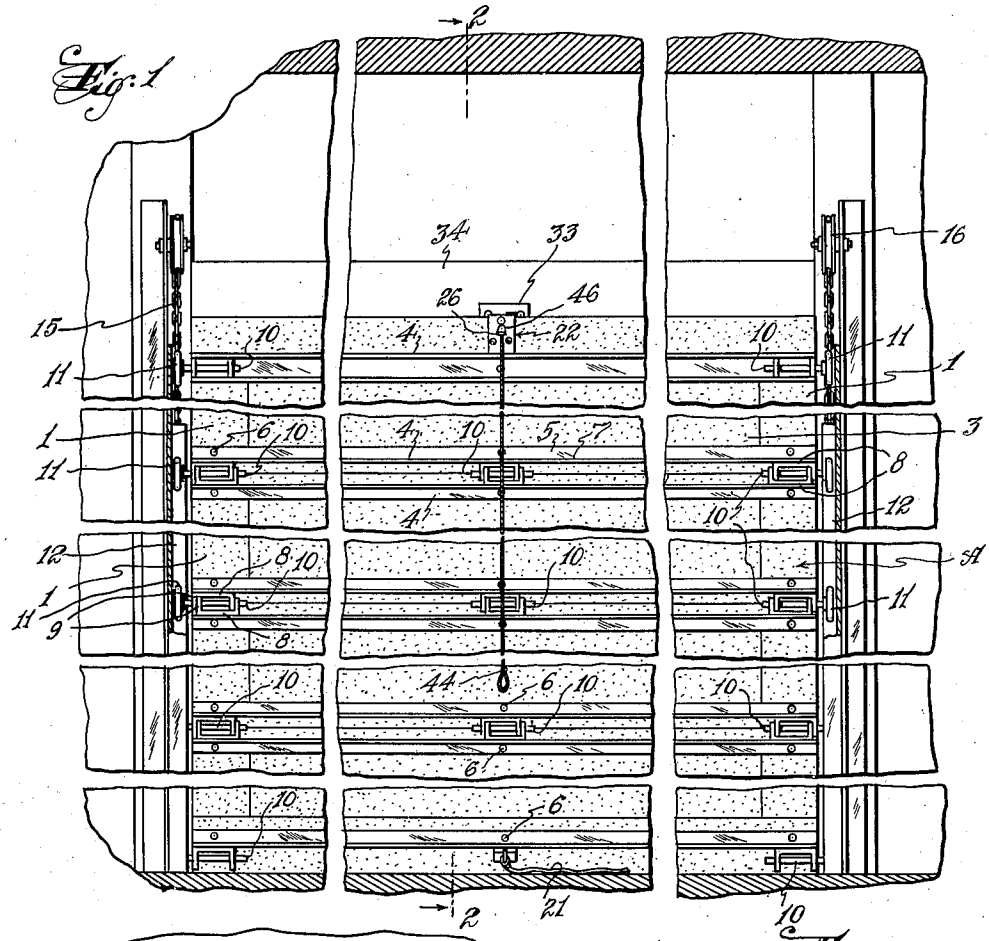
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OVERHEAD DOOR LOCK

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Fig. 1



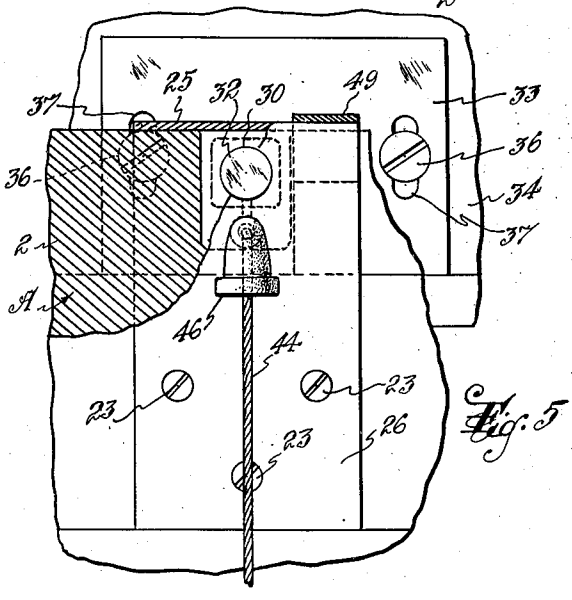
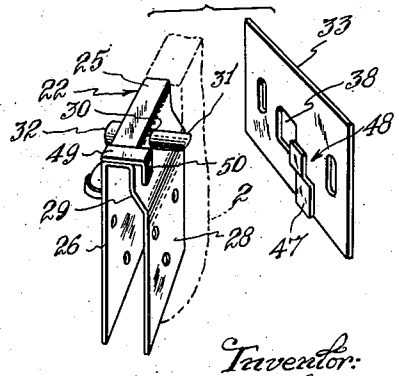


