N. M. LOWER.

LOCOMOTIVE TENDER.

APPLICATION FILED SEPT. 2, 1915.

1,209,312.

Patented Dec. 19, 1916.

2 SHEETS—SHEET 1.

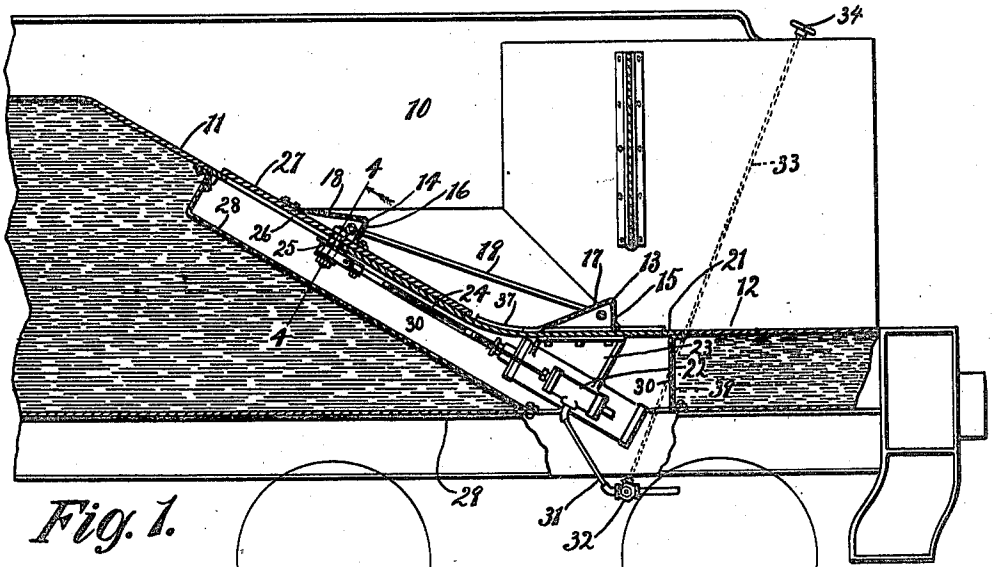


Fig. 1.

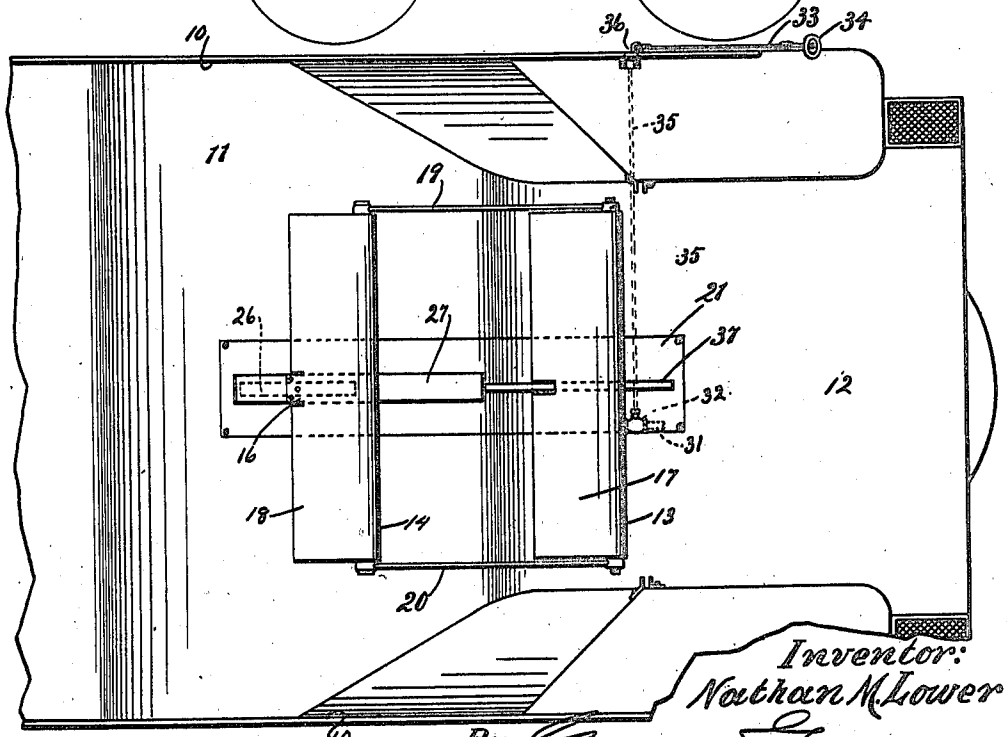


Fig. 2.

