W. J. FLEISCHAUER & H. RICHARDSON.

DOOR LOCK.

APPLICATION FILED JULY 16, 1913.

1,094,550. **Patented Apr. 28, 1914.**

2 SHEETS—SHEET 1.

Fig 1

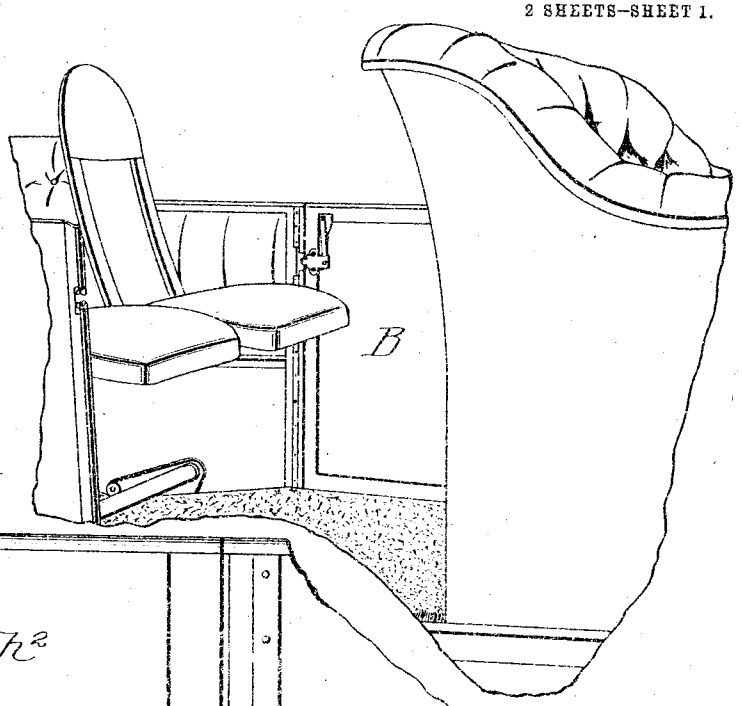
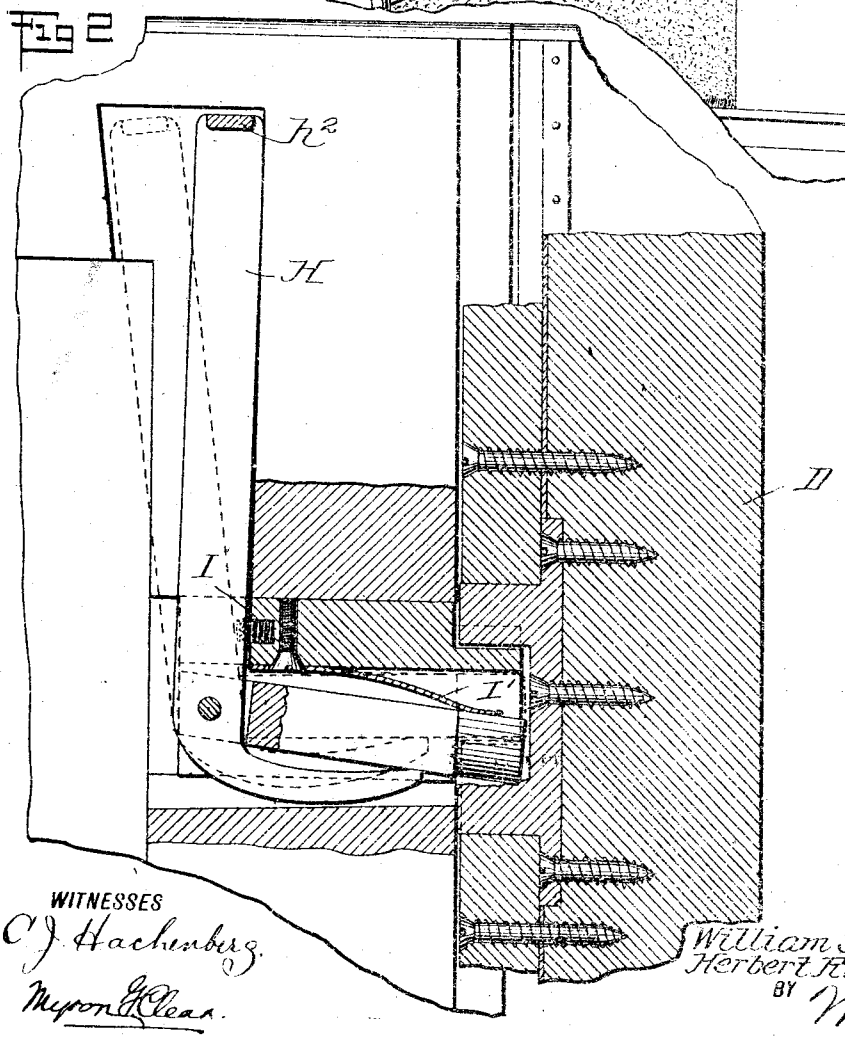


