(No Model.)

C. H. HALL.

AUTOMATIC WHISTLE.

No. 572,112. Patented Dec. 1, 1896.

Fig. 1.

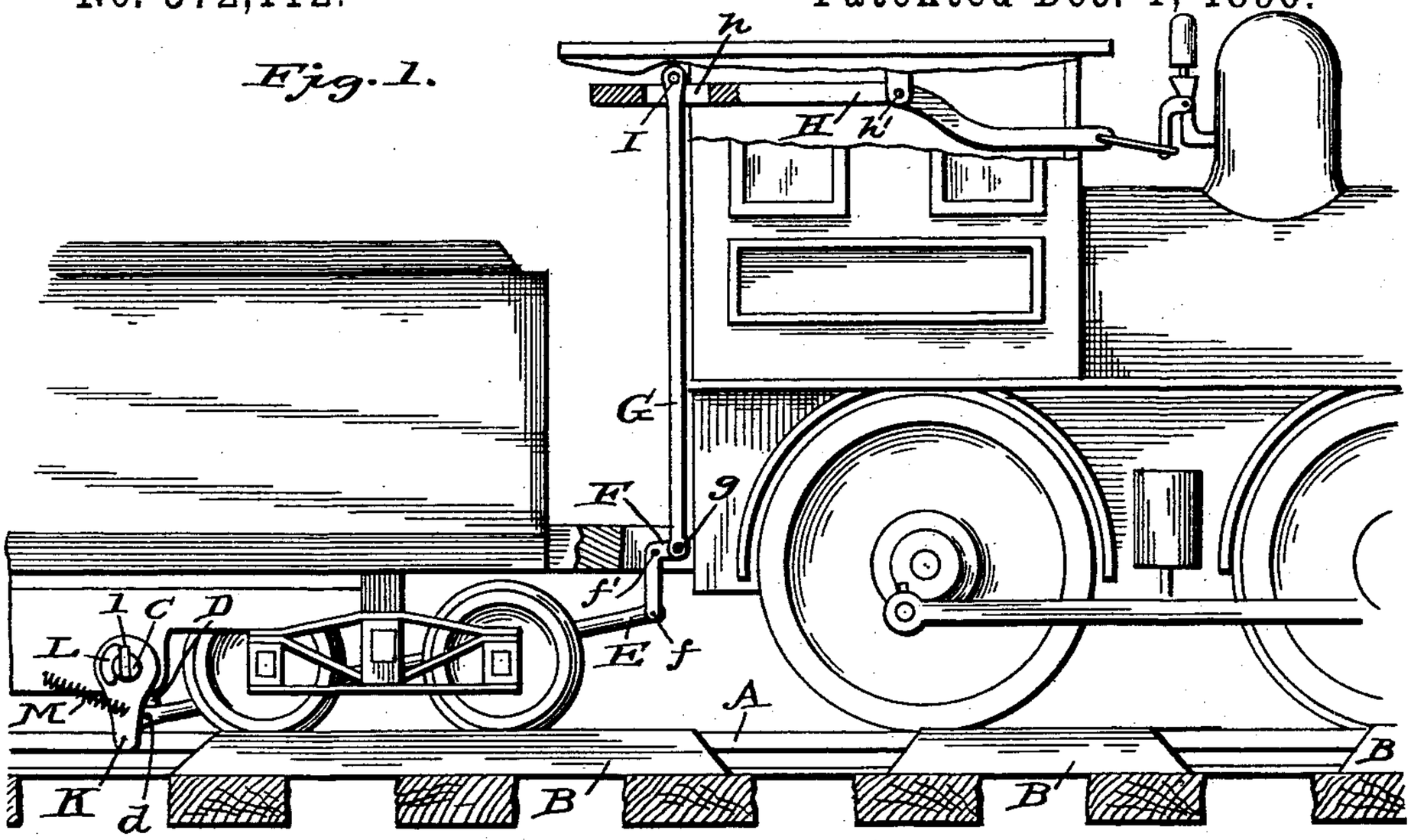


Fig. 2.

