(No Model.)

I. V. KELLY.

CAR DOOR.

No. 523,211. Patented July 17, 1894.

Fig. 1.

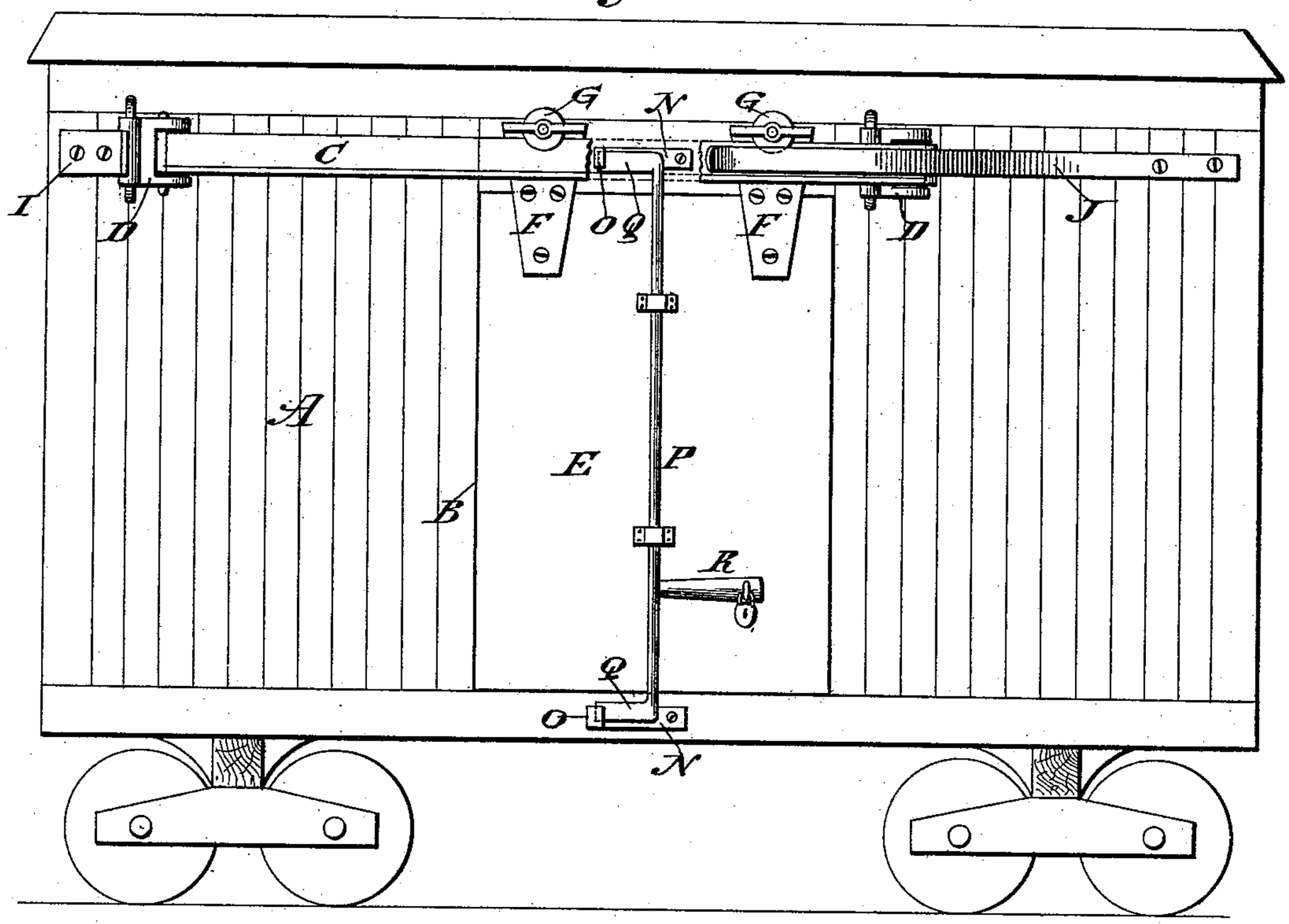
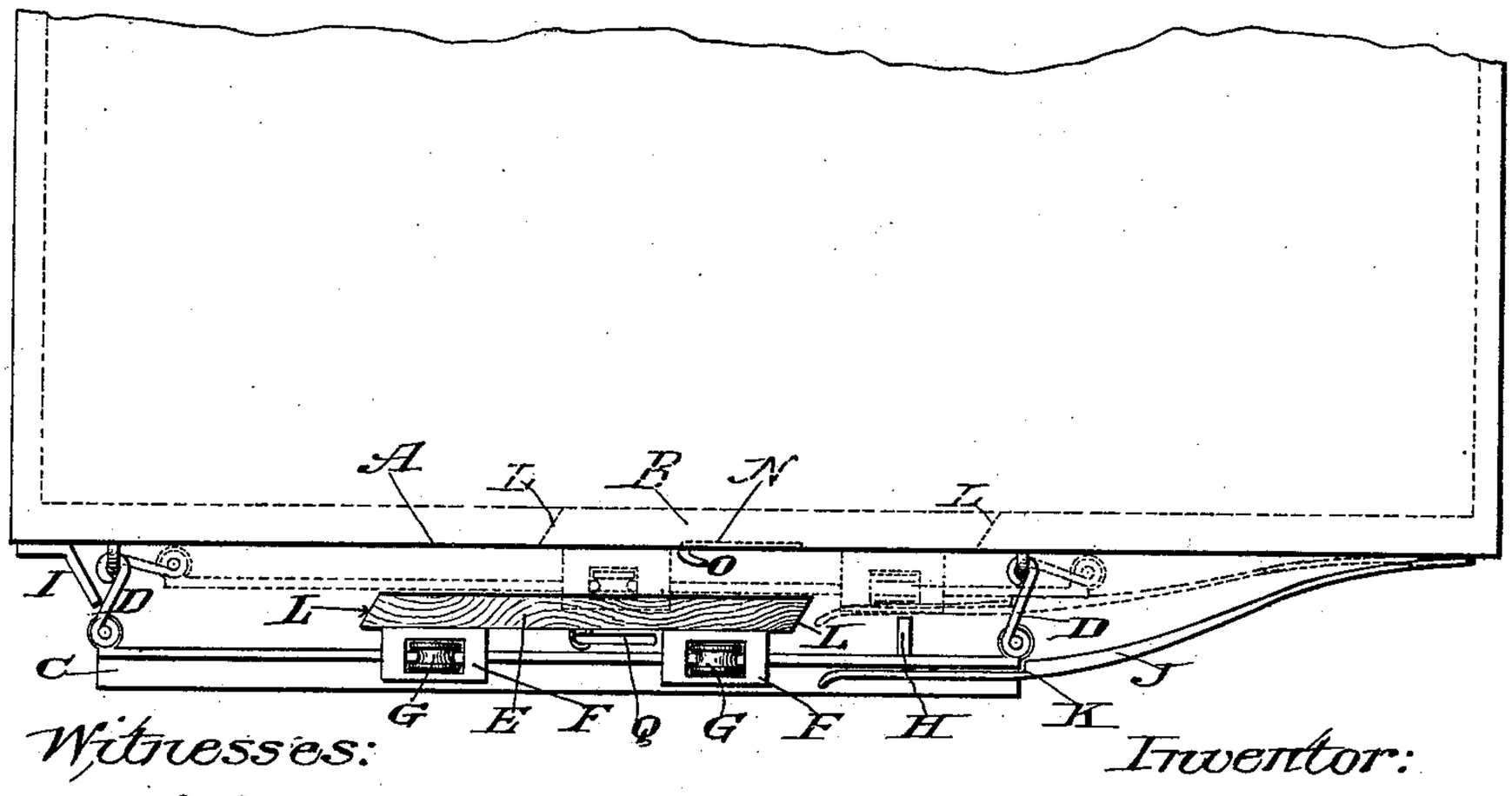


