

Aug. 10, 1926.

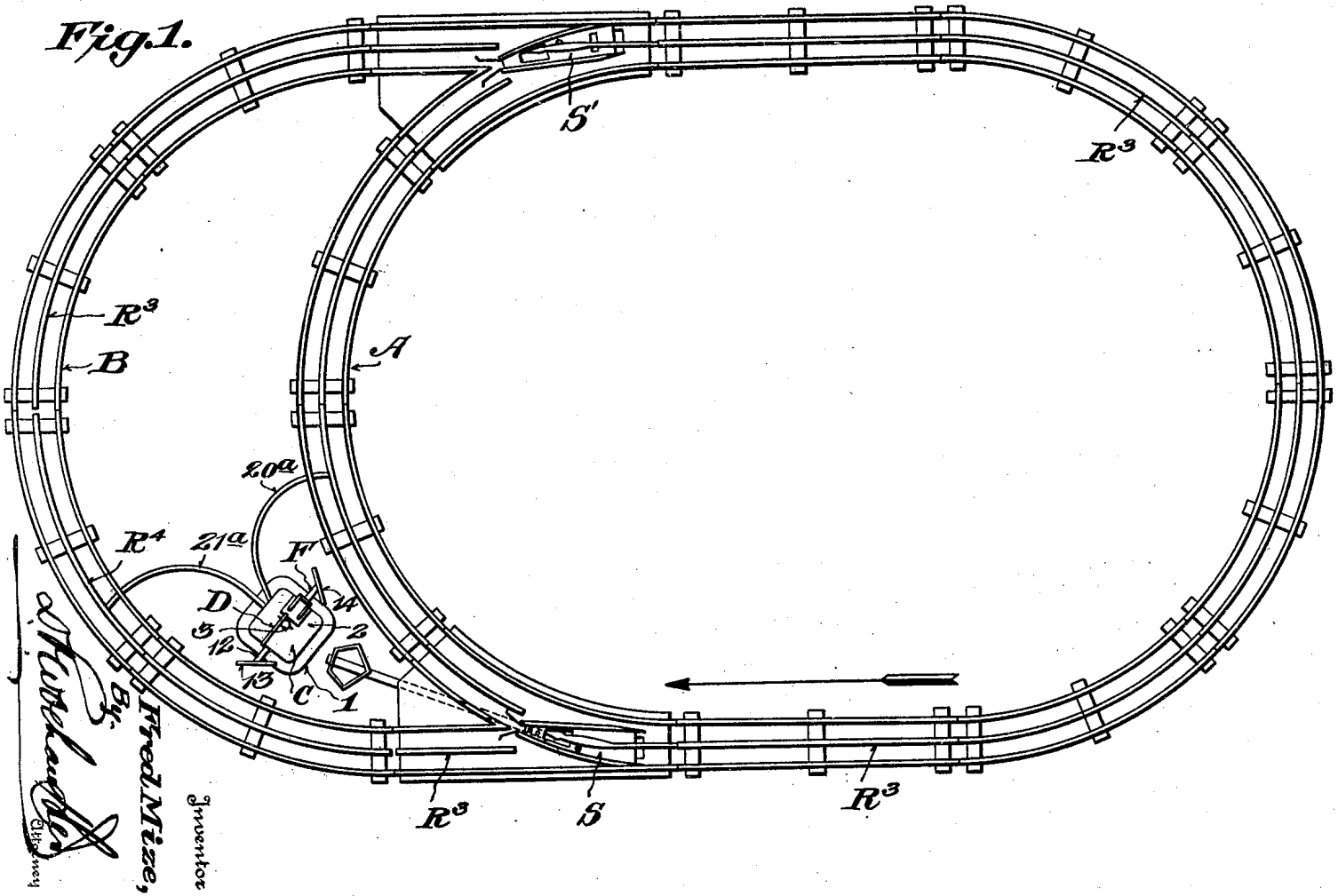
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SEMAPHORE FOR TOY RAILROADS

Filed May 5, 1925

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Fig. 2.

