(No Model.)

J. T. GORDON & J. H. HAMILTON.

AUTOMATIC SIDE DOOR LATCH FOR CARS.

No. 329,733. Patented Nov. 3, 1885.

Fig. 1.

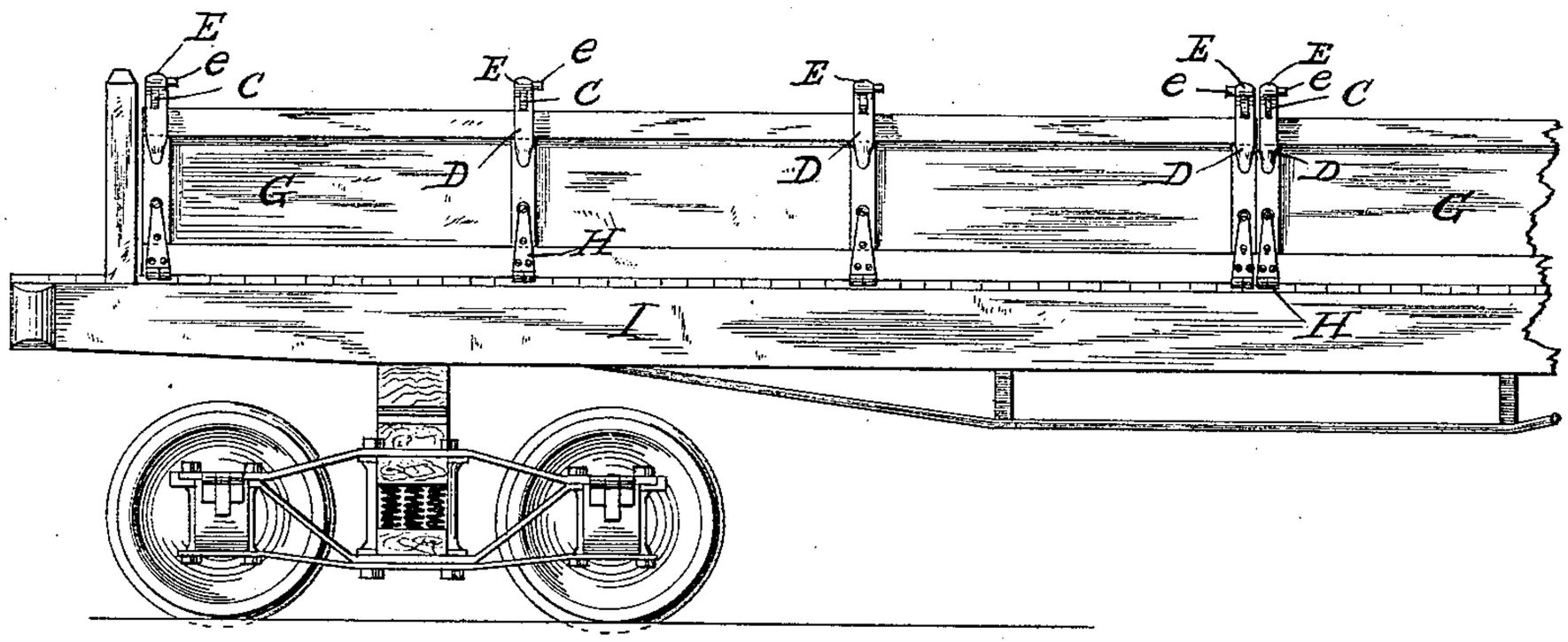


Fig. 2.

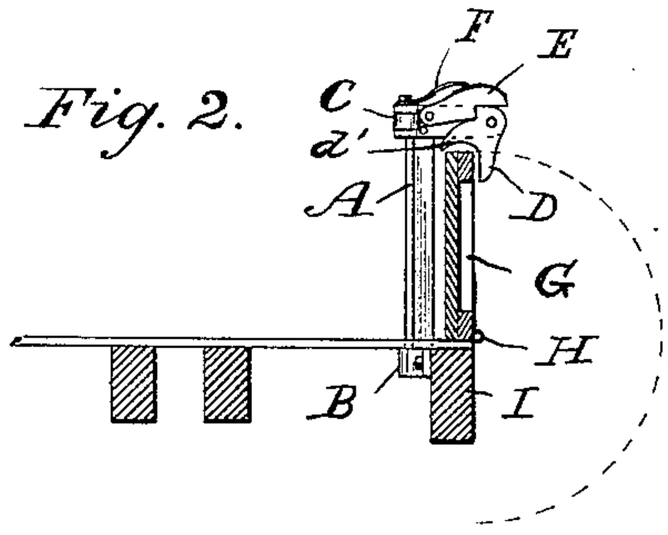


Fig. 3.

