March 12, 1963 L. A. STEBBINS 3,081,138

LOWERABLE COMPARTMENT FOR CABINETS

Filed Oct. 16, 1961 2 Sheets-Sheet 1

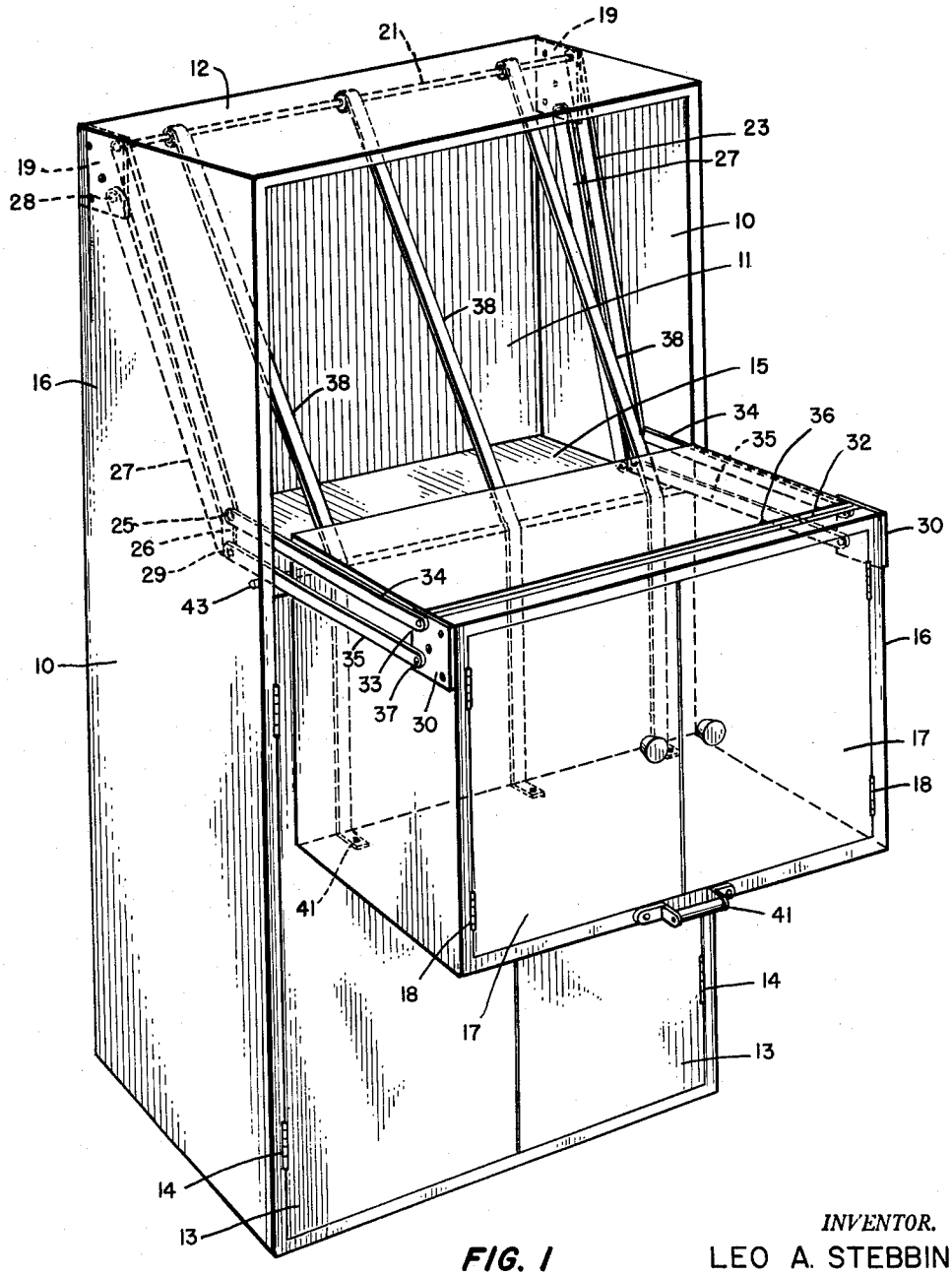

FIG. 1

INVENTOR.