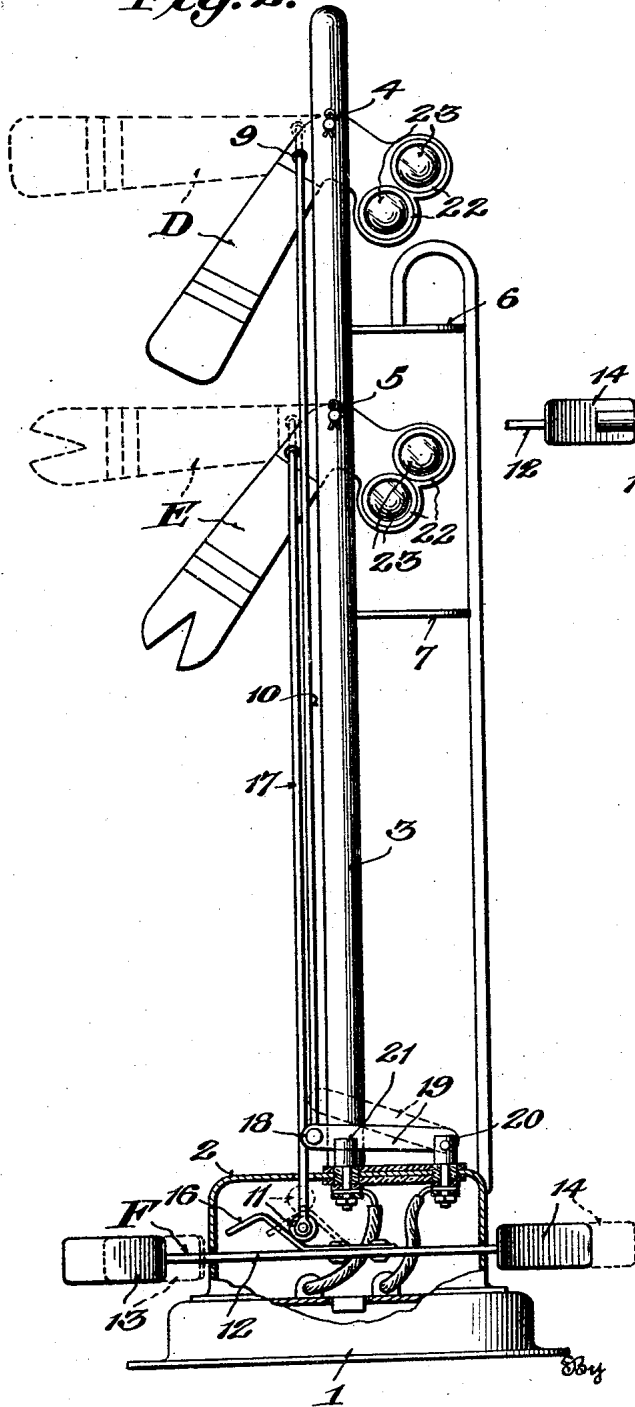
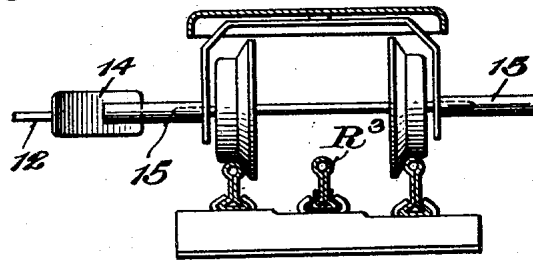


Fig. 7.



