

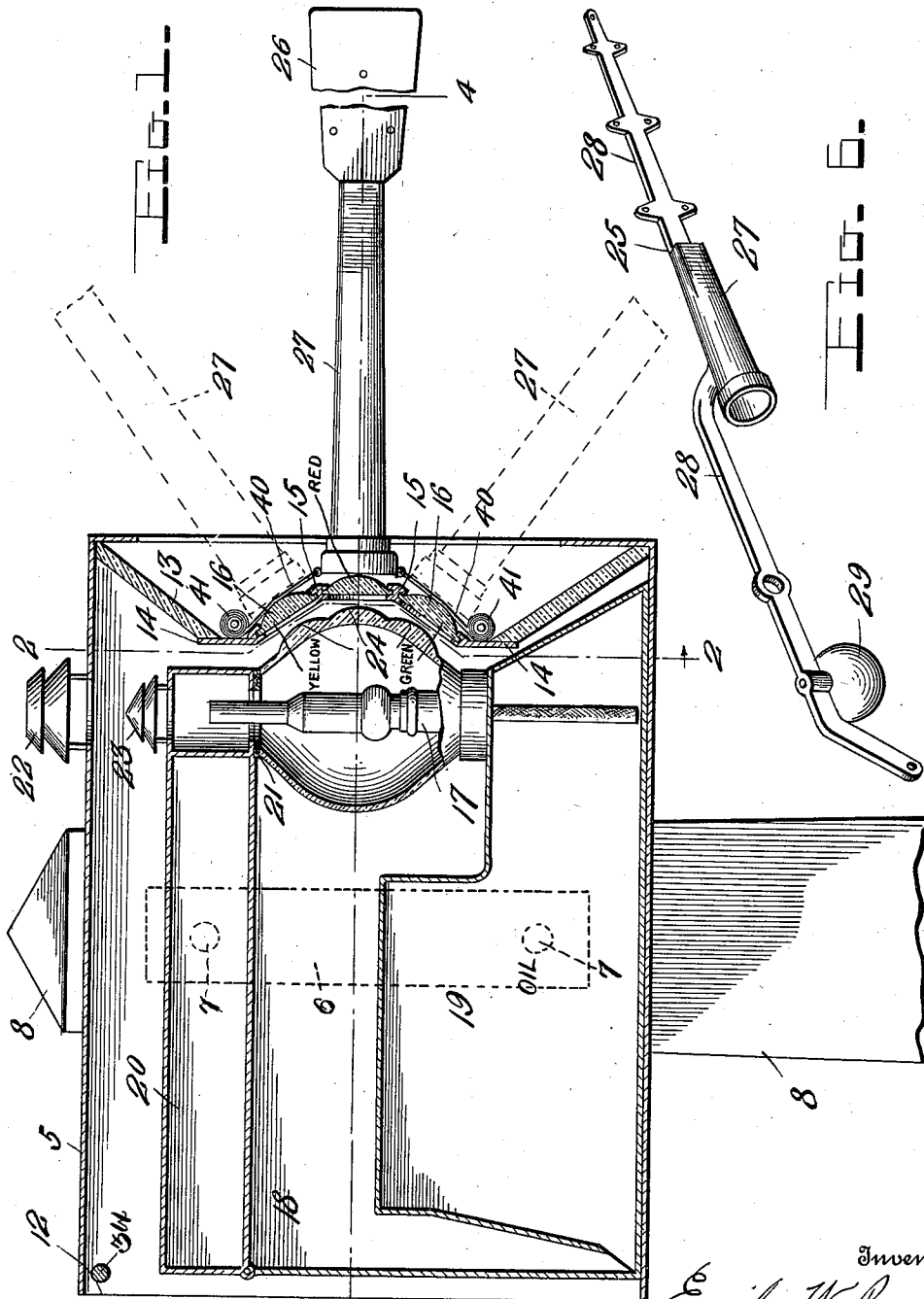
E. W. BEANE.
SIGNAL LANTERN.

APPLICATION FILED APR. 23, 1910.

Patented June 11, 1912.

3 SHEETS-SHEET 1.

1,029,041.



