R. KEDING.

DEVICE FOR COALING LOCOMOTIVES.

APPLICATION FILED NOV. 5, 1914.

1,166,052.

Patented Dec. 28, 1915.

3 SHEETS—SHEET 1.

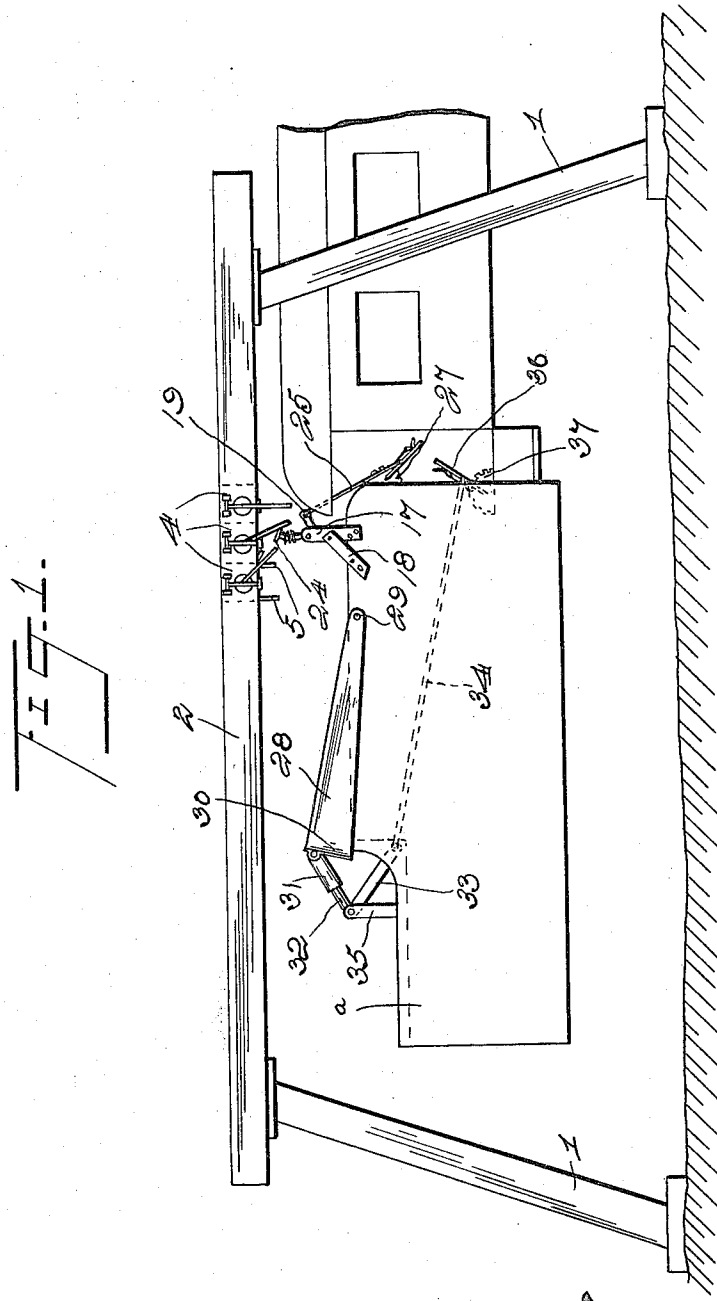



Fig. 1.

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3 SHEETS—SHEET 2.

Fig. 2.