Fig. 2.



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UNITED STATES PATENT OFFICE.

ISAAC V. KELLY, OF HUNTINGTON, WEST VIRGINIA.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 523,211, dated July 17, 1894.

Application filed September 8, 1893. Serial No. 485,067. (No model.)

To all whom it may concern:

Be it known that I, ISAAC V. KELLY, a citizen of the United States, residing at Huntington, in the county of Cabell and State of West Virginia, have invented certain new and useful Improvements in Car-Doors; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to freight car doors.

It has for its object to provide a door of this character which will fit flush with the side of the car and which will not be subjected to the "side wipe" so common with the ordinary sliding doors; furthermore, to provide a door which when slid opposite the doorway will automatically swing into place; furthermore, to provide means for manually swinging the door into place and for swinging it out of its door-way; and finally, to provide a door which shall be simple and strong of construction, durable in use, and comparatively inexpensive to manufacture.

With these objects in view the invention consists in certain features of construction and combination of parts which will be hereinafter described and claimed.

Heretofore rail road men have experienced much trouble and have been subjected to the loss of life and property by the "side wipe" or in other words, the striking of the edge of the door or the irons by which they are secured to the car by timbers or other freight projecting from the platform of a station or other place, thus tearing the door from its hangers and allowing it to drop between and on the tracks. My invention aims to overcome the serious effects of these "side wipes."

