Jan. 20, 1959 J. SCITES 2,869,486

SAFETY CONSTRUCTIONS FOR REFRIGERATORS

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FIG. 1

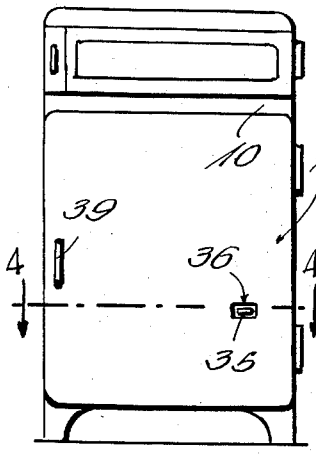


FIG. 2

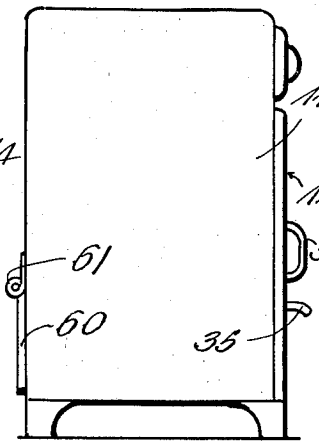


FIG. 3

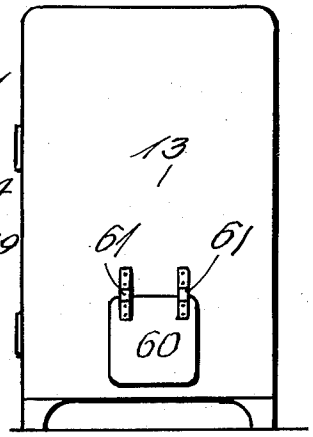


FIG. 9

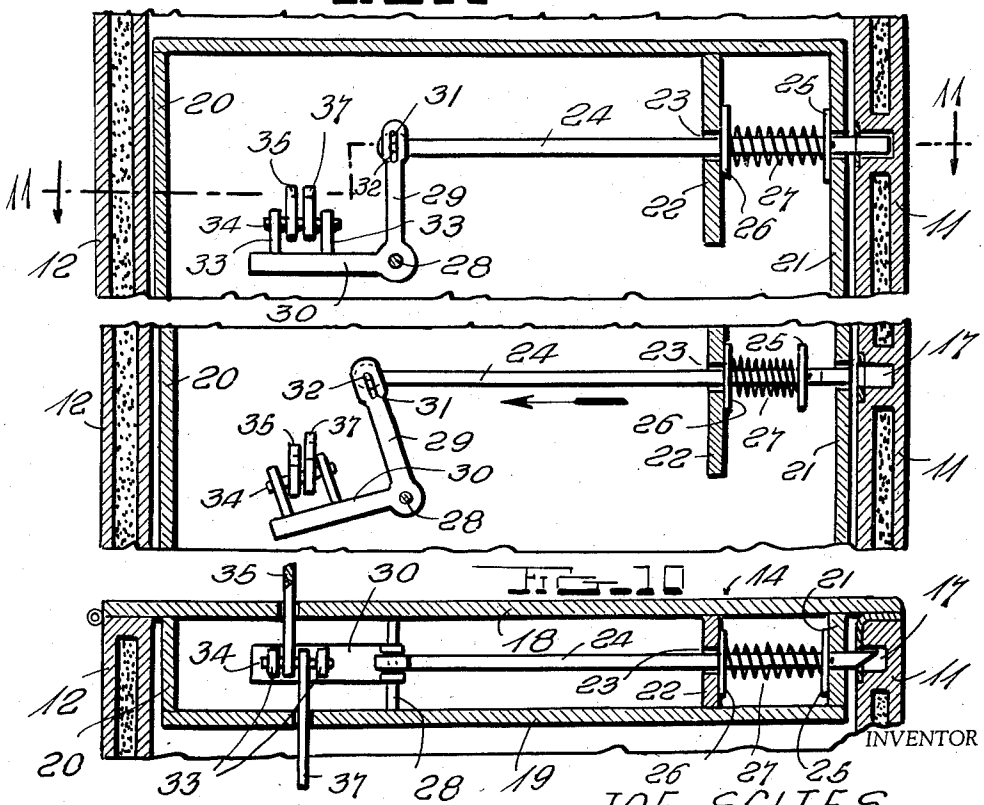


FIG. 10

FIG. 11

INVENTOR

JOE SCITES,

BY Felix A. Russell

ATTORNEY

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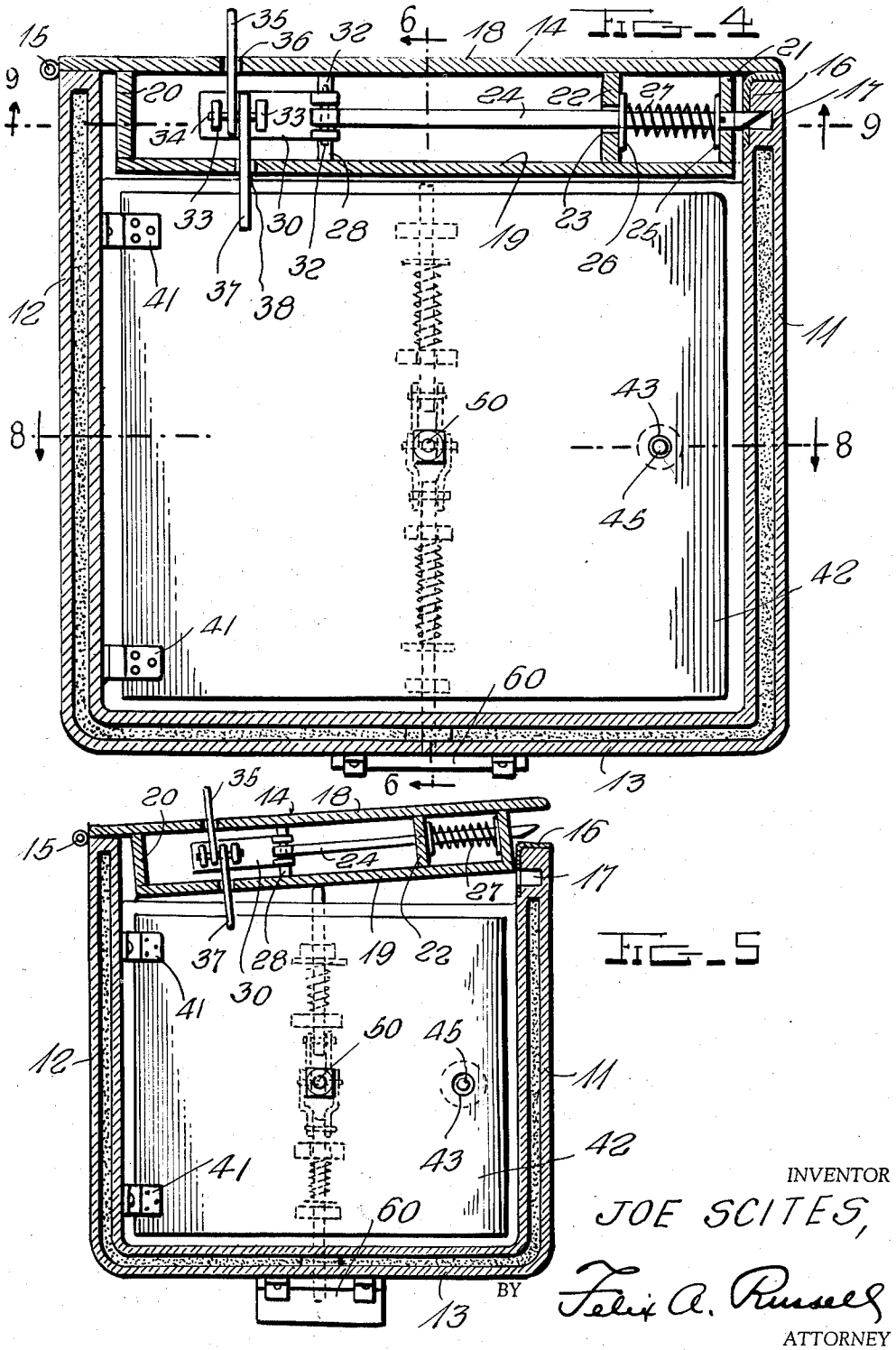


