June 16, 1931. A. RUBIN 1,810,532

REFRIGERATOR LATCH

Filed Sept. 28, 1929

Fig. 1.

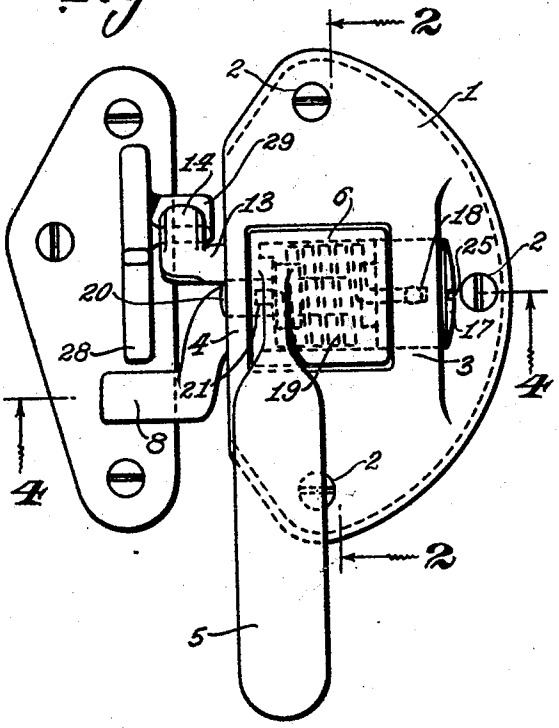


Fig. 2.

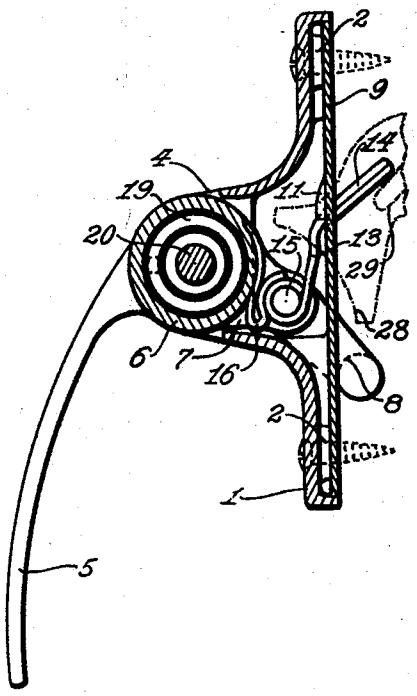


Fig. 3.

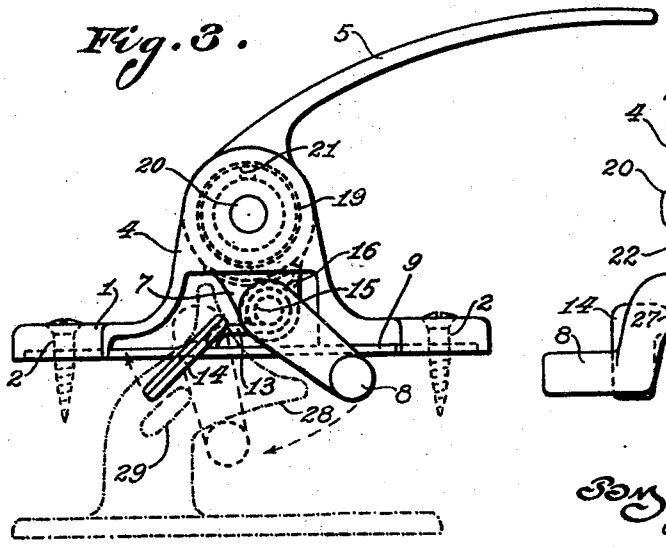
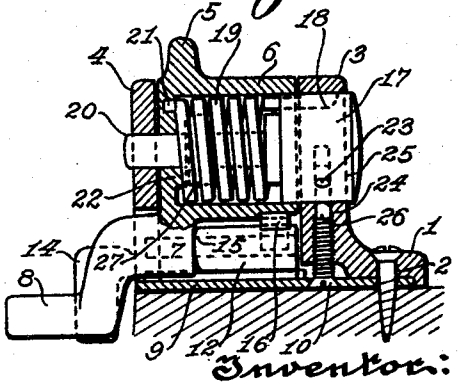


Fig. 4.



