

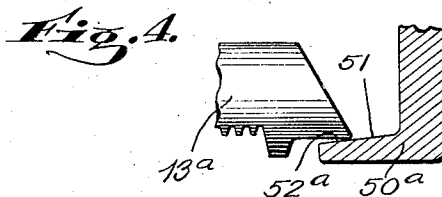
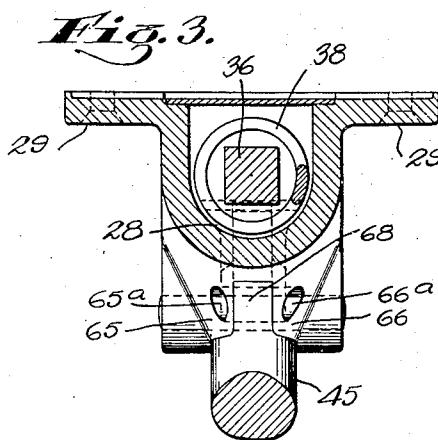
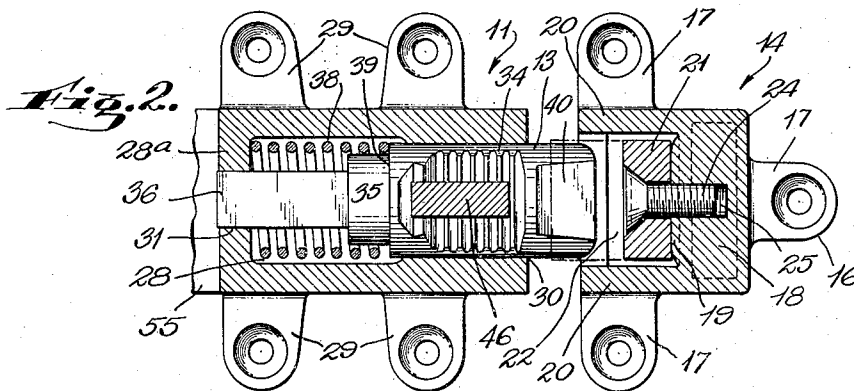
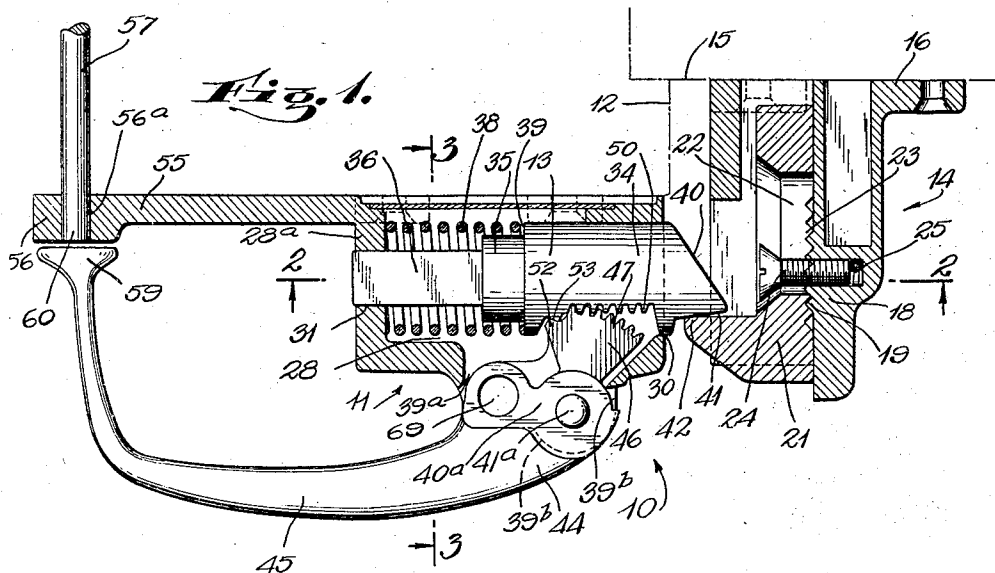
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LOCK

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LOCK

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The invention relates to locks and is particularly directed to a latch lock for refrigerator doors and the like purposes.

The object of this invention is to provide a lock of the character described, wherein a bolt is retracted against the pressure of a projecting spring, highly improved means for retracting the bolt, provision being made for eliminating the loose connection between the bolt and the retracting means, such as occurs in locks of similar type now in use.

A further object of this invention is to provide a neat, compact and rugged device of the character described, which shall be relatively inexpensive to manufacture, comprise few and simple parts, easy to manipulate, be positive and smooth in operation, and yet practical and efficient to a high degree.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims.

In the accompanying drawing, in which is shown one of the various possible illustrative embodiments of this invention,

Fig. 1 is a horizontal cross-sectional view of a lock embodying the invention applied to a refrigerator door or the like;

Fig. 2 is a cross-sectional view taken on line 2-2 of Fig. 1;

Fig. 3 is a cross-sectional view taken on line 3-3 of Fig. 1; and

Fig. 4 is a partial plan view of a modified construction of the strike and illustrating the engagement between the bolt and strike.

Referring now in detail to the drawing, 10 designates a lock embodying the invention comprising a bolt mounting mechanism 11, fastened to a refrigerator door 12 and including a bolt 13 adapted to engage a strike or keeper 14 mounted on the door jamb 15. For the purpose of illustration only, the lock is shown applied to a refrigerator wherein

the door 12 is provided with a portion 16 overlapping the edge of the door jamb 15.