Fig 2



WITNESSES

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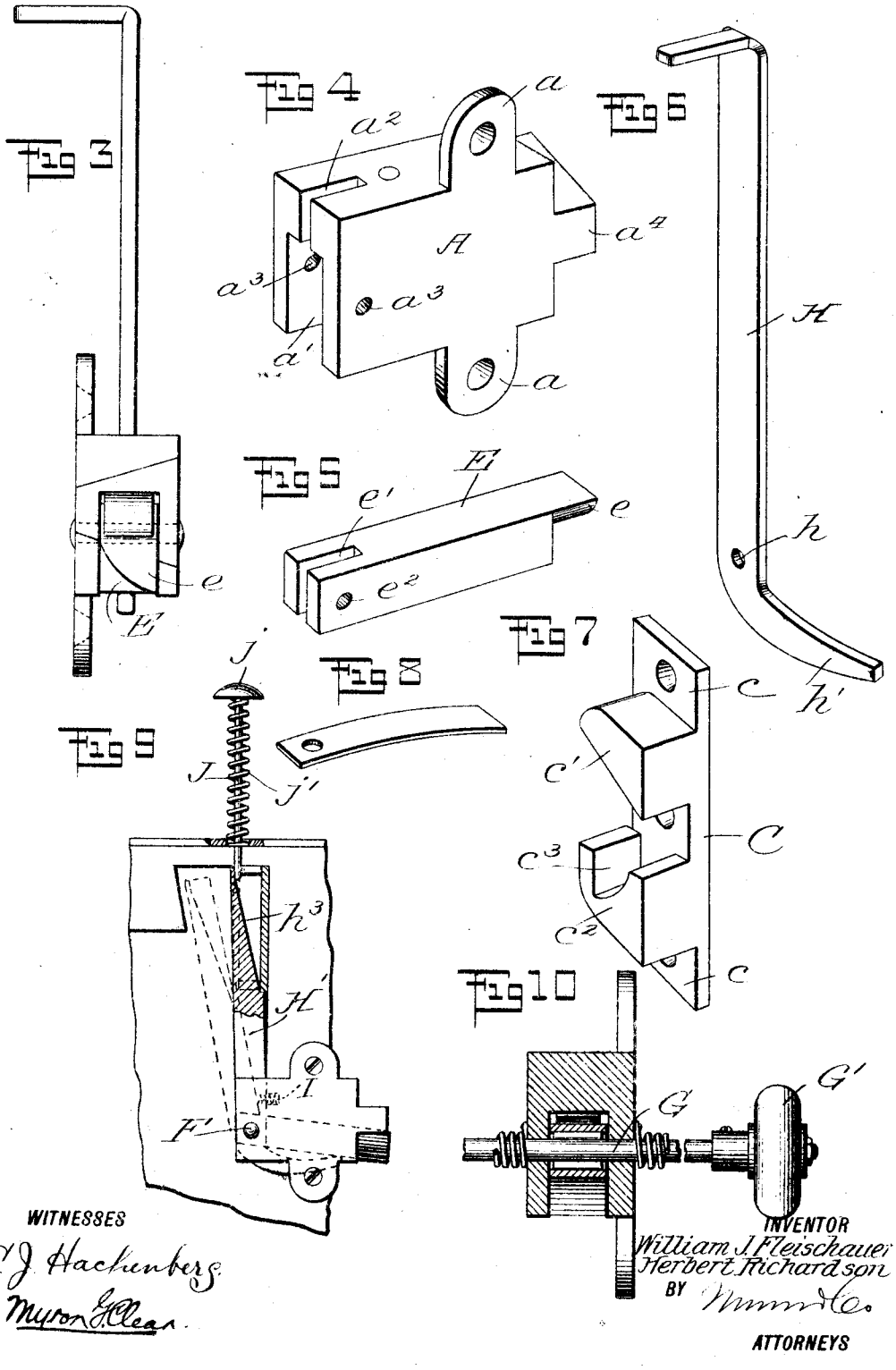
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UNITED STATES PATENT OFFICE.