LEO A. STEBBINS

BY

ATTORNEY

March 12, 1963 L. A. STEBBINS 3,081,138

LOWERABLE COMPARTMENT FOR CABINETS

Filed Oct. 16, 1961 2 Sheets-Sheet 2

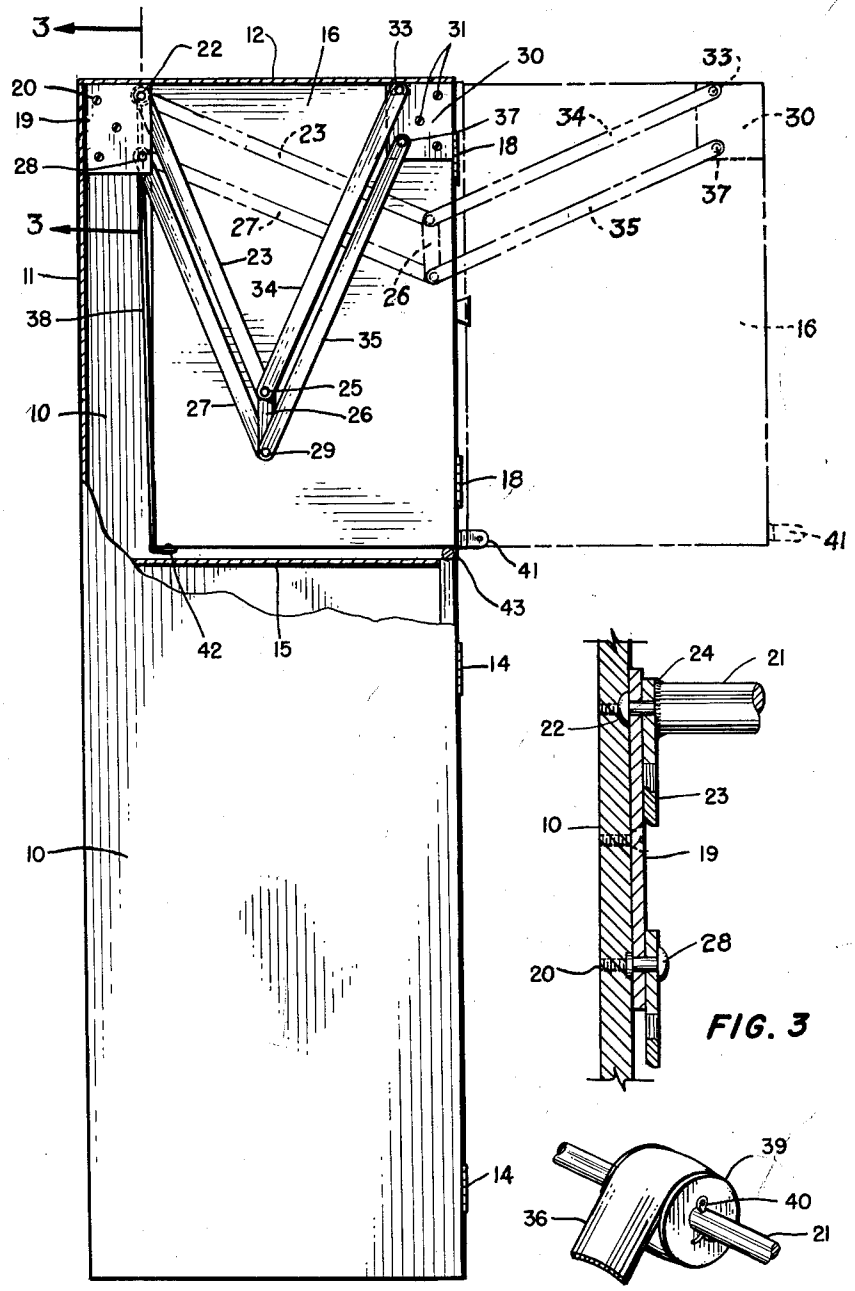

FIG. 2

FIG. 3

FIG. 4

INVENTOR.
LEO A. STEBBINS
BY
ATTORNEY

United States Patent Office 3,081,138 Patented Mar. 12, 1963

3,081,138

LOWERABLE COMPARTMENT FOR CABINETS

Leo A. Stebbins, 859 S. University, Denver, Colo.

Filed Oct. 16, 1961, Ser. No. 145,228
5 Claims. (Cl. 312—319)

It is often exceedingly difficult for the average housewife to reach the upper shelves and upper compartments of conventional kitchen cabinets due to their extreme height above the floor. It has, therefore, been found necessary to provide ladder stools and the like in kitchens for this sole purpose.

