

June 23, 1925.

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J. E. GLOEKLER

LATCH FOR REFRIGERATOR DOORS AND THE LIKE

Filed Oct. 12, 1923

2 Sheets-Sheet 1

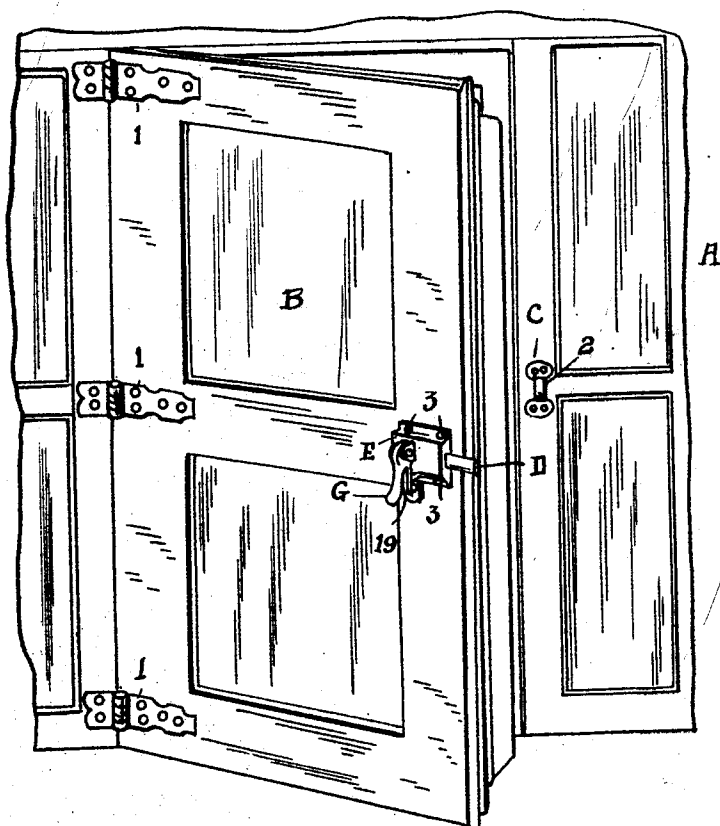


Fig. 1

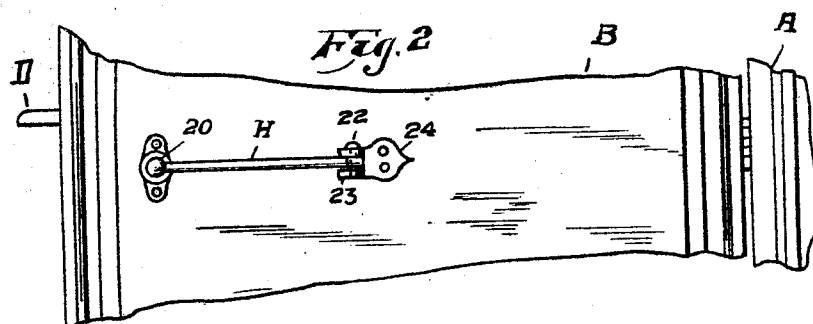


Fig. 2

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Fig. 3

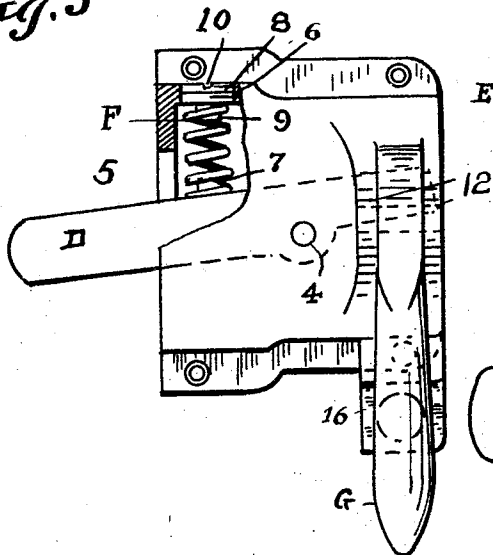


Fig. 4

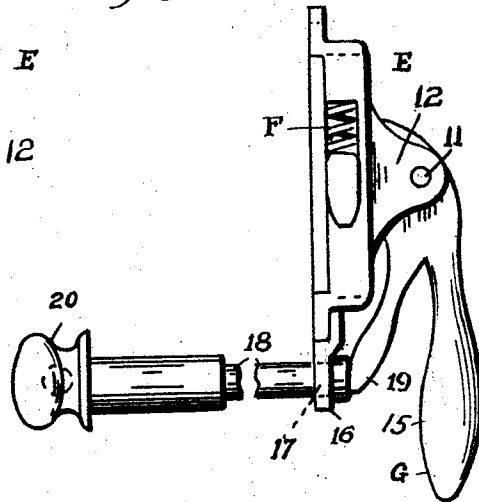


Fig. 5

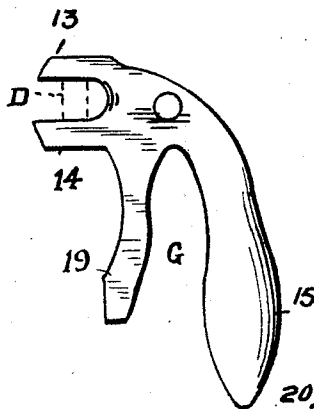
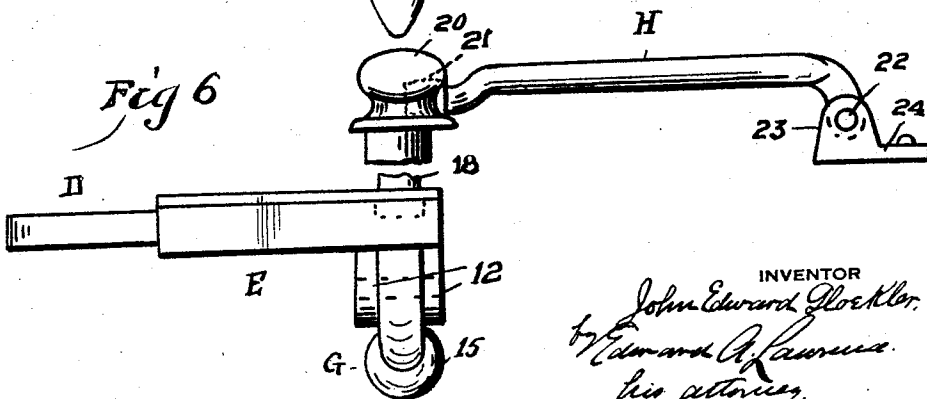


Fig. 6



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UNITED STATES PATENT OFFICE.

JOHN EDWARD GLOEKLER, OF PITTSBURGH, PENNSYLVANIA.

LATCH FOR REFRIGERATOR DOORS AND THE LIKE.

Application filed October 12, 1923. Serial No. 668,109.

To all whom it may concern:

Be it known that I, JOHN EDWARD GLOEKLER, a citizen of the United States, and residing in the city of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented or discovered the new, useful, and Improved Latch for Refrigerator Doors and the like, of which the following is a specification.

My invention consists in certain new and useful improvements in drop-latches for refrigerator doors and the like.

One of the objects which I have in view is the provision of practical means whereby the outwardly-opening door may be unlatched and opened from within the refrigerator by pressure of a portion of the body, such as the shoulder, arm or hip, without requiring the use of the hand or hands; thereby enabling a person whose hands are occupied, as by carrying a quarter of beef, to open the door from within the refrigerator without laying down or shifting his burden.

Another object which I have in view is the provision of a more efficient and convenient type of drop-latch for refrigerator doors and the like.

