J. FEUCHT.

DOOR LATCH.

APPLICATION FILED APR. 2, 1908.

916,545. Patented Mar. 30, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

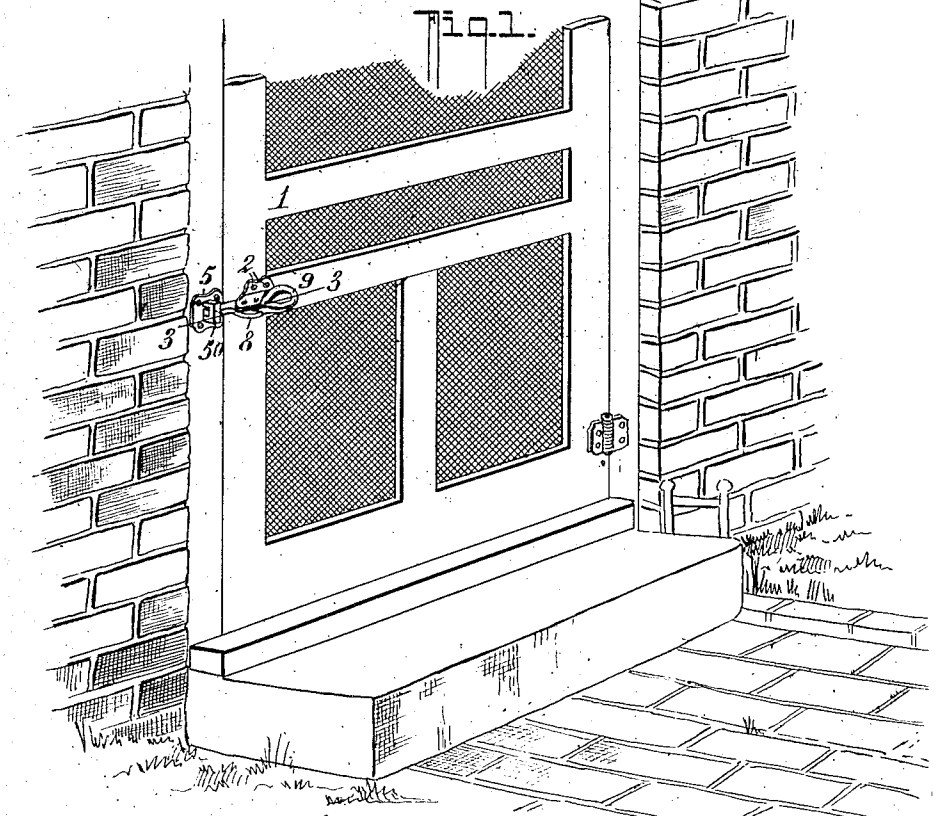


Fig. 3.

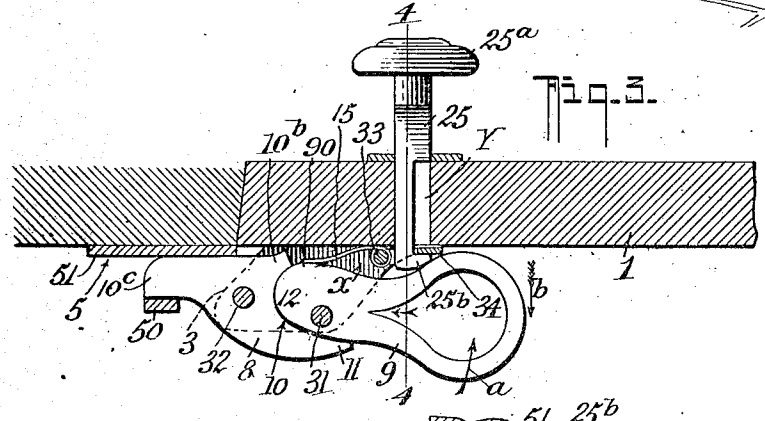
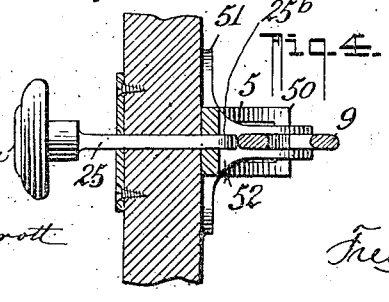


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 2.