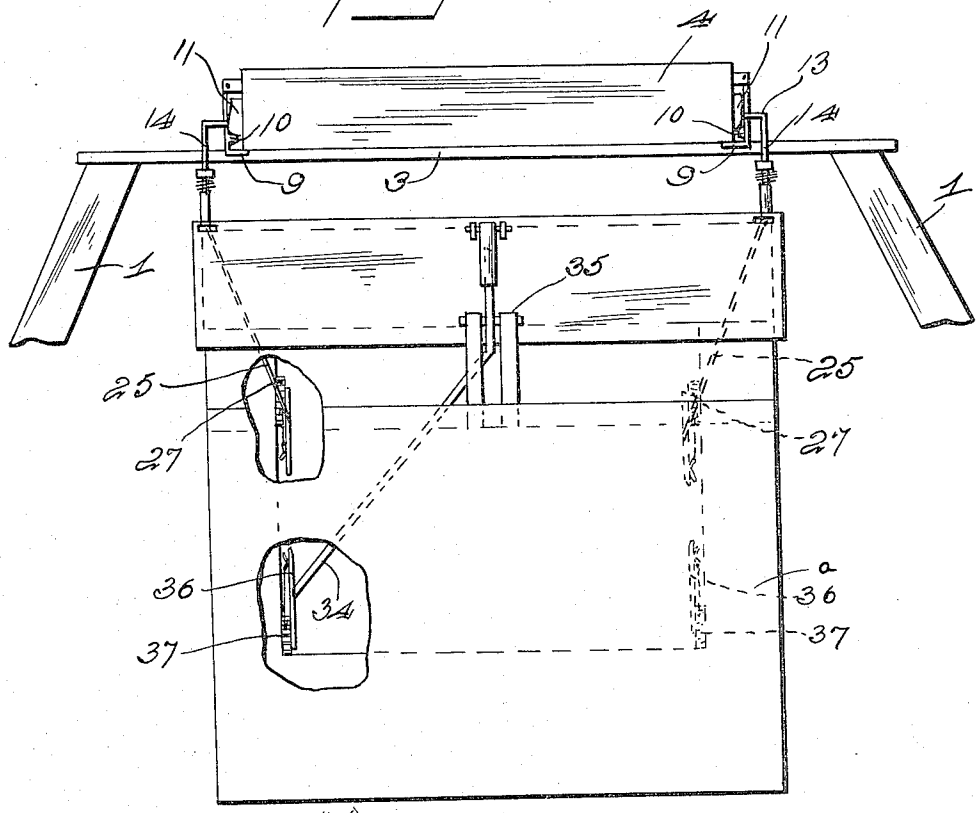
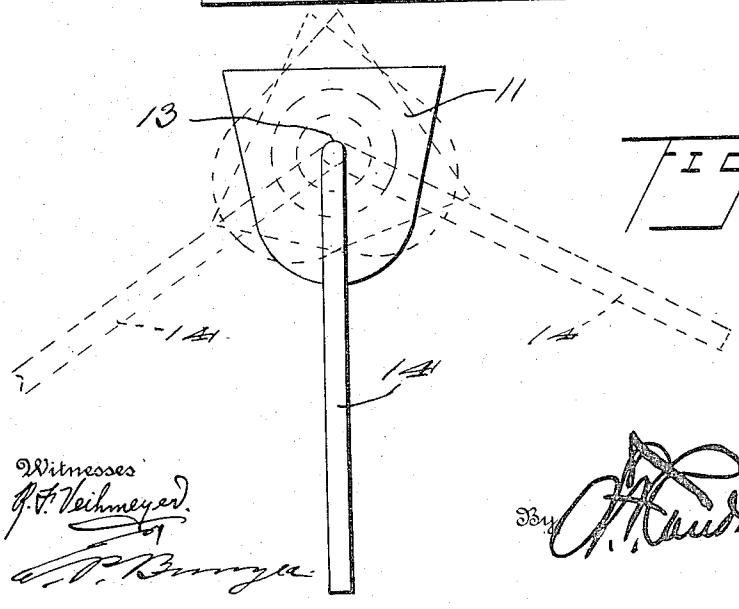



Fig. 4.




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3 SHEETS—SHEET 3.

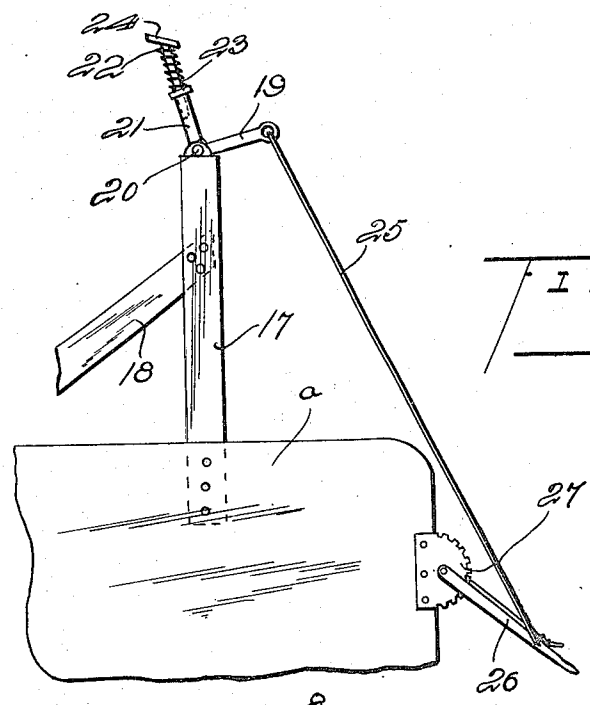



FIG. 3.

