

July 17, 1928.

H. S. BECKER

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BELL RINGING MEANS FOR TOY LOCOMOTIVES

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2 Sheets-Sheet 1

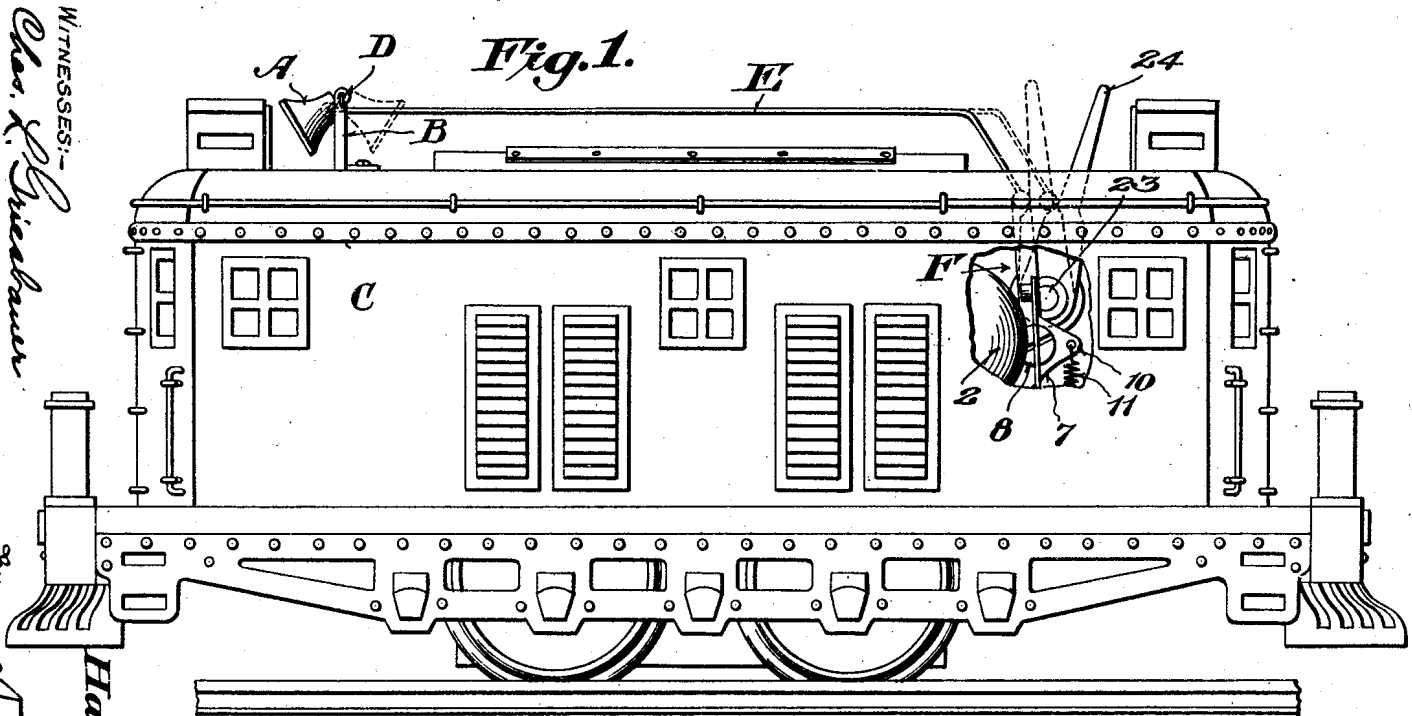


Fig. 6.

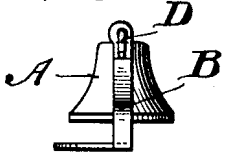
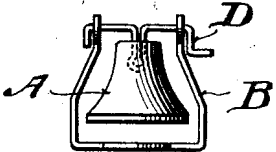


Fig. 7.



