

[54] **TAMPER PROOF LOCKING
MECHANISM**

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[51] Int. Cl. E05c 19/10

[58] Field of Search.....292/95, 96, 97, 99, 100, 127,
292/221, 227, DIG. 72

[56] **References Cited**

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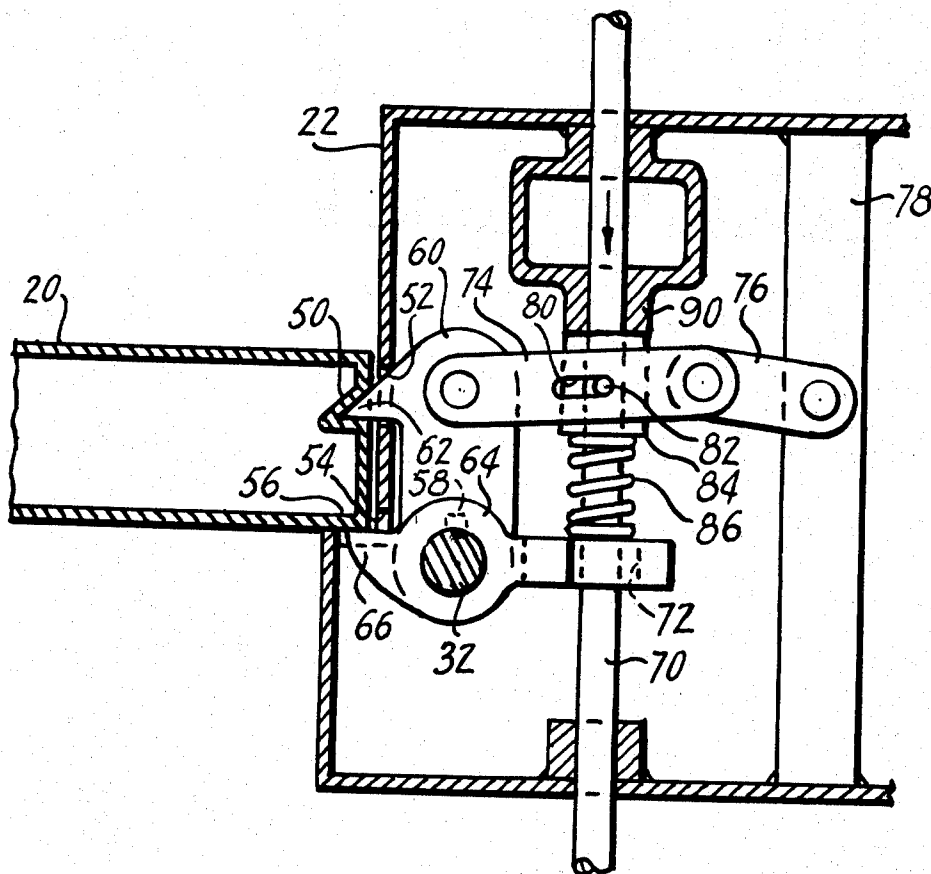
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[57] **ABSTRACT**

A push-pull shaft having an end of each of two links mounted thereon and separated from each other by a spring, the other end of one of the links being pivotally attached to a door latch, the other end of the door latch being keyed to a rotatable shaft, and the other end of the other link forming a latch return dog that kicks open the door when the push-pull shaft is moved to remove the door latch from the recess of the door and press the spring against the link or latch return dog which is rotatably mounted on the rotatable shaft.

