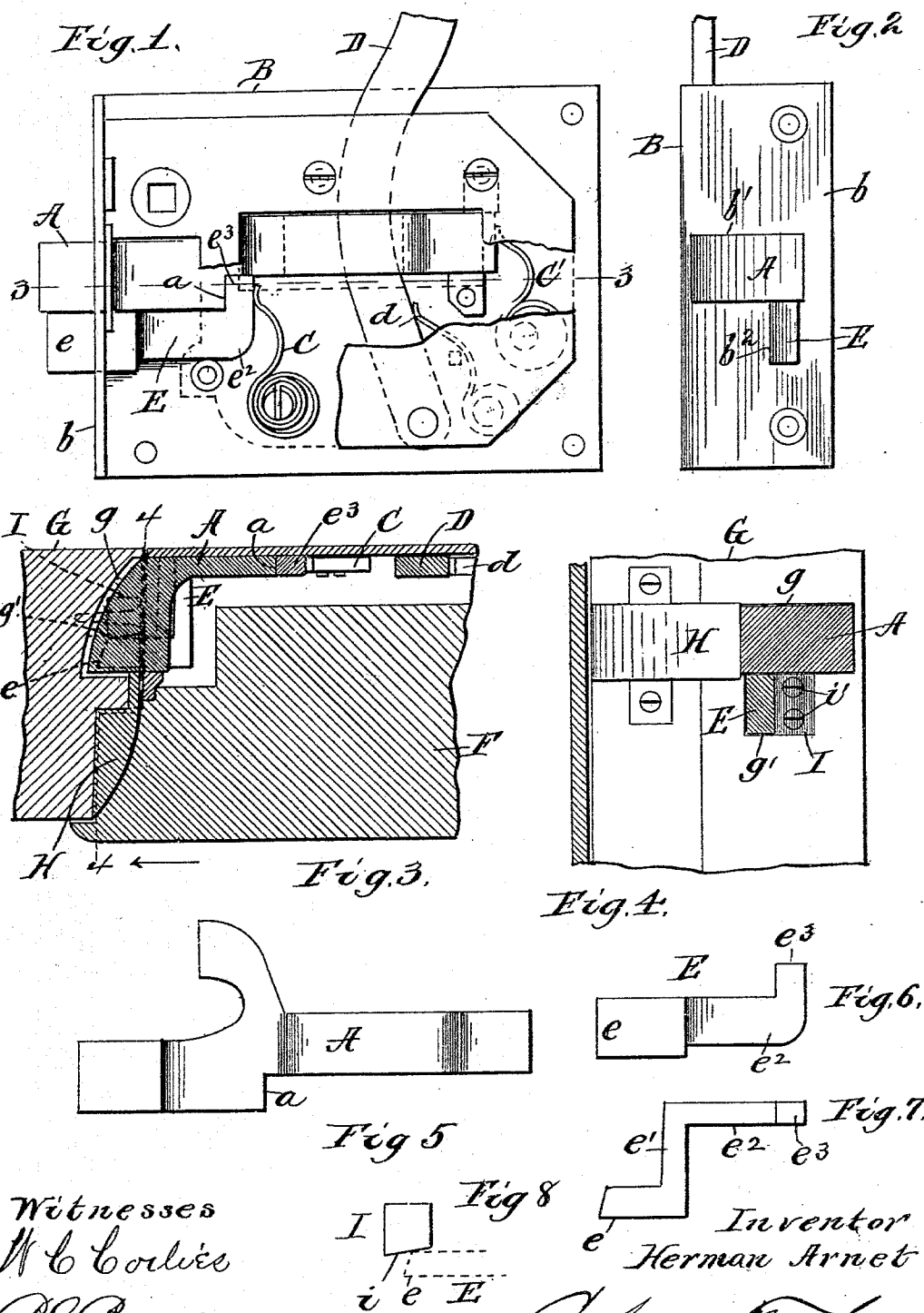


(No Model.)

H. ARNET.
LATCH.

No. 515,985.

Patented Mar. 6, 1894.



Witnesses
W. C. Collier
R. C. Page

Fig 8
I
e E

Inventor
Herman Arnet

Attys

UNITED STATES PATENT OFFICE.