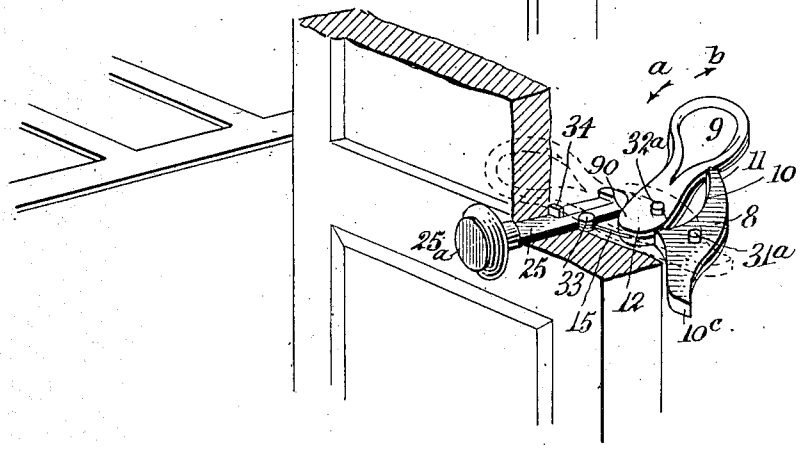


Fig. 5.

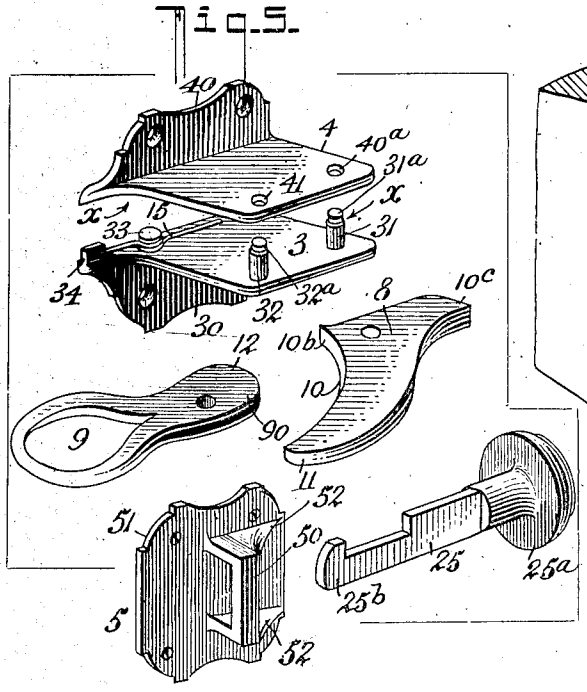
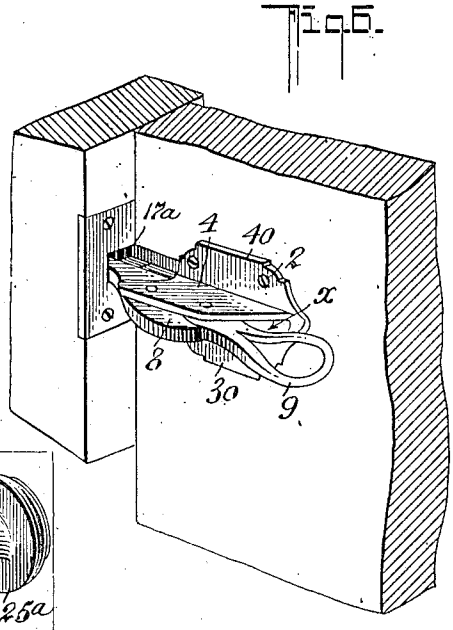


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN FEUCHT, OF ST. PAUL, MINNESOTA.

DOOR-LATCH.

No. 916,545. Specification of Letters Patent. Patented March 30, 1909.

Application filed April 2, 1908. Serial No. 424,681.

To all whom it may concern:

Be it known that I, JOHN FEUCHT, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented a new and Improved Door-Latch, of which the following is a specification.

