(No Model.)

C. A. SMITH.

FREIGHT CAR DOOR.

No. 248,891. Patented Nov. 1, 1881.

Fig. 1.

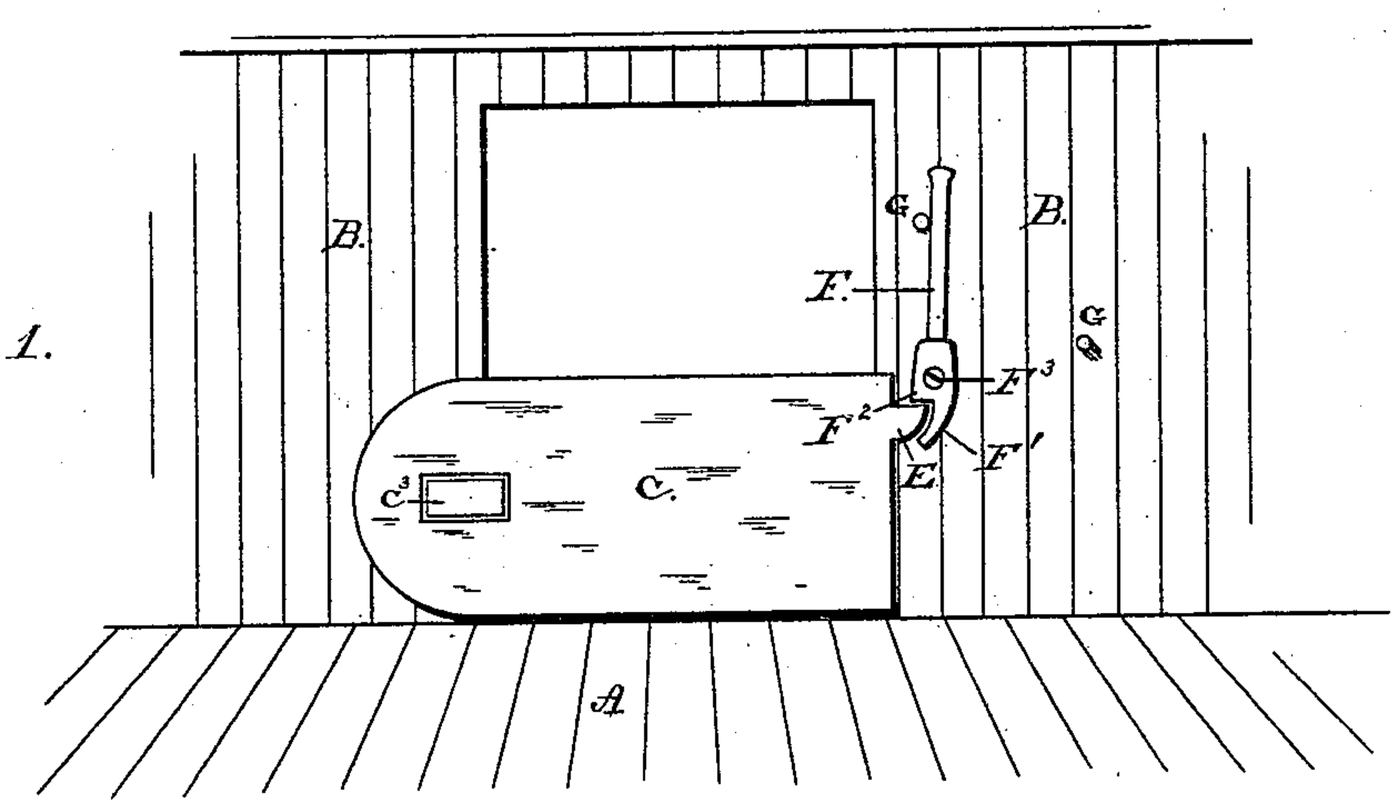


Fig. 2.

