C. A. BEAR.

DOOR FASTENER.

APPLICATION FILED MAR. 31, 1919.

1,351,736.

Patented Sept. 7, 1920.

3 SHEETS—SHEET 1.

Fig. 2

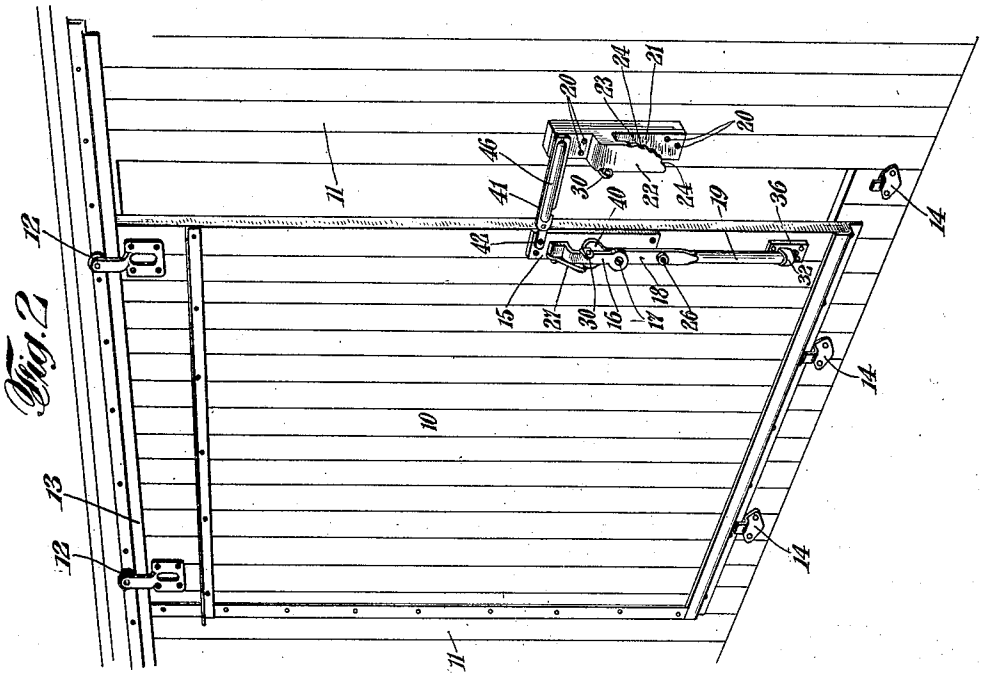
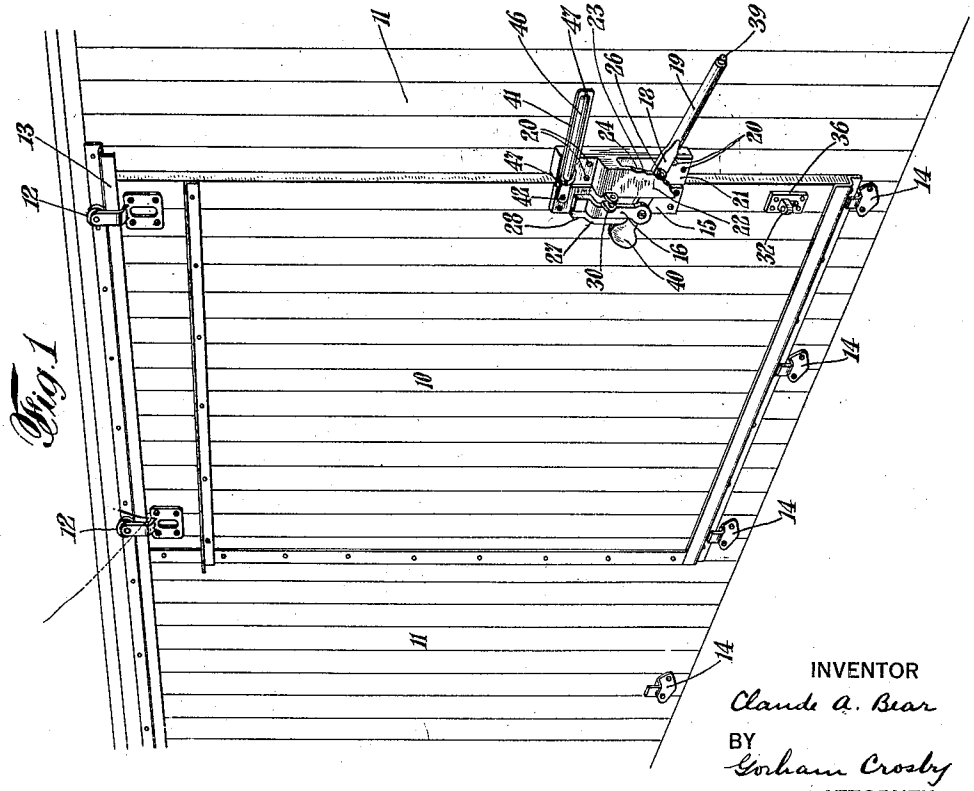