Another of the objects which I have in view is the improvement of drop-latches by the provision of new and improved means for causing the latch-bar to fly into and maintain engagement with the keeper, provision being made for regulating the power of such resilient means to obtain the desired action, and also, in case of weakening through continued use, to compensate for such weakening.

For the accomplishment of the first mentioned purpose, I have provided a push-bar mounted on the inner side of the door, one of whose ends is hingedly attached to the door and whose free end is provided with a stem or pin which protrudes outwardly through a hole in the door and is operatively connected to the latch-bar in such a manner that when pressure is exerted against the push-bar the latch-bar is swung upwardly out of engagement with the keeper. Resilient means are provided for normally keeping the free end of the push-bar spaced away from the door, such means being conveniently the same that exert the spring pressure on the latch-bar.

For the accomplishment of the second object mentioned above, I provide a drop-

latch wherein the rear end of the latch-bar, which is pivotally mounted on a horizontal axis intermediate of its ends, is engaged by the yoked upper end of a handle pivotally mounted on the door so that by swinging the lower end of the handle away from the door, the latch-bar may be disengaged from the keeper.

For the accomplishment of the third object mentioned above, I provide a spring, preferably helical, mounted in the latch-casing and bearing downwardly against the protruding end of the latch-bar, the upper end of said spring bearing against an abutment carried by the casing and adjustable relative thereto to provide for regulating the compression of the spring.

Other novel and advantageous features of construction, and also of arrangement and assemblage of parts will appear from the following description.