Witnesses

Chas. R. Griesbauer
E. M. Ricketts

By

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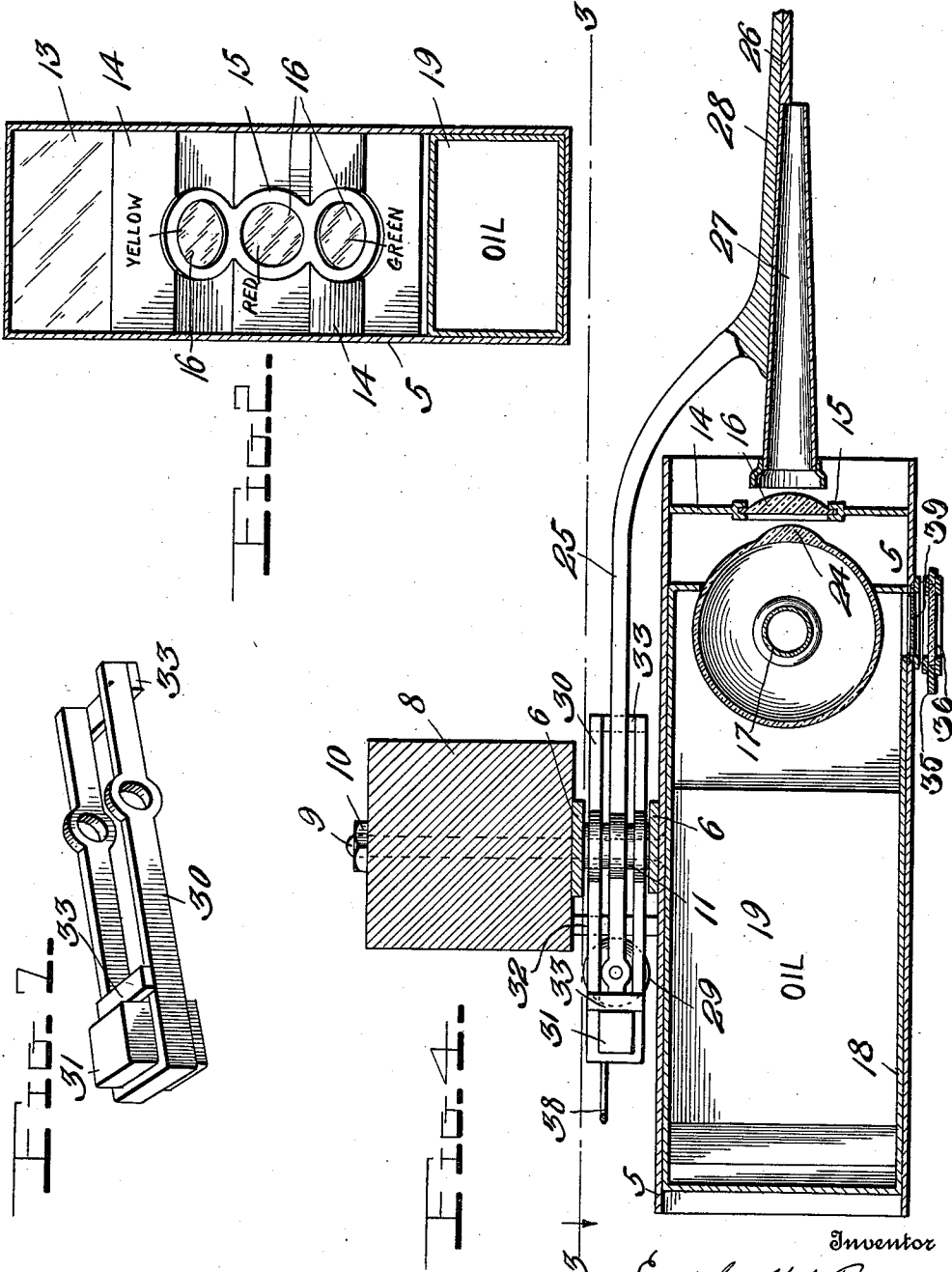
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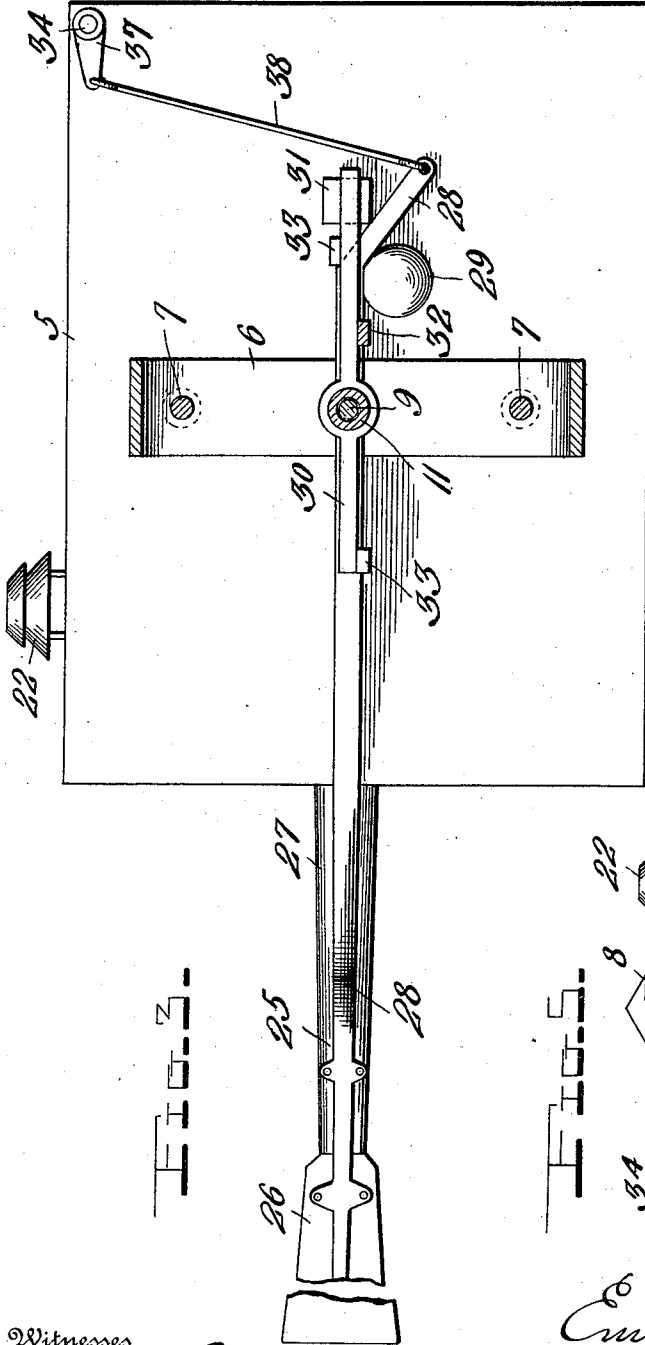


