(No Model.)

C. KELLEY.

LATCH FOR SLIDING DOORS.

No. 466,419. Patented Jan. 5, 1892.

Fig. 1.

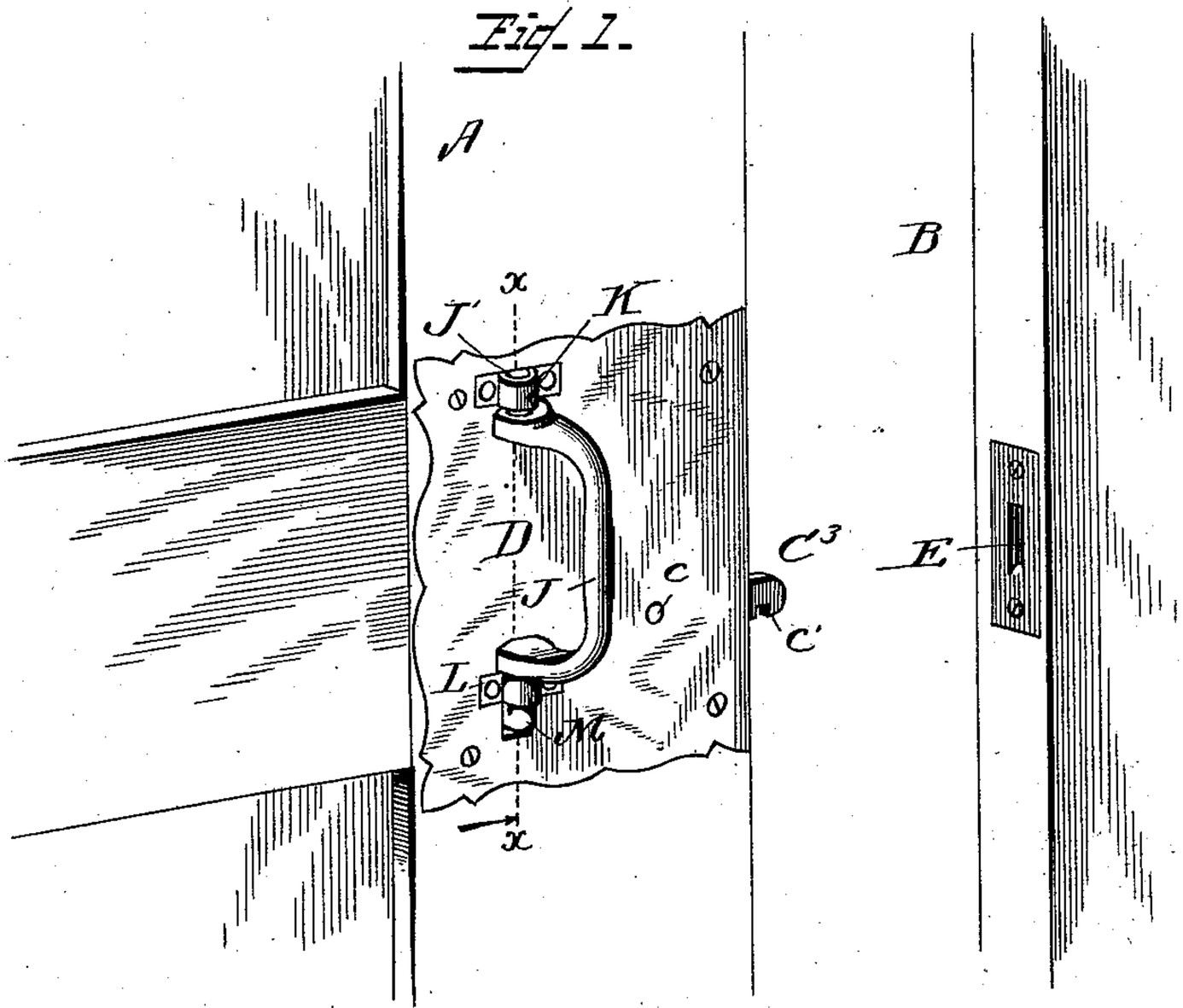

Fig. 2.