Fig. 1



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3 SHEETS—SHEET 2.

Fig. 3.

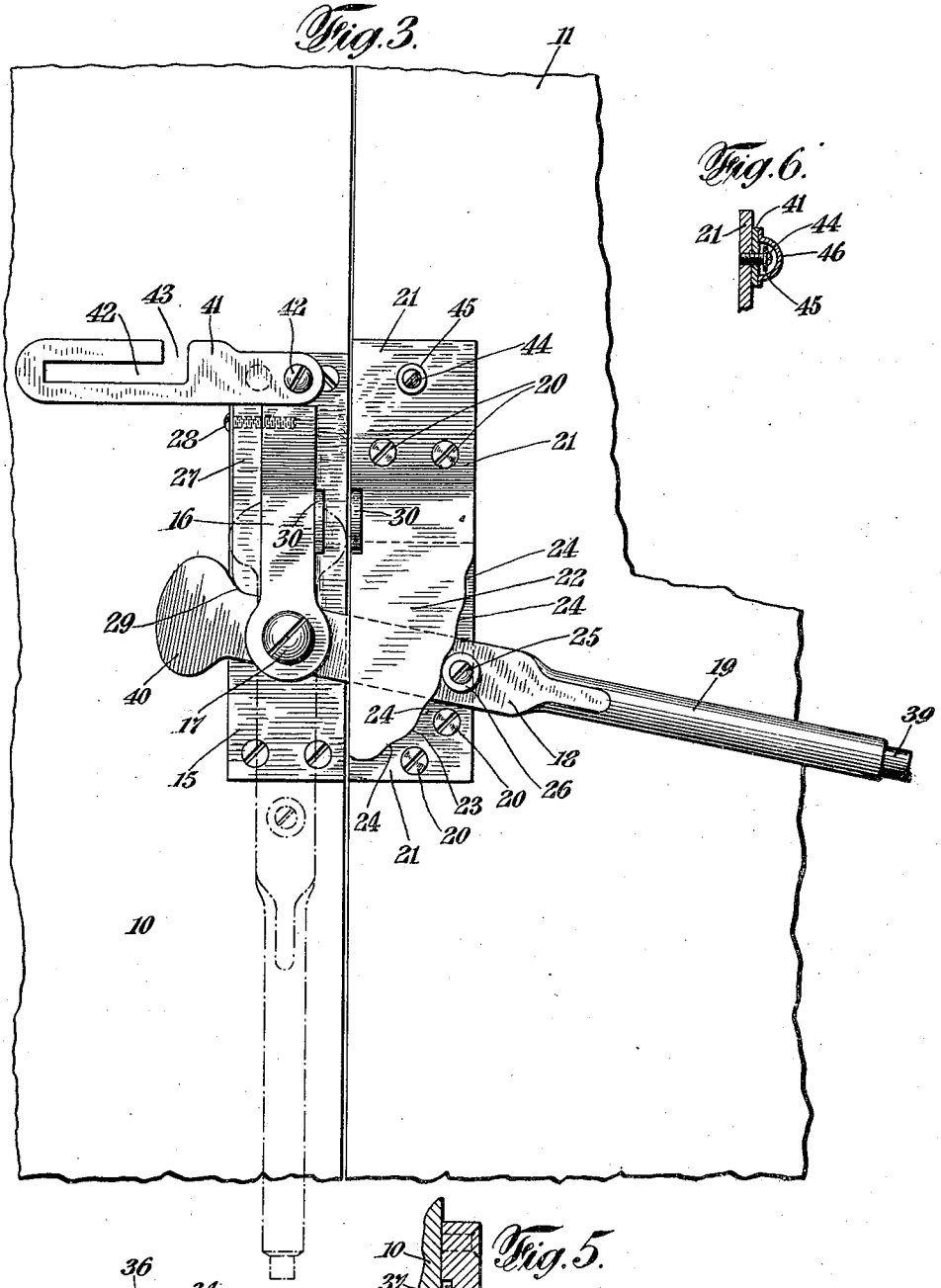


Fig. 6.

Fig. 4.

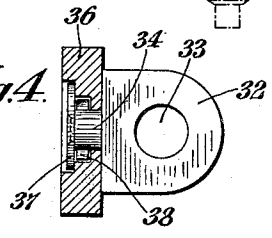