This invention is in the nature of an improved construction of door latching device, that relates more particularly to latching mechanisms of that general type disclosed in my Patent No. 812839, dated February 20, 1906, and the said invention primarily has for its object to provide a simple and inexpensive form of latching device of the character stated, adapted for use on refrigerators, screens, stables and on storm doors, covered catch doors, and stove and fire box doors, in addition to grain doors for which my patented form of lock devices above referred to is more especially designed.

My present invention comprehends an improved coöperative arrangement of a pivoted dog or latching member, and a cam lever for adjusting the said latching member to its latched or released position.

In its more complete nature, this invention embodies, in combination with a pivoted latching dog or member, a cam lever that coöperates therewith for adjusting the said latching dog to its latched and released position and suitably mounted for being fastened on the outside of the door, and a supplemental device operable from the inside of the door for moving to release the lever to unlatch the latching member, and in its still more subordinate features, my present invention consists in certain details of construction and novel arrangement of parts, all of which will be hereinafter fully described, specifically pointed out in the appended claims and illustrated in the accompanying drawings, in which:—

Figure 1 is a perspective view which shows my improved door latch or catch mechanism secured upon the outside of a screen door. Fig. 2 is a similar view which shows the same as applied to an ice box door, parts of the door being in horizontal section and the latching device viewed from the inside of the door, the door being shown open. Fig. 3 is a horizontal section, taken substantially on the line 3—3 of Fig. 1. Fig. 4 is a cross section, taken on the line 4—4 of Fig. 2. Fig. 5, is a detail perspective view of the several parts that comprise my improved construction of door latch mechanism separated. Fig. 6 is a perspective view of a slightly modified form of my invention, the same being shown as an inside door latch.

In the present form of my invention, a latching dog 8 and a dog adjusting lever 9, having a finger engaging loop portion $9^{\times}$, are pivotally mounted in a longitudinal socket x formed between two right-angled brackets 3 and 4 that face one another and each of which has a foot portion 30—40 for conveniently attaching the same on the door frame 1 by the screws 2, as clearly shown in the drawing.

The bracket piece 3 has a pair of pendent bosses 31—32 each of which has a reduced pintle 31^{a}—32^{a} for fitting in the apertures 40^{a}—41 that are formed in the opposite bracket member 4 and whose ends are upset to form rivets for holding the two bracket pieces in proper relation, it being understood that by providing the bosses 31—32 as shown, the two brackets will always be held separated to allow for a free play of the latch dog 8 and the lever 9 upon their pivots.

The latching dog 8 in the present case, is formed with a cam seat 10 and with a lug or stud arm 11, the latter merging with the said seat 10, it also having an inwardly extended heel piece 10^{b} and a toe or latch end 10^{c} for engaging the latch keeper 17, as clearly shown in Fig. 3, by reference to which it will also be noticed that the dog 8 is fulcrumed on the boss 31 in such manner as to coact with the lever 9 fulcrumed on the boss 31.

The lever 9 at its pivot end, has an eccentric cam 12 that is so formed and positioned relatively to the dog 8 that when the said lever 9 is swung inwardly in the direction of the arrow a, it engages the stud arm 11 on the dog 8 and forces the toe end thereof outwardly into the keeper or latch mortise and finally outwardly into a tight frictional contact with the keeper member 5, the latter, in the preferred construction of my present invention, being in the nature of a metallic bracket having a U-shaped latch piece 50 that the toe end of the dog 8 engages, the said latch portion 5 also having an apertured base 51 so it may be readily secured by screws to the door jamb or frame as clearly shown in Fig. 1, by reference to which it will also be observed that the base 51 of the said bracket has a pair of beveled ribs 52 that converge toward the latch piece 50, the said ribs having for their object to center the

locking devices since when the same are used on heavy doors the said doors frequently sag down, and by providing the guide ribs 51, when the dog 8 is forced into engagement with the bottom of the bracket 50 and is pushed upwardly under the influence of the lever 9 it engages the said ribs and thereby gradually lifts the door and at the same time brings the latching device into a proper alinement. When the lever 9, which has an inward extension or handle, is swung outwardly in the direction of the arrow *b*, it engages the heel of the latch 8 and thereby moves the toe end inwardly and out of engagement with the latch keeper portion 50 and to hold the said lever 9 and the dog 8 to the open position, a spring wire 15 is used, that is coiled about the stud 33, has one end extended under another stud 34 projected from the bracket 3, and has its free end held in engagement with the heel portion 90 of the lever 9, as clearly shown in Fig. 3.

