M. C. & S. S. NILES.

KNOB-LATCH.

No. 192,343. Patented June 26, 1877.

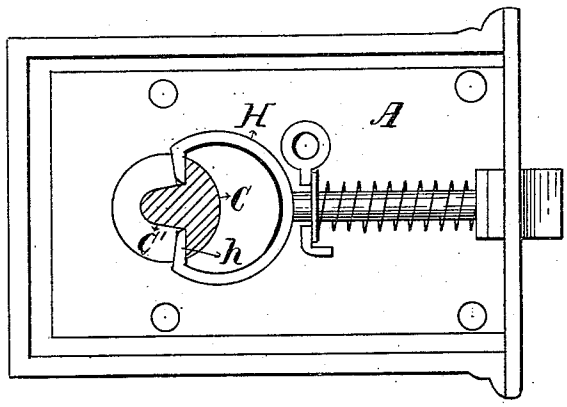


Fig. 1.

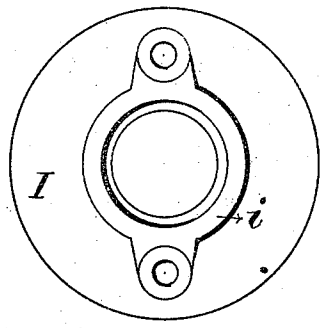


Fig. 2.

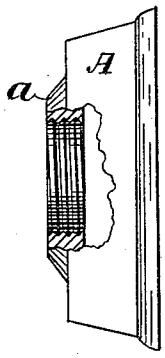


Fig. 4.

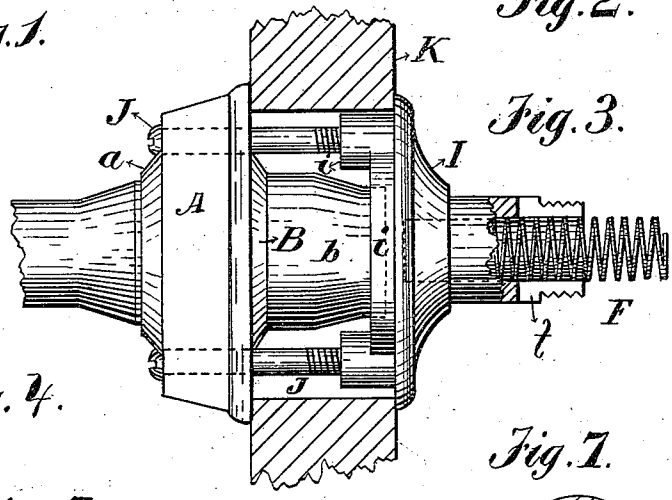


Fig. 3.

Fig. 7.

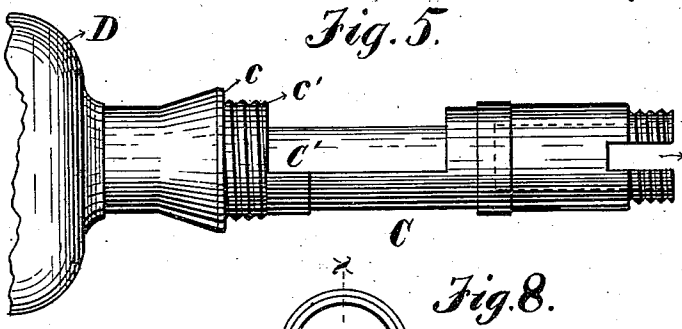


Fig. 5.

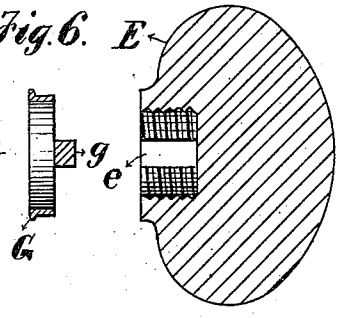


Fig. 6.

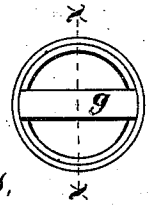


Fig. 8.

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MILTON C. NILES AND SIDNEY S. NILES, OF OAK PARK, ILLINOIS.

IMPROVEMENT IN KNOB-LATCHES.

Specification forming part of Letters Patent No. **192,343**, dated June 26, 1877; application filed March 26, 1877.

To all whom it may concern:

Be it known that we, MILTON C. NILES and SIDNEY S. NILES, of Oak Park, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Knob-Latches, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a side view of the case and inclosed parts, the back plate being removed; Fig. 2, a view of the inner side of the rose; Fig. 3, a sectional view of the door, showing the mode of securing the parts thereto; Fig. 4, an elevation of the inner end of the lock-case, a portion of the end being broken away; Figs. 5, 6, and 7, a side view of the spindle, knobs, and fastener, the latter and one knob being detached; and Fig. 8, a plan view of the knob-fastener.

Our invention relates to rim-locks, the object being to apply various improvements heretofore invented and patented by us to locks of this description.

The invention consists in the combination of a solid spindle passing through the door and the lock-case, through which the spindle also passes, and to which it is secured by a screw-thread. It also consists in the peculiar construction of the rose and back plate, and the method of fastening them together and to the door by long screws passing through the lock-case and door into the rose; and it further consists in various devices and combinations of devices, all of which will be hereinafter more fully set forth.