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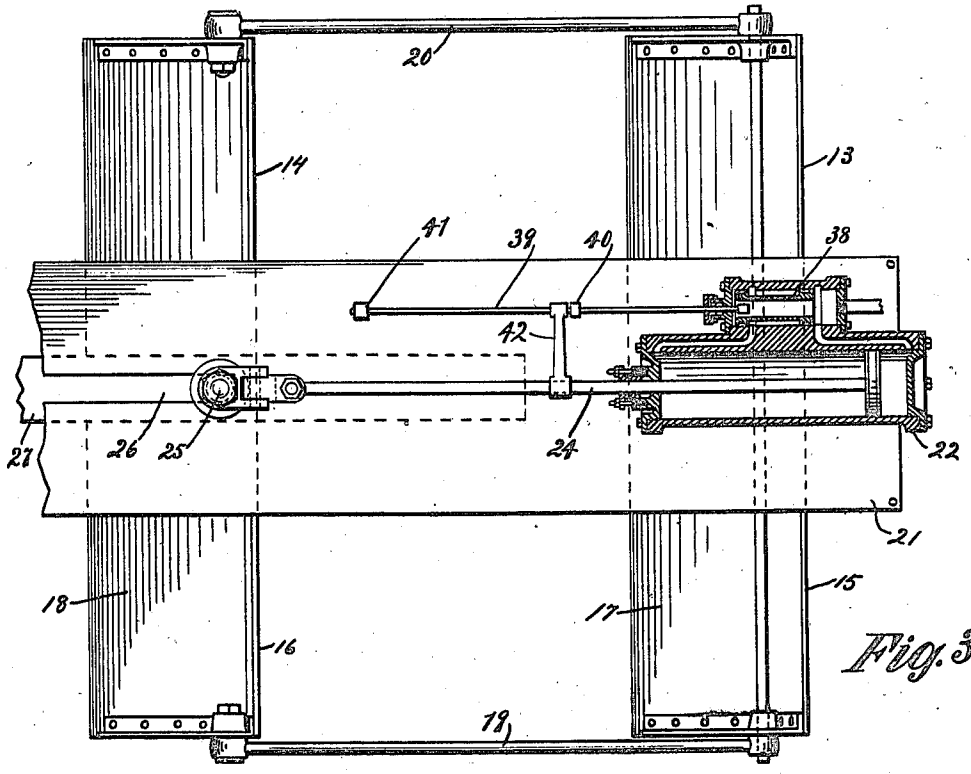


Fig. 3.

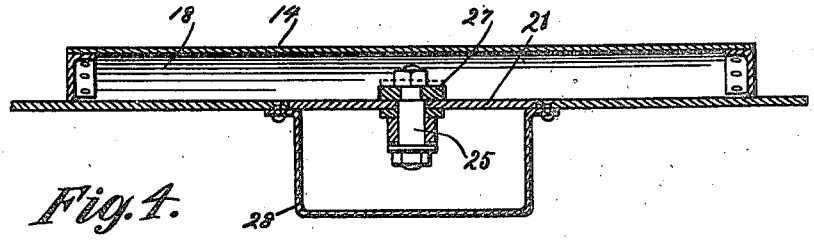


Fig. 4.

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UNITED STATES PATENT OFFICE.

NATHAN M. LOWER, OF SCHENECTADY, NEW YORK, ASSIGNOR TO LOCOMOTIVE STOKER COMPANY, OF SCHENECTADY, NEW YORK, A CORPORATION OF PENNSYLVANIA.

LOCOMOTIVE-TENDER.

1,209,312.

Specification of Letters Patent. Patented Dec. 19, 1916.

Application filed September 2, 1915. Serial No. 48,618.

To all whom it may concern:

Be it known that I, NATHAN M. LOWER, a citizen of the United States, and resident of Schenectady, county of Schenectady, and State of New York, have invented certain new and useful Improvements in Locomotive-Tenders, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to a locomotive tender provided with means for shifting the coal forwardly to the shoveling platform of the tender; its object being to provide simple, economical and efficient means for effecting the transfer and without encroaching upon the capacity of the fuel bin.

An embodiment of the invention is hereinafter described, and is illustrated in the accompanying drawings, in which—

Figure 1 is a detail central vertical section of a locomotive tender with the invention applied thereto; Fig. 2 is a detail plan view of the same; Fig. 3 is an inverted plan of the coal shifting mechanism; and Fig. 4 is a detail section on the line 4—4 of Fig. 3.