4 Claims, 8 Drawing Figures



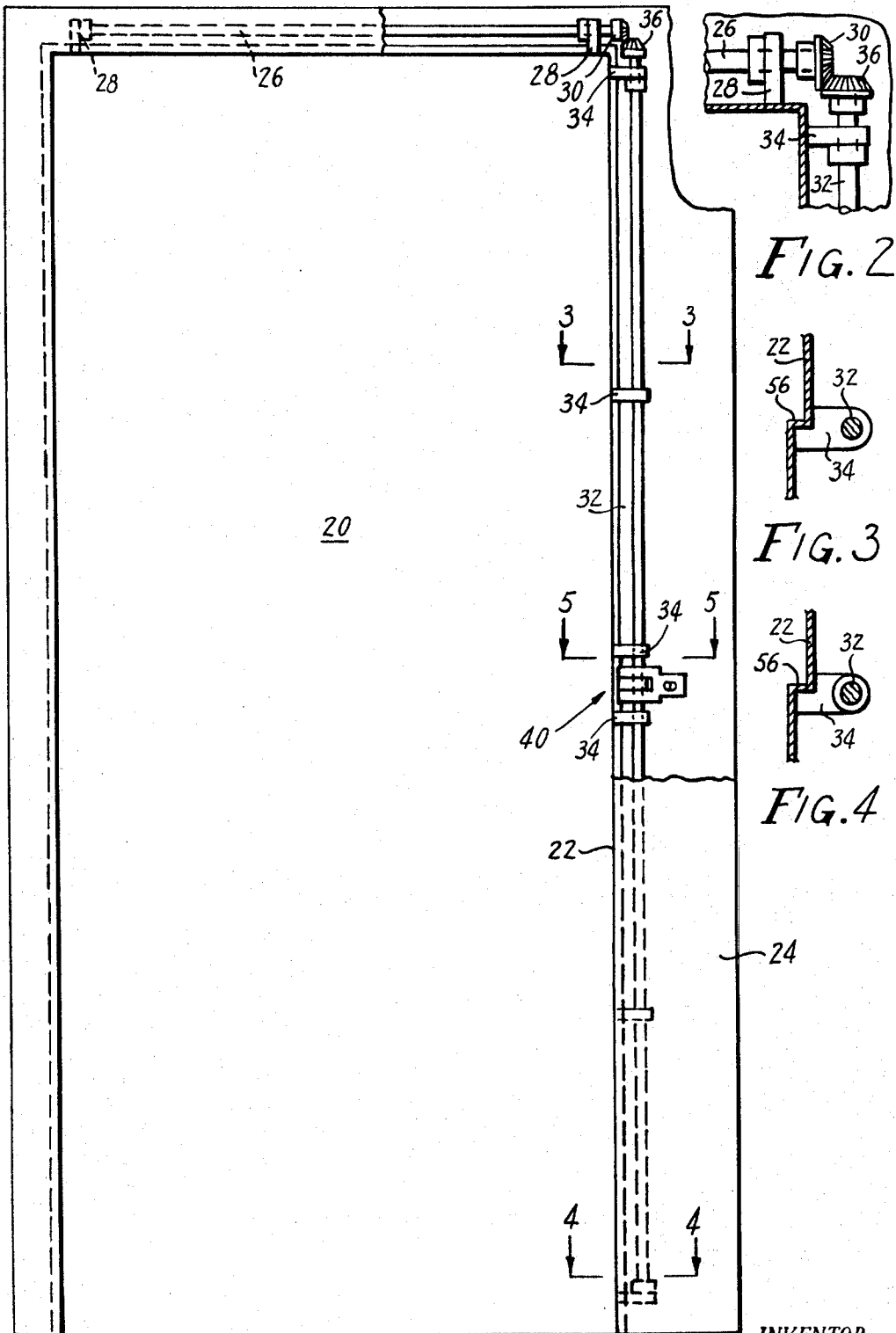


FIG. 1

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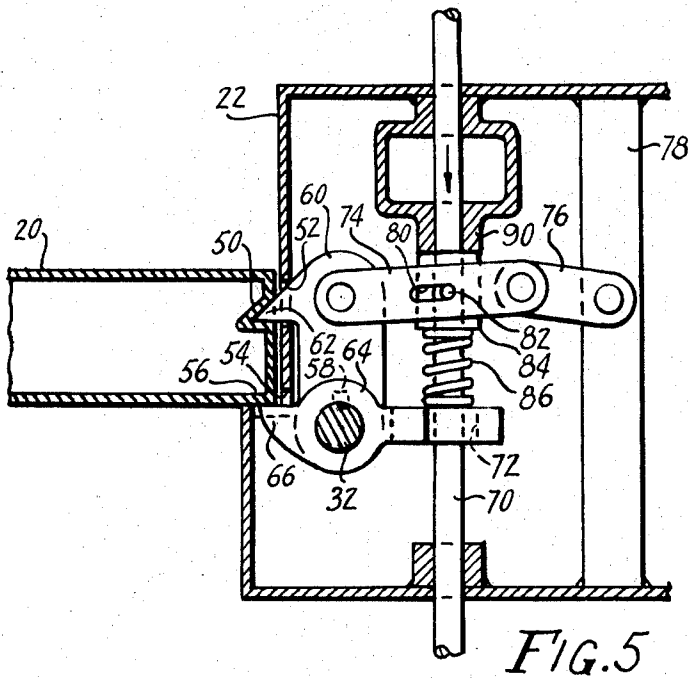


FIG. 5

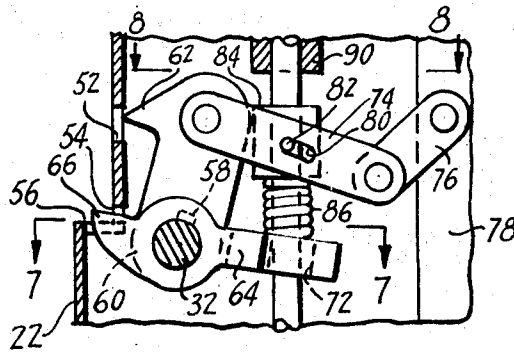


FIG. 6

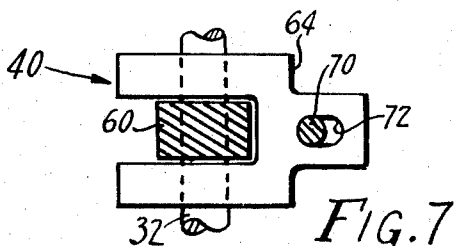


FIG. 7

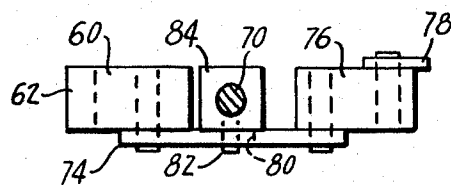


FIG. 8

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TAMPER PROOF LOCKING MECHANISM

This invention relates to a tamper proof locking mechanism to be utilized for optimum security in homes, apartments, commercial buildings, etc.

A primary object is accordingly providing means making it impossible for an object to be wedged between the door and the door latch for entry.

Another object of this invention is to provide a simple device allowing simple operation thereof.

A further object of this invention is to provide means for automatically kicking the door open as the lock is released.

A still further object of this invention is to provide means for automatically locking the door as it is closed.

