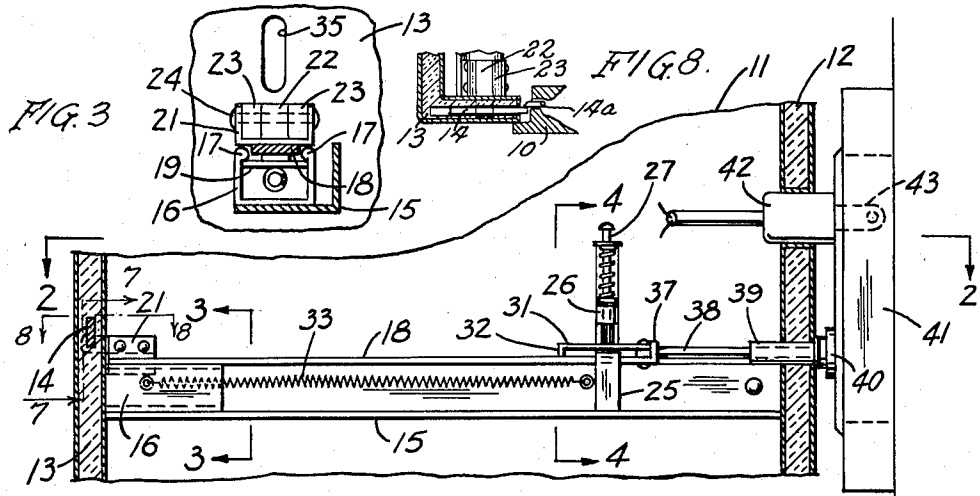
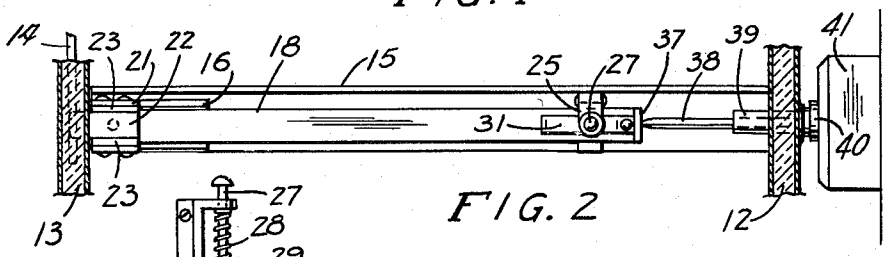
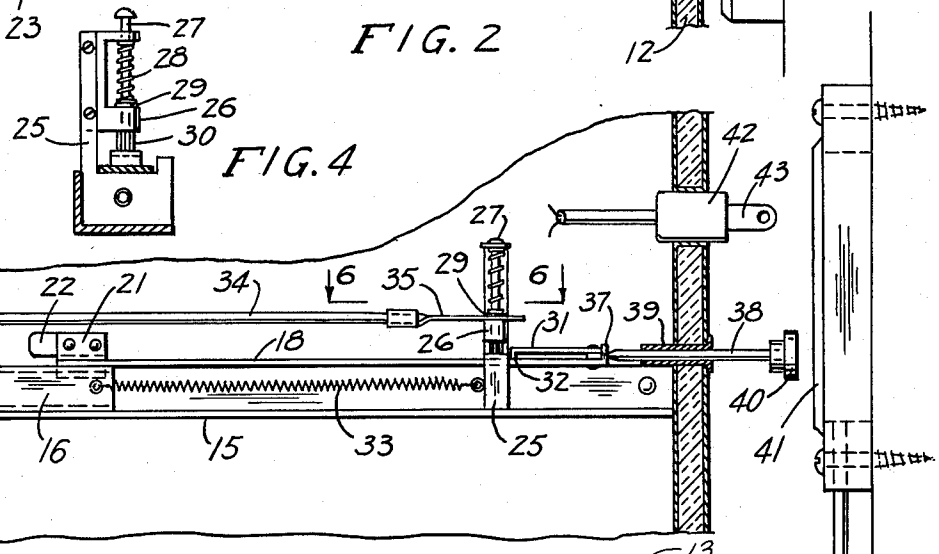
Feb. 7, 1956 C. B. KNOCK 2,733,576

