

No. 797,425.

PATENTED AUG. 15, 1905.

J. HAAG.
LOCK FOR RAILWAY CARRIAGES.
APPLICATION FILED SEPT. 7, 1904.

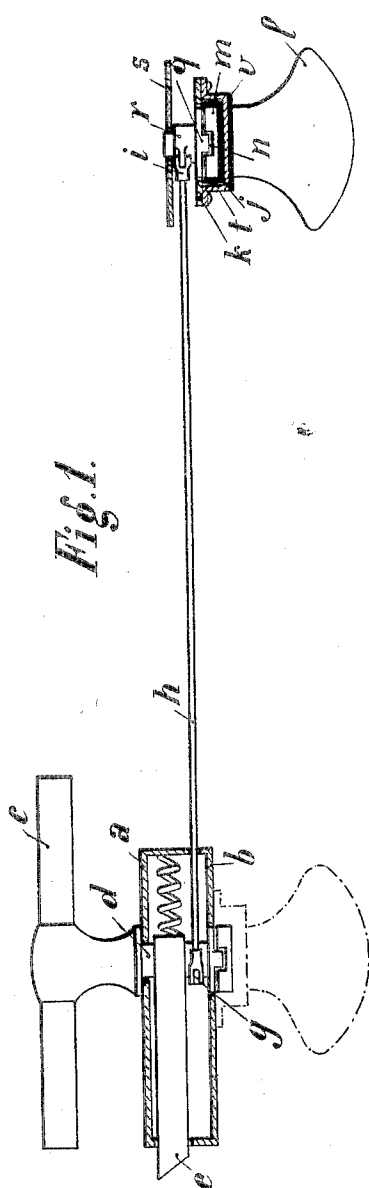


Fig. 1.

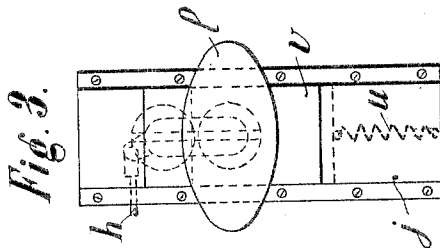


Fig. 3.

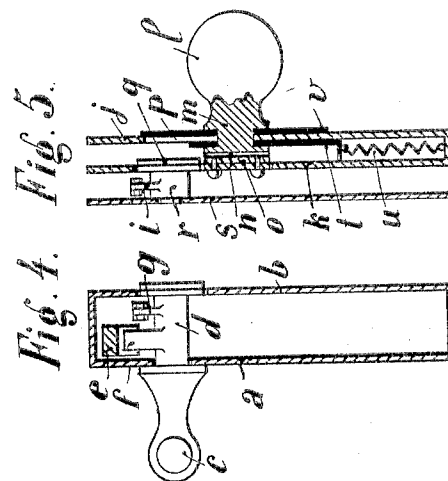


Fig. 4. Fig. 5.

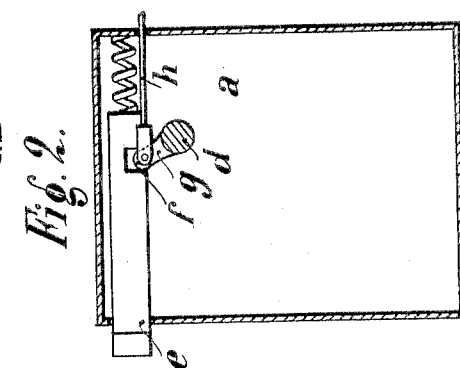


Fig. 2.

Witnesses:
Geo. Heinicke
William L. Ellorick

Inventor
Joseph Haag
by G. Littman
Attorney

UNITED STATES PATENT OFFICE.

JOSEPH HAAG, OF VILLEMOMBLE, FRANCE.

LOCK FOR RAILWAY-CARRIAGES.

No. 797,425.

Specification of Letters Patent.

Patented Aug. 15, 1905.

Application filed September 7, 1904. Serial No. 223,629.

To all whom it may concern:

Be it known that I, JOSEPH HAAG, mechanical engineer, a citizen of the German Empire, residing at 17 Rue des Ecoles, Villemomble, France, have invented certain new and useful improvements in a lock, particularly for railway-carriages, capable of being opened inside the door only by two distinct motions of the handle; 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 appertains to make and use the same.

This invention relates to a lock, particularly for railway-carriages, which, like some locks already known, cannot be opened inside except by means of two successive motions of the inner handle in such manner that any accidental opening of the lock is avoided and the danger arising therefrom removed. According to this invention the result is obtained by arranging the outside and inside handle each upon a separate spindle or stem which become mutually engaged by a sliding motion of the inner handle before the lock can be opened by a rotative motion of the inner handle, while outside the door the opening is effected in the usual way. The combination whereby a vertical upward displacement of the inner handle is required before it is possible to turn it round insures the proper working of the new lock, for even in the event of the spring which draws the handle downward failing to act the latter is released by its own weight from the outer handle and is again stopped.

The accompanying drawings illustrate one construction of said lock.