HERMAN ARNET, OF CHICAGO, ILLINOIS.

LATCH.

SPECIFICATION forming part of Letters Patent No. 515,985, dated March 6, 1894.

Application filed January 21, 1893. Serial No. 459,087. (No model.)

To all whom it may concern:

Be it known that I, HERMAN ARNET, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Carriage-Door Latches, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a rear elevation of a latch, embodying my invention; Fig. 2, a front end elevation of the same; Fig. 3, a plan section of the same secured to a door, the section being taken on the line 3. 3. of Fig. 1; Fig. 4, a detail section taken on the broken line 4. 4. of Fig. 3; Fig. 5, a detail plan of the latch bolt detached; Fig. 6, a plan of the stop-latch detached; Fig. 7, a side elevation of the same, and Fig. 8, a detail plan showing the striking block and stop-latch abutting thereon.

The rattling of the doors of carriages and coaches is the cause of great annoyance, which it is almost impossible to overcome. The rattling may be stopped temporarily, but with the ordinary wear of the parts, it soon occurs again.

It is the object of my present invention to provide a device which will completely obviate this objectionable feature in carriage doors, and which will continue to be operative as the parts wear away with use.

The invention consists in the particular construction and arrangement of a supplementary bolt or stop-latch, and special devices whereby the latter is made to act upon the main latch-bolt, to maintain a tight joint and prevent the latter from rattling in its keeper.

I will now describe in detail the construction and operation of my invention, with so much of a carriage door as is necessary to an understanding of the same and will then, point out in claims, the particular improvements, which I believe to be new and desire to secure by Letters Patent.

In the drawings, I have shown my invention applied to a coach latch of well known construction, substantially as shown and described in Letters Patent No. 323,719, dated August 4, 1885; the application to this particular latch is for illustration only, as I contemplate the use of the device with any latch to which it is applicable. As the construc-

tion and operation of this latch are well known, it will not be necessary to enter upon a description in detail here; therefore only a general reference will be made to such parts as are necessary to an understanding of the construction and operation of my present improvement. The latch bolt, A, is of substantially the same form as shown in said patent, and is mounted in the case, B, in the same way except that it is turned the other side up, so that the shoulder, *a*, will be upon the under side thereof, as seen in Fig. 1. The latch is also provided with two actuating springs, C and C', and there is shown a retracting lever, D, provided with a spring, *d*. Immediately below the latch bolt, A, I arrange a supplementary bolt, E. This bolt is shorter and smaller than the main latch bolt, and is shaped as shown in Fig. 7, so as to follow the contour of the main bolt; the front end *e*, of this supplementary bolt is intended to pass out underneath the front end of the latch bolt. This end, is substantially rectangular in shape, and has a slight bevel upon its front face, as seen in Fig. 7. From this portion the bolt is bent directly back at right angles, and thence turned again inward to right angles, as seen at *e'*, *e''*, in Fig. 7 of the drawings. These bends conform to those of the latch bolt so as to bring the supplementary bolt directly underneath the latter. At the rear end of the supplementary bolt there is a turn upward so as to provide a short upright projection, or lug, *e''*, as seen in Fig. 6 of the drawings, which is adapted to pass up back of the shoulder, *a*, in the latch bolt and engage therewith, as seen in Fig. 1. The forward actuating spring, C, is arranged to bear upon the rearend of the supplementary bolt just back of its engagement with the latch bolt, as also seen in said Fig. 1. The front end, *b*, of the case, is, of course, provided with the usual aperture, *b'*, for the latch bolt, and just below this aperture I cut an additional opening, *b''*, for the accommodation of the front end of the supplementary bolt E, so that the latter may project through the same as seen in Fig. 1. The latch case is mounted upon the carriage door, F, as usual; and the post, G, is constructed in the usual way, being provided with a recess, *g*, for the reception of the projecting end of the latch