FIG. 2.

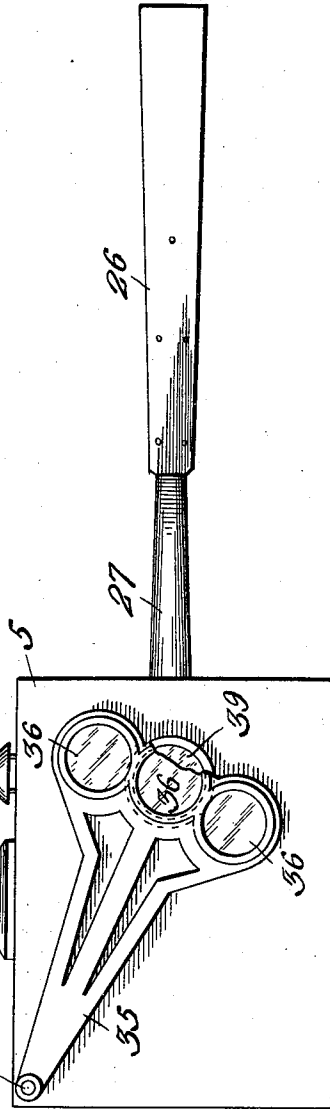


FIG. 5.

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UNITED STATES PATENT OFFICE.

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SIGNAL-LANTERN.

1,029,041.

Specification of Letters Patent. Patented June 11, 1912.

Application filed April 23, 1910. Serial No. 557,167.

To all whom it may concern:

Be it known that I, EMILE W. BEANE, a citizen of the United States, residing at Winslow, in the county of Navajo and State of Arizona, have invented certain new and useful Improvements in Signal-Lanterns, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to certain new and useful improvements in signal lanterns of that character used as danger signals and are secured to the semaphore pole adjacent to the track of a railroad.

15 The primary object of my invention resides in the provision of a lantern of this character which is adapted to indicate to the engineer of an approaching train the condition of the track by means of a light thrown upon the semaphore arm to illuminate the same in various colors, an oscillatory lens carrying member being simultaneously movable with said arm to position one of the lenses carried thereby over an opening in one side of the lantern box adjacent to the track.

20 Another object is to provide a lantern of the above type of simple construction mounted upon a semaphore pole, the semaphore arm being mounted for oscillatory movement between the lantern box and the pole and having a tubular portion, the inner end of which is movable to position the same opposite any one of a plurality of lenses in the lantern box whereby various colored lights may be thrown upon the arm.

25 A further object is to provide means for maintaining the semaphore arm in a normal position to indicate the danger signal.