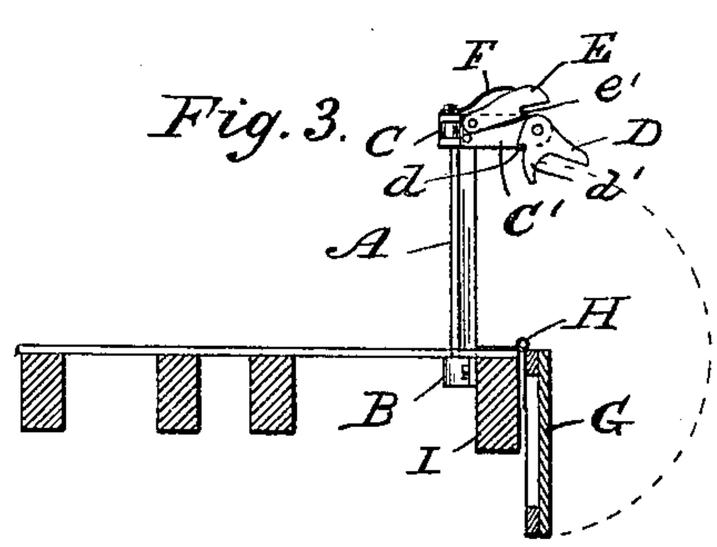


Fig. 5.

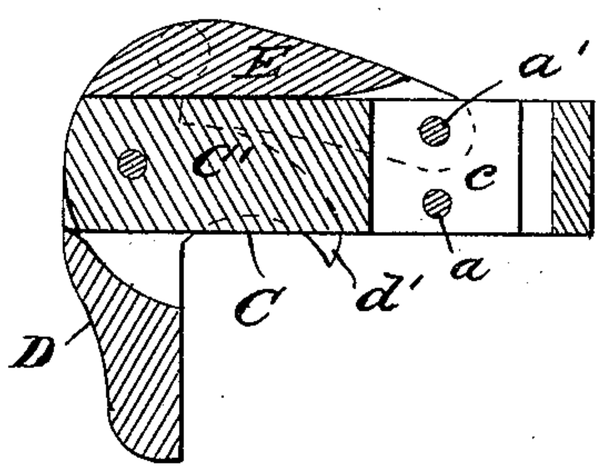
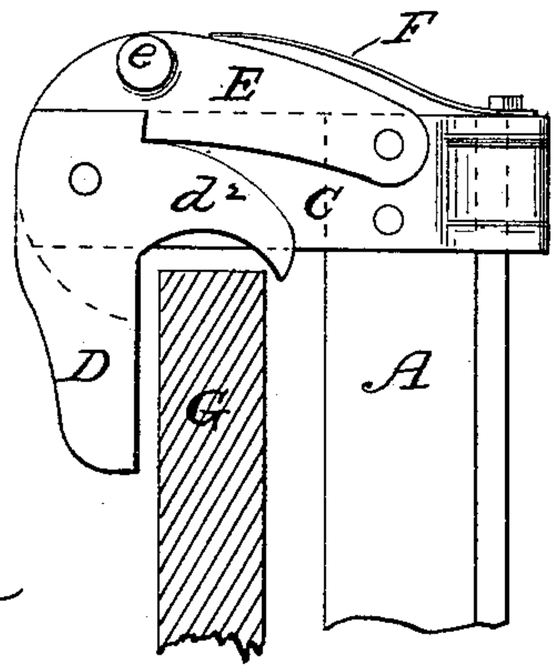


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES T. GORDON AND J. HENRY HAMILTON, OF CONCORD, N. H.

AUTOMATIC SIDE-DOOR LATCH FOR CARS.

SPECIFICATION forming part of Letters Patent No. 329,733, dated November 3, 1885.

Application filed August 26, 1885. Serial No. 175,410. (No model.)

To all whom it may concern:

Be it known that we, JAMES T. GORDON and JOHN HENRY HAMILTON, citizens of the United States, residing at Concord, in the county of Merrimack and State of New Hampshire, have invented a certain new and Improved Automatic Side-Door Hook for Coal-Cars, of which the following is a specification.

Our invention relates to coal or construction cars upon which are used hinged side boards or doors, having particular reference to an automatic latching device for holding said doors closed.

Heretofore the nearest approach to our invention of which we are aware consisted of an iron stake located just behind or inside of the side-board of a car and fitted loosely to an iron socket, the top of said stake being provided with a suitable hook, which rests upon the top of said side-board and laps over the front or outside of the same. When the door is to be opened, this stake is raised far enough to free the side board or door from the hook on the top of said stake, and after the door has been swung down the said stake is dropped down in its socket, allowing the said hook to rest upon the car-floor. In this device, however, the stake must be raised again high enough to allow the top of the side board or door to clear the said hook before it can be placed in the position first above named and secure said side-board closed.

The object of the present invention is to avoid the expense of time and labor which necessarily applies to the raising and lowering of these stakes, and to provide a hook which will automatically close over the side-boards the moment they are shut.