In the drawings,—Figure 1, is a side view of a freight car illustrating the invention showing the door seated in closed position. Fig. 2, is a top view showing in full lines the door away from its seat, and in dotted lines the position assumed by the track and co-acting parts, when the door is seated.

A denotes the side of a freight car and B the door-way.

C denotes a track, preferably of angle-iron, the ends of which are secured to hinges D so that it may swing toward or away from the car side. The door E has hangers F at its top that support wheels G which travel on the track.

Near the front end of the track and on its inner side is a stop pin H which is engaged by one of the door hangers when the door is being moved toward the door way.

I denotes a stop located adjacent to one of the hinges to prevent it swinging too far backward.

J denotes a spring secured to the side of the car and having its free end projecting parallel with and bearing against the track in the path of the wheels. The free extremity of the spring is curved outward, and that portion of the spring directly opposite the end of the track is provided with a detent or shoulder K against which the end of the track abuts when it is swung outward and by which it is retained in this outward position against the action of the spring, and thereby holding the track from swinging in, before the door reaches the stop on track, when door is being closed.

The operation of the parts thus far described is as follows: Assume the track to be swung outward with the one end bearing against the stop I, and the other end against the detent of the spring and the door on the track adjacent to the stop I. It being desired to close the door it is slid toward the opening and when it arrives nearly opposite the same the front wheel strikes the curved end of the spring and forces it outward freeing the end of the track from the detent, the hanger then striking the stop pin on the track swings the hinges past their dead-center and allows the spring to swing the track inward thus seating the door flush with the side of the car. The spring is not relied upon solely to swing the track inward in that when the hanger strikes the stop pin the door usually has sufficient momentum to accomplish the desired result. I however, prefer to use the spring for this purpose in conjunction with the stop pin.

To allow the door to easily enter its opening (its movement being on a slant) I bevel the edges of the door as shown at L and correspondingly bevel the jambs of the door.

The lower end of the door, and the sill may also be beveled to insure a snug fit which

when used on a refrigerator car will prevent the loss of cold air.

Having thus described the operation of the means for seating the door, I will now proceed to describe the mechanism for locking the door in its seat and swinging it therefrom. Plates N, which will be termed friction plates, are secured to the side of the car above and below the opening and each plate has a hooked end O. A rod P is secured in the door to turn, and has bent ends Q to engage the friction plates and a handle R, by which to turn it. When the door is swinging inward the bent ends of the rod take under the hooked ends of the friction plates and by depressing the handle over a staple in the door a seal or padlock may be secured to the staple thus effectively locking the door. When it is desired to open the door the handle is turned in the opposite direction, and the free ends of the rod engaging the friction plates force the door and the track outward in the position shown in Fig. 2, when the door may be slid away from the opening.

I would have it distinctly understood that I do not limit myself to the precise construction herein shown and reserve to myself the right to make such changes as come within the scope of my invention.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination with a car door having beveled door jambs, of a longitudinally and inwardly swinging track, a door mounted to slide on said track and having correspondingly beveled edges and means for swinging the track inward to close the door way, substantially as herein described.

2. The combination with a car having a longitudinally and inwardly swinging track, of a door mounted to slide on said track and means for automatically swinging the track inward when the door is opposite its opening to seat the door therein said door and opening having beveled edges, substantially as set forth.

3. The combination with a car having a swinging track, a door mounted to slide on said track, and means carried by said door to swing automatically the track inward.

4. The combination with a car having a track hinged to its side, a door mounted to slide upon said track, means for holding the track away from the side of the car, and a device carried by the door for releasing the means and allowing the track to be swung inward.

5. The combination with a car, a track having each end hinged thereto, a door having hangers in which are journaled wheels to travel on said track, a spring secured to the car side and having a curved end projecting along side of the track and a detent to hold the track against movement, whereby when the door is slid nearly opposite its opening one of the wheels will press the spring outward and allow the door to swing into the opening.

6. The combination with a longitudinally and inwardly swinging track secured to the side of a car, of a door mounted to slide on said track and having beveled edges to engage the correspondingly beveled edges of the door way, means for swinging automatically the track inward, and means for swinging it outward consisting of a rod having bent ends which are adapted to be turned against friction plates secured to the side of the car.

7. The combination with a car of a track having each end hinged thereto, and provided with a stop pin, a door having hangers and adapted to slide on said track, means for holding the track away from the side of the car, wheels carried by the hangers and adapted to release the track holding means in advance of the engagement of the hangers with the pin on the track.

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

ISAAC V. KELLY.

Witnesses:
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