30 With these and other objects in view, the invention consists of the novel construction, combination and arrangement of parts hereinafter fully described and claimed and illustrated in the accompanying drawing, in which—

35 Figure 1 is a longitudinal section through the lantern box showing the lantern arranged therein and the semaphore arm in its normal position; Fig. 2 is a section taken on the line 2—2 of Fig. 1; Fig. 3 is a section taken on the line 3—3 of Fig. 4; Fig. 4 is an enlarged detail section of the outer end of the lantern box and a portion of the semaphore arm; Fig. 5 is a side elevation of the lantern box showing the oscillatory lens carrying arm; Fig. 6 is a

detail fragmentary perspective view of the semaphore arm; Fig. 7 is a detail perspective view of the yoke member.

Referring to the drawings 5 indicates a substantially rectangular lantern box to one side of which the spaced plates 6 are secured. These plates are connected at their corners and held in spaced relation by means of suitable bolts 7 which also extend through the semaphore post 8. A bolt 9 extends centrally through each of the plates and through the post and is secured therein by means of the nut 10. The sleeve 11 is disposed upon this bolt between the plates 6 and is adapted to receive the semaphore arm for oscillatory movement thereon as will be later set forth. It will be noted that one end of the lamp box 5 is open as shown at 12 and extending inwardly from the upper and lower corners of the other end are the glass plates 13. A metallic strip 14 is secured to the inner ends of these plates and suitable rabbeted strips 15 are spaced from each other and extend transversely between the opposite sides of the lamp box outwardly of the strips 14. Between these strips and the members 15 the lenses 16 are secured. The central lens which is secured between the members 15 is red, while the upper lens is yellow and the lower lens green.

Within the lamp box 5 the lamp 17 is adapted to be arranged and is carried in a suitable casing 18 which in the present instance is provided with an oil receptacle 19. The lamp case has a hinged cover 20. This cover is adapted to be positioned over the upper end of the lamp globe and carries an asbestos cushion 21 which bears thereon and is provided with a central opening through which the lamp chimney extends. This cushion excludes all air from the lamp case, while a sufficient quantity is admitted through the ventilating members 22 and 23 in the box and the lamp case to the interior of the lamp 17. The globe of the lamp is provided with the circular lenses 24 disposed opposite to the lenses 16 and adapted to focus the light rays thereon to obtain a light of intense brilliancy.

As before stated, the semaphore arm 25 is mounted for oscillatory movement upon the sleeve 11 between the lamp box and the pole 8. This arm is formed in three parts which comprise the larger flat portion 26, a comparatively short tubular portion 27, and the

bar 28. The two former members comprising the arm proper are secured and carried by the outer end of the bar 28. This bar is provided with an opening adjacent to its outer end through which the sleeve 11 extends, said sleeve and bar having rotative movement upon the rod or bolt 9. As shown in Fig. 3 the rear end of the bar 28 has secured thereto a weight 29. The arm members 26 and 27 however are sufficient to overcome the weight 29 and normally maintain the arm in a horizontal position. Also mounted upon the sleeve 11 and independently movable thereof is a yoke 30 the major portion of which is disposed rearwardly of the pivotal point of the semaphore arm and has a weight 31 secured thereto. This weighted end of the yoke is supported upon a transverse bar 32 the ends of which are secured to the post and to the side of the lamp box. Stop bars 33 are secured to the longitudinal arms of the yoke on opposite sides thereof. These stop bars are adapted to be engaged by the rear end of the bar 28 and maintain the arm normally in its horizontal position. The semaphore arm may be moved in any approved manner, such mechanism forming no part of the present invention. When the arm is moved below the longitudinal center of the lamp box, upon the release of the mechanism controlling the arm by the operator, it is returned to its normal horizontal position by the weights 31 and 29, the combined weight of which is greater than that of the arm and insures the proper operation thereof. When, however, the arm is moved above its horizontal position, it will be returned to its normal position by the weight of the arm members 26 and 27 which is greater than the weight 29 secured to the rear end of the bar 28, the downward movement of said arm being limited by the stop 33. In this manner the inner end of the tubular portion 27 of the semaphore arm is normally disposed opposite to the central lens 16 which will diffuse a red light through the tubular member and upon the flattened main portion 26 of the semaphore arm, thus indicating to the engineer that the train should be stopped as the track is not clear.