bolt, and there is shown in the drawings an ordinary striking plate, H, which, in this instance, is shown carried back into the said recess of the post to form a lining thereto, as seen in Fig. 3. For the application of the present improvement, the post is also cut out to provide a recess, g' , just below the recess g , and in fact extending down therefrom. This supplementary recess, g' , is at the front part of the recess, g , and is considerably wider than the thickness of the supplementary bolt, E. A small striking block, I, is set in the inner portion of this supplementary recess, g' , as seen in Figs. 3 and 4; and the outer front side, i , of this block, is beveled, as seen in Fig. 8, the inclination being outward from the front end of the block. The block may be secured in place by screws, i' , or any other suitable devices. Now, it is obvious that when the latch bolt is thrown outward by its actuating springs to engage with its keeper recess in the post, the supplementary bolt, E, will also be forced outward by the actuating spring, C, moving along with the latch bolt; but, as this supplementary bolt strikes into its keeper recess, it comes in contact with the bevel face of the striking block, I, and will therefore be thrown outward, and thus carry the whole outer edge of the door outward, so as to hold the front face of the latch bolt into close and constant contact with the outer wall of its keeper recess. Obviously this will prevent all rattling which is caused by the looseness of the latch bolt in its keeper. It will be seen that in order to provide for taking up wear, the supplementary bolt must have more or less independent movement, so that, when new, this bolt will not be projected to the limit of its throw. It will be seen from the construction and arrangement of the supplementary bolt in relation to the latch bolt and its front actuating spring, as seen in Fig. 1, that this independent movement is provided for; it is evident that the supplementary bolt may have a slight movement backward independently of the latch bolt, the spring, C, yielding for this purpose; the supplementary bolt may therefore stop in its outward throw before the latch bolt, and consequently before it reaches the limit of the bevel face on the striking block; the rear actuating spring, C' , will be sufficient to force the latch bolt home. Obviously this arrangement will provide for taking up wear so as to always maintain a perfectly tight joint between the latch bolt and its keeper, and prevent all rattling.

In order to avoid possibility of engagement between the supplementary bolt and the striking plate, the recess for the former is set in slightly beyond the plane of the striking plate, as seen in Fig. 4. This inset is very slight, being just enough to prevent the possible engagement of the outer end of the supplementary bolt with said plate. Obviously the two bolts must be retracted practically at the same time when the door

is to be opened. In the construction and arrangement shown in the drawings, this is accomplished by the engagement of the supplementary bolt with the main latch bolt, as already described; and the retraction of the main bolt by means of the lever, D, or any other device for the latter purpose. This result may be accomplished, however, by any other device whereby the retracting movement of the bolts is accomplished at the same time.

As I have already stated, I contemplate the application of this improvement to carriage latches of any construction where it is possible; and therefore do not wish to be understood as limiting my invention to the particular latch here shown, or the special construction and arrangement of the devices described and shown herein; changes will, of course, be necessary in applying the supplementary bolt to carriage and coach latches of different construction.

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

1. In a carriage door latch, the main latch-bolt, in combination with a supplementary latch or bolt, and a keeper for the latter having a bevel face arranged to move the bolt outward as it enters, whereby the main latch bolt is held from shaking in its keeper, substantially as described.

2. In a carriage door-latch, the main latch-bolt, in combination with a supplementary latch or bolt having a yielding sliding movement backward independent of the main bolt, and a keeper for the supplementary bolt adapted to force it laterally outward as it enters, substantially as described.

3. In a carriage door latch, the main latch bolt, A, provided with a depending shoulder, a , in combination with a supplementary latch or bolt, E, of angular shape, as described, and provided with a vertical lug, e^3 , adapted to engage at the back of said shoulder, and an actuating spring, C, arranged to act upon the rear of the lug, e^3 , substantially as described.

4. In a carriage door-latch, the main latch-bolt, A, in combination with a supplementary bolt, E, the post, G, provided with a keeper recess, g , for the main bolt, and keeper recess, g' , for the supplementary bolt, and a striking block, I, set in the latter recess and provided with a beveled front face, i , substantially as described.

5. In a carriage door-latch, the main latch-bolt, A, provided with shoulder, a , in combination with a supplementary latch or bolt, E, provided with a lug, e^3 , adapted to engage with said shoulder, an actuating spring, C, a retracting lever, D, and recess keepers, g, g' , the latter having a beveled striking face, i , substantially as described.

HERMAN ARNET.

Witnesses:

ROBERT C. PAGE,
W. C. COILIES.