May 28, 1957 E. S. MODES 2,793,894

DOOR LATCH

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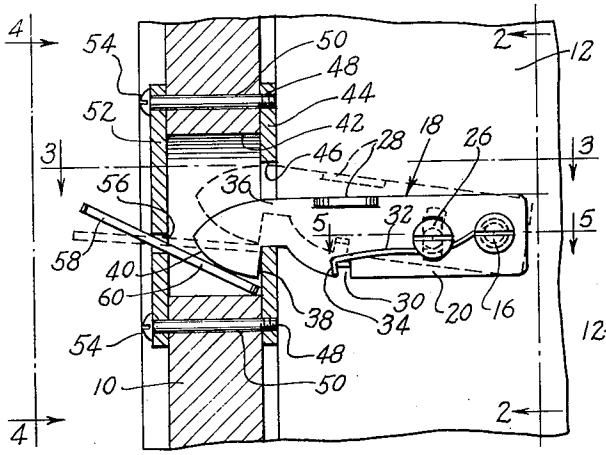


Fig. 1

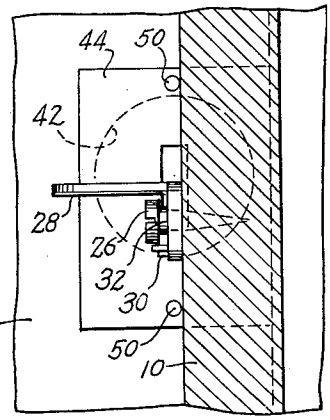


Fig. 2

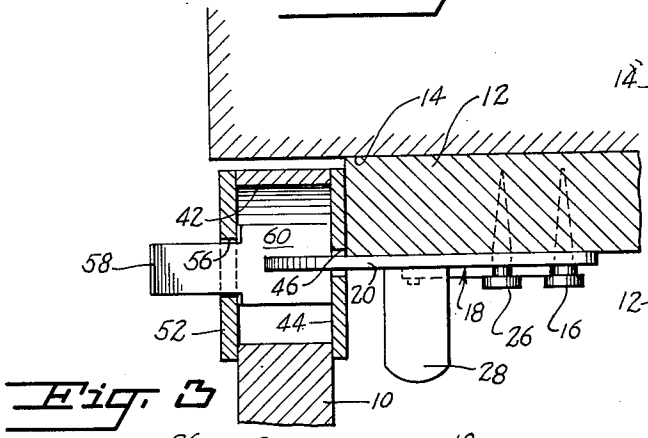


Fig. 3

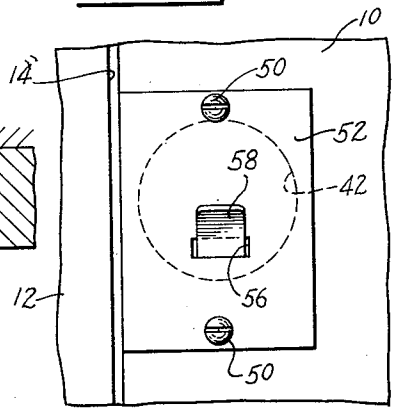


Fig. 4

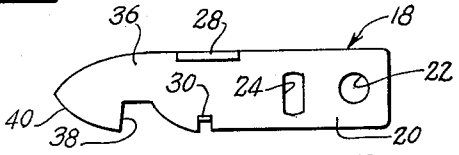


Fig. 6

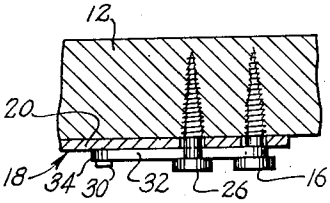


Fig. 5

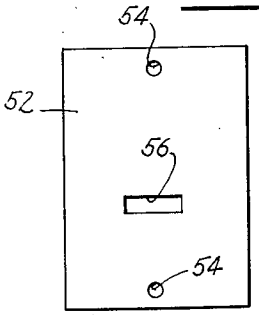


Fig. 7

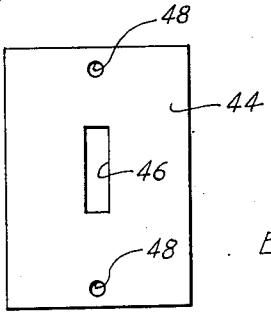


Fig. 8

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DOOR LATCH

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2 Claims. (Cl. 292—128)

This invention relates to a door latch and has for its primary object to secure a screen door in place in a door opening.