FIG. 4

FIG. 5

INVENTOR
JOE SCITES,
BY Felix A. Russell
ATTORNEY

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FIG. 6

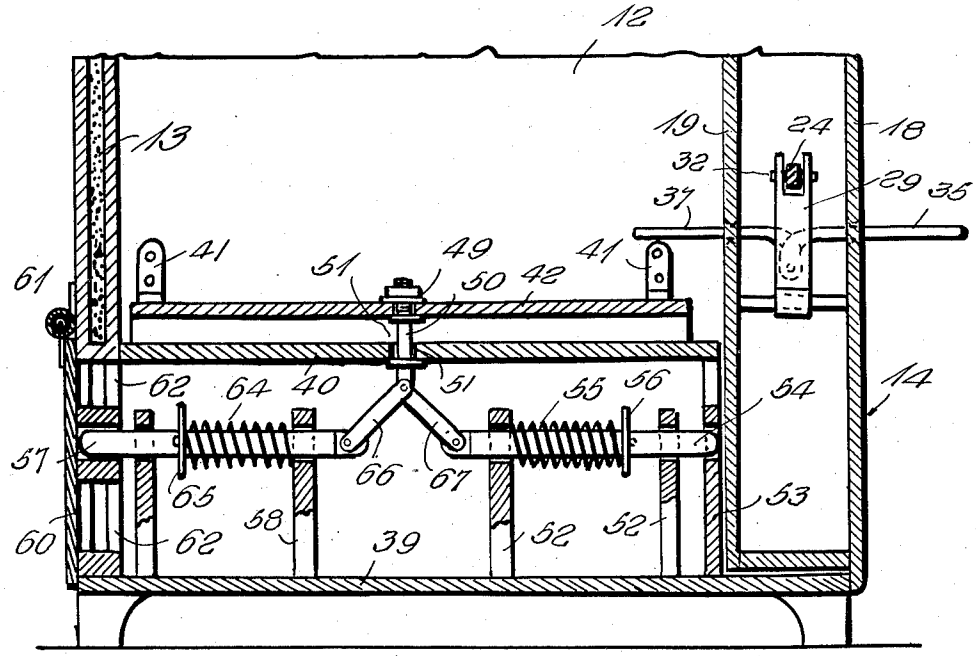


FIG. 7

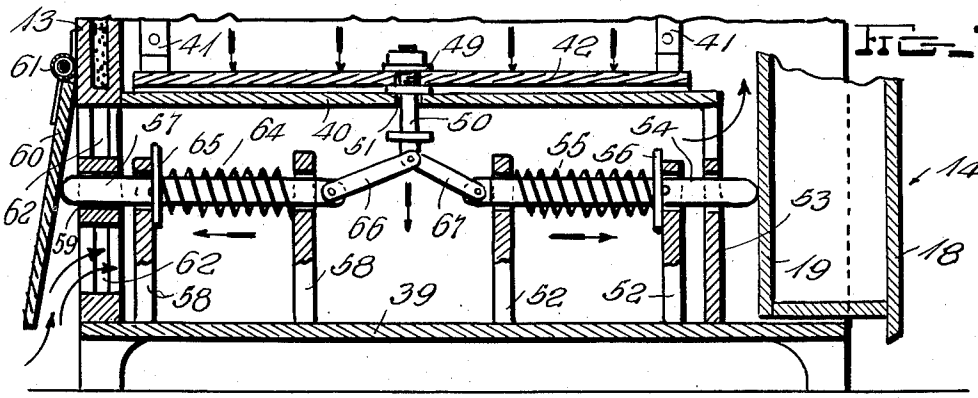
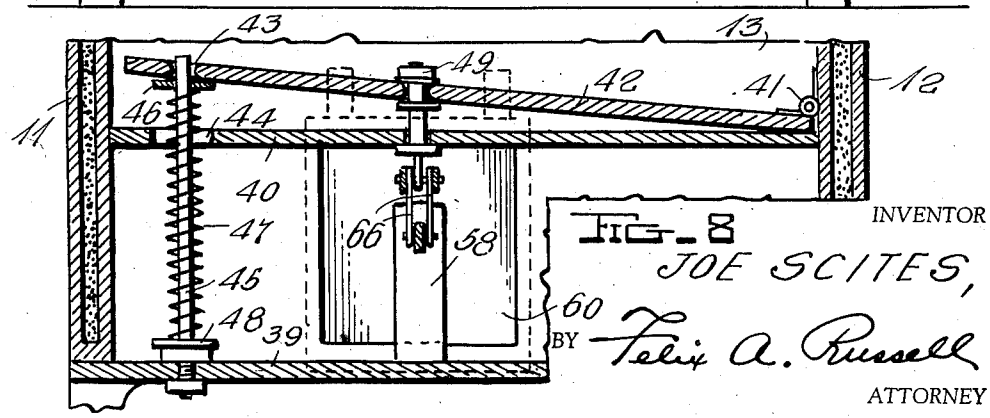


