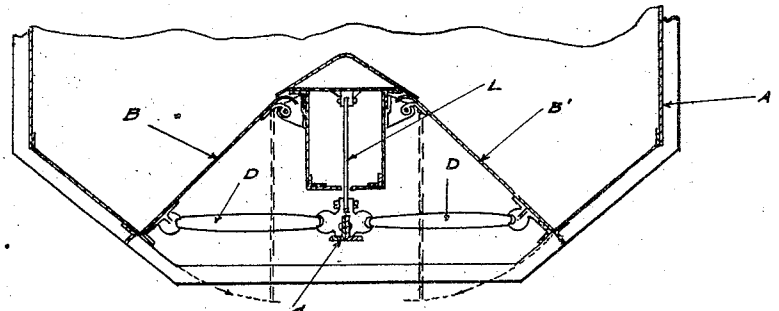
No. 775,402. PATENTED NOV. 22, 1904.

D. A. HITCHCOCK.

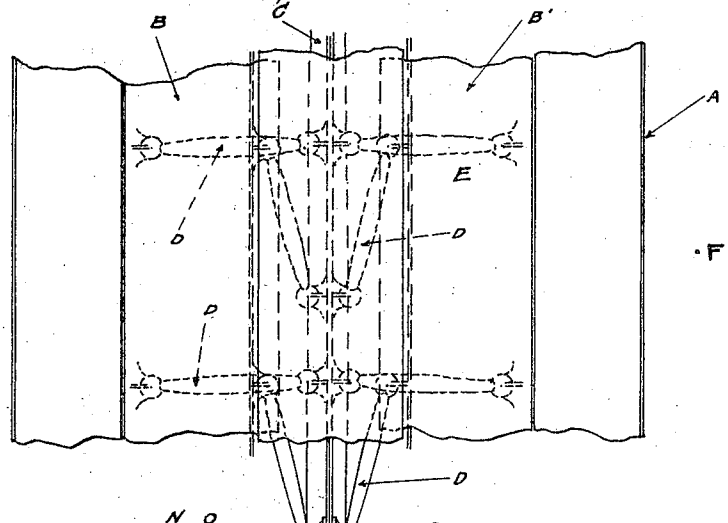
ACTUATING DEVICE FOR SWINGING DOORS OF FREIGHT CARS.

APPLICATION FILED JULY 30, 1904.

NO MODEL.

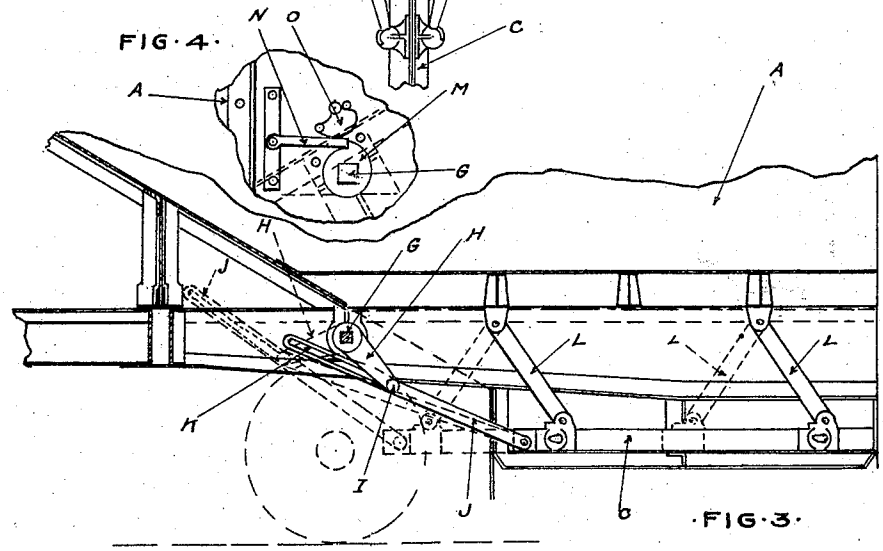


·FIG·1·



·FIG·2·

FIG·4·



·FIG·3·

WITNESSES
Geo. H. Graves
H. C. Smith.

BY

INVENTOR
DWIGHT A. HITCHCOCK.
James Whittemore
ATT'Y.

PHOTO-LITHOGRAPHED BY SACHETT & WILHELMS LITHO. & PTG. CO. NEW YORK.

