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MEANS FOR SIMULATING FIRE BOXES ON TOY LOCOMOTIVES

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2 Sheets-Sheet 2

Fig. 3.

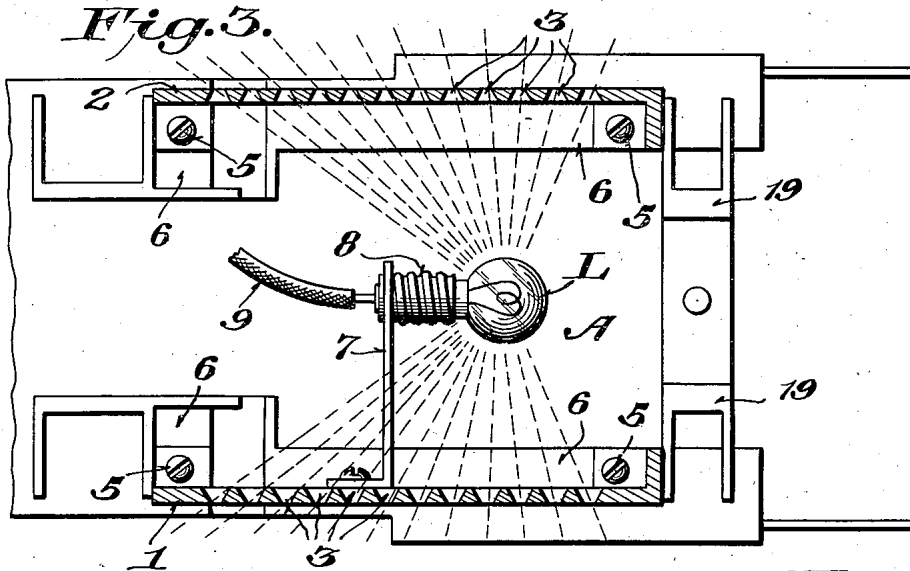


Fig. 4.

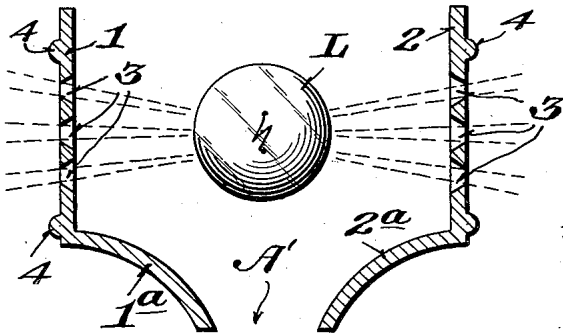


Fig. 5.

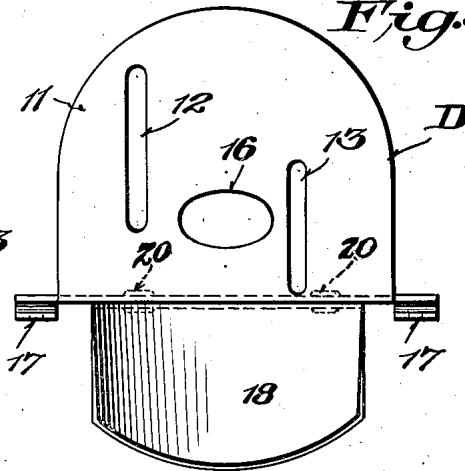
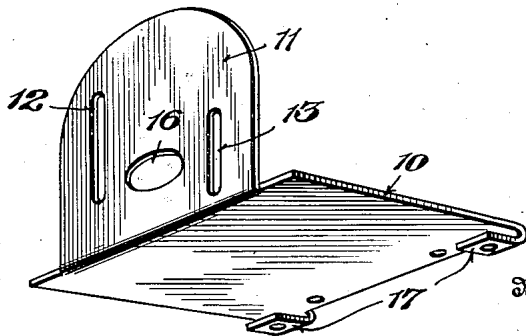


Fig. 6.



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MEANS FOR SIMULATING FIRE BOXES ON TOY LOCOMOTIVES

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This invention relates to toy railway locomotives, and more particularly to a novel improvement in a locomotive whereby it may be made to more effectually simulate the appearance of locomotives used on famous standard trains.

Accordingly, a primary object of the invention is to provide a novel construction for simulating the fire box including a self-contained lighting unit for the interior thereof, and also provide a light ray deflector and fire door plate unit for deflecting the fire box light rays, and simulating a fire door plate, said unit to be equipped with a snap-on arrangement, or other means, to make the fire box lamp easily accessible.

A further object of the invention is to provide a novel fire box construction, comprising a preferably cast-metal fire box equipped on its outer edge with small knobs or raised portions of metal to simulate the rivet heads of the fire box construction on standard locomotives, and further equipped with a series of holes or perforations throughout its length and width, aforementioned holes or perforations being provided for the purpose of allowing rays from a preferably red colored lamp unit, which is mounted on the interior of the fire box to show through the said holes or perforations in the walls of the fire box, thus simulating the appearance of flames showing through the draught holes in a fire box such as modern standard locomotives are equipped with, and which may be observed in operation upon any of the standard railroads.