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REFRIGERATOR LATCH

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This invention relates to latches for refrigerator doors.

In the ordinary latch for refrigerator doors, the bolt must strike the bevel portion of the keeper in order to place it in position to snap behind the catch and keep the door in position. This causes a strain on the latch, its parts and fastenings.

An object, therefore, of this invention is to provide a latch in which the bolt after the door is opened, will be held in withdrawn position until the door is closed. Another object of this invention is to provide a latch which is simple of construction, economical to manufacture, positive in operation, durable in use and easy of repair.

Another object of this invention is to provide novel bearing means for the latching element.

Other objects will appear from the following description taken in connection with the accompanying drawings in which;

Fig. 1 is a plan view of the latch with its keeper.

Fig. 2 is a sectional view taken on line 2—2, Fig. 1;

Fig. 3 is a front elevation with the bolt shown in withdrawn position.

Fig. 4 is a sectional view on lines 4—4, Fig. 1.

This latch comprises a casing having upstanding lugs between which is mounted a latching element. The latching element comprises integrally a handle, a sleeve to engage an axis pin, a lever and a bolt to engage the keeper. Mounted on the latching element is a trigger which when the bolt is withdrawn, engages a shoulder formed on the base plate of the casing. The trigger releases the bolt when the door is closed by striking a lateral projection on the keeper.

The casing has the attaching flange 1 so that the latch may be secured to the door by screws passing through the holes 2 in the flange. Lugs 3 and 4 are integral with and extend outwardly from the casing.

The latching element comprises integrally the handle 5, the sleeve 6, the lug 7, and the bolt 8, carried by the lug.

The casing has the base plate 9 which may be fastened to the casing by the screw 10. The base plate has formed in it a shoulder 11 for a purpose which will be hereafter explained. The base plate has holes which register with the holes 2 in the casing flange.

A trigger comprises a sleeve 12, horizontal arm 13 with an inclined lug 14 on the end of the arm. The trigger is mounted on a pin 15 projecting laterally from the lug 7 of the latching element. The trigger is resiliently actuated by the U spring 16 which has one leg bearing against the trigger and the other against the sleeve 6 of the latching element.

The lug 3 has an orifice of the same diameter as the inside of the sleeve 6 to accommodate the cylindrical head 17 of the axis pin, which head also projects into the sleeve and forms a bearing surface for the latching element. The head has a longitudinal slot 18 in its periphery to engage one end of the spring 19. The spring 19 is positioned about the shank 20 of the axis pin and within the sleeve 6; and has its other end secured by being placed within an orifice 21 in an inwardly projecting annular flange 22 of the sleeve 6. This flange has an orifice of the same diameter as the orifice in the lug 4 adapted to receive the narrow end of the axis pin. The head 17 of the axis pin has in it a series of radially extending holes 23 to register with a hole 24 extending from the inner surface of the orifice in the lug 3 to the bottom of the casing. The head 17 has across its end a transverse slot 25 to receive an adjusting tool such as a screw driver. The axis pin may be secured in its position and its tension also secured by means of a plain cylindrical pin 26 passing through the hole 24 in the casing and into one of the series of holes 23 in the periphery of the head 17. This key pin 26 is held in place by the base plate screw 10 which abuts it.

The axis pin has an annular shoulder 27 formed on its shank which abuts the flange 22 of the sleeve.

The keeper 28 may be of the ordinary form except that it has laterally projecting from it a lug 29 with a top inclined surface.

When the handle of the latch is raised it moves the bolt out of engagement with the

keeper and with it the trigger, causing the edge of the arm 13 of the trigger to fall behind the shoulder 11 on the base plate, thus keeping the bolt in withdrawn position. When the door is closed the projection on the trigger strikes the projection 29 on the keeper thus releasing the bolt. The inclined surfaces of the lug 14 on the trigger and of the lug 29 on the keeper permits clearance as the bolt is released and moves into its keeper.