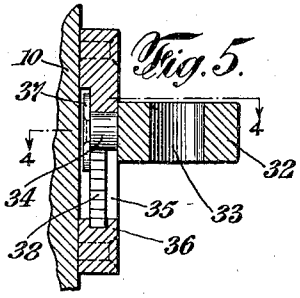


Fig. 5.



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3 SHEETS—SHEET 3.

Fig. 8.

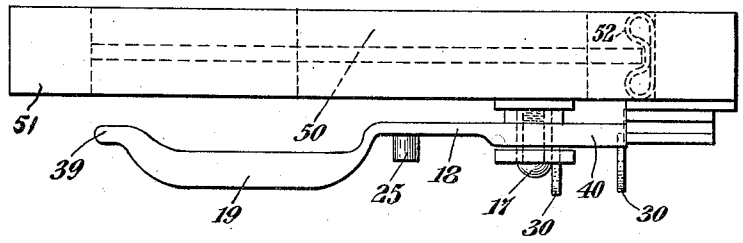
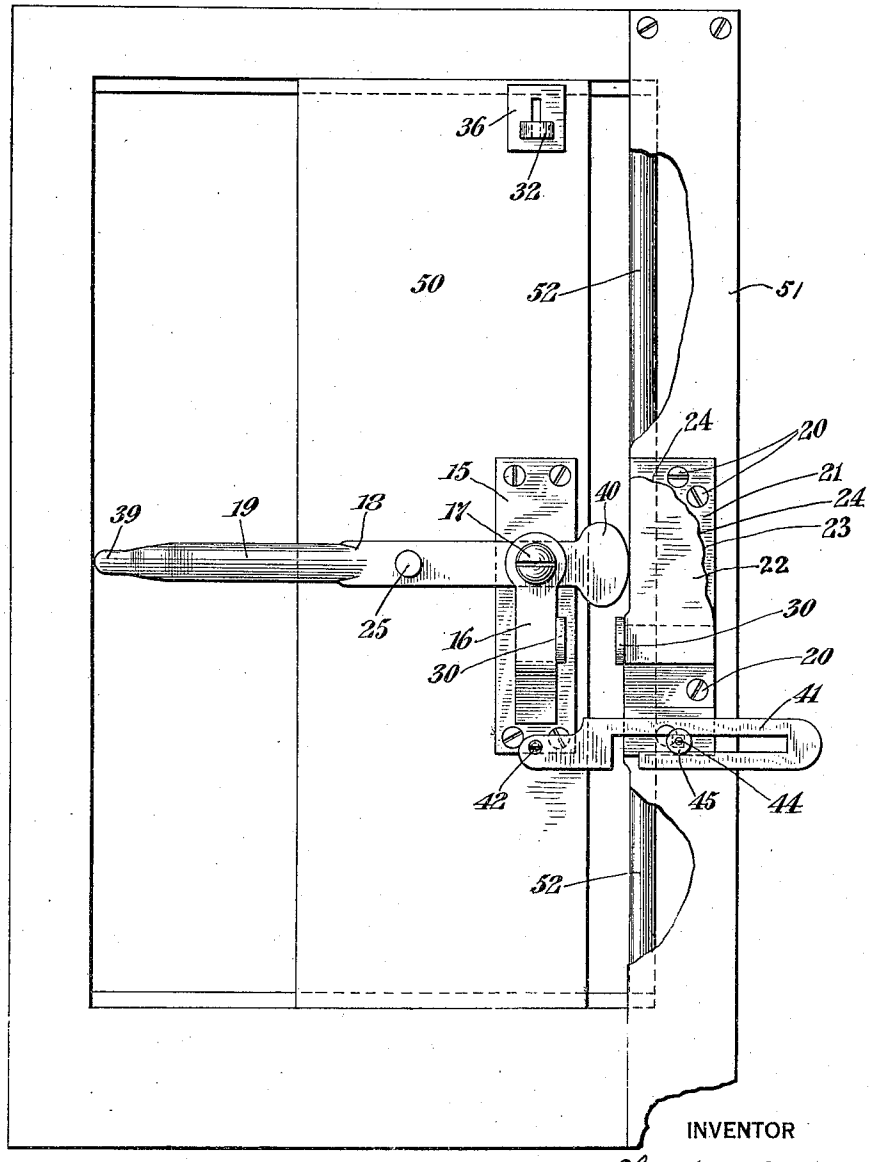