The keeper 14 comprises a member 16 having perforated ears 17 adapted to receive any suitable fastening means for attaching said member 16 to the door jamb. Said member 16 further comprises a portion 18 extending perpendicularly to said door jamb, and having a ribbed or ridged surface 19. A pair of parallel side walls 20 extend from the ends of said portion 18. A strike member 21 may be fixed to the portion 18, said member 21 being formed with a horizontal slot 22 and with a ribbed or ridged outer surface 23 adapted to engage the ribbed portion 19, in a plurality of adjusted positions. A screw 24 extending through the slot 22 is adapted to be screwed to a screw threaded opening 25 formed in said portion 18, whereby the member 21 may be fixed to the portion 18 in various positions.

The mechanism 11 comprises a housing 28 formed with perforated ears 29, adapted to receive any fastening means for attaching said housing to the door 12. The housing is provided with a circular opening 30 at the front thereof and with a preferably square shaped opening 31 at the rear thereof for the purpose hereinafter appearing.

Slidably mounted within said housing is a bolt 13, having a cylindrical head 34 extending through said opening 30, and formed with a cylindrical reduced portion 35 at the rear thereof, and with a square-shaped shank 36 extending from said cylindrical portion 35 and slidably received within the square-shaped opening 31. A coil compression spring 38, extending about the cylindrical portion 35 and the square shank 36, is interposed between the rear wall 28a, of the housing 28 and the shoulder 39 formed at the rear of the head 34. For the purpose hereinafter appearing, the head 34 of the bolt is formed with a longitudinal rack portion 50 on the outer side thereof.

Said head 34 is further provided with an inner steeply inclined latch portion 40 and with an outer inclined portion 41, the latter preferably having a slight inclination, and adapted to engage the inner edge 42 of the

head 43 of the strike member 21. It will now be noted that the spring 38 normally urges the bolt into engagement with the strike member. Due to the inclination of the outer surface 41, a force results for pressing the door tightly against the door jamb. As shown in Fig. 4, the keeper may be provided with a head 50 having an inner inclined or bevelled surface 51 for engaging the edge 52a to a bolt 13a pressed towards the keeper by means of a spring in the manner shown in Fig. 1. Due to the inclination of the surface 51 the door is normally urged to tightly closed position, since the spring tends to push the bolt toward the keeper and the edge 52 of said bolt will tend to move to a point on said surface 51 which is closer to the door jamb.

Means is provided to retract the bolt 13 against the pressure of spring 38, as for example, when opening the door. To this end, the housing 28 is formed with a pair of parallel spaced wall portions 39 forming a slot or opening 39a therebetween and pivotally mounted on said walls 39 is a retracting member 44, having a portion 40a extending between said walls and pivoted on a transverse pin 41a. Said member 44 is also provided with a handle portion 45 disposed on the outside of the housing and extending longitudinally of the lock. Extending from said portion 40a of said member 44 and projecting into the casing is a segmental geared portion 46 having gear teeth 47 adapted to cooperate with the teeth of said rack portion 50. The gear teeth 47 and 50 are designed for constant contact so as to prevent any looseness or lost motion between the retracting member and the bolt.

It will now be seen that an outward pull on the handle 45 would cause the bolt 13 to be retracted into the housing against the pressure of the compression spring 38 for unlocking the door. On release of the handle 45 the spring 38 will project the bolt 13, and due to the interengagement of the gear teeth 50 and 47, will rotate the retracting member 44 back to its normal position. The segment 46 is provided with a portion 52 adapted to strike the portion 53 of the bolt 13 when the said bolt has reached the full projected position thereof, whereby the retracting member 44 may only be rotated by the spring 38 a predetermined angle. Extending from the housing or casing 28 is an extension 55, formed with a boss 56 having an opening 56a adapted to receive the usual pin 57 extending to the inner side of the refrigerator door for opening the lock from within the refrigerator. The handle 45 is provided with a rear extension 60 overlying the boss 56 whereby a push on the pin 57 will cause the outer end 60 thereof to engage the rear projection 59 of the handle for retracting the bolt 13 and opening the door from the inside. The contacting por-

tions 52, 53 are so arranged that they will contact and stop rotation of the handle 45 before the portion 59 reaches the boss 56. Accidental breaking or cracking of the handle due to sudden impact between portion 59 and boss 56, is thus prevented. The housing 28 is further formed with a pair of ears 65, 66 extending from parallel walls 39 and formed with aligned openings 65a and 66a, and the retracting member 44 is formed with an ear 68 having an opening 69 aligned with said openings 65a and 66a and adapted to register therewith when the bolt is in projecting position. An ordinary padlock may thus be used to prevent opening movement of the handle 45, the U-shaped portion of the padlock being passed through the aligned or registering openings, 65a, 69 and 66a, to effect the locking engagement.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A latch comprising a casing, a spring-projected bolt movable in said casing, said bolt having a rack, bolt-retracting means comprising a handle pivoted for movement toward and away from said casing and a gear segment operated by said handle and meshing with said rack, and a stop on said gear segment adapted to engage said bolt in the projected position of the latter to limit positively the movement of said handle toward the casing when the bolt is in projected position.

2. A latch comprising a casing, a spring-projected bolt movable in said casing, bolt-retracting means comprising a pivoted handle and an operating member actuated thereby in continuous engagement with said bolt, said bolt and member having additional interfitting interengaging portions positively limiting the movement of said handle when the bolt is in projected position.

3. A latch comprising a casing, a spring-projected bolt slidable in said casing longitudinally thereof, said bolt having a rack, bolt-retracting means comprising a handle pivoted for movement toward and away from said casing and a gear segment operated by said handle and meshing with said rack, a shoulder on the bolt adjacent said rack, and a stop on said gear segment adjacent the

teeth thereof adapted to engage said shoulder in the projected position of the bolt to limit positively the movement of said handle toward the casing when the bolt is in projected position.

In testimony whereof I affix my signature.

ALEXANDER S. KATZ.