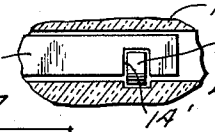
SAFETY DEVICE FOR REFRIGERATORS

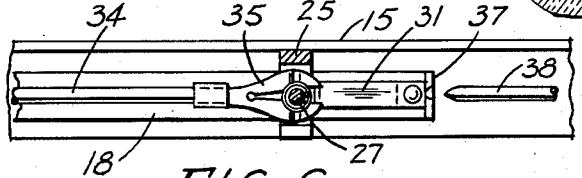
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SAFETY DEVICE FOR REFRIGERATORS

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3 Claims. (Cl. 62—89)

This invention relates to refrigerators, and more particularly to a safety device to prevent children from being locked in refrigerators when such refrigerators are not in use.

A main object of the invention is to provide a novel and improved safety device for insuring that a refrigerator door cannot be locked when the refrigerator is not in use, said safety device involving simple parts, being reliable in operation, and being easy to reset so that the refrigerator with which it is associated may be placed in use.

A further object of the invention is to provide an improved safety device adapted to be installed in a refrigerator and being arranged so that the door latch element of the refrigerator will be rendered inoperative when the refrigerator is not in its normal use, thus preventing the refrigerator door from locking, the safety device involving inexpensive components, being compact in size, and being durable in construction.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

Figure 1 is a fragmentary transverse vertical cross sectional view taken through a refrigerator provided with an improved safety device according to the present invention.

Figure 2 is a horizontal cross sectional view taken on the line 2—2 of Figure 1.

Figure 3 is an enlarged transverse cross sectional detail view taken on the line 3—3 of Figure 1.

Figure 4 is an enlarged transverse cross sectional view taken on the line 4—4 of Figure 1.

Figure 5 is a cross sectional view similar to Figure 1 but showing the refrigerator disconnected from its power receptacle and illustrating the manner in which the door latch element of the refrigerator is disengaged from the detent member of the safety device to render the door latch element inoperative.

Figure 6 is an enlarged cross sectional detail view taken on the line 6—6 of Figure 5.

Figure 7 is a fragmentary sectional view taken on the line 7—7 of Figure 1.

Figure 8 is a fragmentary sectional view taken on the line 8—8 of Figure 1.

Referring to the drawings, 11 generally designates a conventional refrigerator having a rear wall 12 and having a front wall element 13 extending parallel to the rear wall 12 and provided with a door latch element 14 which is slidably mounted in the front wall element 13 for horizontal movement and which is adapted to lockingly engage with a refrigerator door 10 hinged to the refrigerator adjacent the front wall element 13, the door latch element 14 being lockingly engageable with the detent bolt 14a of the refrigerator door only when the door latch element 14 is held in a stationary position in the front wall element 13.

Designated at 15 is a transversely extending horizontal angle bar which is secured in the refrigerator between the

rear wall 12 and the front wall element 13. Secured on the horizontal flange of angle bar 15 adjacent the front wall element 13 is an upwardly facing channel bar 16 having the inturned top edges 17, 17. Designated at 18 is an elongated detent bar which is arranged above and parallel to the bottom flange of the angle bar 15 and which is received between the inturned top edges 17, 17 of the channel member 16. Secured to the forward portion of the detent bar 18 is a plate member 19 engaging beneath the inturned top edges 17, 17 of the channel member 16, whereby the detent bar 18 is restrained against upward movement relative to the channel member 16. Secured on the forward end of the detent bar 18 is a bracket 21 of channel shape in which is secured a detent element 22, said element 22 being positioned between respective spacer blocks 23, 23, as shown in Figure 3, the detent element 22 and spacer blocks 23, 23 being secured in the channel-shaped bracket 21 by a transverse rivet 24. The detent element 22 projects forwardly with respect to the bracket member 21 and is arranged to enter an opening in the front wall element 13 and engage with a notch 14' in the door latch element 14 to hold said door latch element stationary when the detent bar 18 is in its forward position shown in Figures 1 and 2.