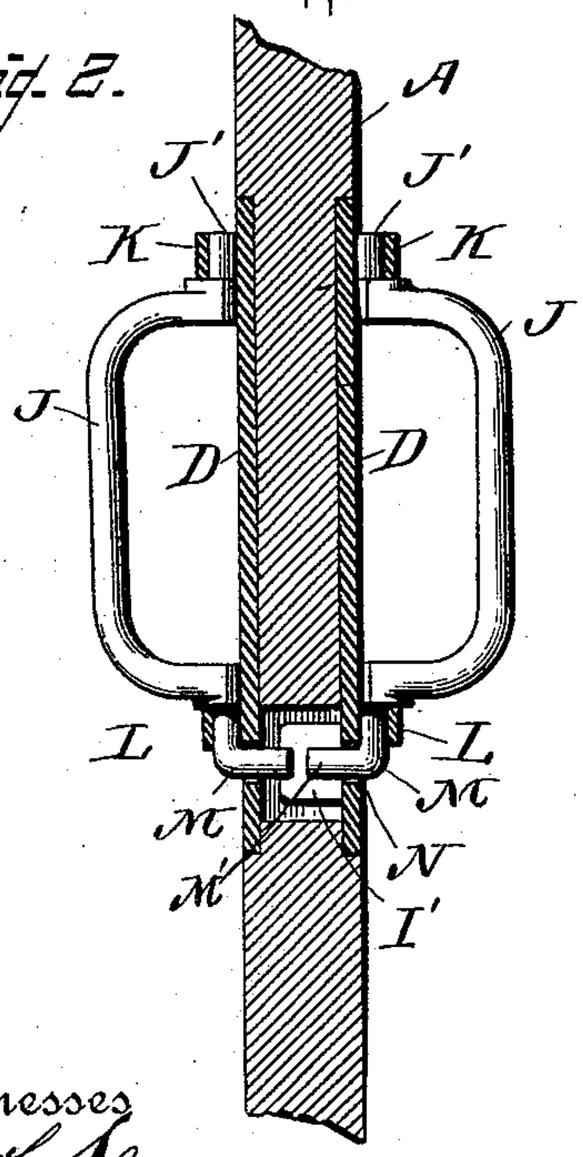

Fig. 3.

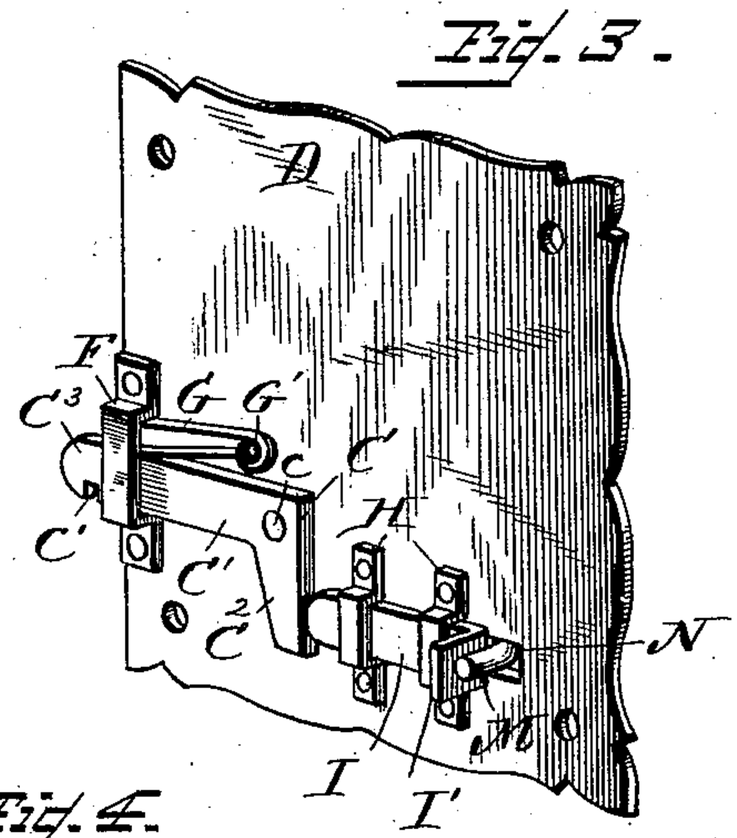

Fig. 4.

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CHARLES KELLEY, OF TORONTO, CANADA.

LATCH FOR SLIDING DOORS.

SPECIFICATION forming part of Letters Patent No. 466,419, dated January 5, 1892.

Application filed April 2, 1891. Serial No. 387,402. (No model.)

To all whom it may concern:

Be it known that I, CHARLES KELLEY, a subject of the Queen of Great Britain, residing at Toronto, in the Province of Ontario and Dominion of Canada, have invented certain new and useful Improvements in Latches for Car and other Sliding 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.