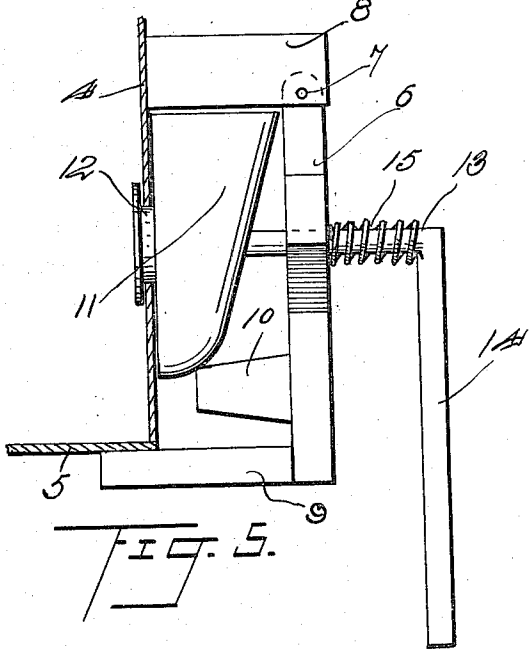



FIG. 5.

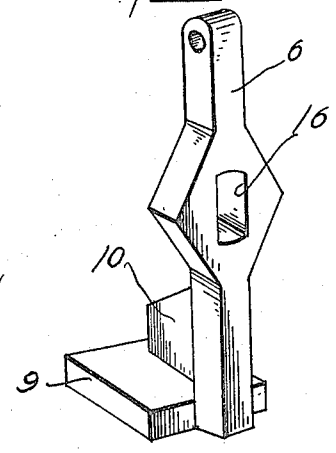



FIG. 6.

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# UNITED STATES PATENT OFFICE.

ROBERT KEDING, OF MILWAUKEE, WISCONSIN.

## DEVICE FOR COALING LOCOMOTIVES.

1,166,052. Specification of Letters Patent. Patented Dec. 28, 1915.

Application filed November 5, 1914. Serial No. 870,474.

*To all whom it may concern:*

Be it known that I, ROBERT KEDING, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Devices for Coaling Locomotives; 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 devices for coaling locomotives, and one of the principal objects of the invention is to provide reliable and efficient means for depositing coal in the tender of locomotives while on the run. Another object of the invention is to provide a number of boxes for containing coal to be supported on a trestle or frame above the height of the cab of the locomotive to be operated by means of a tripping device to deposit the coal in the tender, and means being provided for preventing the coal from being thrown out over the rear end of the tender.

Still another object of the invention is to provide means for holding the double downwardly free doors of the coal boxes closed, and a cam to be operated by a tripping device for forcing the latches for the doors out of connection with said doors so that the coal will drop by gravity through the doors into the tender.

The foregoing and other objects may be attained by means of the construction illustrated in the accompanying drawings, in which,

Figure 1 is a side elevation of a coaling device made in accordance with this invention, Fig. 2 is a rear end elevation of the same, Fig. 3 is a view in elevation of the tripping device carried by the tender, one upon each side for operating the cams for opening the doors of the coal boxes, Fig. 4 is a side elevation of the cam for forcing the latches from underneath the doors, Fig. 5 is a side view of one of the latches and the cam for operating the same, and Fig. 6 is a detail perspective view of one of the latches for holding the doors of the coal boxes closed.

Referring to the drawings, the numeral 1 designates the supporting legs for the longitudinal members 2 of a suitable trestle built over the track, and provided with suitable cross members 3 of suitable height to permit the locomotive to pass freely underneath the same. Supported upon the cross members 3 are coal boxes 4 which are of less width than the tender of the locomotive and said boxes are each provided with a pair of double hinged doors which are adapted to open out from the bottom when released by the latches to discharge the coal from the boxes into the tender. At each side of the coal box is a pivoted latch 6 as at 7 to a bar 8 or lug extending outward from the box 4. The latch 6 is provided with an angular lower end 9 which fits underneath the doors 5 at the center thereof, to hold the same closed. Projecting inwardly from the latch 6 is an inclined lug 10. A cam 11 pivoted loosely on the front of each side of the box at 12 is provided with inwardly projecting arm 13 having a downwardly projecting member 14. The cam 11 when rotated will push upon the lug 10 and will release the latch from the underside of the doors, and permit them to drop and discharge the load of coal from the boxes. A spiral spring 15 surrounding the arm 13 exerts its tension to keep the latch in position to hold the doors closed. The arm 13 extends through a hole 16 in the lever 6.