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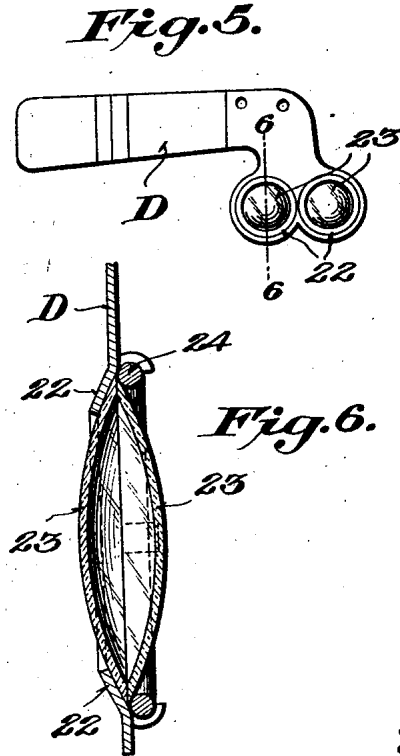
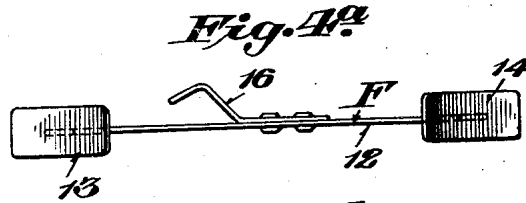
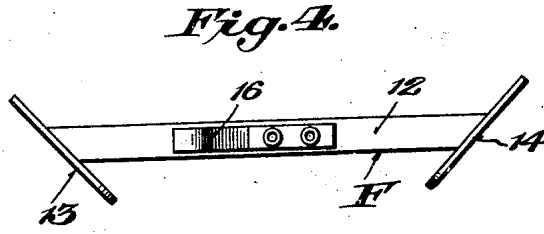
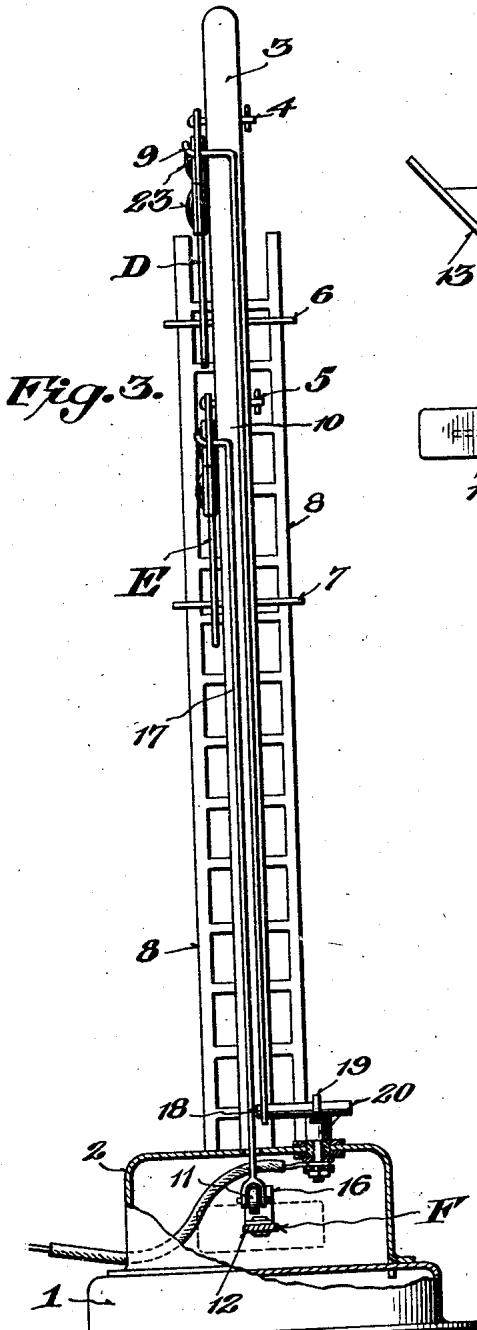
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SEMAPHORE FOR TOY RAILROADS

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3 Sheets-Sheet 3



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SEMAPHORE FOR TOY RAILROADS.

Application filed May 5, 1925. Serial No. 28,198.

This invention relates to toy railways, and more particularly to a novel semaphore for use in connection with toy railway track.