Our invention consists of a stake which is rigidly secured to an iron socket fastened at some suitable point upon either the outside or inside of the side sills of a car, and having secured to its top a suitable casting projecting over the side-board, and provided at its outer end with a swiveled hook or dog, and upon its top with a suitable latch which may be operated upon by a spring, whereby said doors may be opened by simply lifting said latch, which, in connection with the peculiar form of the swivel hook or dog, permits said doors to be closed and locked automatically.

In the drawings forming part of this specification, Figure 1 represents a side elevation of a portion of a car provided with side boards or doors hinged at the floor of said car and having our improved car-stakes in their proper position when locked. Fig. 2 shows a transverse section of a portion of a car-frame, showing a stake with our improved mechanism for automatically locking a side-board, which is shown as when closed. Fig. 3 is a similar view having the side-board open or dropped down and the locking mechanism in a position to receive the side-board when closed. Fig. 4 is an enlarged detailed view of the opposite side of the locking mechanism to that previously shown, the lower part of the stake to which it is riveted being broken off, also the lower part of a side-door shown in section. Fig. 5 is a central vertical section of the locking mechanism detached from its stake.

The stake A is rigidly secured in a suitable iron socket, B, which may be fastened by bolts to a side sill of a car. This stake is formed of iron, of any desired shape; but probably, for the purpose of having it as light as possible, that form known as "T-iron" will be preferable. At the top of the stake A is rigidly attached a cap-piece, C, which projects horizontally over and a little beyond the top of the side-board of a car. To the outer end of this cap-piece C is pivoted a hook or dog, D, and operating upon the top of this dog is a latch, E, which is pivoted at a suitable point to the cap-piece. This latch may be provided with a spring, F, for assuring its contact with the dog D, if desired; but in practice this is found, under ordinary circumstances, to be unnecessary. The hinged dog D and the latch E may be each pivoted on one side of the cap-piece C; or they may be so constructed as that their pivotal parts shall straddle said cap-piece, as shown relative to the dog D in Fig. 1. The cap-piece C has the same vertical thickness from end to end; but that part which attaches to the stake will be wider horizontally than the projection C′, to which the dog D is hinged. In Fig. 5, in this enlarged portion of the said cap-piece is formed a vertical opening, *c*, adapted to receive a stake when formed of T-iron, and the rivets *a a′* hold the two parts firmly together, the rivet

a' projecting far enough on one or both sides to serve as a pivot for the latch E. A knob, *e*, is formed upon one or both sides of the said latch, as in Figs. 1, 4, and 5, by which it may be raised. The under side of the outer part of the latch is cut away, so as to shut down over the flat top of the dog or hook D, thus enabling the shoulder *e'* of the latch to come in contact with the shoulder *d* of the hook, which prevents the said hook from being moved outward, as seen best in Fig. 4. The hook or dog D is provided with a rear projection, *d'*, which is best formed curvilinear top and bottom—*i. e.*, the top convex and the bottom concave. In the drawings two of these rear projections are shown, one on either side of the cap-piece C, as at *d' d²*, Figs. 4 and 5.

When it is desired to open the side doors, G, the latch E is first raised to the position shown in Fig. 3, when the said side door may be pushed outward and dropped down by means of the hinges H, which connect said door to the floor or the side sill, I, of the car, as seen in the drawings. This leaves the hook or dog D in nearly a horizontal position. When it is desired to close the said side door, said door must be raised, and in describing the circle shown in dotted lines in Figs. 2 and 3 said side door will strike against the projections *d' d²*, and thus cause the hook or dog D to follow the said door back to the point necessary to bring the respective surfaces or shoulders *d e'* of the dog D and latch E in contact, and thus lock the said dog so as to hold the door closed.

Having described our invention, what we claim as new as applied to coal or construction cars, and desire to secure by Letters Patent of the United States, is—

1. The combination, with a rigid stake, of a suitable cap-piece secured to the top thereof and projecting horizontally over the top of the side-board, a swivel hook or dog pivoted to the outer end of said cap-piece, and adapted to rise when said side-board is swung down and to drop when said side-board is closed by contact with the same, and a suitable latch for retaining said hook in either position, for the purpose set forth.

2. The combination, with a rigid stake, of a cap-piece rigidly secured to the top thereof and projecting horizontally over the top of the side-board, a swivel hook or dog pivoted to the outer end of said cap-piece, and adapted to be lifted or dropped by contact with the side door, a suitable latch for retaining said hook in either position, and a spring acting upon said latch, all constructed and operating substantially in the manner and for the purpose set forth.

In testimony whereof we affix our signatures in presence of witnesses.

JAMES T. GORDON.
J. HENRY HAMILTON.

Witnesses:
J. B. THURSTON,
FRANK E. SHEPARD.