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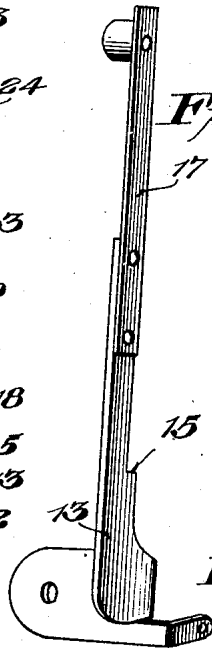
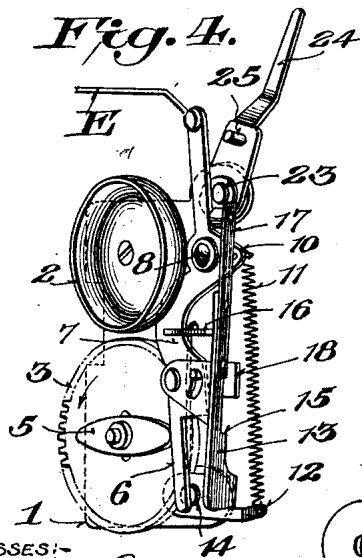
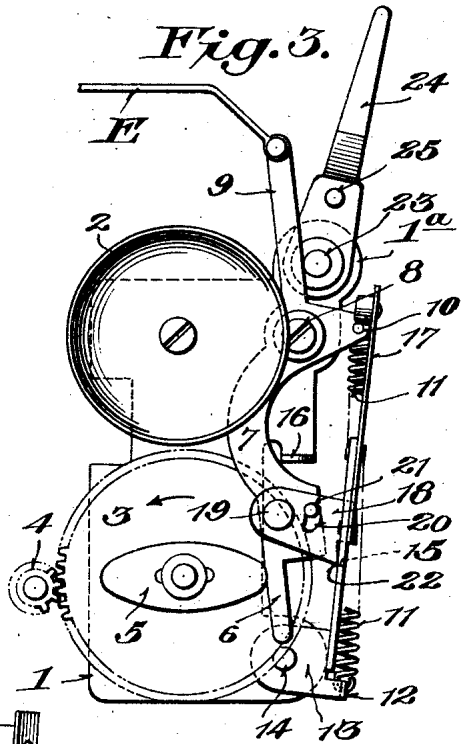
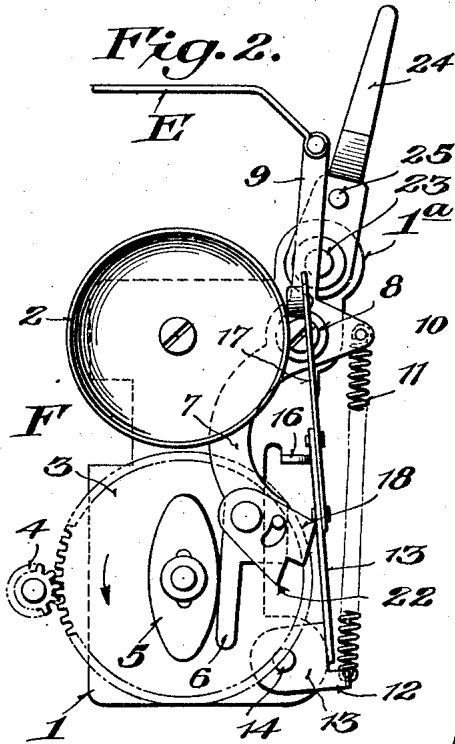
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BELL RINGING MEANS FOR TOY LOCOMOTIVES

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

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BELL-RINGING MEANS FOR TOY LOCOMOTIVES.

Application filed January 17, 1928. Serial No. 247,447.

This invention relates to toy railways, and more particularly to a novel bell-ringing construction and arrangement for use on electrically or mechanically operated toy locomotives, for simulating the action and appearance of the bells on large passenger and freight service locomotives now in general use.