It will thus be seen that a refrigerator latch is provided which is simple in construction and economical to manufacture. The parts are simple and lend themselves to the ordinary methods of manufacture. The tension of the spring within the sleeve may be easily adjusted by removing the base plate, adjusting the tension by a screw driver operating in the slot in the head of the axis pin; the retaining pin being a plain cylindrical one, may be simply dropped in its proper hole and it will be held in position by the screw which retains the base plate. The construction permits the latch to be quickly disassembled and reassembled, making it easy to replace worn parts.

The latching element is rigidly supported, the flange on one end of the sleeve forming a bearing surface with the shank of the axis pin, and the cylindrical head of the pin forming a bearing surface with the sleeve at its other end.

It is to be understood that various changes may be made in details of construction, within the scope of the appended claims, without departing from the spirit of this invention.

Having described the invention, what is claimed is:

1. A latch for refrigerator doors including a latching element having a bolt to engage a keeper, a trigger pivotally mounted on and supported by said latching element and adapted to retain the bolt in withdrawn position when the door is open and a spring to actuate the trigger.

2. A latch for refrigerator doors including, a casing having a base plate, a latching element including a bolt and pivotally mounted on said casing, a spring to actuate the latching element, a trigger mounted on the latching element, and a shoulder on the base plate adapted to engage the trigger and hold the bolt in withdrawn position when the door is open.

3. A latch for refrigerator doors including, a casing having a base plate, a latching element pivotally mounted on said casing, said latching element comprising integrally a handle, a lug and a bolt secured to the lug, a spring to actuate the latching element, a trigger pivotally mounted on the latching element, and a shoulder on the base plate adapted to engage the trigger and hold the bolt in withdrawn position when the door is open.

4. A latch for refrigerator doors comprising, a housing having a base plate, a bolt pivotally mounted on said housing, a spring to actuate said bolt, a pin to retain the tension of said spring, and a screw to secure said base plate so positioned as to abut said pin.

5. A latch for refrigerator doors comprising, a base having upstanding lugs, a pin on said lugs for pivotally supporting a latching element, said pin having a cylindrical head adapted to fit in one of said lugs, a sleeve on the latching element, and a torsion spring about said pin and within said sleeve, one end of said spring engaging the head of said pin and the other end engaging the sleeve.

6. A latch for refrigerator doors comprising, a casing having upstanding lugs, an axis pin on said lugs for pivotally supporting a latching element, the pin having a cylindrical head to fit in one of said lugs, a sleeve on the latching element, and a torsion spring about the pin and within said sleeve, one end of said spring engaging the head of said pin and the other end engaging the sleeve, the head of said pin having a hole in its periphery to receive a retaining pin passing through the casing and projecting into said hole to retain the pivot pin in position.

7. A latch for refrigerator doors comprising, a base having upstanding lugs, an axis pin on said lugs for pivotally supporting a latching element, said pin having a cylindrical head adapted to fit in one of said lugs, a sleeve on the latching element, a torsion spring about said pin and within said sleeve, one end of said spring engaging the head of said pin and the other end engaging the sleeve, a series of radial holes in the periphery of said cylindrical head to register with a hole through the casing, means on the head of said pin to engage an adjusting tool, and a retaining pin to secure the said axis pin in position.

8. In a latch for refrigerator doors, an axis pin to engage a sleeve having an inwardly extending annular flange at one end to fit the shank of the pin, said pin having a cylindrical head to fit the sleeve, and two supporting lugs, one of which adjacent to said flange is journaled to fit the shank of the pin and the other one journaled to fit the head of the pin.

9. In a latch for refrigerator doors, an axis pin to engage a sleeve having an inwardly extending annular flange at one end to fit the shank of the pin, said pin having a cylindrical head to fit the sleeve, and a torsion spring about said pin and within said sleeve having one end retained by the head of the pin and one end retained by the sleeve flange.

10. In a latch for refrigerator doors, an axis pin to engage a sleeve having an in-

wardly extending annular flange at one end to fit the shank of the pin, said pin having a cylindrical head to fit the sleeve and a shoulder on the shank to abut the flange, and two supporting lugs, one of which adjacent to said flange is journaled to fit the shank of the pin and the other one journaled to fit the head of the pin.

In testimony whereof I affix my signature this 12th day of Sept. 1929.

ADOLPH RUBIN.