Fig. 5

Fig. 6



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Fig. 2

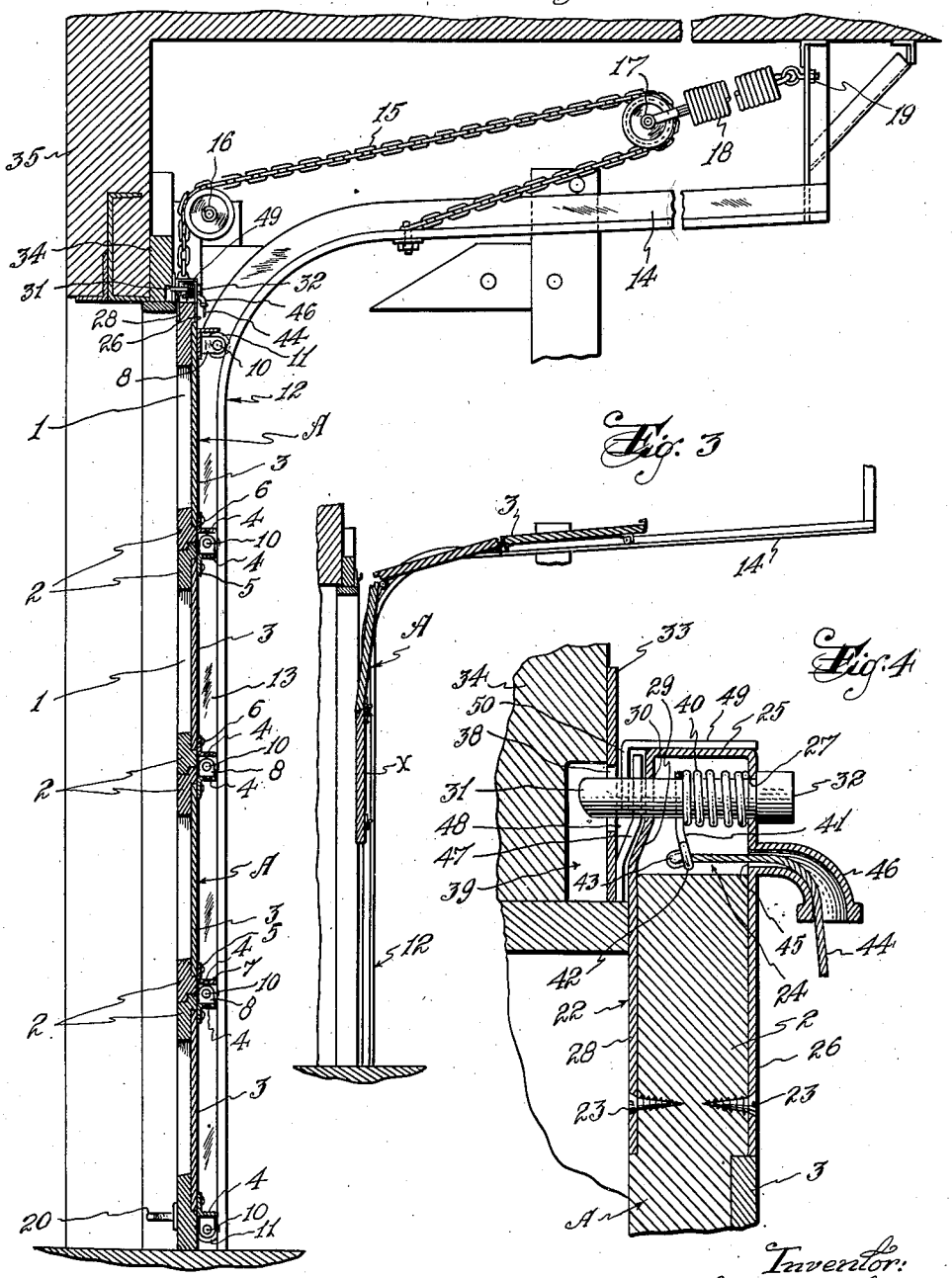


Fig. 3

Fig. 4

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OVERHEAD DOOR LOCK

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2 Claims. (Cl. 292—171)

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This invention relates in general to doors of the so-called overhead type and in particular to locks for such doors.