Fig. 7.



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UNITED STATES PATENT OFFICE.

CLAUDE A. BEAR, OF ALBANY, NEW YORK, ASSIGNOR OF TWO-NINTHS TO GEORGE P. FOX, OF ALBANY, NEW YORK, TWO-NINTHS TO ALEXANDER McGARY, OF NEW YORK, N. Y., AND TWO-NINTHS TO GEORGE R. BERGER, OF CHICAGO, ILLINOIS.

DOOR-FASTENER.

1,351,736. Specification of Letters Patent. Patented Sept. 7, 1920.

Application filed March 31, 1919. Serial No. 286,448.

To all whom it may concern:

Be it known that I, CLAUDE A. BEAR, a citizen of the United States, and a resident of Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Door-Fasteners, of which the following is a specification.

My invention relates to improvements in door fasteners and more particularly to fasteners for doors of railway cars, such as baggage cars and freight cars.

The main object of the invention is to provide a simple, easily constructed and applied and efficient means for fastening such doors. Further and more specific objects, features and advantages will more clearly appear from the detailed description given below taken in connection with the accompanying drawings which form a part of this specification. In the drawings, Figure 1 shows in perspective a portion of the freight car and its door with the fastening means therefor embodying my invention in a preferred form thereof. Fig. 2 is a similar view but showing the parts in different positions relative to one another. Fig. 3 is a detail illustrating on an enlarged scale the fastening means shown in Figs. 1 and 2. Fig. 4 is a transverse section through the handle holding means. Fig. 5 is a vertical section through the same. Fig. 6 is a transverse section through the auxiliary latch member. Fig. 7 is a face view illustrating a modification particularly adapted for use on baggage cars. Fig. 8 is a top plan view of parts shown in Fig. 6.

Referring to Figs. 1 to 5 inclusive, 10 represents a door of a freight car 11. In the form illustrated the door 10 is provided with rollers 12 running on a track 13 so that the door may be easily slid back and forth to open and close the same. At the bottom brackets 14 are provided to maintain the door in proper position with respect to the side of the car.

Secured upon the door 10 is a base plate 15 having integral therewith an arm 16 projecting downwardly partly with the door and provided at its lower end with a pivot pin 17 extending therethrough and through the base 15 and on which is pivoted a latch member 18 having a handle portion 19 integral therewith. Secured to the door frame as by bolts or screws 20, is a base member 21 having integral therewith a downwardly extending cam member 22 provided on its outer edge with a cam face 23 having a plurality of depressions 24 therein. As shown in the Figs. 1 and 2 the cam member 22 is spaced from the base plate 21 whereby the latch member 18 may be swung counter-clockwise as viewed in Figs. 1 and 3 up between the cam member 22 and the base plate 21. The latch member 18 has secured thereto by means of a pin 25, a roller 26 which is adapted to engage the cam face 24 in order to pull the car door 10 tightly closed, by a cam action. The roller 26 will eventually reach one of the depressions 24 which will tend to prevent it from becoming disengaged from the cam member so that the door is latched in closed position. In order however, to prevent the jarring of the car from working the latch member loose from the cam or keeper member 22, I provide a dog 27 pivoted to the member 15 by screw 28 which dog, upon the swinging of the latch member 18 into the position shown in full lines in Figs. 1 and 3 to coöperate with the keeper member 21 and 22 to latch the door closed, drops downwardly and inwardly to engage a portion 29 of the latch member 18 on the opposite side of the pivot 17 and so prevent the latch member 18 from becoming disengaged from the keeper or cam member 22. The members 16 and 22 are each provided with an integral ear 30 which ears are perforated so that when the door is closed a padlock may lock the two together or the general wire and lead seal may be used therewith to seal the door closed.