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DOOR-LOCK.

1,094,550. Specification of Letters Patent. Patented Apr. 28, 1914.

Application filed July 16, 1913. Serial No. 779,316.

To all whom it may concern:

Be it known that we, WILLIAM J. FLEISCHAUER and HERBERT RICHARDSON, citizens of the United States, and residents of Pontiac, in the county of Oakland and State of Michigan, have made certain new and useful Improvements in Door-Locks, of which the following is a specification.

Our present invention relates to door locks, and more particularly to a lock adapted for automobile doors, our object being to provide a simple, strong and durable arrangement embodying a minimum number of parts so coöperating as to prevent the door from rattling when closed, and so arranged and constructed as to promote certain advantages in their operation and application to an automobile door as hereinafter specifically referred to. These and other objects will be apparent from the following description, in which reference is made to the accompanying drawings forming a part of this specification and in which,

Figure 1 is a perspective view of the intermediate portion of a motor vehicle, illustrating our improved lock in connection with one of the doors thereof. Fig. 2 is an inside elevation of adjoining parts of the door and frame, partly broken away and in section. Fig. 3 is an end elevation of the bolt cage and the parts connected thereto. Fig. 4 is a perspective view of the bolt cage with its connected parts removed. Fig. 5 is a similar view of the bolt removed. Fig. 6 is a similar view of the bolt actuating lever removed. Fig. 7 is a similar view of the striker plate. Fig. 8 is a similar view of one of the controlling springs. Fig. 9 is an elevation partly broken away and in section and illustrating a slightly modified form of actuating member, and Fig. 10 is a sectional view through the bolt cage illustrating another slightly modified form in which a horizontally disposed handle is utilized to actuate the lock bolt.

Referring now to these figures, the bolt cage A is set into the free edge of the door B, adjacent the upper end of the latter, and the striker plate C is set into the adjacent edge of the door frame D, the said bolt cage and striker being secured in position by suitable fastening members extending through their projecting apertured ears a, c respectively.

The bolt cage A as particularly shown in Figs. 3 and 4, is provided with a longitudinal slot cut therein from its lower edge and in which is disposed the locking bolt E, this bolt, as will be seen by reference to Figs. 3 and 5, being square in cross section for the major portion of its length so as to fit and move without friction in the slot a' of the bolt cage, the free projecting end portion e of the locking bolt being reduced to a triangular shape with a lower inner rounded surface in order to successfully ride the striker plate.

The rear end of the locking bolt E is provided with a vertical slot e' in line with a similar slot a^2 of the bolt cage and this end of the locking bolt is also provided with horizontal apertures e^2 adapted to register with similar apertures a^3 of the bolt cage in order to receive a pivot pin F by which the rear end of the locking bolt is pivotally mounted, and upon which pivot its forward reduced end e is movable vertically by means to be hereinafter described.

At its forward end the bolt cage is provided with an intermediate head a^4 extending transversely of the entire width of the cage, this head tapering toward the inner side of the bolt cage by virtue of its upper and lower inclined surfaces, and being intersected by the before-mentioned longitudinal slot a' of the bolt cage in order to allow the locking bolt E to be raised so that its reduced head e is between the said tapering edges of the projecting head.