No. 775,402. Patented November 22, 1904.

UNITED STATES PATENT OFFICE.

DWIGHT A. HITCHCOCK, OF DETROIT, MICHIGAN, ASSIGNOR TO THOMAS H. SIMPSON, OF DETROIT, MICHIGAN.

ACTUATING DEVICE FOR SWINGING DOORS OF FREIGHT-CARS.

SPECIFICATION forming part of Letters Patent No. 775,402, dated November 22, 1904.

Application filed July 30, 1904. Serial No. 218,829. (No model.)

To all whom it may concern:

Be it known that I, DWIGHT A. HITCHCOCK, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Actuating Devices for Swinging Doors of Freight-Cars, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to an improved actuating device for swinging doors of freight-cars, and particularly for that class of swinging doors which are used in hopper-bottoms or dump-cars.

The invention consists in the construction, arrangement, and combination of parts, as more fully hereinafter described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a vertical section through the lower part of the body of the car, showing the swinging doors and the actuating devices therefor. Fig. 2 is a plan view of the car-bottom, showing partially in dotted and partially in full lines the actuating mechanism in different positions. Fig. 3 is a longitudinal section showing in full and dotted lines the different positions of the parts. Fig. 4 is a detail elevation illustrating the lock for the crank-shaft.

My improvement is shown as applied to a form of actuating device for car-doors which is described in United States Letters Patent No. 686,902, of November 19, 1901, and the parts described in that patent are the car-body A, having a double hopper-bottom and having the doors B B′ for opening and closing the discharge from the hoppers. The doors are opened and closed by means of the reciprocating actuator-bar C, which has connected to opposite sides the arms D, these arms being connected at their inner ends to the actuator-bar and at their outer ends to the doors and are adapted to be moved to close the door by being moved into their straight horizontal position (shown at E in Fig. 2) or by opening the door, as shown in their oblique position in Fig. 2.

G is a crank-shaft journaled transversely of the car and having a crank-arm H at its inner end, which has a wrist or crank pin I engaging a link J, which in turn is connected to the actuator-bar C.

When this device is in use, the car being loaded with ore or coal, for instance, if the operator turns the crank-shaft and unlocks the car-doors the weight resting thereon will tend to revolve the crank-shaft very rapidly, and there is grave danger that the operator may be seriously injured. Many efforts have been made to overcome this difficulty, and my improvement is designed to and does obviate this danger and makes it quite safe for the man to open the doors when the car is loaded.

I lengthen the link J, and in the extension thereof I form a slot K, which the pin or wrist I engages. When the door is to be shut and locked, the crank H is turned at the right hand, Fig. 3, and that will move the actuator-bar C from the position shown in dotted lines to the position shown in full lines, the wrist I being at the right-hand end of the slot K. To unlock the doors, the crank H is turned to the left, as shown in dotted lines, Fig. 3, and it first travels the whole length of the slot K before it begins to actuate the link J. When it has reached the end of the slot, the further movement of the crank will draw with it the actuator-bar C, and then when the load upon the doors forcibly opens them the link will travel upon the crank-pin I without actuating it, as shown in dotted lines at the left hand of Fig. 3.

It will be understood that the actuator-bar C is supported upon suitable links L and that I may provide the suitable lock for the crank-shaft by placing on the outer end thereof a toothed wheel M, with which the pawl or dog N is adapted to engage, and I may also provide the locking-cam O to positively hold the dog in engagement with the wheel, so that it may not become accidentally unlocked during the travel of the car.

What I claim as my invention is—

1. The combination with a car, of a swinging door, an oscillatory operating-bar, horizontally-swinging arms engaged at their inner ends with the bar and at their outer ends with the door, and means for actuating the

operating-bar, comprising a crank-shaft and means connecting the crank and the bar, comprising a lost-motion connection, which permits the operation of the bar in both directions positively, but which, when the bar is moved to open the door, permits the bar to move without actuating the crank-shaft.

2. The combination with a car, of a swinging door, an oscillatory operating-bar, horizontal swinging arms engaged at their inner ends with the bar and at their outer ends with the door, a slotted link connected to the bar, and an operating crank-shaft having its crank engaging the slot in the link, for the purpose described.

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

DWIGHT A. HITCHCOCK.

Witnesses:
H. C. SMITH,
ED. D. AULT.