No. 645,816. Patented Mar. 20, 1900.

G. H. LAWRENCE.

DUMPING CAR.

(Application filed Oct. 27, 1899.)

(No Model.)

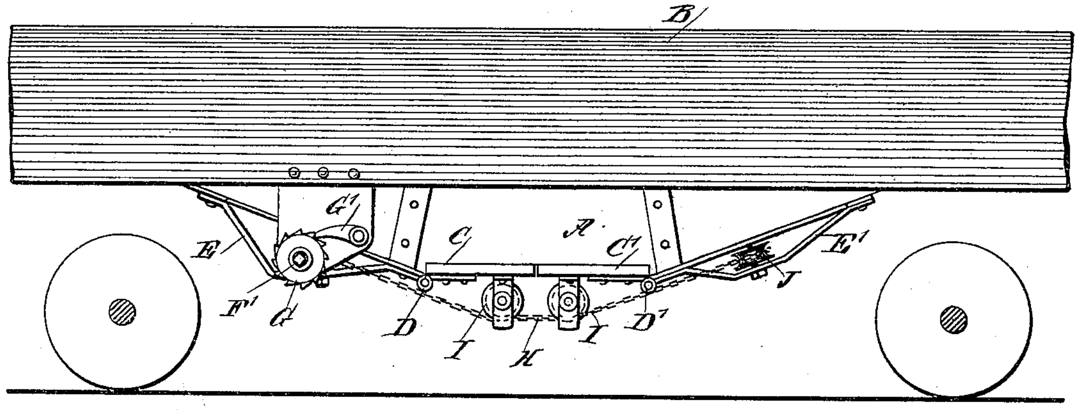

Fig. 1

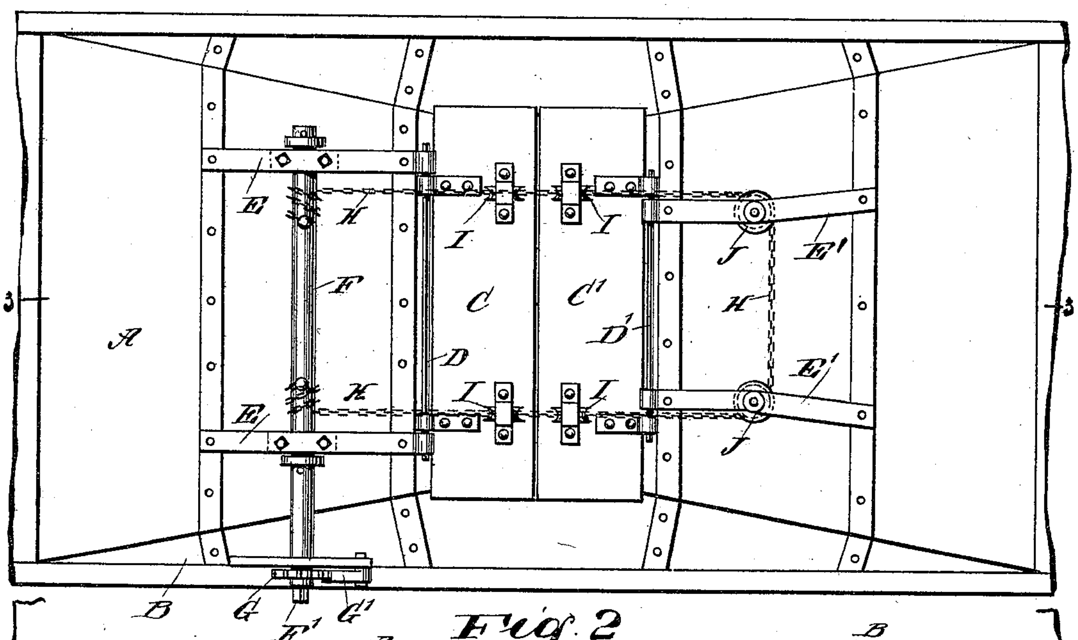

Fig. 2

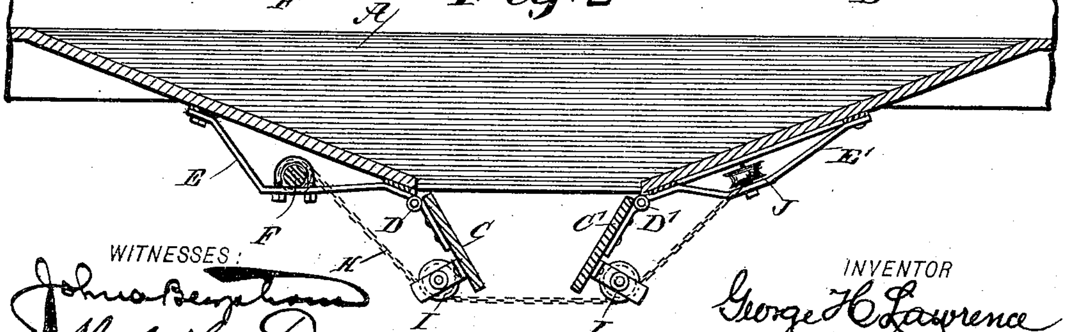

Fig. 3

WITNESSES:

INVENTOR
George H. Lawrence

BY Munn & Co
ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE H. LAWRENCE, OF MIDDLETOWN, NEW YORK.

DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 645,816, dated March 20, 1900.

Application filed October 27, 1899. Serial No. 734,943. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. LAWRENCE, of Middletown, in the county of Orange and State of New York, have invented a new and Improved Dumping-Car, of which the following is a full, clear, and exact description.

The invention relates to railroad coal-cars of the hopper-bottom type; and its object is to provide a new and improved dumping-car which is simple and durable in construction and arranged to permit of conveniently opening and securely closing the doors without danger of unequal closing of said doors and a consequent loss of the loaded material, as is so frequently experienced with coal-cars heretofore constructed.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of my invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement as applied. Fig. 2 is an enlarged inverted plan view of the same, and Fig. 3 is a sectional side elevation of the same on the line 3 3 in Fig. 2.

The hopper-bottom A of the car-body B is provided with the usual doors C C′, connected by hinges D D′ with the hopper-bottom, so as to readily swing into an open position when released, as hereinafter more fully described. At one side of the hinge D for the door C is arranged a framework E, in which is journaled a transversely-extending winding-shaft F, provided at one outer end with a square offset F′ for the frame of a crank-arm or other device to allow the operator to turn the shaft, for the purpose hereinafter more fully described, the shaft being provided near the offset F′ with a ratchet-wheel G, adapted to be engaged by a pawl G′ to lock the shaft F against accidental unwinding.

On the shaft F wind the ends of a chain H, extending longitudinally of the car and transversely across the doors C C′ and under pulleys I, journaled in suitable bearings at or near the free ends of the doors C C′, at the under side thereof. The chain H then extends to and passes over pulleys J, journaled in suitable bearings in the framework E′, secured to the hopper-bottom A at one side of the hinge D′.

By reference to the construction disclosed in Figs. 1 and 2 it will be seen that the pulleys I are located below the horizontal plane in which extend the shaft F and the pulleys J, so that the chain from the shaft F extends downward to the pulleys I on the door C and upward from the said pulleys I on the door C′ to the pulleys J, thereby forming a trussed chain for securely holding the doors in a closed position against the weight of the load resting on the said doors. (See Fig. 1.)

When it is desired to open the doors, the operator releases the pawl G′ from the ratchet-wheel G and allows the shaft F to turn, so that the weight of the load on the doors C C′ causes the doors to swing open, the ends of the chain unwinding from the now revolving shaft F. When it is desired to close the doors, the operator turns the shaft F by the use of a crank, as above explained, to wind up the ends of the chain H and to cause the doors to swing upward owing to the chain passing over the pulleys I on the two doors C C′. Now it is evident that in case there is any slack in one of the runs of the chains it is readily equalized owing to the chain passing over the pulleys J, spaced apart on the car-body and on the side of said doors opposite to that on which the shaft F is located. Hence the two runs of the chain push equally on the doors, near the ends thereof, and consequently both doors are swung properly into a closed position and are held in this position against accidental opening or against sagging at one end of the door owing to the equalized chain, the ends of which are uniformly wound up on the shaft F, the latter being locked against rotation by the pawl G′ engaging the ratchet-wheel G.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A dumping-car, provided with a winding-shaft located on the under side of the car and at one side of the dumping-doors, and an equalizing-chain arranged for winding at its ends on said shaft, the chain extending transversely across the dumping-doors and having

a traveling connection with the car, to allow the chain to equalize, substantially as shown and described.

2. A dumping-car, provided with a winding-shaft on the under side of the car-body and at one side of the dumping-doors, an equalizing-chain arranged to wind at its ends on said shaft, the chain extending transversely across the dumping-doors and car-body, and pulleys on the car-body at the side of the doors opposite that at which the shaft is located, the chain passing over said pulleys, to allow the chain to equalize, substantially as shown and described.

3. A dumping-car, provided with a winding-shaft on the under side of the car-body and at one side of the dumping-doors, an equalizing-chain arranged to wind at its ends on said shaft, the chain extending transversely across the dumping-doors and car-body, pulleys on the car-body at the side of the doors opposite that at which the shaft is located, the chain passing over said pulleys, to allow the chain to equalize, and door-pulleys on the under side of the doors at or near the free ends thereof, and under which the chain passes from the winding-shaft to the car-body pulleys, substantially as shown and described.

4. A dumping-car, provided with a winding-shaft on the under side of the car-body and at one side of the dumping-doors, an equalizing-chain arranged to wind at its ends on said shaft, the chain extending transversely across the dumping-doors and car-body, pulleys on the car-body at the side of the doors opposite that at which the shaft is located, the chain passing over said pulleys, to allow the chain to equalize, and door-pulleys on the under side of the doors at or near the free ends thereof, and under which the chain passes from the winding-shaft to the car-body pulleys, the said car-door pulleys being located below the horizontal plane in which the said car-body pulleys and the said winding-shaft are located, substantially as shown and described.

GEORGE H. LAWRENCE.

Witnesses:
FRANK B. AYRES,
HENRY S. SPOONER.