Sept. 5, 1950 W. YLINEN 2,521,111

DOOR LOCK

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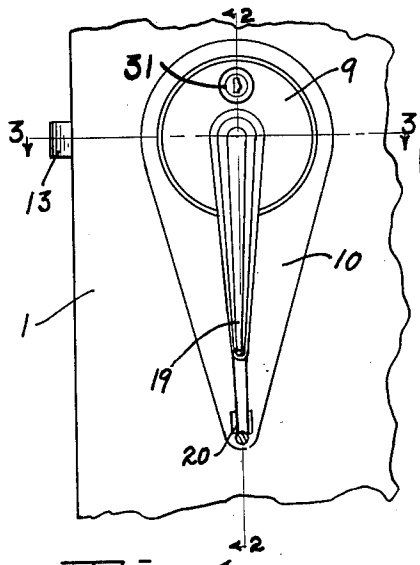


Fig. 1

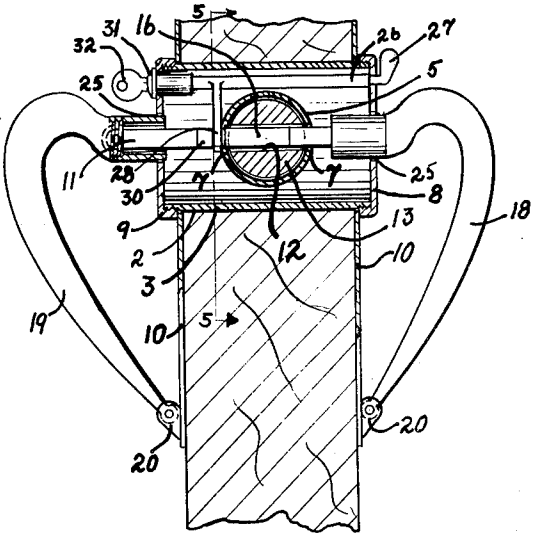


Fig. 2

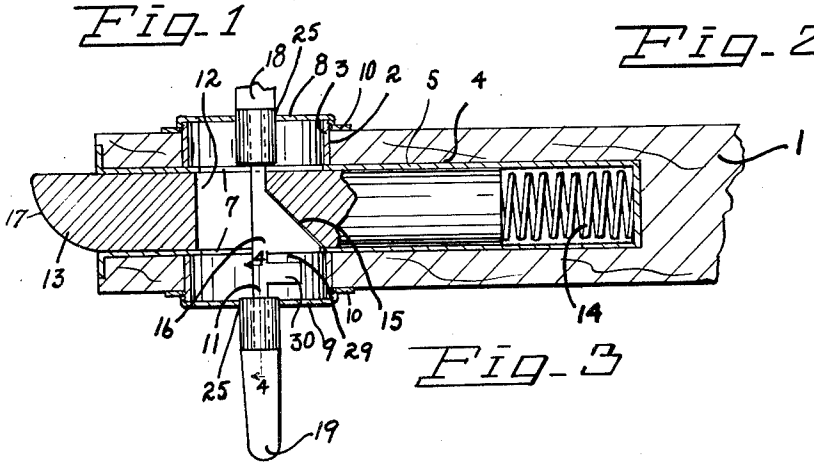


Fig. 3

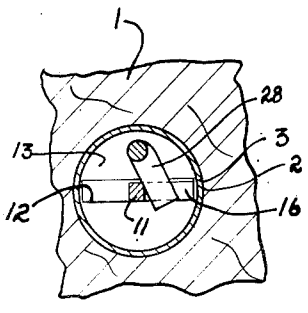


Fig. 5

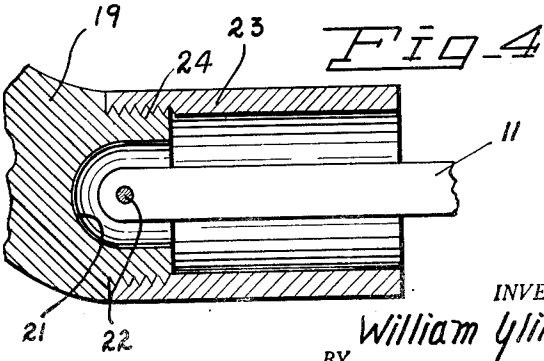


Fig. 4

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DOOR LOCK

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1 Claim. (Cl. 70—146)

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This invention relates to an improved door catch and it is one object of the invention to provide a device of this character so constructed that by grasping a handle at the inner or outer side of a door and shifting the bar longitudinally through the door a bolt slidably mounted at right angles to the bar will be moved to a retracted position and release the door for opening movement.

Another object of the invention is to provide a catch and lock wherein the bolt is slidably mounted in a tube embedded in the door and formed in opposite side portions with slots with which register a slot formed through the bolt, the slot of the bolt being so formed that it is provided with a cam surface engaged by an arm projecting transversely from a bar with which handles are connected for shifting the bar longitudinally and retracting the bolt.

Another object of the invention is to provide a catch and lock wherein the bar for retracting the bolt is formed with a slot or recess for receiving a side arm of a shaft which is turned by means of a key in order to move the side arm into the recess and secure the bar against movement in a direction to retract the bolt.

Another object of the invention is to provide a catch and lock which is simple in construction and may be easily mounted in a door.