Near the bottom of the door 10 I provide a sliding keeper member 32 (see also Figs. 4 and 5). The keeper member 32 is provided with a vertical aperture 33 and with a rearwardly extending portion 34 extending through a slot 35 in a plate 36 firmly secured to the door 10. A flange or washer 37 is secured to the other end of the portion 34 so as to prevent the keeper member 33 from becoming disengaged from the plate 36 but permitting the keeper member to have a vertical sliding movement with respect to the slot 35. A spring 38 normally keeps the keeper member 32 in its uppermost position. When the latch member 18 is swung downwardly to vertical position, the

keeper 32 is pressed downwardly until the end portion 39 on the handle 19 comes opposite the aperture 33 whereupon the keeper 32 is released so that the spring 38 forces the same upwardly to engage the portion 39 to firmly secure the latch member 18 with its handle 19 in an upright position whereupon it may be used as a handle rigid with the door 10 to open and close the door (see Fig. 2). Thus the latch member is temporarily secured in a fixed position on the door, other than that position in which it holds the door closed, whereby it conveniently serves as a handle for moving the sliding door back and forth.

On the opposite side of the pivot the latch member 18 is provided with an enlarged flat head 40. In case it is desired to open the door and the door for any reason sticks, the latch member 18 may be swung in a clockwise direction until the head 40 strikes the member 21 whereupon a further movement of the handle 19 in the same clockwise direction as viewed in Figs. 1, 2 and 3, will cause the head 40 to act against the member 21 where it is joined with the member 22 to force or pry the door open by a cam action. It will, therefore, be seen that the latch member 18 coöperating with the other parts not only provides a means for forcing the door closed by cam action, but also for latching the door closed and also for forcing the door open and also as a handle member rigid with the door for pulling the door back and forth as desired.

In some cases it is desired to leave such a door partially open for ventilation or other purposes and I, therefore, provide another latch member 41 pivoted to the member 15 at 42. The member 41 is provided with a longitudinal slot 42 and an entering slot therein at 43 so that when the door is closed and the member 41 is swung clockwise toward a screw pin 44 provided with a flange or washer head 45, the pin 44 will enter the slot 43 and may slide along the slot 42. But the pin 44 can only be disengaged from the member 41 through the transverse slot 43 when the doors are closed since the flange or washer 45 is too big to pass through the slot 42 should it be attempted to pull the latch member 41 outwardly away therefrom. A cap plate 46 is provided to cover the outer side of the slotted portion of the member 41 and is secured thereto by means of screws 47. In Fig. 3 the cap member is omitted in order to show the nature of the slots in member 41. By providing the additional latch member 46 the door may be left partially open for ventilation or other purposes, but will be prevented from opening more than the length of the latch member 41 by reason of the pin 44 coming up against the end of the slot 42.

