June 18, 1935. G. K. PARSONS 2,005,002

FOLDING STANDARD

Filed Feb. 23, 1932 2 Sheets-Sheet 1

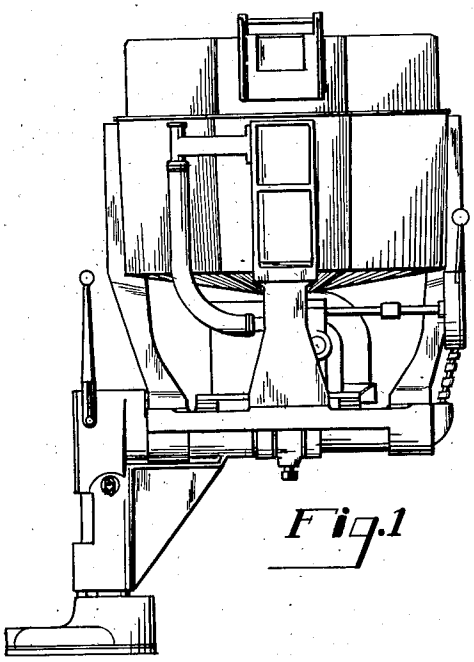


Fig. 1

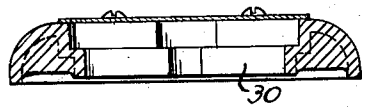


Fig. 3

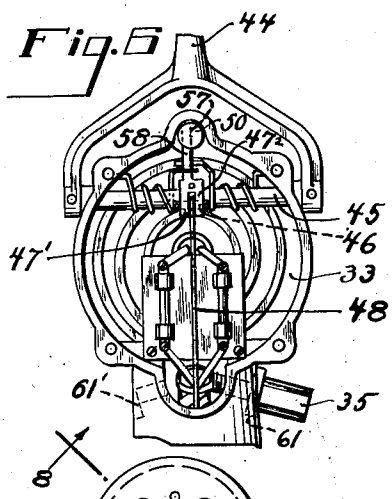