In this connection the invention recognizes that in the production of a lighting system in combination with a perforated fire box and fire door plate, it is desirable that the units be assembled at a low cost, be simple in nature and of a strong construction and preserve the appearance of quality and faithful reproduction of standard locomotive construction.

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 herein after more fully illustrated, described and claimed.

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

Fig. 1 is a side elevation of a portion of a toy locomotive showing application of fire box to locomotive boiler.

Fig. 2 is a vertical longitudinal sectional view showing the arrangement of the lighting system in combination with the perforated fire box and the light ray deflector and fire door plate.

Fig. 3 is a horizontal sectional view looking at the underside of the locomotive cab showing mounting of lighting system with rear trailer trucks and deflector removed.

Fig. 4 is a vertical cross sectional view of the fire box shell showing the perforations or openings; also the imitation rivet heads.

Fig. 5 is an end elevation of the combined reflector and cab floor and fire door plate.

Figure 6 is a perspective view of the cab floor and fire door plate.

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

As previously indicated, a distinctive feature of the present invention is to provide a toy locomotive of the steam type with a lighting system in combination with a novel fire box structure, light ray deflector and fire box door, the light rays being so confined and directed by the light ray deflector as to be guided against the interior sides of the fire box plates, thus passing through the perforations in the walls of the fire box to give the appearance to an observer of the flames flowing through the draft holes in the fire box.

Accordingly, the present invention includes in its organization a suitable fire box construction designated generally as A arranged at the rear portion of a locomotive B beneath the cab C as is customary in standard practice. The fire box construction A includes suitable wall members or plates 1 and 2 located at opposite sides of the locomotive and provided with a plurality of openings 3 which are preferably of tapering formation so that the smaller diameter is arranged at the outer face of the wall while the larger diameter is arranged at the inner face to al-

low a greater angle of reception for the light rays emanating from the lamp L. In that connection it may be pointed out that the holes 3 are located at a suitable distance from the lamp L to give equal passage to all of the light rays directed toward the hole from the lamp so that holes located remotely from the position of the lamp will be illuminated equally as well as holes lying directly opposite the filament. In other words the holes 3 are intended to give equal distribution of the light rays from the lamp L.

In accordance with the illustration shown in the drawings, the walls 1 and 2 are preferably of cast metal, although it will of course be understood that it is within the scope of the invention to provide a fire box made of stamped metal and having openings for emitting light rays from the lamp. Also whether the walls 1 and 2 are cast or made of sheet material, they are provided with suitable bosses or projections 4 for simulating heads of rivets usually employed for holding the plates of fire boxes together. In the illustrated embodiment the plates 1 and 2 constituting the walls of the fire box are preferably secured in any manner, as for example, by the screws 5 or their equivalent to suitable supporting portions 6 of the locomotive frame.

One of the walls of the fire box has secured thereto a bracket arm 7 for carrying a screw shell contact 8 which receives the usual screw plug of the lamp L. The center plug contact of the lamp is properly insulated from the bracket 7 and has a wire 9 connected thereto leading to the source of electrical current on the locomotive usually supplied from the charged third rail on which the locomotive runs. It will, of course, be understood that the screw shell 8 is grounded to the frame of the locomotive to complete the other side of the circuit of the lamp in accordance with well known practice along this line.

The lamp L is preferably red to more closely simulate the fire of the fire box and the rays from said lamp not only are projected through the openings in the side walls 1 and 2 but are also projected downwardly through the opening A' formed between the inturned portions 1a and 2a of the walls 1 and 2, thereby simulating the effect usually appearing below the grate of the fire box. Also to provide the novel effect of the interior of the cab being dark, except for the openings in the fire box such as the stoking opening and the like and to also provide more efficient means for reflecting and distributing the light rays from the lamp through the openings 3, a novel combined reflector, cab floor and fire door plate unit is provided. This unit is clearly shown in Figures 2, 5 and 6 and is designated generally as D and comprises a body bent at right angles to provide

a cab floor portion 10 and a fire door wall 11. The fire door wall 11 is provided with the slots 12 and 13 for receiving the control levers 14 and 15 of the locomotive and is also provided with a stoking door opening 16 which will more effectually simulate the interior appearance of the cab on a steam locomotive. The rear edge of the floor portion 10 of the unit D is provided with the inturned clamping members 17 which are adapted to fit over the offset supporting members 18 of the frame of the locomotive to hold the unit in position.

The underside of the floor 10 of the unit D is also adapted to carry the reflector plate 18 which fits beneath the lamp as shown in Figure 2. This plate is preferably of concave cross section and acts not only as a deflector for diffusing the light rays but also prevents the glare from the lamp passing backwardly toward the rear of the fire box, thereby further simulating the appearance of light shining from the grate beneath the fire box at the point where the grate usually occurs in the fire box construction. The reflector 18 is secured to the floor portion 10 of the unit by eyelets or rivets 20 which will be apparent from Figure 5.