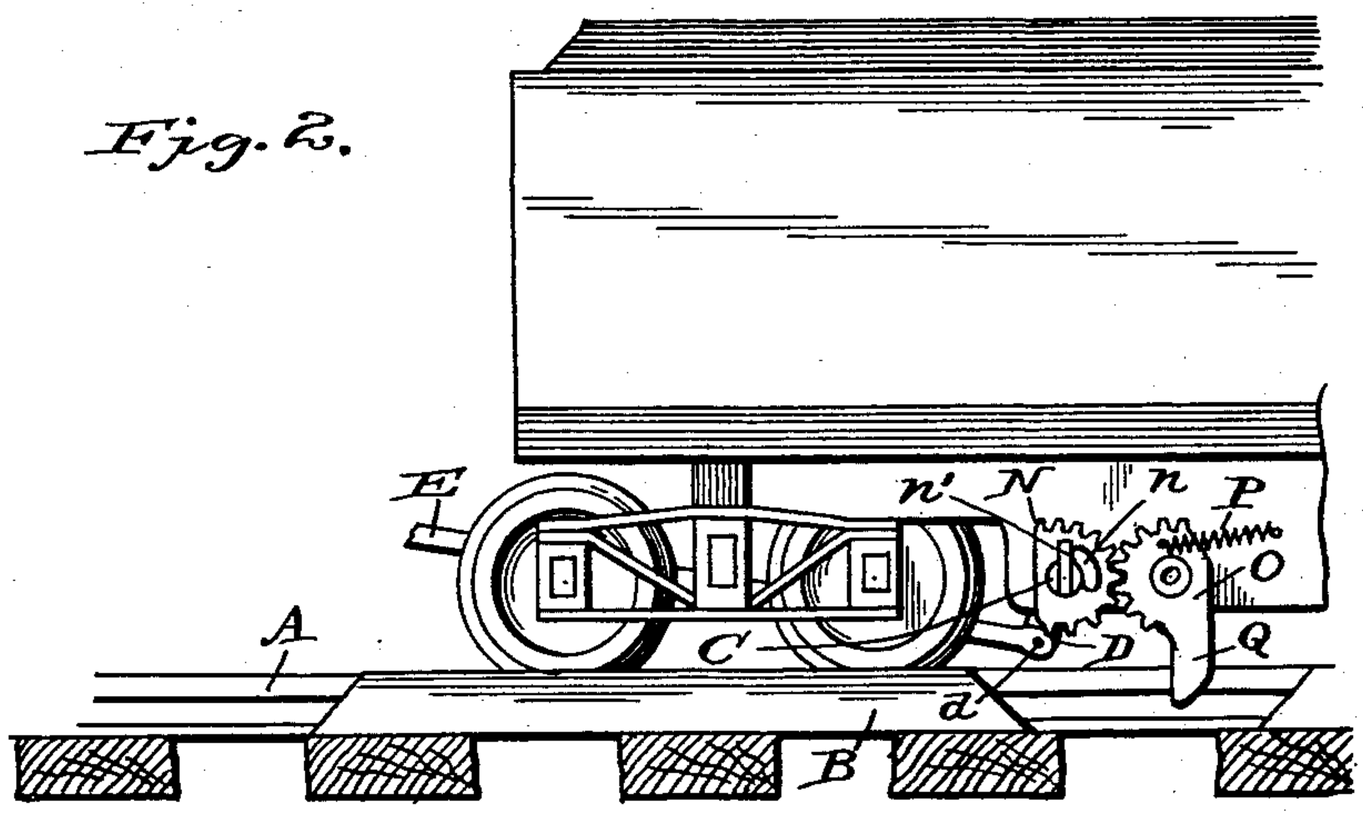
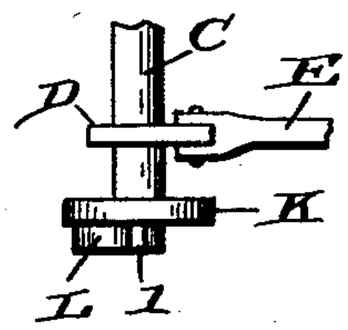


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES HENRY HALL, OF GLIDDEN, WISCONSIN, ASSIGNOR OF ONE-HALF TO EDWARD BESSE, OF BUTTERNUT, WISCONSIN.