Fig. 6

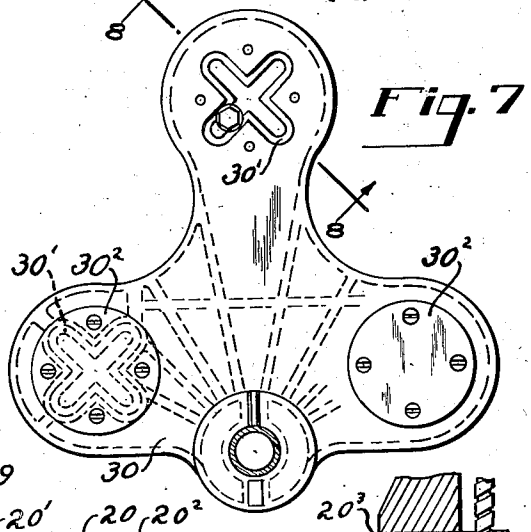


Fig. 7

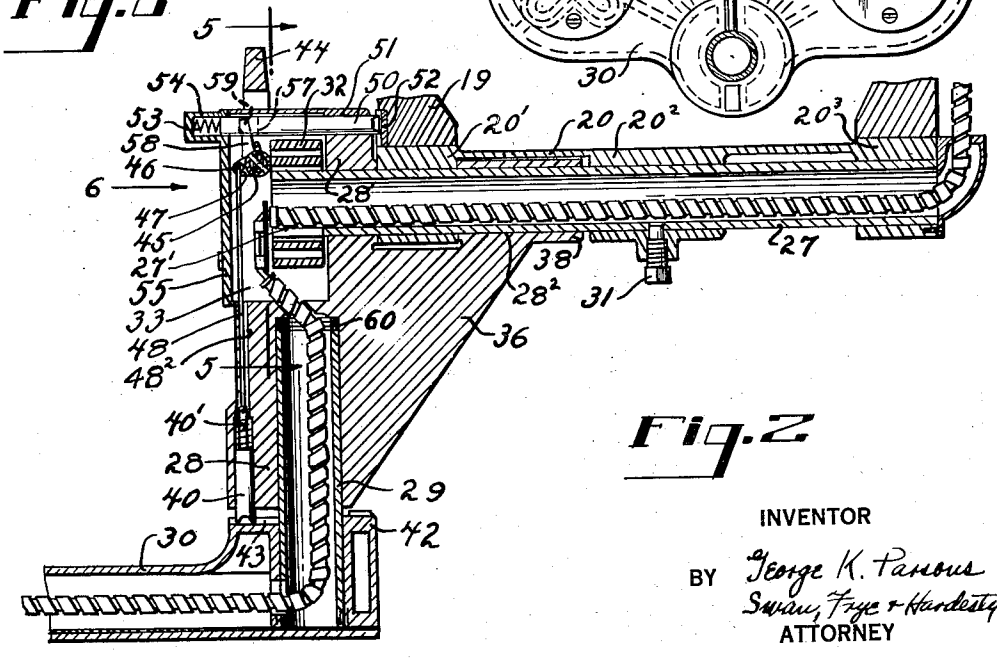


Fig. 2

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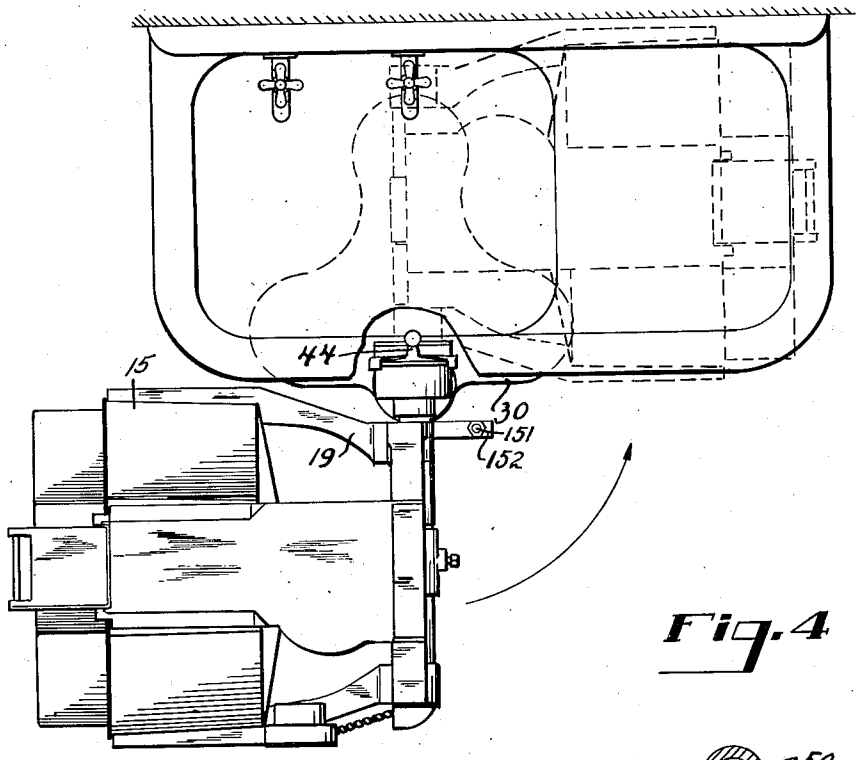