The striker plate C is provided upon its outer surface with upper and lower projections c' and c^2, the lower and upper faces of which projections, are inclined and spaced from one another in order to provide a tapering space of substantially the proportions of the head a^4 of the bolt cage, this tapering space receiving the said head of the bolt cage and the lower projection c^2 having an intermediate and substantially triangular cavity c^3 into which the reduced free end of the bolt E projects to lock the door in closed position. Thus, it will be seen that the striker plate C forms a bumper and a keeper as well, and that proper engagement as above stated of the head a^4 of the bolt cage within the triangular recess or space between projections c' and c^2, will effectually prevent up and down movement of the door

B, and thus coöperate with the locking bolt in engaged position to prevent the door from rattling during the travel of the vehicle.

As shown in Fig. 10, we may actuate the locking bolt E by means of a horizontal spindle G having intermediate side projections within the bolt cage and between portions of the bolt and having a handle G′ either upon the inside or outside of the door B, but we prefer to utilize an actuating lever H, the vertical body portion of which is extended within and through the rear vertical slot a^2, e' of the bolt cage and locking bolt, and pivoted by virtue of the pin F extending through its lower aperture h, the lower extremity of this vertical body portion of the lever having an angular arm h' which extends forwardly beneath the locking bolt, whereby angular movement of the upper portion of the lever in a direction away from the door frame serves to raise the locking bolt and release the door.

We preferably control the normal position of the parts by means of a flat spring I′ secured within the longitudinal slot of the bolt cage and bearing downwardly upon the locking bolt E as particularly shown in Fig. 2, and prevent the lever from rattling by means of a small coil spring seated in the slot a^2 of the back cage and engaging the lever.

The vertical portion of the lever H may be disposed within a cut-out portion in the inner face of the door as particularly shown in Figs. 1 and 2, and, as also shown in this figure, its upper end may have an angular inward extension h^2 constituting a handle by which it may be readily manipulated. As shown in Fig. 9, however, the upper portion of a corresponding lever H′ may be provided with an inclined vertical edge h^3, and a push rod J may be vertically, movably mounted through the upper edge of the door, this push rod having an upper button j and controlled by a spring j' and having its lower end in engagement with the inclined edge of the lever so that when depressed, the lever will be rocked to raise the locking bolt.

We claim:

1. In an automobile door lock, the combination of a striker plate having a tapering side recess and a cavity below the recess, of a bolt cage having a tapering head projecting from one end and adapted to fit within the side recess of the striker plate, said bolt cage also having a longitudinal slot extending partially through the said head, a locking bolt pivotally mounted within the slot of the bolt cage and having a projecting free end extending beyond the headed end of the bolt cage and movable into and out of the slot of the head, and means for moving the said locking bolt, all for the purpose described.

2. In an automobile door lock, the combination with a striker plate having a tapering side recess and a cavity below the recess, of a bolt cage having a projecting tapering head at one end adapted to interfit the recess of the striker plate, a locking bolt movable within the bolt cage and into and out of the said projecting head, a pivot pin extending transversely through the rear portion of the bolt cage and through the rear end of the locking bolt and an actuating lever pivoted adjacent its lower end on the said transverse pin and having a lower angular arm projecting beneath the locking bolt for the purpose described.

3. In an automobile door lock, the combination with a striker plate having a tapering side recess and a cavity below the recess, of a bolt cage having a projecting tapering head at one end adapted to interfit the recess of the striker plate, a locking bolt movable within the bolt cage and into and out of the said projecting head, a pivot pin extending transversely through the rear portion of the bolt cage and through the rear end of the locking bolt and an actuating lever pivoted adjacent its lower end on the said transverse pin and having a lower angular arm projecting beneath the locking bolt for the purpose described, the upper portion of said lever having an inclined edge, and a spring controlled push rod having one end in engagement with the said inclined edge whereby to rock the lever and lift the locking bolt when the push rod is depressed.

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Witnesses:
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