Another object is to cause the latch to positively engage a keeper and means to enable the latch to be moved out of retaining engagement from either side of the door.

The above and other objects may be attained by employing this invention which embodies among its features a keeper plate mounted to move in a horizontal path, said keeper plate having an elongated vertical slot extending therethrough, a latch mounted to move in a vertical path which intersects the horizontal path, said latch being adapted to extend through the slot and to engage the keeper plate, a cam carried by the latch and extending outwardly therefrom into the horizontal path for engaging the keeper plate adjacent the lower end of the slot and lifting the latch as the keeper plate approaches the latch, a lug carried by the latch and extending laterally outwardly therefrom to define a handle for moving the latch upwardly in the slot and out of latching engagement with the keeper plate, a lever mounted adjacent the keeper plate to rock in a vertical arcuate path which when the latch engages the keeper intersects the path of movement of the latch, and said lever when the keeper is engaged by the latch extending beneath the cam for lifting said latch and holding it elevated during its withdrawal through the slot.

Other features include spring means mounted adjacent the latch, and a lug carried by and extending outwardly from the latch for engagement by the keeper plate to yieldingly advance the latch into latching engagement with the keeper plate.

In the drawings:

Figure 1 is a fragmentary side view of a door frame showing this improved latch mounted thereon and engaging a keeper carried by a door, the latter being shown in section;

Figure 2 is a sectional view taken substantially on the line 2—2 of Figure 1;

Figure 3 is a horizontal sectional view taken substantially on the line 3—3 of Figure 1;

Figure 4 is a fragmentary side view of a door showing it in closed and latched position in a door opening;

Figure 5 is a fragmentary horizontal sectional view taken substantially on the line 5—5 of Figure 1;

Figure 6 is a side view of the latch;

Figure 7 is a side view of a cover plate in conjunction with the door; and

Figure 8 is a side view of the keeper plate.

Referring to the drawings in detail, a door **10** is mounted on a door frame **12** to move in a horizontal path into and out of closing relation with a doorway **14**.

Pivotally mounted as by a screw **16** to the door frame **12** and extending into the horizontal path of movement of the door **10** is a latch designated generally **18**. The latch **18** comprises an elongated body **20** having an opening **22** extending therethrough adjacent one end thereof for the reception of the pivot screw **16**, and extending

through the body **20** intermediate the ends thereof is an elongated transversely extending slot **24** for the reception of a stop screw **26** which enters the door frame **12** in spaced relation to the screw **16**, as will be readily understood upon reference to the drawings. Carried by and extending outwardly from the body **20** intermediate the ends thereof is a finger **28** defining a thumb piece by means of which the latch may be lifted about the axis of the screw **16**, as will be readily understood upon reference to Figure 1. A lug **30** is carried by and extends laterally outwardly from the body **20** beneath the finger **28** for engagement by the spring **32**, one end of which encircles the screw **16**, while the opposite end extends outwardly therefrom beneath the screw **26** and engages the lug **30** to yieldingly urge the latch downwardly into the full line position illustrated in Figure 1. A suitable retaining tongue **34** is carried by the spring **32** adjacent the end thereof remote from that which is connected to the screw **16** and engages the lug **30** to prevent disengagement of the spring **32** with the lug **30**. Carried by the body **20** and extending longitudinally therefrom adjacent the end thereof remote from the opening **22** is a neck **36** which defines with the body **20** a notch **38**, the wall of which remote from the body **20** extends substantially perpendicularly to the longitudinal axis of the body **20** and forms a stop for engagement with a keeper plate, to be more fully hereinafter described. The lower edge of the stop curves upwardly and inwardly as it recedes from the body **20** to define a cam **40**, the purpose of which will hereinafter appear.