A primary object of the invention is to provide bell-ringing means adapted to be embodied in a self-contained unit and which can be attached to the motor frame or other part of a locomotive or car in such a manner as to balance and at the same time add weight to the locomotive which is a desirable feature since it enables them to hold to the tracks easier, the additional weight of the bell unit taking the place of cast iron or other heavy weights heretofore added merely for the purpose of adding weight and having no part in the functioning of the locomotive.

Another object of the invention is to provide a construction which is positive in its action and can be operated either in an intermittent manner or manually rendered inoperative to be silenced. In that connection the invention contemplates a concealed ringing bell and a visible mute or dummy bell which is mechanically operated to swing in synchronism with the ringing bell to more closely simulate the appearance and action of standard practice.

A further object of the invention is to provide a construction which is economical to manufacture and simple to operate, thereby permitting the same to be operated or controlled by inexperienced persons to function in a practical and reliable manner.

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 side elevation of a locomotive having the present bell ringing means applied thereto.

Figure 2 is an elevation of the novel bell ringing unit with the parts in the position of the sounding of the bell.

Figure 3 is a view similar to Fig. 2 showing the position of parts with the clapper element of the bell poised thereabout to be released to ring the bell.

Figure 4 is a detail perspective view of the unit.

Figure 5 is a detail perspective view of the clapper.

Figure 6 and 7 are respectively side and front elevations of the dummy bell hanger.

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

The invention essentially includes in its organization a mute or dummy bell A mounted in a bracket B on the top of a locomotive, car, or other wheeled toy vehicle C, the said dummy bell being mounted on a crank shaft D operatively connected by a rod E with a shiftable part of a concealed bell unit F mounted within the locomotive and actuated by a moving part thereof.

The bell ringing unit F includes in its assembly a supporting plate 1 carrying therewith a bell 2 and a gear 3 adapted to mesh with a motor driven pinion 4 or an equivalent actuator for imparting movement to said gear to operate the bell ringing mechanism. The gear 3 carries therewith a cam 5 for engaging the lower end 6 of an actuating lever 7 which is pivotally mounted on the bracket as indicated at 8 and has an upwardly projecting arm 9 connected with the rod E for operating the mute bell. The actuating lever 7 is provided at a point adjacent its pivot 8 with an offset ear 10 adapted to constitute an anchor for one end of a spring 11 whose opposite end is connected with the hook portion 12 of a bell-clapper lever 13 pivoted to the plate 1 as indicated at 14.

The bell-clapper lever 13 consists of a body portion having an intermediate laterally offset shoulder 15 while its upper end is adapted to abut against a stop member or abutment 16 struck out from the plate 1 whereby the spring clapper portion 17 of the clapper lever will be snapped into engagement with the bell 2 when the clapper

lever is released by the trigger detent 18 and strikes against the abutment. The said trigger or falling detent 18 is pivoted to the actuating lever 7 as indicated at 19 and is provided with a slot 20 for receiving a pin 21 carried by the lever 7. When the lower end 6 of the lever 8 is against a flat side of the cam 5 as shown in Fig. 2, the clapper 17 sounds the bell, and for the purpose of tensioning the clapper lever 13 for the next sounding of the bell the lower end 6 of the lever 7 is engaged by the nose of the cam 5 so that the lever 7 is rocked on its pivot 8 to cause the ear 10 to move upwardly and tension the spring 11 and at the same time carry with it the trigger or detent 18. The said trigger moves upwardly with the lever 7, sliding over the body of the clapper lever 13 until the nose or point 22 of the trigger is released from the shoulder 15 of the clapper lever whereupon the latter will snap toward the bell 2 under the influence of the tensioned spring 11.

The upper corner of the plate 1 is provided with an offset portion 1^a which has pivotally connected thereto as indicated at 23, a control lever 24, the same being provided with an offset pin 25 adapted to engage with the arm 9 of the main actuating lever 7 when desired to hold the said lever in an operative position to prevent the operation of the bell ringing mechanism or in other words silence the bell ringer. When the lever 24 is in the position shown in Figs. 2 and 3 the mechanism will be operative but when it is shifted to the position indicated by dotted lines in Fig. 1, the projection 25 will engage the lever 9 to maintain it inoperative.