AUTOMATIC WHISTLE.

SPECIFICATION forming part of Letters Patent No. 572,112, dated December 1, 1896.

Application filed May 12, 1896. Serial No. 591,235. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HENRY HALL, a citizen of the United States, residing at Glidden, in the county of Ashland and State of Wisconsin, have invented certain new and useful Improvements in Automatic Whistles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain new and useful improvements in automatic whistles or alarms for locomotives and railway-trains; and it has for its object, among others, to provide a simple and cheap automatic whistle by which an alarm is given as the train approaches a crossing without requiring any attention on the part of the engineer.

It has for a further object to provide such a construction as can be readily applied to the locomotive or tender and which will not interfere with the blowing of the whistles by the engineer at any time desired at points other than at the crossing. The construction is such that it will operate in either direction of movement of the train. It may be so arranged as to operate at any required distance from the crossing and also to operate a greater or less number of times, so as to give one, two, or more toots of the whistle.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation showing my improvement. Fig. 2 is a vertical section showing the operating mechanism. Fig. 3 is a detail in top plan.

Like letters of reference indicate like parts in the several views.

The mechanism is so arranged as to operate in either direction of movement of the train, that upon one side being held in an inoperative position while the other is in its operative position, and vice versa.

Referring now to the details of the drawings by letter, A designates the rails of the track, alongside of which at the requisite distance from the crossing are the plates or bars or pieces B, which may be secured on the ties alongside the rails in any suitable manner and which may project a greater or less distance above the same. These plates or blocks have their opposite ends oppositely inclined, as shown, so that the same may be rendered operative in either direction of movement of the train, whether going forward or backing. There may be any desired number of these plates or blocks, according to the number of times it is desired to sound the whistle, and they may be arranged a greater or less distance apart, as may be found most expedient, and produce the desired results. When it is desired to give a long and a short toot, as may sometimes be required, these plates of course will be made of varying lengths.

C is a shaft mounted on the locomotive or tender, as may be found most expedient, and secured to this shaft is a crank-arm D, the lower end of which is pivotally connected, as at *d*, with the longitudinally-disposed rod E, the other end of which is pivotally connected to one arm of a bell-crank lever F, as seen at *f*, which bell-crank lever is pivoted, as at *f'*, to some fixed part on the locomotive or tender, and the other end or arm of this bell-crank is connected pivotally, as at *g*, with the upright arm G, the upper end of which passes through a slot *h* in the horizontally-disposed lever H, pivotally mounted, as at *h'*, and its other end connected with the whistle-actuating mechanism in any suitable manner. The lever H has its slot *h* at its rear end, and the arm G, after passing through the same, has a lateral pin or other means I, preventing its removal but allowing free play of the same in the slot, so as to avoid any possibility of accident by depression of the rod G when the crossing is approached by the train.

Mounted on the shaft C, which extends beyond the locomotive or the tender, is the depending arm K, which is loose upon the shaft and extends downward into the path of the plates or blocks B, and is designed to engage their openings. This arm being loose upon its shaft, it will be seen that it will move in one direction without actuating the shaft, but when it moves in the other direction it causes the shaft to move by reason of the engage-

ment of the lug L on said arm engaging a lug *l* on the shaft. A spring M is provided for normally holding the arm in its vertical position.