In case it is desired to apply my invention to baggage cars, the apparatus shown in Figs. 1 to 6 inclusive may be used in reverse position and applied to the inside of the car. An arrangement suitable for baggage cars is illustrated in Figs. 7 and 8 wherein 50 represents the door and 51 the door frame and 52 represents a rubber tubing against which the door 50 closes to form a tight joint for the purpose of excluding wind, rain, etc. The other reference characters in Figs. 7 and 8 represent parts similar to those already described and which operate in substantially the same manner, the only difference being a reversal of parts, the auxiliary latch 41 being pivoted at the bottom of the plate 15 and the latch member 18 being swung in a clockwise direction to engage the keeper member 22 to close the door and latch it closed. And when it is desired to use the latch member 18 as a handle to open and close the door the end 39 thereof is engaged by the keeper member 32 at the top of the door so that the latch member is secured in an upright position at the upper part of the door where it is more convenient to reach on baggage car doors. In the arrangement shown in Figs. 7 and 8 when it is desired to leave the door open slightly for ventilation or other purposes, the auxiliary latch member 41 is engaged with the pin 44 as previously described and since it is on the inside of the door it will maintain the door locked, although open a short distance since the latch member 41 may only be disengaged when the door is closed and, therefore, can only be disengaged from the inside of the car. The inner side of the lower end of the dog 27 is beveled off to provide a cam face adapted to be engaged by the head 40 on the latch member 18 to move the dog out of the path of the head 40 when moving the latch member 18 in a direction to latch the door closed. When the head 40 swings by the dog 27 as shown in Fig. 3 the dog 27 drops inwardly so as to hold the latch member 18 in position to lock the door closed.

The opening in the member 41 to the longitudinal slot therein is so positioned that the latch member 18 must be operated to pull the door closed against the cushion 52 to some extent before the latch member 41 may be disengaged from its coöperating keeper 44 so that the latch member 41 is adapted to be unlatched only when the door is closed sufficiently to compress the cushion to some extent. Thus it requires operation of latch member 18 to release the latch member 41 so that the door may be fully opened, thereby making it very difficult for anyone to reach into a car from the outside and unlock the door when the apparatus is arranged on the inside of the car, the latch member 18 having its handle extending away from the door when the door is latched closed thereby.

While I have described my improve-

ments in great detail and in connection with preferred forms thereof, I do not desire to be limited to such details or forms since many changes and modifications may be made and the invention embodied in widely different forms without departing from the spirit and scope thereof in its broader aspects.

What I claim as new and desire to secure by Letters Patent, is:—

1. In an arrangement of the class described, the combination with a door and its frame, of a keeper member secured to one, a latch member pivoted to the other and cooperating with the keeper to pull the door closed by a cam action when the latch member is swung into engagement with the keeper, said keeper member being spaced from the member to which it is secured and said latch member being adapted to swing in between the keeper member and the member to which it is secured, and a dog adapted to be inserted in the path of the latch member to prevent its becoming unlatched from the keeper, said latch member having a part adapted to force the door open when the latch member is swung in the opposite direction, and perforated lugs, one carried by the member secured to the frame and the other by the member secured to the door, by means of which the door may be sealed.

2. In an arrangement of the class described, the combination with a door and its frame, of a keeper secured to the frame and a latch member pivoted to the door, said latch member having a part coöperating with said keeper to hold the door closed when the latch member is swung into engagement with the keeper member, said latch member having a part adapted to force the door open when the latch member is swung in the opposite direction, and means for temporarily securing the latch member in a fixed position on the door, other than that position in which it holds the door closed, whereby it also serves as a handle for opening or closing the door.

3. In an arrangement of the class described, the combination with a door and its frame, of a keeper secured to the frame and a latch member pivoted to the door, said keeper having a cam face thereon and said latch member having a part coöperating with said cam face to pull the door closed by a cam action when the latch member is swung into engagement with the keeper member, said latch member having a part adapted to force the door open when the latch member is swung in the opposite direction, and means for securing the latch member in an upright position on the door whereby it serves as a handle for moving the door back and forth.

4. In an arrangement of the class described the combination with a door and its frame, of a keeper secured to one and a latch member pivoted to the other, said keeper having a cam face with a plurality of depressions thereon and said latch member having a part coöperating with said cam face to pull the door closed by a cam action when the latch member is swung into engagement with the keeper, said depressions being adapted to engage said part on the latch member to tend to hold the latch member in latching position.

5. In an arrangement of the class described the combination with a door and its frame, of a keeper secured to one and a latch member pivoted to the other, said keeper having a cam face with a plurality of depressions thereon and said latch member having a part coöperating with said cam face to pull the door closed by a cam action when the latch member is swung into engagement with the keeper, said depressions being adapted to engage said part on the latch member to tend to hold the latch member in latching position and means for securing the latch member in an upright position on the door whereby it serves as a handle for moving the door back and forth.