The above and other objects of this invention will become apparent to those skilled in the art after a consideration of a preferred embodiment of the invention taken together with the drawing wherein:

FIG. 1 is a side elevational view of the door and locking mechanism;

FIG. 2 is a blown up view of bevel gears shown in FIG. 1;

FIG. 3 is a sectional view taken on line 3—3 of FIG. 1;

FIG. 4 is a sectional view taken on line 4—4 of FIG. 1;

FIG. 5 is a sectional view taken on line 5—5 of FIG. 1;

FIG. 6 is a sectional view of FIG. 5 showing the mechanism after the door is opened;

FIG. 7 is a sectional view taken on line 7—7 of FIG. 6; and

FIG. 8 is a sectional view taken on line 8—8 of FIG. 6.

Referring in detail to the drawing, there is shown in FIG. 1 a door 20, a door frame 22 preferably consisting of extruded aluminum, a wall 24 adjacent frame 22, a rotatable shaft 26 mounted within frame 22 by means of collars 28 and having a bevel gear 30 at one end thereof, a rotatable shaft 32 mounted within frame 22 by means of bearings 34 and having a bevel gear 36 at one end thereof meshing with gear 30, and a locking mechanism 40. The shafts 26, 32 are adapted to carry conventional door latching auxiliary bolts (not shown).