Secured to the intermediate portion of the angle bar 15 is the upstanding bracket 25 to which is secured the generally C-shaped guide member 26. A vertical locking bolt 27 is slidably engaged through the arms of the C-shaped member 26, a coiled spring 28 surrounding the intermediate portion of the bolt 27 and bearing on a washer 29 secured to the lower portion of the bolt, biasing the bolt downwardly. Secured to the lower end of the bolt 27 is a locking element 30 which is normally engaged on the top wall 31 of a shoulder member 32 secured to the rear end portion of the detent bar 18. Designated at 33 is a coiled spring connected between the stationary bracket 25 and the bottom guide plate 19 associated with the bracket member 21 at the forward end of the detent bar 18, the spring 33 urging the detent bar rearwardly. The spring 33 is of sufficient strength to move the detent bar 18 rearwardly and to thus allow the shoe element 30 to slip down in front of the shoulder element 32 and to prevent the detent bar 18 from being returned to its forward position, shown in Figures 1 and 2, until the bolt 27 is elevated to an unlocking position, for example, in the manner shown in Figures 5 and 6.

As shown in Figures 5 and 6, an elongated tool 34, a screwdriver, or the like, may be engaged through an aperture 35' in the front wall element 13, the tool 34 preferably having a bifurcated blade 35 and being engageable beneath the washer 29, whereby the bolt element 27 may be lifted by exerting sufficient elevating force on the tool 34.

The detent bar 18 is formed at its rear end with the upwardly projecting flange 37. Designated at 38 is an abutment pin which is slidably engaged through a guide sleeve 39 mounted in the rear wall 12 of the refrigerator in alignment with the flange 37, the pin 38 having the abutment head 40 which is engageable with the front surface of the power receptacle 41. Designated at 42 is the connecting plug which is secured in the rear wall 12 of the refrigerator and which is arranged so that its prongs 43 will be received in the receptacle 41 when the refrigerator is moved to bring its rear wall 12 closely adjacent to the receptacle 41, as shown in Figure 1. The plug 42 is connected to the refrigerator operating circuit, said circuit being energized when the prongs 43 of the plug 42 are engaged in the receptacle 41 in the manner shown in Figure 1.

It will be understood that the receptacle 41 is secured to the wall of the room in which the refrigerator is used at the proper height so that the refrigerator plug 42 may

be engaged in the receptacle and so that simultaneously the abutment head **40** of the abutment pin **38** will engage against the receptacle when the refrigerator is moved to bring the prongs **43** of plug **42** into electrical connection with the prong-receiving apertures of the receptacle.

When the refrigerator is to be placed in use, the bolt **27** is elevated by the tool **34** in the manner above described, and the refrigerator is moved rearwardly to cause the prongs **43** of plug **42** to enter the receptacle openings, while simultaneously the abutment head **40** of the abutment member **38** engages the receptacle, causing the abutment member **38** to exert a force against the flange **37** moving the detent bar **18** forwardly and causing the element **22** at the forward end of the detent bar to interengage with the door latch element **14**. This provides the arrangement shown in Figures 1 and 2, whereby the refrigerator door will be locked in its normal manner and will cooperate with the latch element **14** so that the refrigerator door may be opened and closed as desired. When the refrigerator is no longer in use, the refrigerator is moved away from the wall and from the receptacle **41**, whereby the abutment pin **38** is released, and whereby the coiled spring **33** retracts the latch bar **18** so that the locking element **22** is disengaged from the door latch element **14**, rendering the door latch element **14** inoperative so that the refrigerator door can no longer be locked in its normal manner. As above explained, when this occurs, the foot element **30** of bolt **27** slips down in front of the shoulder **32**, preventing the latch bar **18** from being moved forwardly.