From the foregoing it will be apparent that the present construction includes a novel bell ringing unit which may be mounted within the body or housing of the car or locomotive thereby to be concealed and protected from mis-handling. Also the combination of the interior or concealed bell or gong and the exterior bell which swings or reciprocates in synchronism with the ringing or sounding of the bell provides a novel and effective simulation of bell ringing practice in connection with standard locomotives. As the cam 5 rotates under the influence of its actuator, which may be any suitably driven part or moving part of the locomotive, such for example as the motor or a wheel axle, the lever 7 will be oscillated on its pivot 8 and will alternately raise and permit the trigger 18 to fall to cause its point 22 to snap off of the shoulder 15 of the clapper lever and thus release said lever so that the spring 11 will quickly move the lever 13 into engagement with the stop abutment 16 and thus move the spring clapper 17 to sharply strike the bell or gong.

Without further description it is thought that the features and advantages of the in-

vention 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. In a toy locomotive, the combination of a mute bell and a ringing bell operatively connected, and means for operating said ringing bell, said means comprising a main lever operatively connected at one end with the mute bell, a cam for engaging the end of the lever opposite said connection with the mute bell, a clapper lever, spring means for tensioning the main and clapper levers, and a shiftable trigger element carried by the main lever and adapted to tension the clapper lever and release it for engagement with the bell.

2. In a toy locomotive, the combination of a mute bell and a ringing bell operatively connected, and means for operating said ringing bell, said means comprising a carrier plate, a bell mounted on the plate, a gear, also mounted on the plate, a cam operated by said gear, a lever pivoted to the plate and operatively connected at one end with the mute bell while the other end is engaged by said cam, a clapper lever pivotally mounted on the plate, an abutment against which the clapper lever strikes, a spring for connecting the main and clapper levers under tension, a trigger pivotally carried by the main lever and having means for engaging and releasing the clapper lever to snap it into engagement with the bell.

3. A bell ringing device for toy locomotives comprising a unit including a carrier plate, a bell carried by the plate, a gear pivoted to the plate and adapted to be connected with an operative part of the locomotive, a cam actuated by the gear, a pair of levers having a separate pivot and connected by a common spring, a clapper carried by one of the levers and a trigger element carried by the other of said levers whereby when the lever carrying the trigger element is actuated by the cam the clapper will sound the bell.

4. In a toy electric locomotive, the combination of a swinging mute bell mounted in a visible position on the locomotive and a ringing bell mounted in a concealed position within the locomotive, a clapper for the ringing bell, an operating connection for the mute bell, a cam operated lever for simultaneously operating the clapper to sound the ringing bell and operating the swinging mute bell, and means for rendering the said lever inoperative.

5. In a toy electric locomotive, the combination of a mute swinging bell mounted in an exposed position on the locomotive

and a concealed ringing bell, a lever for swinging the mute bell and a clapper actuated by said lever for sounding the ringing bell in synchronism with the movement of
5 the mute bell, a cam for actuating said lever, a gear carrying said cam, and a pinion of low ratio engaging with said gear for slowly operating the same.

6. In a toy electric locomotive, the combination of a swinging mute bell mounted in
10 a visible position on the locomotive and a ringing bell mounted in a concealed position within the locomotive, and a lever having means connected therewith for simulta-
15 neously sounding the concealed bell and

swinging the mute bell, and means for actuating said lever.

7. A toy electric locomotive, including in combination with the locomotive housing, a bell supporting bracket mounted on top of
20 the locomotive housing, a mute bell mounted to swing in said bracket, a lever pivotally mounted within the body of the locomotive, a bell also mounted within the locomotive, an operating connection between said mute
25 bell and said lever, and a clapper for the ringing bell actuated by said lever.

In testimony whereof I hereunto affix my signature.

HARRY S. BECKER.