The shaft C extends through to the other side and has thereon the segmental gear N, which is loose upon the shaft and designed to move loosely thereon in one direction, but to actuate the shaft when it is moved in the other direction by means of the engagement of the lug *n* on the gear with the lug *n'* on the shaft. O is a similar gear mounted on a shaft *o* and meshing with the gear N. A spring P is provided, which acts on the gear O and holds it normally in its engagement with the other gear and holds it in its foremost position. This gear has a depending arm Q, which is adapted to engage with the blocks B and through the means of the gear turns the shaft C to sound the alarm.

The operation will be apparent. As the train approaches the crossing or the place where the blocks B are arranged the depending arm on the right-hand side in the direction of movement of the train will engage the blocks, and as they come in contact therewith, the arm being moved to the rear, the shaft C is turned, its crank-arm is moved rearward, and through the connection of the arm E, bell-crank lever F, rod G, and lever H and connections the whistle will be sounded and one or more toots will be given, according to the number of blocks over which the arm travels. The arm on one side is out of gear while the other works, and one works backward while the other works forward.

This device will not interfere with the blowing of the whistle by the engineer, as ordinarily.

Modifications in details may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

Having thus described the invention, what is claimed as new is—

1. The combination with a series of blocks arranged alongside of a track and having their ends beveled, of a shaft carried by the moving train, depending arms disposed upon opposite sides of the locomotive and adapted to engage said blocks, gearing connected with the same and interposed mechanism between said shaft and the whistle, substantially as described.

2. The combination with a series of blocks arranged alongside of a track and having their ends beveled, of a shaft carried by the moving train, depending arms disposed upon opposite sides of the locomotive and adapted to engage said blocks, gearing connected with the same and interposed mechanism between said shaft and the whistle, one of said depending arms being loosely mounted on its shaft and the other carried by an independent shaft, substantially as described.

3. The combination with a series of blocks arranged alongside of a track and having their ends beveled, of a shaft carried by the moving train, depending arms disposed upon opposite sides of the locomotive and adapted to engage said blocks, gearing connected with the same and interposed mechanism between said shaft and the whistle, said depending arms being loosely mounted in relation to the shaft, and means on the arms to engage the shaft, said arms being mounted for action independent of each other, substantially as described.

4. The combination with a series of blocks arranged alongside of a track and having their ends beveled, of a shaft carried by the moving train, depending arms disposed upon opposite sides of the locomotive and adapted to engage said blocks, gearing connected with the same and interposed mechanism between said shaft and the whistle, said depending arms being loosely mounted in relation to the shaft, and means on the arms to engage the shaft, said arms being mounted for action independent of each other, and springs acting on said arms and gear, substantially as described.

5. The combination with the shaft C, of the depending arm loosely mounted thereon, a crank-arm on said shaft and operative connections between said depending arm and shaft, a rod pivotally connected therewith, a pivoted bell-crank lever connected with said rod, a vertically-disposed rod pivotally connected with the bell-crank lever, and a lever connected with the upper end thereof and with the whistle, substantially as described.

6. The combination with the shaft C, of the depending arm loosely mounted thereon, a crank-arm on said shaft and operative connections between said depending arm and shaft, a rod pivotally connected therewith, a pivoted bell-crank lever connected with said rod, a vertically-disposed rod pivotally connected with the bell-crank lever, and a lever connected with the upper end thereof and with the whistle, said lever having an elongated slot in which the vertical arm has free play, substantially as described.

7. The combination with the shaft C, of the depending arm loosely mounted thereon, a crank-arm on said shaft and operative connections between said depending arm and shaft, a rod pivotally connected therewith, a pivoted bell-crank lever connected with said rod, a vertically-disposed rod pivotally connected with the bell-crank lever, and a lever connected with the upper end thereof and with the whistle, said lever having an elongated slot in which the vertical arm has free play, and means for preventing displacement of said arm from the slot, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHARLES HENRY HALL.

Witnesses:
D. F. TYLER,
JACOB J. STOLTZ.