When the operator moves the semaphore arm opposite to the upper yellow-colored lens 16, it will indicate to the engineer that he is to proceed with extreme caution, and when the arm is opposite the lower green lens it will indicate that the track is clear. The outer portion 26 of the arm would preferably be covered with suitable material to reflect the light rays whereby the light thrown upon the arm would be utilized to the best advantage. In this manner not only is the arm illuminated, but it is colored and easily read upon the darkest night to indicate to the engineer the condition of the

track. A shaft 34 extends transversely through the upper rear corner of the lamp box and has secured upon the outer end thereof an arm 35. This arm may be of any desired form and is enlarged at its lower end and provided with a plurality of lenses 36. These lenses are of similar colors to the lenses 16, the central one being red, the lower green, and the upper one yellow. The opposite or inner end of the shaft 34 is formed with the crank 37 to which is connected the upper end of a pitman rod 38 the lower end of which is pivotally secured to the rear extremity of semaphore bar 28 and is simultaneously movable therewith. Thus as the semaphore arm is moved the shaft 34 will be rotated in proportion to such movement and the lens carrying arm 35 oscillated upon the outer surface of the lamp box. An opening 39 is provided through the lamp box and has a glass arranged therein and when the tubular portion of the semaphore arm is positioned opposite to any one of the lenses 16, one of the lenses 36 will also be disposed opposite this opening whereby a light of similar color will be shown upon the side of the lamp box to that which is thrown upon the semaphore arm. The opening 39 in the side of the casing is positioned directly opposite to the lamp 17 and receives the full benefit of the light rays radiated therefrom. Thus two signal lights are shown, and all possibility of the signal being disregarded is overcome.

In order to prevent the light rays being reflected from the lenses 16 which are not in alignment with the arm 25, I provide the curtains 40 which are carried upon spring shade rolls 41 of the ordinary form and are secured to the metal strips 14 at the inner ends of the glass plates 13. The other ends of these curtains are secured upon opposite sides of the tubular portion 27 of the semaphore arm. There is sufficient of the curtain material upon the rolls to extend across two of the faces of the lenses 16. Thus as the semaphore arm moves the curtains will be drawn from one roller and rolled upon the other, such extended curtain being disposed over the lenses 16 and preventing the diffusion of the variously colored lights upon the semaphore arm and allowing but a single color to be shown thereon. In this manner every possibility of a misinterpretation of the signal is obviated and the device is thus rendered very positive in its operation and the signals may be instantaneously changed and indicated from opposite sides of the lantern box.

From the foregoing it will be seen that I have provided a combined signal lantern and semaphore which while of simple construction is admirably adapted for the purposes specified. It will be obvious that any desired number of lenses 16 and 36 may be

provided without in any way affecting the operation or departing from the essential features as defined and set forth in the appended claims. It will also be understood that various forms of lamp boxes and casings may be provided and that the successful operation of the device is not necessarily dependent upon the particular form described and illustrated.

10 Having thus described the invention, what is claimed is:

1. In combination, a lamp box having a lamp removably positioned therein, and a plurality of vari-colored lenses arranged in one end of said box in concentric relation to the globe of the lamp, a semaphore arm having a tubular portion movable into alinement with any one of said lenses to receive the light rays radiated therefrom and diffuse the same upon the arm, and means arranged in the end of the lamp box and connected to the inner end of the tubular portion of the semaphore arm to be moved by said arm over the other lenses, substantially as and for the purpose set forth.

2. In combination, a lamp box having a lamp removably positioned therein, a plurality of vari-colored lenses arranged in one end of the box, an oscillatory semaphore arm, means carried by said arm movable into alinement with any one of said lenses to receive the light rays radiated therefrom and to concentrate the same upon the arm, and means movably arranged in the end of the lamp box and connected to the arm to be drawn over the other of said lenses in the oscillatory movement of the arm, substantially as and for the purpose set forth.

3. In combination, a lamp box having a

lamp removably positioned therein, a plurality of vari-colored lenses arcuately arranged in one end of the lamp box, a semaphore arm mounted for oscillatory movement and having a tubular portion movable into alinement with any one of said lenses, curtains mounted in the end of the lamp box above and below the lenses connected to the inner end of the tubular portion of said arm whereby said curtains are drawn over the lenses with which said arm is not alined to concentrate a light of a single color upon the arm.

4. In combination, a lamp box having a lamp removably positioned therein, a plurality of vari-colored lenses arcuately arranged in one end of the lamp box in concentric relation to the globe of the lamp, an oscillatory semaphore arm having a tubular portion the inner end of which is disposed contiguous to the lenses, said tubular portion being adapted to be moved into alinement with any one of said lenses to concentrate a light of a single color upon the semaphore arm, curtains mounted upon spring rollers arranged in the end of the lamp box above and below said lenses, the free ends of said curtains being connected to opposite sides of the tubular portion of the arm whereby the same are drawn over the lenses with which the tubular portion of the arm is not alined, substantially as and for the purpose set forth.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

EMILE W. BEANE.

Witnesses:

WM. NAGLE,

F. E. KIERNAN.