The invention is illustrated in the accompanying drawings wherein:

Fig. 1 is a view in elevation showing a portion of a door equipped with the improved catch and lock.

Fig. 2 is a sectional view taken vertically along line 2—2 of Figure 1.

Fig. 3 is a horizontal sectional view taken along line 3—3 of Figure 1.

Fig. 4 is a fragmentary sectional view taken through a portion of a handle and a guide sleeve for the handle.

Fig. 5 is a transverse sectional view taken along line 5—5 of Figure 2.

This lock is used for holding a door closed. The door 1 may be of any desired size and thickness and adjacent its free side edge is formed with a transversely extending opening 2 to receive a cylinder 3 and a bore 4 to receive a tube 5. The bore 4 leads from the free side edge face of the door and the tube is formed about its outer end with a flange which is countersunk in the door and secured in a conventional manner by screws or the like (not shown). Slots 7 are formed in opposite side portions of the tube and are of such length that they extend through the cylinder 3 for the full diameter thereof, as shown in Figure 3. Caps 8 and 9 close ends of the cylinder and their marginal portions overlap escutcheon plates 10 which bear against side faces of the door.

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A bar 11 extends longitudinally through the cylinder and this bar passes through the slots 7 and through a slot 12 formed in the bolt 13 which is slidably mounted in the tube 5 and urged outwardly by a spring 14 mounted in the tube between inner end of the tube and the inner end of the bolt. The slot is formed entirely through the bolt but its inner end portion is cut to form a diagonally extending cam surface 15 for engagement by the confronting cam surface of a lug or arm 16, and upon referring to Figure 3 it will be seen that when the bar is shifted longitudinally in one direction the cam surfaces of the arm 16 and the bolt will cause the bolt to be shifted inwardly to a retracted position. When the bar is released expansion of the spring will shift the bolt outwardly to the extended position in which it will engage a keeper on a door frame and hold the door closed. The outer end of the bolt has the usual curved surface 17 for momentarily shifting the bolt inwardly when a door is closed and this surface engages the keeper. In order to shift the bar 11 longitudinally there have been provided inner and outer handles 18 and 19 which have their lower ends pivoted to ears 20 projecting from the escutcheon plates 10 for swinging movement towards and away from the door. The upper end portion of each handle extends towards the door and at its end is formed with a pocket 21 to receive the adjoining end of the bar 11 which is secured in the pocket by a pin 22 passed transversely through the handle. Sleeves 23 are screwed upon the reduced and threaded ends 24 of the handles and these sleeves pass through openings 25 formed centrally of the caps 8 and 9 to guide movement of the handles and the bar 11. Since the sleeves are screwed upon the end portions of the handles through which the pins 22 pass they serve to hold pins in place and prevent them from slipping longitudinally out of securing engagement with the ends of the bar. The openings 25 are of such size that binding will not occur when the handles are grasped and actuated to shift the bar longitudinally. When the handle 18 is grasped pull is exerted to shift the bar 11 longitudinally and move the bolt to its retracted position and when the handle 19 is grasped push is exerted thereon to shift the bar and retract the bolt.

In order that the bar 11 may be secured against

longitudinal movement and the bolt held in an extended position there has been provided a rod or shaft **26** which extends through the cylinder longitudinally thereof in crossing relation to the tube **5**. The inner end portion of the shaft passes through the cap **8** and is formed with a lever **27** so that by grasping this lever, or finger hold, the shaft may be turned and its side arm **28** swung downwardly into a slot or recess **29** defined by an arm **30** spaced from the lug or arm **16**. When the side arm **28** is engaged in the recess **29** the bar **11** can not be shifted longitudinally and the bolt may not be retracted to release the door for opening movement. The outer end portion of the shaft **26** is received in the cylinder of a lock **31** mounted through the outer cap **9** and when a key **32** is inserted into the lock and turned the shaft will be turned to rotate the shaft and effect retraction of the bolt. It will thus be seen that a person within a room or building may secure the bolt by grasping the lever **27** and turning the shaft **26** and the door may then not be opened by a person outside the room or building who does not have a key to fit the lock.

Having thus described the invention, what is claimed is:

In a door fastener having a cylinder adapted to be mounted through a door and provided with heads at its ends, a spring biased bolt slidable longitudinally to extended and retracted positions and passing through the cylinder transversely thereof, and a bar slidable longitudinally through the cylinder and provided with a laterally extending lug having a cam surface engaging a portion of the bolt for shifting the bolt longitudinally to retracted position when the bar is shifted longitudinally in one direction; a finger extending laterally from said bar in transversely spaced parallel relation to the lug and together with the lug forming a slot, a shaft extending longitudinally through the cylinder, in upwardly spaced parallel relation to said bar and having one end portion rotatably mounted through one head of the cylinder and projecting outwardly therefrom and carrying a laterally extending lever for manually turning the shaft, an arm extending laterally from said shaft and having swinging movement imparted thereto out of position in the slot between the lug and the finger for securing the bar against longitudinal movement in a direction to retract the bolt, and a lock mounted through the other head of the cylinder, the shaft being connected with the mechanism of the lock whereby the shaft may be turned in a direction to swing its arm out of the slot of the bar and thereby release the bar when the lock is actuated by a key thrust into the outer end of the lock.

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