Referring to FIG. 5, there is shown a vertical recess 50 within door 20, a vertical slot 52 within frame 22 directly in front of and aligned with recess 50, and a vertical slot 54 within frame 22 extending along the door stop 56. Fixed to rotatable shaft 32 by means of a key 58 is a door latch 60 having a pointed edge 62 extending along one side thereof and insertable within recess 50 through slot 52. Pivotaly connected to rotatable shaft 32 adjacent door latch 60 is a latch return dog 64 having a pointed edge 66 at one end thereof insertable through slot 54. Latch return dog 64 is slidably attached to a rod 70 which passes through a hole 72, having a diameter larger than the diameter of rod 70, at the other end of latch return dog 64. Rod 70 is mounted within frame 22 for slidable movement along its axis. Door latch 60 is pivoted to a link 74 at the end thereof opposite the end fixed to rotatable shaft 32. The other end of link 74 is pivotaly connected to a link 76 which is in turn pivotaly connected to a fixed cross member 78. Link 74 has a longitudinal slot 80 along the axis thereof which is slidably connected to a pin 82 extending from a block 84 which in turn is fixedly mounted on rod 70. A spring 86 is mounted on rod 70 between block 84 and return latch dog 64

so that when rod 70 is pulled or pushed in the direction shown by the arrow, edge 62 of door latch 60 will pivot out of recess 50 while block 84 presses spring 86 against return latch dog 64 pivoting it about rotatable shaft 32 so that edge 66 is pushed into slot 54 kicking door 20 open as clearly shown in FIG. 6. When door 20 is closed, it pushes edge 66 of return latch dog 64 back out of slot 54 which presses spring 86 upward against block 84 which moves upward until it makes contact with stop 90 at which time edge 62 will again be inserted within recess 50 due to pivotal links 74 and 76. It should be noted that lock mechanism 40 will open only when shafts 26 and 32 are allowed to rotate due to the fact that door latch 60 is fixedly secured to rotatable shaft 32 and will pivot out of recess 50 only if shaft 32 rotates therewith.

While a preferred embodiment has been illustrated and described, it should be understood by those skilled in the art that many changes and modifications may be resorted to without departing from the spirit and scope of this invention.

I claim:

1. A tamper proof locking mechanism, comprising a door having a vertical recess in the end vertical face thereof, a door frame having a vertical slot therein aligned with an adjacent said recess when the door is in the closed state and having a vertical slot along the door stop portion thereof, a rotatable vertical shaft mounted within said door frame, a horizontal rod slidably mounted within said door frame for movement transverse with the plane of the door when in its closed position, first means connected between said shaft and said rod, second means connected between said shaft and said rod, a portion of said first means insertable within said first-mentioned slot and said recess and positioned therein when the door is in its locked state, a portion of said second means adjacent the second-mentioned slot, and third means connected between said first means and said second means, said rod causing said portion of said first means to be pulled out of said recess in said first mentioned slot, said third means forcing said portion of said second means into said second mentioned slot kicking the door open when said rod is moved in the direction going from said first means to said second means, said second means and said third means automatically forcing said portion of said first means into said recess upon the closing of the door.

2. The mechanism of claim 1, wherein said first means includes linkage pivotaly connected to said portion of said first means and slidably and pivotaly connected to said rod preventing a wedge slipped in between said door frame and the end face of the door from forcing said portion of said first means out of said recess.

3. The mechanism of claim 2, wherein said first means is fixedly secured to said shaft for rotation and locking therewith.

4. The mechanism of claim 1, wherein said second means is pivotaly attached to said shaft and has a hole therethrough of greater diameter than the diameter of said rod, said rod being within said hole, said third means causing said second means to slide along said rod at an angle thereto rather than parallel therewith pivoting said second means about said shaft in order to force said portion of said second means into said second mentioned slot.

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