As illustrated in the drawings, the door **10** is provided with an opening **42** which, as illustrated, is adapted to receive the end of the latch **18** remote from the pivot screw **16**, and fixed to the door **10** in covering relation with one end of the opening **42** is a plate **44** defining a keeper for engaging the latch **18** and holding the door in closed relation to the doorway **14**. The plate **44** is provided with an elongated vertically extending slot **46** through which the latch **18** projects when the door is in closed position and extending through the plate **44** are internally screw threaded openings **48** for the reception of retaining screws **50** by means of which the plate **44** is secured against the side of the door adjacent the door frame. A cover plate **52** is provided adjacent opposite ends with openings **54** which are adapted to align with the internally screw threaded openings **48** in the plate **44** to receive the screws **50**, and extending through the cover plate **52** intermediate the ends thereof is a horizontally extending slot **56** for the reception of the tongue **58** of a lever **60** which is normally tilted so that its inner end lies adjacent the lower side of the opening **42** and when the door is in closed position beneath the cam **40** of the latch **18**.

In use, it will be evident that with the keeper plate **44** mounted on the door, as illustrated in the drawings, and the cover plate mounted on the opposite side of the door, as the door moves to closed position, the latch **18**, projecting into the path of movement of the keeper **44**, will be engaged by the bottom wall of the slot **46** and lifted by the cam **40** so that the wall **38** of the notch will engage behind the keeper to hold the door **10** in closing relation to the door opening. When it is desired to open the door from the side adjacent the door frame, the tongue **28** is engaged and the latch **18** lifted against the effort of the spring **32** to disengage the wall **38** from the lower portion of the keeper **44** so that the door may be opened by moving it away from the door frame **12** and thus extracting the latch through the slot **46** from the opening **42**. In opening the door from the opposite side, downward pressure is exerted upon the thumb piece **58** to cause the lever **60** to rock in the slot **56** and engage the cam **40** to lift the latch into the released position,

as suggested by the dotted lines in Figure 2. Obviously, as the door moves to closed position, the plate **44** will move in a horizontal path to intersect the path of movement of the latch **18** and when the cam **40** is engaged by the bottom wall of the slot **46**, the latch **18** will move in its vertical arcuate path, as suggested by the broken lines in Figure 1, to subsequently move downwardly under the influence of the spring **32** so that the wall **38** of the notch in the latch body **20** will engage behind the plate **44** to secure the door in closed position.

While in the foregoing there has been shown and described the preferred embodiment of this invention, it is to be understood that minor changes in the details of construction, combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

What is claimed is:

1. In a latch assembly, a support, an elongated latch having a first end and a second end, means pivoting the latch to the support at said first end, said latch being formed with a slot extending thereacross at a point between said means and the second end of the latch, a stop secured to said support and extending through said slot, said latch having upper and lower edges, a lateral lug on said lower edge between said stop and the second end of the latch, an elongated spring having a first end secured to said means and a second free end, said spring having an intermediate portion engaged beneath said stop with the free end of the spring tensioned upon and bearing upon said lug, said lower edge of the latch having a notch between said lug and the second end of the latch defining a head having a stop edge facing said lug, said head being arranged to engage through an opening in a keeper plate with said stop edge engaged with a side of the keeper plate.

2. In a latch assembly, a support, an elongated latch having a first end and a second end, means pivoting the latch to the support at said first end, said latch being formed with a slot extending thereacross at a point between said means and the second end of the latch, a stop secured to said support and extending through said slot, said latch having upper and lower edges, a lateral lug on said lower edge between said stop and the second end of the latch, an elongated spring having a first end secured to said means and a second free end, said spring having an intermediate portion engaged beneath said stop with the free end of the spring tensioned upon and bearing upon said lug, said lower edge of the latch having a notch between said lug and the second end of the latch defining a head having a stop edge facing said lug, said head being arranged to engage through an opening in a keeper plate with said stop edge engaged with a side of the keeper plate, the part of the lower edge of the latch along said head being curved to define a cam for latch pivoting engagement with an edge of a keeper plate opening.

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