Such doors as shown in my Patent No. 2,134,397 usually include a plurality of panel sections hingedly connected at their edges on horizontal axes so that the panel sections may be arranged in a common plane in a door opening for closing the door and may pivotally relatively move to permit raising of the panel sections and movement thereof from the vertical plane into a horizontal plane overhead for opening the door, the panel sections being mounted on rollers running in tracks. A spring-pressed sliding bolt is also usually provided to lock the door in its closed position.

Heretofore such sliding bolts have been very easily manipulated by an unauthorized person inserting a tool between the door and the door frame so as to gain access to the end of the bolt and force the bolt to unlocked position.

One object of my invention is to provide an improved lock for such doors with a safety guard whereby the door cannot be pried away from the door frame so as to expose or to permit unauthorized access to the locking bolt.

Another object of the present invention is to provide a safety guard for a lock for overhead doors which will be highly effective to prevent a knife or other implement being inserted between the door and door frame and force the bolt to unlocked position.

A further object is to provide a lock of this kind that is simple and rugged in construction and inexpensive to manufacture.

Other objects and advantages of the invention will be apparent from the description thereof to follow taken in connection with the accompanying drawings in which—

Figure 1 is a rear elevational view of an overhead door embodying my invention and showing the door in closed position.

Figure 2 is a transverse vertical sectional view on the line 2—2 of Figure 1.

Figure 3 is a schematic sectional view on a reduced scale showing the manner of assembling the panel sections in the tracks.

Figure 4 is an enlarged vertical sectional view showing the locking mechanism in operative position.

Figure 5 is a front elevational view of the parts shown in Figure 4.

Figure 6 is a compositive perspective detail view of the locking mechanism.

Specifically describing the embodiment shown in the drawings, the door comprises a plurality of panel sections A preferably formed of wood. Each panel section includes a pair of stiles 1 and a pair of rails 2. The stiles and rails are suitably undercut to receive a panel 3 preferably

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formed of plywood and the adjoining ends of the stiles and rails are suitably interlocked.

For reenforcing the panel sections 1 and attaching hinges and roller mountings to the panel sections, I apply an angle bar 4, preferably of metal, to each rail 2 of each panel section. Preferably the angle bars have one flange 5 secured to the panel section and extending inwardly thereof from the edges of the section, screws 6 passing through the angle bars, the rails and the respective panels 3 to reenforce the attachment of the panels to the sections 1. The other flanges 7 of the angle bars project perpendicularly from the rear sides of the panel sections.

Secured to the flanges 7 of the respective angle bars are the sections of hinges and roller mountings. As shown the hinge sections 8 may be identical and each comprises an approximately U-shaped strip of metal having its base portion secured as by welding or riveting to the corresponding flange 7 and its arms 9 projecting toward the edge of the respective panel section. The arms 9 of the complemental sections 8 are adapted to be juxtaposed in assembly and have alined openings to receive a hinge pintle 10. The hinge pintles may also serve as the axles for rollers 11 on the hinges at the ends of the panel sections.

While preferably the hinges are also located at the middle of the panel sections, it will be understood that the hinges may be arranged in any suitable location.

Each pair of angle bars 4 for connecting adjoining sections and the hinges associated with said pair of angle bars together constitute a constructional unit. The angle bars with the associated hinge sections may be assembled on the panel sections at the factory and the panel sections may be connected together at the site of installation by the simple insertion of the hinge pintles 10. It will be observed that the flange 7 of each angle bar normally is spaced from and parallel to the corresponding flange of the other bar, while the other flanges 5 are disposed in parallel planes and the hinge sections are connected to the first-mentioned flanges 7.

In installing the door, a track 12 is mounted at each vertical side of the door opening and includes a vertical leg 13 extending throughout the height of the door opening and a horizontal leg 14 disposed above the door opening.

The panel sections are assembled in the tracks in the manner above described in my Patent 2,134,397.

As usual the door will be counterbalanced as by a chain 15 connected at one end to the lower edge of the lower section X at each end thereof, which chains pass over corresponding guide rollers 16 and 17 and have their other ends connected to a fixed support, for example a horizontal portion

of the corresponding track 12. The rollers 17 float and are connected to the ends of the corresponding tension springs 18, the other ends of which are attached to a fixed support such as the track mounting 19.

In operation of the door, the panel sections may be slid along the tracks 12 either manually as through a handle 20 at the front of the door and a pull cord 21 at the rear of the door, or by automatic means to locate the panel sections across the door opening to close the door or move them into the horizontal portions of the tracks to open the door.