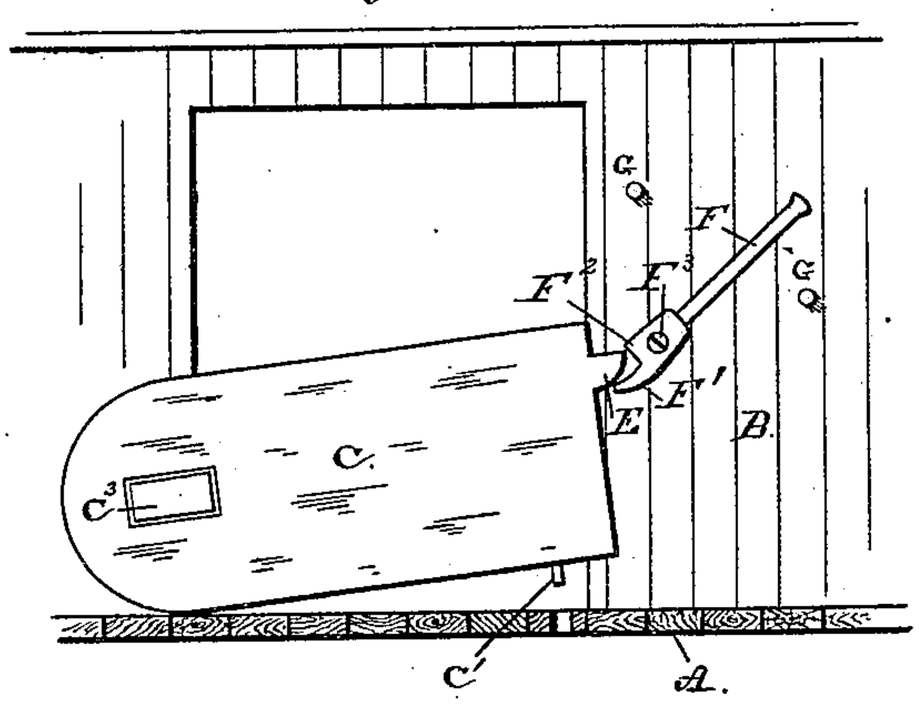


Fig. 3.

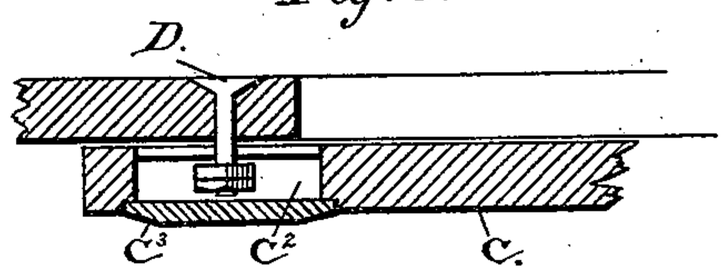
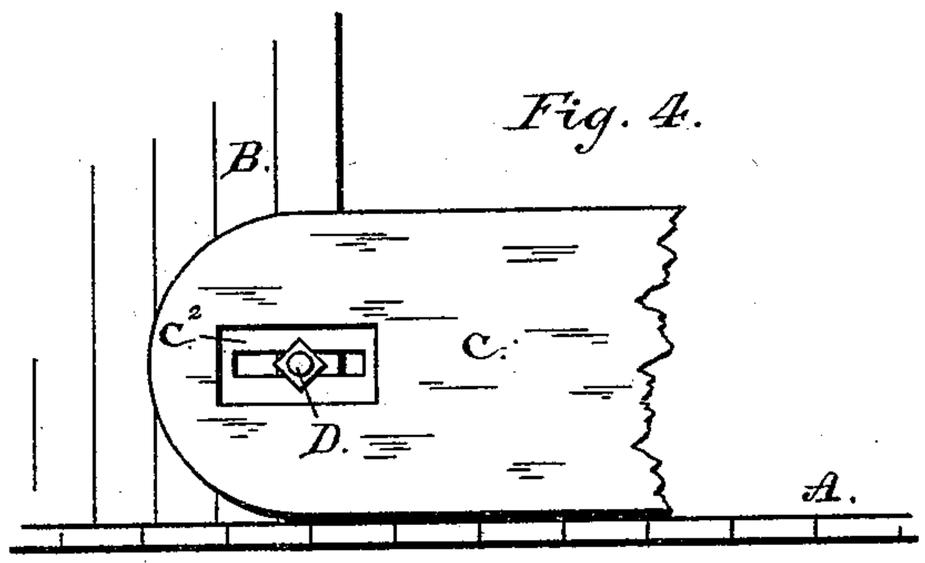


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

CHARLES A. SMITH, OF TOLEDO, OHIO.