This invention relates to certain new and useful improvements in latches for car and other sliding doors, and has for its especial object to provide a simple and inexpensive latch for use upon the sliding doors of street-cars, the latch being so arranged with reference to the handles of the door that the simple movement imparted through the medium of the handle in opening the door will serve to release the latch, thus dispensing entirely with the use of the ordinary protruding levers and other appliances which are commonly employed in actuating the latch, the use of which upon the doors of street-cars and other public conveyances are seriously objectionable upon account of their liability to catch upon the clothing of passengers who are passing in and out of the door.

To this end and to such others as the invention may pertain the same consists in the peculiar construction and in the novel combination, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the accompanying drawings, and then specifically defined in the appended claim.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, like letters of reference indicating the same parts throughout the several views, and in which drawings—

Figure 1 is a perspective view of a car-door provided with a latch embodying my improvements, the door being shown as partly open. Fig. 2 is a vertical section upon the line *x x* of Fig. 1. Fig. 3 is a perspective view, upon an enlarged scale, of the latch and its attachments. Fig. 4 is an enlarged detail of one of the handles.

Reference now being had to the details of the drawings by letter, A designates an ordinary sliding door such as is commonly used upon street-cars, and B the frame or jamb of the door, against which the door closes when shut.

The latch C consists of the vertical portion C^2 and the horizontal body portion C′. This latch is pivoted to the inner face of the plate D by means of a bolt or pivot *c*, which is passed through the latch at the angle formed by the unison of the vertical portion C^2 with the horizontal portion C′ of the latch. The outer or free end of the body C′ of the latch extends for a short distance beyond the edge of the plate D and is provided with a notch *c*′, adapted to engage the keeper E in the door-frame when the door is closed.

Near the outer edge of the plate D a guide or keeper F is provided, through which the body portion of the latch passes, and above the latch, with its ends within the said keeper F and its longitudinal center coiled about a retaining-bolt G′, is a spring G, which normally holds the latch down, as shown in Fig. 3 of the drawings.

Loosely retained within the keepers or guides H H, which are secured to the plate D in the rear of the lower end of the vertical arm C^2 of the latch, is a sliding bar I, the extreme rear end of which is bent outwardly at right angles to the face of the plate D. The position of the bar I is such as to cause the same, when moved in the direction of the latch, to engage the rear edge of the portion C^2 thereof and cause the same to turn upon its pivot, thus raising the free end of the latch against the tension of the spring G.

The handles J, one upon each side of the door, are in all respects alike, being provided at their upper ends with vertical pintles J′, which are journaled within the casings K K, which are attached to the outer face of the plate D, and at their lower ends the handles are provided with rods or extensions M, which are passed through openings formed in the castings L, and their lower ends are bent inwardly and passed through horizontal slots or openings N in the plates D and bear against the rear face of the portion I′ of the sliding

bar I. In order to limit the throw of the handles J, shoulders *d* are provided, which serve to prevent the handles from being turned back against the face of the door, and yet permit the same to be turned sufficiently to actuate the latch through the medium of the mechanism hereinbefore described.

The operation of the latch is simple and readily understood from the foregoing description. The latch will be normally held down or in a locked position by the tension of the spring G. When the handle J of the door is grasped and force employed to move the door, a partial rotation is given to the handle, thus serving to force the inner end M′ of the extension M against the end of the sliding bar I raising the latch.

The desirability of a car-door latch of the character above described will be at once recognized when it is considered that the constant jar and sudden side movements that are imparted to the car, especially in rounding sharp curves, tend to open the door, thus subjecting the passengers to drafts of air and exposing them to the rain and snow during stormy weather.

By the use of my latch a simple and effective latch is provided which, upon the closing of the door, will serve to positively lock the same in its closed position. The form of the handles and their connection with the latch-operating mechanism is such as to cause the latch to be automatically released by the single movement which is required to slide the door. The latch will be actuated with equal facility from either side of the door, and the shoulders *d*, upon the handles bearing against the face of the door, serve the double function of preventing the handles from being turned back against the face of the door and also serve to relieve the lock-operating mechanism of the strain which would otherwise be imparted to the same were the handle allowed to turn beyond the point necessary to actuate the latch.

Having thus described my invention, what I claim to be new, and desire to secure by Letters Patent, is—

The combination, with a sliding door, of the plate D, secured thereto, the pivoted bell-crank latch C, provided with horizontal body portion C′ and arm C^2, at right angles to the body portion, the pivoted partially-rotatable handle upon the opposite side of the plate D, the extension M, connected with the handle and passed through an opening in the plate, the sliding bar I upon the inner side of the plate, with one of its ends adapted to bear against the end of the vertical arm of the latch and its other end provided with a bearing-surface for the extension M of the handle, substantially as and for the purpose described.

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

CHARLES KELLEY.

Witnesses:

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A. L. HOUGH.