Figure 1 shows a longitudinal horizontal section across the whole locking arrangement. Fig. 2 illustrates a longitudinal vertical section across the lock. Fig. 3 gives a front view of the safety contrivance, and Figs. 4 and 5 represent transverse vertical sections across the lock and the safety contrivance.

The falling-latch *e*, placed between the plates *a* and *b*, is drawn back outside the door by the usual handle *c* being rotated. The spindle *d* of the handle *c* is furnished inside with a cam *f*, which engages a notch suitably provided in the latch *e*, and an arm *g*, to which a rod *h* is attached by means of a joint or pivot. (See Fig. 4.) This rod is connected with the safety device. The latter consists of a case *j k s*, located inside the carriage-door. Said case is furnished with an ordinary door handle

or knob *l*, the stem *m* whereof is provided at the inner extremity with a vertical notch or groove *n*. Such notch or groove corresponds with two feathers or ridges *o* and *q*, the lower one of which, *o*, is fixed onto plate *k*, Fig. 5, while the upper one is located at the end of a spindle *r*, rotatively arranged between the plates *k* and *s*. Such spindle *r* is furnished with an arm *z*, which serves as an attachment to the rod *h*. Normally the handle *l* remains engaged by its groove *n* upon the fixed ridge *o*, which prevents it from rotating. In order to engage the groove *n* of the stem *m* and the ridge *q* of the spindle *r* and to permit the rotation of the spindle *r* by means of the handle *l*, it is necessary to pull or push such handle *l* upward. The plate *j* is furnished for that purpose with a slot *p*, which is permanently hidden by an outer plate *v*, which is fixed onto the handle *l* and moves with it. A spring *u*, attached either to an inner slide-plate *t*, fixed onto the handle *l*, or direct to the stem *m*, constantly draws handle *l* downward, Fig. 5; but in the event of such spring *u* being absent or breaking the weight of the handle *l* itself is sufficient to bring it down.

In doors where there is sufficient room near the front edge the safety device may be arranged inside opposite the outer handle *c*. The rod *h*, the spindle *r*, and the plates *k* and *s* are then dispensed with and the ridge *q* is located or formed at the end of the spindle *d* of the outer handle, as shown in Fig. 1.

The working of this lock is as follows: When the door is shut, the handle *l* occupies the position shown in Fig. 5. Its stem *m* is not in engagement with the ridge *q*, but its groove *n* is engaged by the fixed ridge *o* in such a manner that it cannot rotate nor operate the latch *e*. On the other hand, the door may be opened from the outside by turning the handle *c* ninety degrees. In order to open the door inside, it is first of all necessary to raise the handle *l*, so that the groove *n* of the stem *m* may leave the ridge *o* and engage the ridge *q*. When the handle *l* is turned ninety degrees, the ridge *q* and the spindle *r* participate in the rotation and draw back the latch *e* by means of rod *h*. In the arrangement shown by dotted lines in Fig. 1 the handle *l* rotates the spindle *d*, which draws back the latch *e*. Upon the handle *l* being raised the spring *u* becomes stretched, and upon the handle then being rotated the spring of the latch becomes compressed. When the handle *l* is released, the latch is driven forward

by its spring and causes the ridge *q* to resume its vertical position in such manner that the spring *u* causes the handle *l* to go down, while the groove *n* leaves the ridge *q* and engages the fixed ridge *o*. It will be seen therefrom that the handle *l* must perform two successive motions—viz., a sliding motion upward and a turning motion—before the carriage-door can be opened from inside, and it is impossible that these two motions can be produced accidentally in the exact succession. Even a child playing with the handle *l* will hardly execute exactly these two motions, which may be rendered still more difficult by giving the spring *u* sufficient strength.

Whenever it appears desirable, the fixed ridge *o* may be dispensed with, so that it may be possible to freely turn the handle *l* without operating the latch *e* so long as the handle *l* is not drawn upward before being rotated. It is obvious that the ridge *q* may also be arranged at the end of the stem *m* of the handle *l*, while the groove *n* is provided at the end of the spindle *r* or at the end of the spindle *d*.

What I claim as my invention is—

1. A lock for railroad-car doors comprising a spring-actuated latch-bolt engaged by a tooth on the stem of the outer handle, a stem for said handle, having a straight ridge, and a slidably-arranged door-knob on the inside

of the door having a grooved stem the groove being in line with the ridge substantially as described and for the purpose set forth.

2. A lock for railroad-car doors comprising a spring-actuated latch-bolt engaged by a tooth on the stem of the outer handle, a stem for said handle, having a straight ridge, and a slidably-arranged door-knob on the inside of the door, having a stem with a groove in line with the ridge, and guides for the slidable knob parallel to the groove and ridge of the stem, substantially as described.

3. A lock for railroad-car doors comprising a spring-actuated latch-bolt engaged by a tooth on the stem of the outer handle, a crank-arm on said stem, connected by a rod to the crank-arm of a similar stem revolubly arranged outside of the lock, a projection or ridge on said stem, a door-knob on the inner side of the door arranged slidably and revolubly below said ridge, having a groove in line with said ridge and guides for the slidable door-knob parallel to the groove and ridge, substantially as described.

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

JOSEPH HAAG.

Witnesses:

STARCK,
S. PROL.