FIG. 8



INVENTOR
JOE SCITES,
BY Felix A. Russell
ATTORNEY

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SAFETY CONSTRUCTIONS FOR REFRIGERATORS

Joe Scites, Toler, Ky., assignor of one-half to Ida Tuggle, Portsmouth, Va.

Application July 2, 1957, Serial No. 669,579

3 Claims. (Cl. 109—63.5)

The present invention relates to a safety construction for refrigerators and it consists in the combinations, constructions and arrangements of parts herein described and claimed.

Generally there is provided in a refrigerator construction a main door having a latch provided with a handle which extends through the front wall of the door and second handle which extends through the inner face of the door, both handles being operative to cause the latch to function. In addition, there is provided a platform which is hingedly mounted within the refrigerator adjacent to the bottom thereof. The platform is provided with novel mechanism which, when a weight is placed thereon, prevents the closing of the main door of the refrigerator and at the same time acts to open an emergency door at the rear of the refrigerator. The apparatus is such that a child entering the refrigerator will cause through its weight a downward movement of the platform which thus opens the emergency door to allow air to enter the refrigerator and at the same time projects forwardly a bar which, in turn, prevents the closing of the main refrigerator door. As an additional safety factor, even if the main door should be closed in spite of the mechanism operated by the movement of the platform, a second or "inside" handle is provided for the latch of the main door so that anyone entrapped within the refrigerator may utilize such inside handle to operate the latch of the main door and thus easily escape.

It is accordingly an object of the invention to provide a safety means for a refrigerator which automatically prevents the closing of the main refrigerator door so long as a person remains inside the refrigerator.

Another object of the invention is to provide, in an apparatus of the character set forth, a novel safety handle for the latch of a refrigerator door.

A further object of the invention is the provision, in an apparatus of the character set forth, of safety means operative without the necessity of outside power.

A still further object of the invention is to provide a structure of the character set forth which is simple in construction, inexpensive to manufacture and yet effective and efficient in use.

Other and further objects of the invention will become apparent from a reading of the following specification taken in conjunction with the drawings, in which:

Figure 1 is a front elevational view of an embodiment of the invention,

Figure 2 is a side elevational view thereof,

Figure 3 is a rear elevational view of the device illustrated in Figures 1 and 2,

Figure 4 is an enlarged sectional view taken along line 4—4 of Figure 1, and showing certain doors forming parts of the invention in closed condition,

Figure 5 is a view similar to Figure 4 but somewhat reduced and illustrating the aforesaid doors in opened condition,

Figure 6 is a fragmentary sectional view taken along line 6—6 of Figure 4,

Figure 7 is a view similar to Figure 6 but illustrating certain doors shown in Figure 6 in opened condition,

Figure 8 is a fragmentary sectional view taken along line 8—8 of Figure 4,

Figure 9 is a fragmentary sectional view taken along line 9—9 of Figure 4 with a latch forming a part of the invention shown in locked condition,

Figure 10 is a view similar to Figure 9 but showing the latch in unlocked condition, and

Figure 11 is a fragmentary sectional view taken along line 11—11 of Figure 9.