To that end the invention contemplates a novel semaphore adapted to be operated or actuated by a portion of the train in its movement to indicate whether or not a train is occupying the block or section guarded by the semaphore, and also having means for controlling a section of the third rail of the track whereby the said section may be included in or omitted from the circuit thereby to render it live or dead as the operator may desire, its condition being indicated by another semaphore arm arranged on the same post with the semaphore arm for giving the other signal previously referred to. In other words the present invention aims to provide a novel combination semaphore which is semi-automatic in its operation, that is, automatic to the extent that it is controlled by a portion of the train in its movement, while another part thereof may be manually controlled by the operator to energize or de-energize an insulated third rail section in event that the operator desires to shunt the train into the track including that section.

Another object of the invention is to provide a novel semaphore device that is particularly useful in connection with tracks formed in a plurality of loops or arranged in a series of loops through which the train passes in a prescribed order as shown and described in my copending application Serial No. 27,254, filed May 1, 1925.

A further object of the invention is to provide a simple, practical and reliable construction that may be readily assembled and installed for use by inexperienced persons, and which is efficient and faithful in operation.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawings in which:

Figure 1 is a more or less diagrammatic view illustrating the application of the invention.

Figure 2 is an elevation of the semaphore device constituting the present invention, partly in section, to illustrate the parts housed within the base.

Figure 3 is an elevation taken at right angles to Fig. 2; also partly in section.

Figure 4 is a detail top plan view of the actuator for the automatic semaphore arm.

Figure 4^a is a detail side elevation of the actuator for the automatic semaphore arm shown in Fig. 4.

Figure 5 is a detail elevation of the semaphore arm.

Figure 6 is an enlarged sectional view taken on the line 6-6 of Fig. 5.

Figure 7 is a detail cross-sectional view illustrating the train-carried means for actuating the automatic semaphore arm.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

In carrying the present invention into effect, it may be pointed out that the same is particularly useful in connection with a track system utilizing a plurality of intercommunicating loops such as shown in Figure 1, and more fully described and claimed in my copending application Serial No. 27,254, filed May 1, 1925, although it will of course be understood that the present novel signalling unit may be used in connection with other track arrangements.

Referring to Figure 1 it will be observed that a main track loop A and a secondary track loop B communicate at the point of the switch devices S and S' thereby to provide a fork between adjacent track sections of the loops A and B in which the present novel signalling unit designated generally as C may be located. As will be observed from the drawing the track sections of the loops A and B are all preferably of the central third rail type and include the usual insulated third rail R³. In the case of the loop B however, it may be pointed out that the third rail section R⁴ is insulated from the remaining third rail R³ of the loop B thereby to provide a section which may be controlled at the will of the operator to be energized or de-energized and cause the train to come to a stop or move ahead as

desired, as will hereinafter more fully appear.

The present novel signalling unit C is preferably provided with a plurality of semaphore arms D and E adapted to indicate the condition for train travel on either of the loops A or B. That is to say it is proposed to provide a signal device comprising semaphore arms for one or more loops of track, certain of which arms are automatically actuated by a part of the train as it moves along the track while other of said arms may be operated or set manually to simultaneously control a portion of the electrified third rail and at the same time indicate whether the track of which that rail is a part will permit a train to go on through or whether it will be required to stop due to lack of current in the section of third rail with which the semaphore cooperates.

Referring more in detail to the structural features and characteristics of the unit C it will be observed that the same comprises a base 1 which also includes a cap portion 2 which provides a hollow interior chamber for housing certain of the operative parts of the semaphore, as will presently appear. The said cap 2 carries an upright post 3 and has the semaphore arms D and E previously referred to pivotally mounted thereon as indicated at 4 and 5. Also as shown, the post 3 has attached thereto the platform portions 6 and 7 substantially adjacent and below each of the semaphores D and E, and these platforms have in turn secured thereto a ladder 8 which extends downwardly toward the cap 2 of the base. This construction simulates the modern multi-armed semaphore construction and at the same time braces and reinforces the semaphore carrying post 3.