The unit D may be readily removed and replaced in the cab so as to conveniently provide access to the lamp L. That is possible because of the fact that the unit D is provided with the clamping members or clips 17-17 which engage with the cross brace 19 of the locomotive frame.

To a person observing the locomotive cab from the rear the locomotive operating rods 14 and 15 will be seen projecting through the slots 12 and 13 in the fire box door plate 11, and the dull reflection of light rays from the lamp L will be seen through the fire box door opening 16 which in connection with the cab floor 10 will give a very realistic simulation of the operating mechanism in the interior of a standard gauge locomotive.

From the foregoing it will be apparent that the present invention provides a novel construction for effectively directing and distributing light rays so as to effectually simulate the appearance of a fire box construction on steam type locomotives, thereby giving the toy locomotive an animated and attractive effect.

Without further description it is thought that the features and advantages of the invention will be readily apparent to those skilled in the art, and it 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 and scope of the appended claims.

I claim:

1. A toy locomotive including in combination with the cab thereof, means located

beneath the cab simulating a fire box construction, and means for illuminating said fire box construction.

2. A toy locomotive of the steam type having means for simulating a fire box, said means including a perforated exposed wall and a lamp arranged behind said wall.

3. In a toy locomotive of the steam type, means for simulating a fire box construction comprising a pair of spaced walls having perforations, and a lamp supported between said walls and adapted to project its light rays through said openings.

4. A toy locomotive of the steam type including a cab portion, means beneath the cab portion for simulating a fire box, said means including perforated walls carried by opposite sides of the locomotive, and a combined reflector, cab floor and fire wall forming a unit removably supported within the cab portion of the locomotive.

5. A toy locomotive of the steam type including a cab portion, and means below the cab for simulating a fire box, said means comprising a pair of spaced walls having openings therein, means for securing said walls to the frame of the locomotive, a bracket carried by one of said walls, lamp supporting means carried by said bracket, a lamp adapted to be located in said lamp supporting means, and a combined reflector and shield unit removably secured to the locomotive to provide a floor for the cab and also to provide a fire box wall.

6. A toy locomotive of the steam type including a cab, a fire box construction arranged beneath the cab, said fire box construction including a pair of spaced perforated walls, a lamp supported by one of said walls in illuminating relation to said openings; and a unit removably attached from the locomotive to the open side of the cab, said unit including a part formed to provide a floor for the cab and an upstanding part to simulate a fire box wall, said wall having an opening simulating a fire box door and also having slots therein, and a reflector carried by the underside of said part simulating the floor and inclining downwardly beneath the position of said lamp.

7. In a toy locomotive of the steam type including a cab portion, means for simulating a fire box, comprising spaced perforated walls, a lamp supported between said walls in illuminating relation to said openings and a reflector for said lamp.

8. In a toy locomotive of the steam type including a cab, means located beneath the cab for simulating a fire box construction, said means comprising spaced walls having conical openings, the smallest diameter of said openings being at the outer face of the wall and the largest diameter of the openings being at the inside face of the wall, and

a lamp supported in illuminating relation to said openings.

9. A toy locomotive of the steam type including a cab, means located beneath the cab for simulating a fire box construction, said means comprising spaced walls provided with openings, a lamp arranged in illuminating relation to said openings and projections on the outer faces of said walls simulating rivets.

10. A toy locomotive of the steam type, including a cab, means located beneath the cab simulating a fire box construction, said means including spaced walls having openings, a lamp arranged in illuminating relation to said openings, a reflector for said lamp and a shield for said lamp simulating the floor of the cab.

11. A toy locomotive of the steam type, including a cab, means located beneath the cab simulating a fire box construction, said means including spaced walls having openings, a lamp arranged in illuminating relation to said openings, a reflector for said lamp, a shield for said lamp simulating the floor of the cab, and a member carried with said shield and projecting upwardly above the part simulating the floor of the cab and having an opening simulating a fire box door.

12. In a toy locomotive of the steam type for miniature electric railways, the combination with the locomotive body of right and left wall plates mounted on said body and provided with openings to simulate the side walls and draft openings of a fire box, a lamp mounted between said walls, and a light ray deflector for said lamp.

13. A fire box construction for toy locomotives including wall members having apertures for the emission of light rays, a bracket for supporting a lamp between said walls, and means for deflecting and guiding the light rays from the lamp through said openings and between the wall members.

14. In a toy locomotive of the steam type, means for simulating a fire box construction comprising perforated members, a source of light between said members, and means for shielding and deflecting rays from the source of light through the openings, said means also having an opening simulating a fire box door.

15. An electrically driven toy locomotive of the steam type having a portion simulating a fire box, and means within said fire box for illuminating the same.

16. An electrically driven toy locomotive of the steam type having a portion simulating a fire box, and a source of artificial light arranged to illuminate the interior of said fire box.

In testimony whereof I hereunto affix my signature.

SIMON V. CHAPLAN.