6. In an arrangement of the class described the combination with a door and its frame, of a keeper secured to one and a latch member pivoted to the other, said keeper having a cam face with a plurality of depressions thereon and said latch member having a part coöperating with said cam face to pull the door closed by a cam action when the latch member is swung into engagement with the keeper, said depressions being adapted to engage said part on the latch member to tend to hold the latch member in latching position, and means for securing the latch member in an upright position on the door whereby it serves as a handle for moving the door back and forth, said latch member having a part adapted to force the door open when the latch member is swung in the opposite direction and a dog adapted to be inserted in the path of the latch member to prevent its becoming unlatched from the keeper.

7. In an arrangement of the class described the combination with a door and its frame, of a keeper member secured to one, a latch member carried by the other and coöperating with the keeper to hold the door closed and a second latch member and coöperating keeper, one secured to the door the other to its frame, the second latch member coöperating with its keeper to permit the door to be partially opened, as for ventilation, while preventing it from being fully opened and requiring operation of the first latch member to release the second latch member so that the door may be fully opened.

8. In an arrangement of the class de-

scribed the combination with a door and its frame, of a keeper member secured to one, a latch member carried by the other and cooperating with the keeper to pull the door closed by a cam action, when swung in one direction, said latch member having a part adapted to force the door open when swung in the opposite direction, and a second latch member and coöperating keeper, one secured to the door the other to its frame, the second latch member coöperating with its keeper to permit the door to be partially opened, as for ventilation, while preventing it from being fully opened and requiring operation of the first latch member so that the door may be fully opened.

9. In an arrangement of the class described the combination with a door and its frame, of a keeper secured to the frame and a latch member pivoted to the door, said keeper having a cam face thereon and said latch member having a part coöperating with said cam face to pull the door closed by a cam action when the latch member is swung into engagement with the keeper member, said latch member having a part adapted to force the door open when the latch member is swung in the opposite direction and means for securing the latch member in an upright position on the door whereby it serves as a handle for moving the door back and forth, said last mentioned means comprising a sliding keeper normally engaging the free end of the latch member.

10. In an arrangement of the class described the combination with a door and its frame, a latch member attached to one and coöperating with a part on the other to permit the door to be partially opened as for ventilation while preventing it from being fully opened, a resilient cushion for the door and another latch device adapted to pull the door closed against the cushion by a cam action, said first mentioned latch member being adapted to be unlatched only when said door is closed sufficiently to compress the resilient cushion to some extent.

11. In an arrangement of the class described the combination with a door and its frame, a latch member attached to one and coöperating with a part on the other to permit the door to be partially opened as for ventilation while preventing it from being fully opened, a resilient cushion for the door and another latch device adapted to pull the door closed against the cushion by a cam action, said first mentioned latch member being adapted to be unlatched only when said door is closed sufficiently to compress the resilient cushion to some extent, and said second latch device having a handle which extends away from the door when the door is latched closed thereby.

12. In an arrangement of the class described the combination with a door and its frame, of a keeper secured to one and a latch member pivoted to the other, and cooperating with the keeper member to close the door by a cam action and a dog for holding said latch member in closed position said dog having a cam face adapted to be engaged by the latch member to move the dog out of its path when moving the latch member in a direction to latch the door closed.

13. In an arrangement of the class described the combination with a sliding door and its frame, of a keeper secured to the frame and a latch member pivoted to the door and adapted to coöperate with the keeper member to hold the door closed when swung in one direction said latch member having a hand hold part, and means for temporarily securing the latch member in a fixed position on the door, other than that position in which it holds the door closed, whereby it serves as a handle for moving the door back and forth.

14. In an arrangement of the class described the combination of a sliding door and its frame, of a keeper member secured to one, a latch member carried to the other and coöperating with the keeper to hold the door closed, and a second latch member and coöperating keeper, one secured to the door and the other to its frame, the second latch member coöperating with its keeper to permit the door to be partially opened, as for ventilation, while preventing it from being fully opened, and requiring operation of the first latch member to release the second latch member so that the door may be fully opened, the first latch member having a handle which extends away from the door edge when the door is latched closed thereby.

Signed at New York in the county of New York and State of New York this 29th day of March, A. D. 1919.

CLAUDE A. BEAR.