The semaphore arm D has pivotally connected thereto as indicated at 9 a rod 10 which extends through and is guided by the cap 2 of the base, and carries at its lower extremity a roller 11 or its equivalent. Normally the arm D occupies the downwardly inclined position shown in Figure 2, and for the purpose of moving and holding the same to the raised dotted line position a novel train operated actuator F is employed. This actuator may be of any suitable construction, but in the embodiment shown preferably consists of a bar 12 slidably mounted and guided in suitable openings provided in the side walls of the cap 2 of the base and has its outer extremities fitted with the push plates 13 and 14 which are obliquely disposed with reference to the bar 12, and as will be observed from Figure 1 are inclined in the direction of travel of the train whereby the abutments 15 (Fig. 7) carried by one of the axles of the last car of the train engage either one of the plates 13 or 14, alternately to push the bar 12 back

and forth. This sliding movement of the bar 12 is utilized through the medium of the rod lifting member or cam 16 carried thereby to control the operation of the rod 10. That is to say when the bar 12 is shifted to the dotted line position shown in Figure 2 the lifter member 16 will engage the roller 11 and cause it to ride to the peak of the said lifter member and thereby cause the arm D to be lifted to the dotted line position and held there until the bar 12 is shifted in the opposite direction by one of the train carried abutments 15 engaging with the plate 14.

The semaphore arm E has connected therewith a rod 17 whose lower end is pivotally connected as indicated at 18 with the blade 19 of a knife switch. The blade 19 is pivotally connected to the terminal 20 mounted on the cap 2 of the base and the forward part of the blade cooperates with the contact member 21 to close a circuit between the members 20 and 21 when the arm E is in the lower or full line position shown in Figure 2. When the arm E is elevated to the dotted line position the circuit between the terminal elements 20 and 21 is broken. These terminal elements are respectively connected with the third rail R³ of the main loop A by the wire 20^a, and with the insulated third rail section R⁴ by the wire 21^a as will be seen in Figure 1. Thus, when the insulated third rail section R⁴ is to be controlled the operator manually sets the semaphore arm E to the position which will open or close the switch of which the blade 19 is a part.

From the foregoing it will be apparent that the present signalling device C includes the novel mechanically operated semaphore arm D which is actuated by the movement of the train to disclose the condition for traffic in the loop A as well as the loop B. Also if the loop B is to hold the train therein instead of permitting it to pass on through, the raised arm E will indicate that the loop B is a "dead" loop, or the equivalent of a blocked loop.

In connection with the semaphore arms D and E it may be observed that the same are provided with suitable lens openings 22 which are dished or embossed thereby to receive the hollow disc like translucent members 23. These members are centrally dished and placed back to back thereby to give a bulged effect, or "bull's-eye" effect, and the said members are held in place by a locking ring 24 or its equivalent. This not only produces a very realistic effect in combination with the painted semaphore arms D and E, but also provides a very simple and effective semaphore construction.

Without further description it is thought that the many features and advantages of the present invention will be readily ap-

parent to those skilled in the art, and will of course be understood that changes in the form, proportion and minor details of construction may be resorted to without departing from the spirit of the invention or scope of the appended claims.

I claim:—

1. In a toy railway, the combination with adjacent intercommunicating loops of third rail track, of a semaphore device having separate semaphore arms which are respectively automatically and manually controlled to indicate the condition of train travel in either loop.

2. A toy railway including in combination, adjacent intercommunicating loops of track including a central third rail and a section of third rail of one loop being insulated, a semaphore device located at the junction of the loop and said semaphore arm movably mounted on the post, a switch included in circuit with the third rail section of one loop and with the insulating third rail section of the other loop, and means connected with the arm to operate the switch.

3. In a toy railway the combination with adjacent intercommunicating loops of third rail track, of a semaphore device located adjacent the fork formed where said loops communicate and having a plurality of semaphore arms for indicating the condition of train travel in either loop, and train operated means for controlling one of said semaphore arms.

4. In a toy railway the combination with adjacent intercommunicating loops of third rail track, of a semaphore device located adjacent the fork formed where said loops communicate and having a plurality of semaphore arms for indicating the condition of train travel in either loop, train operated means for controlling one of said semaphore arms, and the other of said arms being manually controlled.

5. In a toy railway the combination with adjacent loops of track, of a semaphore device having a plurality of semaphore arms for respectively indicating the condition of train travel in either loop, and means carried by a train for operating one of said semaphore arms and means for manually setting the other of said semaphore arms.