Referring more particularly to the drawings, there is shown therein a refrigerator provided with a front wall 10, side walls 11 and 12 and a rear wall 13, the front wall 10 being provided with a main door generally indicated at 14.

The door 14 is hinged, as indicated at 15, adjacent the side wall 12 and the side wall 11 is provided with a keeper plate 16 and a latch-receiving opening 17. The door 14 is of hollow construction and is provided with an outer wall 18 and an inner wall 19 which are interconnected by means of end walls 20 and 21. A bracket 22 extends between the front and rear walls 18 and 19, respectively, in spaced parallel relation to the end wall 21 and is centrally provided with an opening 23 for the passage therethrough of an elongated latch bar 24 which also extends through the end wall 21 and, in locked condition, into the latch-receiving opening 17 which is aligned with a similar opening in the keeper plate 16.

A collar 25 is fixed to the bar 24 inwardly of the wall 21 and a collar 26 is freely mounted upon the bar 24 adjacent the outer side of the bracket 22 and a compression spring 27 surrounds the bar 24 between the collars 25 and 26 whereby to normally urge the latch bar 24 outwardly of the door 14.

A pin 28 is mounted between the walls 18 and 19 and has pivotally mounted thereon a bell-crank lever having a normally vertically extending arm 29 and a normally horizontally extending arm 30. The arm 29 is bifurcated and each portion thereof is provided adcent its outer end with a longitudinal slot 31, as shown in Figures 9 and 10. The inner end of the bar 24 is provided with laterally extending pins 32, as shown in Figure 4, which pins are slidable in the slots 31.

The arm 30 is provided with a pair of upwardly extending standards 33 and a pin 34 extends through the upper end portions of the standards.

An outer latch handle 35 extends through an opening 36 in the outer panel 18 and is pivotally connected at its inner end to the pin 34 between the standards 33. An inner latch handle 37 extends through an opening 38 in the inner panel 19 and is likewise pivotally connected to the pin 34 between the standards 33. A conventional door handle 39 is also provided on the outer face of the door 14.

In the operation of this portion of the invention, it will be apparent that by lifting upwardly upon either latch handle 35 or latch handle 37, that such latch handles will abut against the upper edge of its respective opening 36 or 38 to thus open the same and cause a downward movement of the arm 30 and a consequent counterclockwise movement of the arm 29 as viewed, for example, in Figures 9 and 10, thus causing the latch bar 24 to move inwardly of the door against the action of the spring 27 thus disengaging the same from the latch-receiving opening 17 and keeper plate 16 as shown in Figures 5 and 10. Release of either of the thus operated latch handles 35 and 37 will cause the spring 27 to again move the latch bar 24 outwardly so that,

if the door is closed as shown in Figure 4, for example, the latch bar will extend through the keeper plate into the opening 17 to thus lock the door. However, it will be apparent that a child or other person finding himself locked within the refrigerator may merely lift the inner handle 37 to thus unlatch the door—a feat not possible in the standard refrigerator.

An additional safety feature is illustrated particularly in Figures 5 to 8, inclusive, and it will be seen that there is provided a bottom wall 39 which is conventional. A horizontal partition member 40 is mounted in vertically spaced relation to the bottom 39 and its forward edge terminates inwardly of the inner panel 19 of the door 14 when the latter is in its closed position.

Hinged, as indicated at 41, to the side wall 12 immediately above the partition 40 is a platform 42 which is centrally provided adjacent its free edge with an opening 43. An opening 44 is provided in the partition 40 in vertical registry with the opening 43 and a vertically extending pin 45 is affixed to the bottom 39 and extends upwardly through the openings 44 and 43. A collar 46 is slidably mounted upon the pin 45 and normally bears against the underside of the platform 42 due to the action of a compression spring 47 which surrounds the pin 45 and bears at its lower end against the bottom 39 on a fixed collar 48, the upper end of the spring 47 bearing against the underside of the collar 46.

Centrally affixed to the platform 42, as indicated at 49, is a vertically dependent arm 50 which extends freely through an opening 51 provided in the partition 40.