Supported upon each side of the tender *a* of the locomotive is an upright 17 having a brace 18, and pivoted to the upper end of the upright 17 is an elbow lever 19 pivoted at 20 and having a tubular portion 21 in which is mounted sliding rods 22 having a spring 23 surrounding the same. At the top of the rod 22 is an inclined shoe 24. One member of the elbow lever is connected to a rod 25 leading to a lever 26 pivoted to a sector rack 27. When the lever 26 is operated, the shoe 24 may be thrown down out of the way or up again to lie in the path of the depending member 14 to turn the latter and to operate the cam and throw the latch out from under the doors.

A guard or fender 28 is pivoted at 29 to the sides of the tender *a*, said fender having a back portion 30 to which is pivoted centrally a tube 31. Mounted in the tube 31 is a sliding member 32, said member 32 being formed upon an elbow lever, the other member of which 33 is connected to an operating rod 34. The elbow lever is pivoted between upright standards 35, and the operating rod 34 is connected to a suitable lever 36 pivoted to a sector rack 37.

The operation of the invention may be

briefly described as follows: The locomotive may pass underneath the coal boxes at the rate of eight or ten miles an hour and when the shoes 24 strike the depending member 14, the cam 11 is rotated to throw the latches out from underneath the door and the coal in the boxes 4 is discharged into the tender. The guard 28 may be thrown up in position to prevent the coal from being thrown out at the rear end of the tender, and any number of boxes required may be discharged of the coal into the tender without the necessity of stopping the locomotive. After the tender has been loaded with coal the shoe 29 is thrown down out of the way by means of the lever 26, and the guard 28 may also be thrown out of the way.

Various changes may be made in the details of construction without departing from the spirit and scope of the invention as defined in the claims.

What is claimed is:—

1. A device for discharging coal into a tender of a locomotive comprising an upright support secured to said tender, a brace bar for the support, an elbow lever pivoted to the top of said support, a rod slidably mounted in one of the arms of said elbow lever, an inclined shoe secured to the end of said sliding rod, a coil spring surrounding said rod and bearing against said shoe and arm and thereby normally holding said shoe upward, a sector rack, a lever pivoted to said sector rack, a connecting rod secure to said lever and one arm of said elbow lever thereby raising or lowering said shoe from out of engagement with a coacting operating mechanism of a coal discharge box.

2. A device for facilitating the discharge of coal into a tender of a moving locomotive having a fender comprising slanting side walls, a back portion secured thereto and an open front portion, said fender being pivoted at its front portion to the tender, an elbow lever pivoted to the tender, a cap slidably mounted on one arm of the elbow lever, a connecting rod secured to the opposite arm of said elbow lever, said cap being pivoted to the back portion of the fender, a sector rack, a lever pivoted to said sector rack, said connecting rod being secured to said lever whereby when said lever is operated the back portion of said lever is raised or lowered.

3. A device for discharging coal into the tender of a moving locomotive comprising a device for supporting a coal box above the tender, a door hinged to each side of the bottom of the box, a bar extending outwardly from one end of the box, a latch pivoted at its upper end to the outer end of the bar and having an angular lower end extending inwardly to support the doors in closed position, an inclined lug secured to the inner side of the latch, a cam pivoted to said end of the box and located inwardly of the latch, a horizontal arm carried by the cam and extending outwardly therefrom beyond the latch, a vertical arm depending from the outer end of the horizontal arm, and a spring mounted on the horizontal arm and engaging the latch to normally hold it in locking position.

4. A device for discharging coal into the tender of a moving locomotive comprising a device for supporting a coal box above the tender, a door hinged to each side of the bottom of the box, a bar extending outwardly from one end of the box, a latch pivoted at its upper end to the outer end of the bar and having an angular lower end extending inwardly to support the door in closed position, said latch having a transverse slot in the central portion thereof, an inclined lug secured to the inner side of the latch, a cam pivoted to said end of the box and located inwardly of the latch, a horizontal arm carried by the cam and extending outwardly through said slot in the latch, a vertical arm depending from the outer end of the horizontal arm, and a spring mounted on the horizontal arm and engaging the latch to normally hold said latch in locking position, said slot in the latch limiting the movement of said latch.

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

ROBERT KEDING.

Witnesses:
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M. B. HEIM.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."