For large refrigerator doors, barn doors, screen doors, stable doors, etc., to provide for opening the latch from the inside, the preferred form of my invention includes a pusher knob 25^a on the end of a stem 25 that extends through a slot Y in the door frame, see Fig. 2, and whose inner end passes between the bosses 33 and 34 and terminates in a heel 25^b that is positioned for engaging with the lever 9 in such manner that by pushing on the knob the lever 9 is swung outwardly to release the dog or latch member 8 for opening the door. By slamming the door the latch mechanism automatically closes.

When used as an ordinary inside door latch the pusher latch and the stem are omitted and the said parts of my invention are arranged as shown in Fig. 6, the door or latch member 8 in this arrangement being adapted for entering the latch mortise 17^a in the door jamb.

By reason of pivotally mounting the members 8 and 9 as stated and shown and combining the spring therewith for normally holding the said parts under tension to their open position and with the toe end of the member 8 projected, it will be readily apparent that in closing the door, the latching dog 8 when arranged as shown in Figs. 1 to 5 will strike the latch member 50 and thereby automatically latch the door.

From the foregoing, taken in connection with the accompanying drawings the manner in which my invention is manipulated, and its advantages will be readily apparent.

By mounting the lever and dog as shown, the latching action is positive and the unlocking easily effected, by simply pulling the lever 9 outwardly, which lever at the same time serves as a convenient handle for pulling the door open.

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

1. A latch that comprises a pivoted dog and a pivoted lever, the dog having a stud arm, a latch keeper engaging end and a heel like extension, the lever having a cam portion alternately engageable with the stud arm and the heel extension for adjusting the dog to either of its positions.

2. A latch comprising a pivoted dog and a separate lever having a finger engaging portion, said dog and lever being mounted on one side of the door, the dog having a latching toe at one end and a heel portion at the other end, the lever having a cam portion adapted when it is swung in one direction to move the locking dog to its released position and when swung in the opposite direction to move the said dog to its latching position.

3. A latch, comprising a pivoted dog and a lever mounted upon the inside of the door, the dog having a stud arm and a latch engaging end and a heel like extension, the lever having a cam portion alternately engageable with the stud arm and the heel extension for adjusting the dog to either of its positions and a supplemental device operable from the outside of the door for moving the lever to one of its positions.

4. The combination with the fixedly held latch keeper, a pivoted latch dog and a separate lever mounted on the door, the lever having an eccentric cam to engage with the locking dog, said dog having a toe piece to engage the said latch keeper when the door is closed and that automatically moves into engagement with the said keeper when the lever is moved in one direction, and that automatically moves out of engagement with said keeper when the lever is moved in an opposite direction, said lever serving to move the latch dog into and out of its latching position and retaining said dog in its latching and unlatching positions.

5. The combination with the fixed latch keeper; of a dog pivotally mounted on the door, said dog having a toe at one end, a heel extension at the other end, and a stud arm, the lever pivotally mounted on the door having a cam head for coöperating with the dog and adapted under one movement to engage the stud arm to force the dog to its locked position and under another movement to engage the heel of the dog to move it to its unlocked position.

6. In a door latch of the character described, the combination with the latch keeper on the door casing, a bracket on the door, a latch dog pivotally mounted on the bracket, having a toe piece for engaging the keeper, said latch dog and keeper being relatively so arranged whereby the dog automatically locks with the keeper when the door is closed, and a lever having a finger engaging portion and being pivotally mount-

ed on the bracket for engaging with and moving the latch dog to its unlocked position, and a supplemental means for actuating the lever in one direction of movement.

7. The combination with the latch keeper that includes a base having inclined ribs on its base that converge toward the latch dog receiving portion of the keeper; of a latch dog pivotally mounted on the door, having a toe piece for engaging the keeper and its ribs when the door is closed, and a lever pivotally mounted on the door that coöperates with the latch dog to move it into a locked engagement with the keeper, as set forth.

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Witnesses:
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