This invention relates to means for eliminating the excessive reaching usually required with relatively high kitchen cabinets and relates more particularly to lowerable upper cabinet compartments of the type illustrated and described in applicant's prior Patent No. 2,555,254.

The principal object of this invention is to provide a simple, economical, and highly efficient, foldable cabinet compartment support which can be quickly and easily applied to an elevated compartment of a cabinet which will enable the entire compartment to be readily lowered within easy reach and thence returned to its elevated position in the cabinet with a minimum of manual effort.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention, reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing:

FIG. 1 is a perspective view of a cabinet with the invention applied thereto showing an upper cabinet compartment as it would appear when lowered within easy reach through the medium of this invention;

FIG. 2 is a side elevational view of the compartment of FIG. 1 partially broken away to show the interior construction and showing in solid line the upper cabinet compartment in its normal elevated position and in broken line an intermediate forward position of the lowerable cabinet compartment;

FIG. 3 is an enlarged fragmentary sectional view taken on the line 3—3, FIG. 2; and

FIG. 4 is a fragmentary, enlarged, detail, perspective view of a type of spring employed in this invention.

In the drawing, a modular section of a kitchen cabinet is illustrated having side walls **10**, a back wall **11**, and a top plate **12**. The lower main portion of the cabinet may be closed at its top by a dividing plate **15** and may contain the usual cabinet shelves. The main portion is closed by doors **13** hinged to the side walls **10** at **14**. The upper portion of the cabinet is open at the front to receive a movable upper compartment **16** preferably provided with front doors **17**, hinged thereto at **18**, and a pull handle **41**.

This invention relates more particularly to mounting means for securing the movable upper compartment to the main cabinet so that it may be lowered to a position in front of the main doors **13**, as shown in FIG. 1, or raised into place in the open upper portion of the cabinet, as shown in FIG. 2.

The improved compartment mounting means employs two similar, but of opposite hand, fixed mounting plates **19**, adapted to be attached, by means of suitable screws **20**, to the inside faces of the side walls **10** and against the back wall **11** and the top plate **12**.

A first torque rod **21** extends between the fixed mounting plates **19**. The extremities of the torque rod **21** are reduced in diameter to provide terminal studs **22** which pass through and are rotatably mounted in the mounting plates **19**. The rear extremity of an upper rear parallel bar **23** is fitted over the stud **22** at each extremity of the torque rod **21** and is permanently affixed thereto in any desired manner such as by means of a weld **24**. The two upper rear parallel bars are affixed to the torque rod so as to lie in common plane to rotate as a unit with the torque rod **21**.

The forward extremity of each rear upper parallel bar is pivoted, on a pivot rivet **25**, to the upper extremity of a vertical spacer member **26**. A rear lower parallel bar **27**, corresponding in length to the bar **23**, is positioned below and in parallel relation to each rear upper parallel bar **23**. The rear lower parallel bars **27** are pivotally mounted at their rear extremities on the mounting plates **19** vertically below the studs **22** upon suitable lower plate rivets **28** and they are pivoted at their forward extremities to the lower extremities of the spacer members **26** by means of lower spacer rivets **29**.

The improved mounting means also employs two similar, but of opposite hand, movable mounting plates **30** adapted to be attached against the sides of the compartment **16** at the upper forward corners of the latter by means of suitable attachment screws **31**.

A second torque rod **32** extends between the movable mounting plates **30**. The extremities of the second torque rod **32** are reduced in diameter, as shown in FIG. 3, with reference to the first torque rod **21** to provide terminal studs **33** which pass through and are rotatably mounted in the movable mounting plates **30** similarly to the first torque rod **21**. The second torque rod **32** lies in a clearance groove **36** in the top of the movable compartment.

An upper forward parallel bar is fitted over the stud **33** at each extremity of the second torque rod **32** and is permanently affixed thereto, such as by welding, so that the two upper forward parallel bars **34** will lie in a common plane and rotate as a unit with the second torque rod **32**. The rear extremity of each upper forward parallel bar **34** is pivoted on the pivot rivet **25** on the upper extremity of the spacer member in common with the rear upper parallel bar **23**.