FREIGHT-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 248,891, dated November 1, 1881.

Application filed March 19, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. SMITH, of Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Freight-Car Doors; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to freight-car doors, and is designed for use especially in cars constructed for carrying grain and the like.

Heretofore car-doors have ordinarily been constructed so that when the car is filled with grain its pressure outward against the door makes it difficult to open, to effect which crow-bars, jimmies, &c., are thrust between the door and the floor of the car and the door pried up. This results in a great amount of damage, and is, moreover, inconvenient. Another difficulty with crow-bars is that grain or other freight within the car often prevents a full or sufficient opening of the door.

My invention has for its object the correction of the difficulties above pointed out.

The drawings illustrate my invention as viewed from the inside of a car, looking outward.

Figure 1 shows my door as closed. Fig. 2 represents the method of starting the door open by the use of its locking and opening lever. Fig. 3 is a view taken in section through the slotted hinge-connection between the door and car; and Fig. 4 is a view of the door from the inside, with a portion removed to show said hinge-connection.

A is the floor of the car; B, a wall of the same. C is the door. C′ is a dowel-pin attached to the lower edge of the door and engaging in a hole extending down through the car-floor.

If desired, two or more dowels C′ may be employed, and by making the holes in which they fit to extend entirely through the floor of the car any grain or dirt, instead of clogging these holes, will fall through to the ground.

The door C is attached to the wall B in a peculiar manner, which allows at the same time a swinging and longitudinal sliding motion to the door C. This motion is effected in one of two ways, either of which will readily appear to be the equivalent of the other. The first of these methods is that which is illustrated in the drawings; and it consists in attaching a headed bolt or lug, D, which engages within the slotted chamber C^2 of the door. This bolt or lug D may, however, be attached to the door C and engage in a slotted chamber formed in the wall B.

To effect an easy construction and assemblage of parts, a section, C^3, of the door may be made removable, thus exposing the slot, through which the shank of the headed bolt D may be passed and fastened to the wall of the car. Now, when the removable section C^3 is replaced the head of the bolt D will be housed within its chamber C^2, and thus the door be securely attached to the wall. By this construction it will readily appear that the door in any of its positions may be given either a swinging or longitudinal sliding motion to a limited extent, or it may have a compound motion made up of both of these. The dowel C and its hole or socket are so placed as to register when the door is in its closed position, and with the pressure of the grain outward against the door I have found the dowel, the hinge, and the latch to constitute a sufficient locking mechanism for the door.

E is a projection, which may be termed a "latch." It extends from the upper portion of the free or swinging end of the door C, substantially as illustrated, and is rigidly attached to the door.

F is a combined opening and locking lever, having an opening portion, F′, and a locking portion, F^2. The lever F is pivoted at F^3 to the wall B. Suitable stops, G, may be placed to limit the swing of this lever. When the door is closed the locking portion F^2 of the lever rests above the latch E and prevents the door from being swung upward, while the dowel-pin prevents the door from being slid open or unlocked, while at the same time the opening portion F′ rests partially under the latch E.

When it is desired to open the door, instead of using the crow-bar or jimmy, as above explained, it is only necessary to pull down the arm of the lever F. When this is done the lifting portion F′, acting upon the latch E, will raise the end of the door and start it open sufficiently to make it an easy matter to open the door completely by manual effort.

The removal of the door, when necessary, is a very simple matter, as the section C^3 of the door can be displaced and the bolt D taken out.

What I claim is—

1. A freight-car door pivoted upon a bolt which extends through an elongated straight slot formed in the door, and a cover, C^3, located over the slot in the door, substantially as set forth.

2. The combination, with a freight-car door pivoted upon a bolt having a bearing in an elongated straight slot, said door provided with a projection, E, of a lever constructed to engage with the lower edge of said projection for raising the door, and with its upper edge for locking the door, substantially as set forth.

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

CHARLES A. SMITH.

Witnesses:
MYRON D. JONES,
TIMOTHY J. DOMSON.