6. A signal device for toy railways comprising in combination with track sections arranged on opposite sides of the signalling device, a plurality of semaphore arms, means interposed in the path of train travel on one of said track sections for operating one of said semaphore arms by a portion of the train, and the other of said semaphore arms being capable of independent setting to indicate the condition of the other section of track.

7. A semaphore device for toy railways including a base, a post mounted on the

base, a plurality of semaphore arms pivotally mounted on the post, and means slidably mounted in the base and operatively connected with one of said arms whereby the same may be raised and lowered.

8. A semaphore device for toy railway cars including a base, a post mounted on the base, a plurality of semaphore arms pivotally mounted on the post and train operated means shiftably mounted in the base and operatively connected with one of said arms thereby to raise and lower the same.

9. A semaphore device for toy railways including a base, a post mounted on the base, a plurality of semaphore arms pivotally mounted on the post, a rod connected with one of said arms, and an actuator slidably mounted in the base and having a cam adapted to engage said rod when its position shifts to thereby raise and lower the arm to which the rod is connected.

10. A semaphore device for toy railways including a base, a post mounted on the base, a plurality of semaphore arms pivotally mounted on the post, a rod connected with one of the arms, and projecting into the base, an actuator member slidably mounted in the base and having a rod lifting portion for engaging with the end of the rod projecting within the base, and means mounted on said actuator exterior of the base and adapted for engagement by a train part thereby to shift the actuator.

11. A semaphore device for toy railways including a base, a post mounted on the base, a plurality of semaphore arms pivotally mounted on the post, a rod connected with one of the arms, and projecting into the base, an actuator member slidably mounted in the base and having a rod lifting portion for engaging with the end of the rod projecting within the base, and the ends of said actuator outside of the base being provided with plate portions inclining in the direction of travel of the train in connection with which the device is used.

12. A semaphore device adapted for use in connection with toy railway track including a base adapted to be mounted between adjacent track sections, a plurality of semaphore arms supported above the base, and an actuator for one of said semaphore arms adapted to be alternately projected into the path of the train carried part on a train moving over either of said adjacent track sections.

13. In a semaphore device for toy railways, the combination of a base, a post mounted on the base, manually and automatically operated semaphore arms mounted on the post, an electrical switch device mounted on the base, and a connection between said electrical switch device and said manually operated arm.

14. A semaphore device for toy electric

5 railways including intercommunicating main
and secondary track loops having a central
third rail, and said semaphore device includ-
ing a base located at the fork of the track
10 loops, a post mounted on the base, a plu-
rality of semaphore arms pivotally supported
on the post, an electrical switch device in-
cluded in circuit with the third rail of the
main loop and with an insulated section of
15 the third rail of the secondary loop, and an
operating connection between one of said
arms and the said switch device.

15 15. A toy railway, including in combina-
tion adjacent intercommunicating loops of
track one of which includes a continuous
third rail and the other of which includes
an insulated third rail section, a semaphore
device located adjacent a junction of said
20 loops, a manually operated semaphore arm
and a train operated semaphore arm on
said post for separately indicating the con-
dition of train travel in either loop, and said
semaphore device including an electric
switch controlled by the manually operated
25 semaphore arm, and said switch being in
circuit with the third rail of one loop and

the insulated section of the other loop, and
an operating connection between said man-
ually operated arm and said electrical switch
device. 30

16. In a toy railway the combination with
adjacent intercommunicating loops of track
including a central third rail, a portion of
which third rail in one of the loops is in-
sulated, of a semaphore device located ad- 35
jacent the junction of the loop having the
insulated third rail with another loop, and
said semaphore device including a post, a
plurality of semaphore arms mounted on
the post, an electrical switch device included 40
in circuit with the third rail of one loop
and the insulated third rail section of the
adjacent loop, and a connection between one
of said semaphore arms and the electrical
switch device whereby said arm may be 45
set manually to indicate whether the switch
is opened or closed and consequently
whether or not the insulated third rail sec-
tion is energized or not.

In testimony whereof I hereunto affix my 50
signature.

FRED MIZE.