The side and rear walls and the bottom of the coal or fuel bin of a locomotive tender are represented at 10, 11, 12. A pair of pusher heads 13, 14 are applied respectively, and slide upon the bottom 12 and the rear wall 11. Each is provided with a perpendicular front face 15, 16, and an inclined back 17, 18. The two heads extend approximately the width of the bottom of the fuel bin and are connected by means of rigid links 19, 20, secured to their ends.

To adapt a tender of standard construction to receive the motor for driving the pusher heads, its back wall 11 and floor 12 are cut away to receive a plate 21 to the lower face of which a reciprocating motor 22 is secured by means of a bracket 23. The motor is located below the forward portion of the plate 21, its axis being parallel with the upper portion thereof which extends up the inclined wall 11. The piston rod 24 of the motor is attached to the pusher head 14 by means of a bolt 25 which extends through and reciprocates in a longitudinal slot 26 in the plate 21. The length of this slot is the same as the stroke of the motor and it is covered by means of a plate 27 carried by the head 16 and double the length of the slot, thereby preventing passage of fuel through the slot in any position which the head 14 may occupy.

A casing 28 is secured to the rear side of the wall 11 which constitutes the front wall of the tank of the tender and provides a chamber for the motor and its piston while closing the opening in the tank wall. The bottom 29 of the tank is apertured to accommodate the lower end of the motor 22 and suitable walls, as 30, are inserted to close up the water space. Steam is supplied to the motor through a pipe 31 provided with a throttle valve, as indicated at 32, which valve may be operated by means of a rod 33 having a hand wheel 34 in convenient reach of the fireman and in driving connection with the valve stem 35, as by means of a pair of beveled gears 36.

On the outstroke of the motor, the pushers 13, 14, are moved backwardly under the fuel, their inclined backs rendering this movement comparatively easy. On the instroke of the motor, the pusher heads are advanced carrying with them the lower stratum of fuel and pushing it forwardly on to the shoveling platform where it is in convenient reach of the fireman. A guide rib 37 is preferably applied to the forward end of the plate 21 to prevent lateral movement of the pusher head 13 and such movement of the pusher head 14 is prevented by the bolt 25.

The device is automatic in its action in that at the end of each stroke of the motor, which carries the pushers to the limit of their movement in either direction, the motor is reversed. The motor valve 38 is provided with a stem 39 having stops 40, 41, which are engaged by a tappet arm 42 carried by the piston rod 24 thereby shifting the valve.

The coal advancing mechanism is simple of construction and may be manufactured ready for application to a tender of standard construction and the latter is easily adapted for its reception.

I claim as my invention—

1. In combination, a locomotive tender having an inclined slotted rear wall and a floor, a casing back of the inclined wall, a fuel pusher reciprocable over the inclined wall, a motor inclosed within the casing, and a connection between the motor piston and pusher and passing through the wall slot.

2. In combination, a locomotive tender

having a fuel bin, and a water chamber back of and extending under the bin, the rear wall of the bin being inclined, a compartment back of such wall and extending under the floor of the bin, a reciprocating motor within such compartment and having its axis parallel with the inclined wall, a pusher reciprocable over the inclined wall, and a connection between the piston rod of the motor and the pusher and extending through a slot in the inclined wall.

3. In combination, a locomotive tender having an inclined slotted rear wall and a floor, a casing back of the inclined wall, a fuel pusher reciprocable over the inclined wall and floor and comprising a plurality of pusher heads linked together, a motor inclosed within the casing, and a connection between the motor piston and rear pusher head and passing through the wall slot.

4. In combination, a locomotive tender having an inclined slotted rear wall and a floor, a casing back of the inclined wall, a fuel pusher reciprocable over the inclined wall, a motor inclosed within the casing, a connection between the motor piston and pusher and passing through the wall slot, and means for reversing the motor as the pusher approaches the limit of its movement in either direction.

5. In combination, a locomotive tender having a fuel bin, a fuel pusher reciprocable over the floor of the bin and comprising a plurality of heads spaced apart, rigid links pivotally attached to and connecting the heads, and power means connected with the rearward head.

6. In combination, a locomotive tender having a fuel bin, a fuel pusher reciprocable over the floor of the bin and comprising a plurality of heads spaced apart, rigid links pivotally attached to and connecting the heads, and power means connected with one of the heads.

NATHAN M. LOWER.