It will be readily apparent that by the use of the above described safety device, it will be impossible to lock the refrigerator door when the refrigerator is not in use, and thus possibility of children being locked in the unused refrigerator is completely eliminated.

While a specific embodiment of an improved safety device for a refrigerator has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. In a refrigerator of the type having a rear wall and a front wall element parallel to said rear wall provided with a door latch element slidable horizontally in said front wall element and adapted to lockingly engage with a refrigerator door hinged to the refrigerator adjacent said front wall element, a safety latch device comprising a support mounted transversely in the refrigerator between said rear wall and said front wall element, a detent member slidably mounted on said support and being interengageable with said door latch element to hold said door latch element in latching position, spring means urging said detent member away from said door latch element, a horizontal abutment member slidably mounted in and extending outwardly from said rear wall and being engageable with the end of said detent member, and a plug mounted in said rear wall and being connected to the refrigerator operating circuit, said plug being engageable in a wall mounted receptacle to complete the operating circuit, said abutment member being located adjacent said plug in a position to engage an abutment surface provided on said wall mounted receptacle, whereby to hold said detent member in engagement with said door latch element when the plug is engaged in the receptacle and to allow the detent member to be retracted from engagement with the door latch element when the plug is disconnected from the receptacle.

2. In a refrigerator of the type having a rear wall and a front wall element parallel to said rear wall provided with a door latch element slidable horizontally in said front wall element and adapted to lockingly engage with a refrigerator door hinged to the refrigerator adjacent said front wall element, a safety latch device comprising a support mounted transversely in the refrigerator between said rear wall and said front wall element, a detent member slidably mounted on said support and being interengageable with said door latch element to hold said door latch element in latching position, spring means urging said detent member away from said door latch element, a horizontal abutment member slidably mounted in and extending outwardly from said rear wall and being engageable with the end of said detent member, a plug mounted in said rear wall and being connected to the refrigerator operating circuit, said plug being engageable in a wall mounted receptacle to complete the operating circuit, said abutment member being located adjacent said plug in a position to engage an abutment surface provided on said wall mounted receptacle, whereby to hold said detent member in engagement with said door latch element when the plug is engaged in the receptacle and to allow the detent member to be retracted from engagement with the door latch element when the plug is disconnected from the receptacle, and a vertically movable locking bolt lockingly engageable with said detent member to prevent movement of said detent member toward said door latch element after the plug has been disconnected from the receptacle.

3. In a refrigerator of the type having a rear wall and a front wall element parallel to said rear wall provided with a door latch element slidable horizontally in said front wall element and adapted to lockingly engage with a refrigerator door hinged to the refrigerator adjacent said front wall element, a safety latch device comprising a support mounted transversely in the refrigerator between said rear wall and said front wall element, a detent member slidably mounted on said support and being interengageable with said door latch element to hold said door latch element in latching position, spring means urging said detent member away from said door latch element, a horizontal abutment member slidably mounted in and extending outwardly from said rear wall and being engageable with the end of said detent member, a plug mounted in said rear wall and being connected to the refrigerator operating circuit, said plug being engageable in a wall mounted receptacle to complete the operating circuit, said abutment member being located adjacent said plug in a position to engage an abutment surface provided on said wall mounted receptacle, whereby to hold said detent member in engagement with said door latch element when the plug is engaged in the receptacle and to allow the detent member to be retracted from engagement with the door latch element when the plug is disconnected from the receptacle, a bracket mounted on said support, a vertically movable bolt slidably mounted on said bracket and located over said detent member, spring means biasing said bolt downwardly on said detent member, and a forwardly facing shoulder on said detent member and having a horizontal top surface, said bolt being engageable by said shoulder to prevent the detent member from being moved toward said door latch element after the detent member has been retracted by the action of the first-named spring means, said bolt being at times manually movable to a position over said horizontal top surface of the shoulder to free said detent member for engagement with the door latch element.

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