According to the present invention I have provided improved mechanism for locking the door in closed position. As shown in the drawings, an inverted U-shaped metal lock casing 22 is attached to the outer and inner faces of the top rail 2 of the uppermost panel section A of the door at its center by means of screws 23. The casing projects above the upper edge of said top rail providing a space 24 between the rail and connecting wall 25 of the casing. The rear wall 26 of the casing, as viewed in Figures 2 and 4, at a point above the upper end of the top rail is formed with an opening 27. The front wall 28 at a point above the upper end of the top rail is offset as indicated at 29 and above said offset portion is formed with an opening 30 in alignment with the opening 27 in the rear wall. A bolt 31 is slidably mounted in said aligned openings and extends across the space 24 and beyond the front and rear walls. The rear end of the bolt is formed with a headed portion 32 to limit its forward travel.

A keeper plate 33 is adjustably fastened to the head or lintel 34 of the door frame 35 at a point opposite the casing 22 by means of bolts 36 passing through elongated openings 37 in the plate adjacent its side edges. A central substantially square shaped opening 38 is formed in the plate and behind this opening the lintel 34 is cut away to provide a space 39 to receive the outer end of the bolt 31.

Surrounding the bolt 31 in the space 24 is a spring 40 with one end seated against the inner surface of the rear wall 26 of the casing and with its other end seated against a pin 41 having one end threaded into an opening in the bolt and having its other end depending from the bolt and formed into a loop 42 for receiving and connecting the headed end 43 of a cable 44 to the bolt. The cable extends rearwardly of the casing 22 through an opening 45 in the rear wall thereof and through an integral elbow or guide member 46 to the rear of the door. The spring 40 normally projects the bolt 31 forwardly through the opening 38 in the keeper plate into the space 39 in the lintel of the door frame in order to lock the door in closed position. The bolt may be pulled rearwardly to unlocking position against the action of spring 40 by the cable 44 which is positioned behind the door and not accessible to unauthorized persons.

The locking mechanism just described is provided with a safety guard in the form of a flat metal bar or strap 47 having one end fastened to the outer surface of the keeper plate 33 to one side of its central opening 38 and having its other end offset to provide a space 48 between it and the keeper plate. The offset end of the flat bar or strap rests against the upper offset end

of the front wall of the casing. Another flat bar or strap 49 is suitably fastened to the upper connecting wall 25 of the casing adjacent one end thereof and in line with the strap 47. Strap 49 is provided at one end with a downwardly extending flange to form a hook 50 extending into the space 48 between the offset end of the strap 47 and the keeper plate 33 thereby interlocking the casing 22 and keeper plate 33 when the door is in closed position as shown in Figures 1 and 4. The straps are so positioned and arranged that when the bolt is thrown it will slide past the straps into locking engagement with the keeper plate after the interlocking straps have come into interlocking engagement with each other.

From the foregoing it will be seen that the keeper plate and projected bolt hold and lock the door against upward or opening movement and that the interlocked straps 47 and 49 prevent lateral inward or outward movement of the casing relative to the keeper plate thereby making it impossible to pry or spread the keeper plate and casing apart in order to force the bolt back by inserting a tool between the casing and keeper plate.

Changes in details might be made without departing from the principle of the invention.

What I claim is:

1. A lock including a keeper plate fastened to a fixed member, said plate having an opening, a strap having one end fastened to the keeper plate and its other end offset therefrom, a substantially U-shaped plate fastened to a movable member, a sliding bolt supported by said U-shaped plate and adapted to be projected into the opening in the keeper plate for locking the fixed and movable members together and a hooked strap fastened to said U-shaped plate adapted to interlock with the offset end of the strap of the keeper plate for preventing relative movement between the keeper plate and U-shaped plate in a direction parallel to the direction of movement of the bolt.

2. A lock including a keeper plate fastened to a fixed member, said plate having an opening, a strap having one end fastened to the keeper plate and its other end offset therefrom, a substantially U-shaped plate fastened to a movable member, a spring-pressed sliding bolt supported by said U-shaped plate and adapted to be projected into the opening in the keeper plate for locking the fixed and movable members together, a hooked strap fastened to said U-shaped plate adapted to interlock with the offset end of the strap of the keeper plate for preventing relative movement between the keeper plate and U-shaped plate in a direction parallel to the direction of movement of the bolt and flexible means fastened to the bolt for retracting the same from locking position.

HENRY B. CLARK.

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