In the accompanying drawings, which are however merely intended to illustrate the practical embodiment of the principles of my invention without limiting the scope of the same to the construction shown, Fig. 1 is a broken elevation of the front of a refrigerator with the partly opened door provided with a latch which embodies such principles; Fig. 2 is a broken elevation showing the inside of the door and the push-bar mounted thereon; Fig. 3 is an enlarged front face view of the latch, the casing being partially broken away in section to show the spring and its mounting; Fig. 4 is a front edge view showing the latch mechanism and the push-bar in their assembled relation, the door being omitted; Fig. 5 is a side elevation of the latch-handle, and Fig. 6 is a plan view of the assembled parts also shown in Fig. 4.

The following is a detailed description of the drawings.

A represents the refrigerator provided with a suitable entrance doorway in which is hung the door B connected to one of the door jambs by the hinges 1. The opposite jamb of the door is provided with a latch-keeper C having the usual outwardly spaced and upwardly extending prong 2 whose upper end is upwardly and inwardly inclined to facilitate the automatic engagement of the latch-bar with the keeper when the door is swung shut. D is the latch-bar which protrudes from the latch-casing E to engage the keeper C. The casing E is at-

attached to the outer face of the door, as by screws 3, and the latch-bar is pivotally mounted in said casing on the horizontal pin 4, the front and longer end of said latch-bar protruding through the vertically slotted opening 5 in the front edge of the casing.

The latch-bar D is resiliently depressed into engagement with the keeper C by means of the spring F which is dropped down through a hole 6 in the top of the casing and bears at its lower end on the front end of the latch-bar, the latter being provided with a pin 7 which extends up into the spring and holds the lower end of the latter in place. The upper end of the spring bears against a nut 8 which is externally threaded to screw down into the threaded hole 6, which nut is provided with a depending pin 9 which extends into the spring to hold the upper end of the latter in proper position. The nut 8 is provided on its top with a screw-driver slot 10 so that the nut may be removed for the insertion or removal of the spring, and also adjusted in said threaded hole to provide for the regulation of the compression and the effective strength of the spring.

It is evident that when the door is swung shut, the latch-bar will automatically spring into engagement with the keeper to latch the door, and also that the latch-bar must be swung upwardly, compressing the spring, to disengage said bar from the keeper to permit the door to be swung open.

The door is unlatched from without by means of the handle G which is pivotally mounted on the casing, as by means of a pin 11 extending through the twin pierced flanges 12 extending outwardly from the casing, and between which flanges the upper end of the handle extends, said handle being also pierced for the extension therethrough of the pivot pin 11. At the top said handle is provided with a yoke consisting of the upper and lower projections 13 and 14 which extend through a vertical slotted opening in the front end of the casing and engage the rear end of the latch-bar from above and below.

15 is the grip portion of said handle which depends, and is preferably weighted so that, when not grasped to open the door, the handle tends to elevate the rear end of the latch-bar and depress its front end. Thus the weight of the handle acts to assist the action of the spring F, or it may be used as a substitute therefor. It is evident that if the grip 15 be pulled outwardly, the rear end of the latch-bar will be depressed and its front end raised, thus releasing it from the keeper. On the other hand, if the grip is released, the handle will move inwardly toward the door and the front end of the latch will be depressed.

16 is a wear plate integral with the casing and depending below the same in flat contact with the door, and through said door and said wear plate extends a horizontal hole 17 in which is slidably mounted a pin 18 whose outer end is enlarged so that the pin cannot be withdrawn inwardly through the hole. The outer end of the pin 18 impinges against an arm 19 integral with the handle G which is spaced inwardly from the grip 15, so that said arm will bear against the outer end of said pin when the handle is idle. The inner end of the pin 18 has mounted thereon the boss or enlargement 20.

H is a push-bar mounted horizontally on the inner side of the door B in substantially the following manner. The front end of said bar is loosely connected to the boss 20, as by being inserted into a loosely fitting hole 21 in said boss, while the other end of the push-bar is intumed toward the door and hingedly connected thereto, as by a pin 22 extending through pierced ears 23 of a bracket 24 mounted on the door, which pin also extends through a hole in the end of the push-bar which is inserted between said ears.

It is evident that the impingement of the outer end of the pin 18 against the handle G will normally maintain the bar H in spaced relation with said door, but that pressure on said bar by a person inside of the refrigerator will force the free end of the bar toward the door, thus forcing the pin 18 outwardly and swinging the handle G in the proper manner to raise the front end of the latch-bar and disengage it from the keeper. When the pressure against said bar H is relieved, the inward movement of the lower end of the handle will force said bar into its normal spaced relations with the door.

It is thus evident that a person standing within the refrigerator with the door shut, need only to lean his weight or push against the push-bar, and the latch will be released and the door will swing open.