In the drawings, A represents the case of a rim-lock, and B the back plate thereof, which is provided with a tubular projection, *b*, that is inserted in and passes through the door. The front side of the case A has an aperture for the reception of the spindle, about which a rim, *a*, is raised, the interior of which is screw-threaded, as shown in Fig. 4 of the drawings.

The aperture in the case A is opposite the tubular projection *b* on the back plate, and through them is passed a solid spindle, C, which is extended at each end to form the knob-shanks, and at the end projecting outside of the lock-case is provided with a shoulder, *c*, just inside of which a screw-thread, *c'*, is cut, so that the spindle can be screwed into the rim *a* to fasten it to the case, the shoulder *c* fitting against the outside of the case when the parts are placed in working position. This end of the spindle may have a screw-thread cut upon it, by means of which the knob D is secured therewith; or the latter may be made in one piece with the spindle, or fastened to it in any other way which may be suitable. The central portion of the spindle is cut away, so as to form a cam, C', on that portion of the spindle which is within the case, as shown in Figs. 1 and 5 of the drawings.

The other end of the spindle, which projects through the door, is threaded to provide means for securing the knob E thereto. This end of the spindle may also be made tubular, if desired, for the reception of a spiral spring, F, in which case it should also have a recess, *f*, cut in its extreme end. A ring, G, is made of such size as to fit over the end of the spindle, and across one end is a bar, *g*, corresponding in size to the recess *f* in the end of the spindle. Grooves *e* are also cut in the interior of the threaded portion of the knob E, sufficiently wide to permit the ends of the cross-bar *g* to slide in them. By this device the knob E, when turned upon the end of the spindle, may be securely fastened. The ring is first slipped over the end of the spindle, the bar *g* entering the recess *f*, pushing back the spring F. The knob E is then turned upon the end of the spindle, and when in proper position the ring will be forced back into the knob, the cross-bar being held in the groove *e*, thereby preventing the knob from turning until the ring is pushed forward and disengaged therefrom.

The bolt-talons H are curved, as shown in Fig. 1 of the drawings, so as to form a circular opening large enough to receive the spindle C. The ends of the talons are bent inward toward each other to form hooks or projections *h*, which are fitted upon the inside faces of the cam C', the curve of the talons being sufficiently large to permit them to be slipped over the end of the spindle until brought opposite the cam, when the hooks are adjusted against the latter, as shown in Fig. 1 of the drawings.

The rose I is constructed with an enlarge-

ment, *i*, upon its inner face, in which are made suitable holes for the reception of the threaded ends of long screws J, which are passed through the case A and door K, and screwed into these holes in the rose I, as shown in Fig. 3 of the drawings.

The door K is cut to receive the tubular projection *b*, the projection *i* on the inside of the rose, and the screws J.

In fitting these devices to the door the spindle is first passed through the case and screwed into the aperture therein.

The bolt-talons H, which are in one piece with the bolt, are then slipped over the end of the spindle, and adjusted in position, as shown in Fig. 1 of the drawings, the thread on the spindle being arranged so that when thus adjusted the spindle will not be quite turned up against the case. The back plate B is then fastened in position, the tubular portion *b* being slipped over the spindle, and both are inserted in the aperture in the door, and the rose I adjusted in position upon the end of the spindle opposite the case.

The case may then be fastened in position upon the door by the long screws J passing through the door into the rose, and such other screws as may be necessary, and the knob E is secured to the spindle in the manner heretofore described. The particular devices for fastening this knob herein specified are not absolutely necessary, however, to our invention, as it is evident that the knob may be secured by any other suitable means without affecting the operation of the main features of our improvement.

It will be seen that the case, spindle, and rose are all fastened together by devices not easily displaced, and, therefore, while the lock is of cheap and simple construction, it is especially adapted for use upon doors of railway-cars, and in other locations where, from constant jar or use, there is great liability to derangement of parts and detachment of knobs or case, requiring constant care and frequent repairs. The working parts are also effectually protected from rust and dirt, thereby preventing the rapid wearing of bearing-surfaces.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is—

1. The exterior case A, in combination with the back plate B, provided with a tubular projection, *b*, and spindle C, secured to the case by a screw-thread thereon, substantially as and for the purpose set forth.

2. The case A, in combination with the rose I, back plate B, provided with a tubular projection, *b*, the outer end of which is supported in a bearing in the rose, and the long screws J, extending through the case and door to fasten the several parts together and to the door, substantially as and for the purpose set forth.

3. The spindle C, in combination with the spring F, knob E, and fastening-ring G, all constructed and operating substantially as and for the purpose set forth.

4. The spindle provided with a screw-thread upon its bearing-surface in the lock, in combination with a bearing in the lock, also having a screw-thread, whereby the spindle is fastened to the lock and held in position to operate the bolt, substantially as and for the purpose described.

5. The case A, in combination with the back plate B, provided with a tubular projection, *b*, and the spindle C, having a bearing in both case and tubular projection, and projecting outside of each to form knob-shanks at the ends, substantially as and for the purpose set forth.

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Witnesses:
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