in the interior of the car. Fig.

1 of the drawings shows two such mechanisms, as described above, each one being a duplicate of the other with the exception of the lever 9. One of the levers 9 is made longer than the other, so that each frame can be controlled from the interior of the car while the operator remains in his cab, as previously described.

In the interior of the car on the roof 21 of the motorman's cab is a color plate 12 forming part of the locking mechanism and having an opening through which the rod 11 extends. As shown in Fig. 7 of the drawings, plate 12 has a plurality of teeth 16. At the base of the teeth and between them are painted the colors to be displayed by the marker lights. These teeth are arranged in groups on each side of the center line near the periphery of the plate and at each end of one of the groups are placed stops 19 and 20.

Slidably mounted on the rod 11 is a locking plate 15 which is adapted to engage with the color plate 12 by means of suitably formed teeth 17 which are placed diametrically opposite each other near the periphery of the plate 15. These teeth 17 fit between the teeth 16 of the color plate 12 and when held in place serve the double purpose of indicating the colors displayed by the marker lights and preventing the rotation of the rod 11. One of the teeth 17—A of the plate 15 is longer than the other and engages with the stops 19 and 20 of the color plate to restrict the turning of the rod 11 so as to maintain the frame 5 in operable position at all times. Otherwise the frame 5 might be turned through an arc of 180° and not cause the marker lights to display the colors indicated on the color plate. This locking plate is shown in Figs. 4 and 5 of the drawings.

Slidably mounted on the end of the rod 11 is the operating handle 13. This handle 13 has a transverse opening through its hub which is elongated in a direction longitudinally of the hub and through which the pin 18 is passed and through the rod 11. The pin 18 thus restricts the sliding action of the handle 13 on the rod 11 and prevents rotation of the handle with respect to the rod. The opening in the end of the hub through which the rod 11 enters is enlarged for a portion of its length and a compression spring 14 is placed therein encircling the rod 11. The spring 14 is seated at one end on the pin 18 and is initially compressed at the other end by the plate 15 which is fastened to the end of the hub and closing the opening therein. The spring is thus sufficiently initially compressed so as to hold the locking plate 15 in contact with the color plate 12. At the other end of the hub of the operating handle a portion of the member 13 extends in either direction at right angles to the rod 11 and provides a means for grasping and turning the handle. This assembly of the handle with

the rod 11 and plates 12 and 15 is shown in Fig. 4 of the drawings.

Referring now to Figs. 4 and 7 of the drawings with the indicating mechanism and frame 5 in position as shown in Fig. 2, the marker lights would show white on the left-hand side of the end of the car and yellow on the right-hand side. Assuming that the yellow light is showing, should the operator desire to display a white light on both sides of the end of the car, the operation of changing the yellow light to white would be as follows:—The operator would grasp the handle 13 of the locking and operating mechanism for the frame on the right-hand side of the car and would pull downward, compressing the spring 14 until the upper side of the slot in the handle strikes the pin 18. The teeth 17 and 17—A will now be below the teeth 16 on the plate 12 and the handle is turned until the tooth 17—A on the plate 15 strikes the stop 19 on the plate 12. This would cause a corresponding movement of the frame 5 through the rod 11 and levers 9 and place the frame 5 in the position 5—A shown in Fig. 1. The rays of light from the lighting element 4 can now shine uninterrupted through the clear glass lens, giving a white light. The operator then releases the handle and the spring 14 forces the teeth 17 and 17—A of the plate 15 into one of the spaces 16 of the color plate 12 and holds them there and thus locks the frame 5 in position and prevents any accidental movement of the frame in either direction. Since these mechanisms are preferably placed in the roof of the motorman's cab near the car controls the motorman, when desiring to change either light, can grasp the appropriate handle pulling downward and turn the handle until the teeth on the locking plate are in line with the desired colored marking on the color plate and release the handle.

Having thus described the invention what I claim as new and desire to secure by Letters Patent is:

1. In an interior control for railway car marker lights, a locking device comprising a revolving shaft extending through the car frame, connected at one end of the marker light actuating mechanism and the other end secured to the locking mechanism, said mechanism comprising a disc secured to the car frame and an engaging hub secured to the shaft, said hub being open at one end and closed at the other end by a handle, the open end containing a compression spring and being secured to shaft by a pin passing through the hub and shaft below the spring, teeth on the upper portion of the hub engaging spaced teeth on the above mentioned disc to prevent accidental turning of the shaft, colors between the teeth of said disc being the same as the colors to be shown by the marker light, one of said teeth on hub

being slightly longer than the other to indicate the same color on the disc as is shown by the marker light, the compression spring in the hub being capable of being compressed so as to allow disengagement between the teeth of the hub and the disc to allow changing of the colors of the marker light.

having a handle on the other end, teeth on said handle engaging those on said color plate, one of said teeth being longer than the others to indicate on the color plate the color of the signal displayed, means on said handle normally holding the handle in engagement with said color plate but permitting movement longitudinally of the shaft to allow turning of said frame.

In testimony whereof I affix my signature.
ALFRED K. PEHRSON.

2. The combination in a system of marker lights for a railway car of a fixed exterior lighting element, a frame containing colored signal glasses partly surrounding said lighting element, a color plate on the interior of said car, spaced colored markings on said plate corresponding to the colors of the signals, an operating mechanism for rotating said frame, extending through said color plate to means connected with said frame, and a member extending from said operating mechanism for indicating on the color plate the color of the signals displayed.

3. The combination in a system of marker lights for a railway car of a fixed exterior lighting element, a rotatable frame containing spaced transparent colored signals partially surrounding said lighting element, a member connecting said frame to an operating mechanism on the interior of the car, said mechanism comprising a plate fixed to the interior of the car, spaced teeth on said plate and colors, corresponding to those of the signals, at the base of said teeth, a rotatable shaft extending through said color plate and having a connection to the signal frame at one end and a handle at the other end, means on said handle for engagement with the teeth of said color plate, one of said means being extended to indicate on the color plate the color of the signal displayed, and means between said shaft and handle premitting a longitudinal movement of said handle for disengaging said handle from the color plate to permit turning of said frame.

4. In a system of marker lights for a railway car, the combination of an exterior lighting element partly surrounded by a rotatable frame, transparent colored signal glasses in said frame, a plate secured to the interior of the car, spaced teeth on said plate, a rotatable shaft projecting through said plate connected at one end to said frame, and having a handle on the other end, teeth on said handle normally engaging those of said plate, and means on said handle permitting movement longitudinally of the shaft to allow turning of said frame.

5. In a system of marker lights for a railway car, the combination of a fixed exterior lighting element partly surrounded by a rotatable frame, transparent colored signal glasses in said frame, a color plate secured to the interior of the car, spaced teeth on said color plate, colors between said teeth corresponding to those of the signal glasses, a rotatable shaft projecting through said color plate connected at one end to said frame and

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