Although for the purpose of clearly disclosing the principles of my invention as the same are embodied in the structure shown in accompanying drawings, I have described the latter in detail, I do not wish to limit myself thereby, but claim broadly—

1. In a latch for refrigerator doors and the like, the combination with a keeper mounted on the door jamb, of a latch mechanism mounted on the door and comprising an inclosing casing, a latch-bar mounted in said casing to swing on a horizontal axis and its front and protruding end when depressed engaging said keeper, a vertically disposed helical spring in said casing with its lower end bearing on the front end of said latch bar, the top of said casing being

provided with a threaded hole, and a bearing nut screwed in said hole and having its lower end bearing on the upper end of said spring, whereby the power of said spring may be regulated by adjusting said nut.

2. In a latch for refrigerator doors and the like, the combination with a keeper mounted on the door jamb, of a latch mechanism mounted on the door and comprising an inclosing casing, a latch-bar mounted in said casing to swing on a horizontal axis and its front and protruding end when depressed engaging said keeper, a vertically disposed helical spring in said casing with its lower end bearing on the front end of said latch bar, the top of said casing being provided with a threaded hole, and a bearing nut screwed in said hole and having its lower end bearing on the upper end of said spring, whereby the power of said spring may be regulated by adjusting said nut, and said bearing nut being provided with a reduced portion extending down into the interior of said spring.

3. In a latch for refrigerator doors and the like, the combination with a keeper mounted on the door jamb, of a latch mechanism mounted on the door and comprising an inclosing casing, a latch-bar mounted in said casing to swing on a horizontal axis and its front and protruding end when depressed engaging said keeper, a vertically disposed helical spring in said casing with its lower end bearing on the front end of said latch bar, the top of said casing being provided with a threaded hole, and a bearing nut screwed in said hole and having its lower end bearing on the upper end of said spring, whereby the power of said spring may be regulated by adjusting said nut, and said bearing nut being provided with a reduced portion extending down into the interior of said spring, and the latch bar being provided with a pin extending up into the interior of said spring.

4. In a latch for refrigerator doors and the like, the combination of a keeper mounted on the door jamb, a drop latch-bar pivotally mounted on the door and swinging on a horizontal axis so that its front end may be depressed into engagement with said keeper to latch the door or may be raised out of engagement with the keeper to unlatch the door, means for normally maintaining the front end of said latch depressed, a handle pivotally mounted on the door and operatively connected with the inner end of said latch-bar whereby when said handle is drawn away from said door the front end of the latch-bar is raised, a push-bar mounted on the inner side of the door and having one end pivotally attached to the latter, and a member connected to the free end of said push-bar and extending

through an aperture in said door and engaging said handle whereby when the free end of said push-bar is pressed toward said door, the front end of said latch-bar is raised.

5. In a latch for refrigerator doors and the like, the combination of a keeper mounted on the door jamb, a latch-bar pivotally mounted on the door and swinging on a horizontal axis so as to be brought into engagement with said keeper, means for normally holding said latch-bar in and returning it to its engaging position, a handle pivotally mounted on said door and engaging said latch-bar whereby said latch bar may be disengaged from said keeper, a push-bar disposed in substantial parallelism with the inside of said door and having one end hingedly connected to said door, and a push-pin attached to the free end of said push-bar and extending through a hole in said door into engagement with said handle whereby when the free end of said push-bar is moved toward said door said push-pin swings said handle and releases said latch.

6. In a latch for refrigerator doors and the like, the combination of a keeper mounted on the door jamb, a latch bar pivotally mounted on the outer side of the door to swing on a horizontal axis and adapted to be swung into and out of engagement with said keeper, means for normally maintaining said bar in and returning it to its engaged position, a horizontally disposed push-bar mounted on the inner side of the door and having one end pivotally connected to said door to swing on a vertical axis, a pin carried by the free end of said push bar and extending through an aperture in said door, and means whereby when said push-bar is pressed towards said door said pin acts to disengage the latch bar from the keeper.

7. In a latch for refrigerator doors and the like, the combination of a keeper mounted on the door jamb, a latch-bar pivotally mounted on the outer side of the door to swing on a horizontal axis and adapted to be swung into and out of engagement with said keeper, means for normally maintaining said bar in and returning it to its engaged position, a horizontally disposed push-bar mounted on the inner side of the door and having one end pivotally connected to said door to swing on a vertical axis, a pin carried by the free end of said push-bar and extending through an aperture in said door, means whereby when said push-bar is pressed towards said door said pin acts to disengage the latch bar from the keeper, and means on the outer side of said door for operating said latch-bar.

Signed at Pittsburgh, Pa., this 30th day of July, 1923.

JOHN EDWARD GLOEKLER.