Slidably extending through suitable openings in vertical brackets 52 and a vertical partition 53 is an elongated dog 54 which is normally urged in an outward direction by means of a compression spring 55 and collar 56. An elongated rearwardly extending dog 57 extends through suitable openings in brackets 58 mounted upon the bottom 39 and through an opening 59 in the rear wall 13.

The rear wall 13 is provided with an emergency cover 60 which is hinged, as indicated at 61, to the outer face of the rear wall 13 and normally, through gravity, remains in a vertical position to cover air inlet openings 62 in such rear wall 13. The dog 57 is normally urged in an outward direction by means of a compression spring 64 and collar 65. Links 66 interconnect the lower end of the arm 50 with the inner end of the dog 57 while links 67 interconnect the lower end of the arm 50 with the inner end of the dog 54. The spring 47 is slightly stronger than the combined strength of the springs 55 and 64.

In the operation of this last-described portion of the invention, it will be apparent that if a weight, even that of a small child, is placed upon the platform 42, the latter will swing downwardly against the action of the spring 47 thus causing a downward movement of the arm 50 and, through the linkage 66 and 67, an outward movement of the dogs 54 and 57. When the dog 54 is in its outward position, as shown in Figure 7, it will be apparent that the door 14 may not be closed since it will abut against the outer end of the dog 54 and be thereby prevented from moving inwardly to a latchable position. Likewise, when the dog 54 is in its outward position it will move the emergency door 60 outwardly, as shown in Figure 7, to thereby uncover the inlet openings 62 and to thus allow air to enter the opening 62 and thus pass upwardly between the outer edge of the partition 40 and the inner wall 19 of the door even though the latter become closed. If the door 14 is open—and it must be since it is prevented from fully closing by means of the dog 54—then air may circulate entirely through the refrigerator and thus provide sufficient oxygen for a child or other person standing upon the platform 42. It will also be apparent that the platform 42 is of such size that it is impossible for anyone entering the refrigerator not to place his weight thereon thus making this portion of the device entirely automatic in its functioning.

While but one form of the invention has been shown and described herein, it will be readily apparent to those skilled in the art that many minor modifications may be made without departing from the spirit of the invention or the scope of the appended claims.

What is claimed is:

1. In a refrigerator having a top, a bottom, side walls, a rear wall, a front wall, and an outwardly opening main door in said front wall, the provision of safety means for said refrigerator, said means comprising a horizontal partition mounted in said refrigerator in spaced relation to said bottom, a platform hinged at one of its edges to one of said side walls immediately above said partition, said rear wall having an opening therein, an emergency door for said opening hinged at its upper edge to the outer face of said rear wall, a pair of dogs mounted in said refrigerator below said partition, spring means normally holding said dogs in retracted position, and means operable by downward movement of said platform for extending said dogs whereby one of said dogs abuts said emergency door to open the same and the other of said dogs abuts the main door to prevent the closing thereof.

2. In a refrigerator having a top, a bottom, side walls, a rear wall, a front wall, and an outwardly opening main door in said front wall, the provision of safety means for said refrigerator, said means comprising a horizontal partition mounted in said refrigerator in spaced relation to said bottom, a platform hinged at one of its edges to one of said side walls immediately above said partition, said rear wall having an opening therein, an emergency door for said opening hinged at its upper edge to the outer face of said rear wall, an elongated forwardly extending dog mounted in said refrigerator below said partition, a like rearwardly extending dog likewise mounted below said partition, a vertically dependent arm centrally affixed to said platform and extending freely through said partition, links interconnecting the inner ends of said dogs with the lower end of said dependent arm, and spring means for normally retaining said dogs in retracted positions, said dogs adapted when extended by weight upon said platform to abut the inner faces of said doors whereby to open said emergency door and to prevent closing of said main door.

3. A device as defined in claim 2 wherein said spring means for normally retaining said dogs in retracted position comprises a vertically extending pin affixed to said bottom and extending freely through said partition and said platform, a collar freely mounted on said pin in abutting relation to the underside of said platform, and a compression spring surrounding said pin and bearing at its lower end against said collar.

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