A lower forward parallel bar **35**, corresponding in length to the bar **34**, is positioned below and in parallel relation to each upper forward parallel bar **34**. Each lower forward parallel bar is pivotally mounted at its forward extremity on one of the movable mounting plates **30** vertically below the stud **33** on a pivot rivet **37**, and is pivotally mounted at its rear extremity on one of the lower spacer rivets **29** on one of the spacer members **26** in common with the rear lower parallel bar **27**.

Thus, it can be seen that with the plates **30** affixed to the compartment **16**, the compartment can be shifted forward and back and raised and lowered without tilting in any direction. The parallel bars prevent forward and back tilting and the torque rods prevent lateral tilting since they force the two mounting means to always move in unison.

To relieve the weight of the compartment **16** a plurality of counterbalance strip springs **38** are provided. These springs are of a type comprising spring steel strips formed in a tight spiral coil. Withdrawal of the extremity of the strip from the coil is resisted by the tendency of the strip to resume its preformed coiled condition. The strip is arcuately bent longitudinally to maintain the withdrawn portion straight similarly to a self-coiling steel measuring tape.

The springs **38** are coiled about, but are not attached to, the first torque rod **21** between suitable retaining washers **39** held in place at each side of the coil by means of suitable keys **40**. The extremities of the spring strips are attached to the bottom of the compartment **16**, as shown at **42**, at the rear of the latter so as to constantly

urge the compartment upwardly and rearwardly. When the compartment is in the lowered position of FIG. 1 the spring strips are bent over a spring guide member **43** extending across the cabinet at the forward edge of the dividing plate **15**.

It is believed the operation of the device can be understood from the above description of its construction. Briefly, let us assume the compartment **16** is in the "in place" position of FIG. 2, and that access thereto is desired. The user simply grasps the pull handle **41** and pulls the compartment forward to the broken line position of FIG. 2. Thence, pulls the compartment downwardly to the position of FIG. 1 for easy access to the interior. To replace the compartment the above procedure is simply reversed.

While a specific form of the improvement has been described and illustrated herein, it is to be understood that the same may be varied within the scope of the appended claims, without departing from the spirit of the invention.

Having thus described the invention what is claimed and desired to be secured by Letters Patent is:

1. A mounting means for mounting an upper compartment in a receiving space in a cabinet so that it may be drawn forwardly and downwardly from said space for convenient access comprising: two similar but of opposite hand fixed mounting plates mounted within and at opposite sides of said space; two similar but of opposite hand movable mounting plates mounted externally and upon opposite ends of said compartment; a rear pair of similar parallel bars pivotally mounted in vertically-spaced relation on each of said fixed mounting plates and extending forwardly and downwardly therefrom; a forward pair of similar parallel bars pivotally mounted in vertically-spaced relation on each of said movable mounting plates and extending rearwardly and downwardly therefrom; two vertical spacing members, the rear and forward pairs of parallel bars at each end of said compartment being pivotally mounted on one of said spacing members in vertically-spaced relation corresponding to the vertically-spaced relations on said mounting plates; and a torque rod extending between and rotatably mounted in said fixed mounting plates, one bar of each rear pair of parallel bars being fixedly secured to said torque rod so that the two pairs of parallel bars will rotate in unison about their pivotal mountings on said mounting plates.

2. A mounting means as described in claim 1 having a torque rod extending between and rotatably mounted in said movable mounting plate one bar of each forward pair of parallel bars being fixedly secured to said torque rod so that the two pairs of parallel bars will rotate in unison about their pivotal mountings on said mounting plates.

3. A mounting means as described in claim 1 having a first torque rod extending between and rotatably mounted in said fixed mounting plates, one bar of each rear pair of parallel bars being fixedly secured to said torque rod; a second torque rod extending between and rotatably mounted in said movable mounting plates, one bar of each forward pair of parallel bars being fixedly secured to said second torque rod so that the two pairs of parallel bars will rotate in unison about their pivotal mountings on said mounting plates.

4. A mounting means as described in claim 1 having counterbalancing means mounted in said space and extending to said compartment and supporting a portion of the weight of the latter.

5. A mounting means as described in claim 2 having springs mounted on said torque rod and means for attaching said springs to said cabinet for resiliently supporting a portion of the weight of the latter.

References Cited in the file of this patent

UNITED STATES PATENTS

2,473,239	Boyd	June 14, 1949
2,635,030	Stebbins et al.	Apr. 14, 1953