Fig. 4

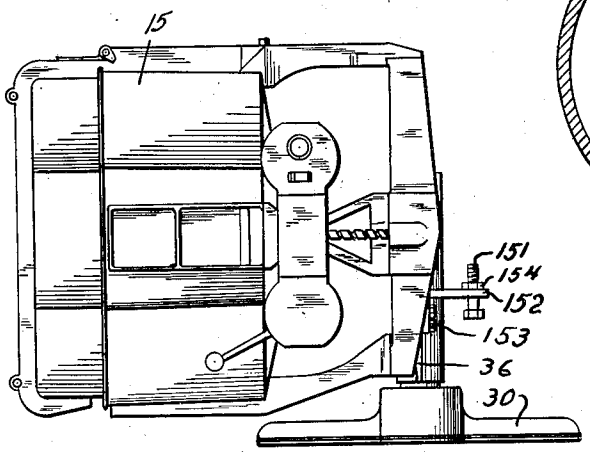


Fig. 3

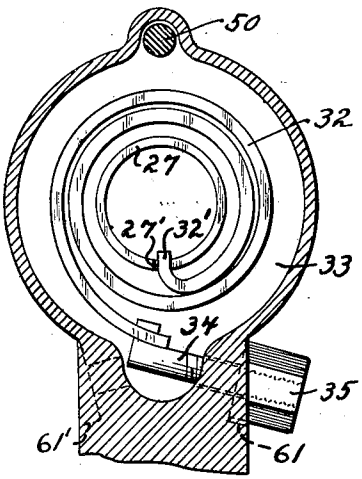


Fig. 5

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Patented June 18, 1935 2,005,002

UNITED STATES PATENT OFFICE

2,005,002

FOLDING STANDARD

George K. Parsons, Detroit, Mich., assignor to Unitor Corporation, Detroit, Mich., a corporation of Michigan

Application February 23, 1932, Serial No. 594,680

7 Claims. (Cl. 248—13)

This invention relates to supporting standards or mounting means, and particularly to a foldable support especially suitable for use in conjunction with devices used in kitchens of households, to adapt the same to be swung beneath a sink or table. The invention constitutes an improvement upon that disclosed in my copending application Serial Number 530,116, filed April 14, 1931, now Patent No. 1,970,814, dated August 21, 1934, and is particularly intended for use as a foldable support for a household machine of the type disclosed in my copending application, Serial Number 530,117, filed April 14, 1931, or the type disclosed in my copending application, Serial Number 594,679, filed February 23, 1932. The invention has for an important object provision of a foldable standard adapted to rigidly support the machine or other load carried thereby in upright or elevated position in front of a sink, for example, thus positioning it conveniently when it is desired to use the machine or other device, yet which permits folding a machine away in such manner that it lies completely beneath the sink and out of the way when not in use.

Another object of the invention is the arrangement of improved controlling means for locking and releasing the machine with respect to swinging movements about vertical and horizontal axes, which controlling means is so arranged as to render it impossible to swing the machine about the vertical axis while standing upright, although it may be easily released to permit such swinging when it has been folded over to reduce its overall height, thereby preventing swinging the machine into contact with the sink or other elevated adjunct beneath which it folds.

A still further object of the invention lies in the provision of novel and simple latching means for selectively preventing or permitting swinging movement of the machine about vertical and horizontal axes, and controlling means for such latching mechanism comprising a single lever movable in one direction to control a latch governing horizontal swinging of the machine, and in another direction to control a latch governing vertical swinging movement of the machine.

A still further object consists in the provision, in such a foldable supporting standard, of improved means for conducting suitable electric wiring to a machine supported thereby.

Other objects and advantages will be apparent from the following description, wherein reference is made to the accompanying drawings illustrating a preferred embodiment of my invention, and wherein similar reference numerals designate similar figures throughout the several views.

In the drawings:

Figure 1 shows in side elevation a dishwashing and convertible household machine of the type disclosed in my copending application, Serial Number 594,679 filed February 23, 1932, supported on a foldable standard of the type contemplated by my present invention;

Figure 2 is a vertical sectional view taken substantially centrally through my improved support;

Figure 3 is a front elevational view of such a machine mounted upon my improved standard, showing the machine folded downwardly about the horizontal axis and ready for swinging about the vertical axis to the stored position beneath the sink;

Figure 4 is a top view showing a sink in plan and the machine mounted upon my improved standard and substantially in the same position in which it is shown in elevational Figure 3, showing also the manner of swinging the same beneath the sink and indicating in dotted lines its position when folded therebeneath;

Figure 5 is a detail vertical sectional view taken substantially on the line **5—5** of Figure 2 and looking in the direction of the arrows;

Figure 6 is a detail elevational view showing the interior of the box which serves to house the counterbalance spring and latch mechanism as well as the electrical fuses, taken looking substantially as indicated by the arrow **6** of Figure 2, but with the cover plate removed;

Figure 7 is a plan view of the base portion of the standard, and

Figure 8 is a detail section taken substantially on the line **8—8** of Figure 7, and looking in the direction of the arrows.

Referring now to the drawings, reference character **30** indicates a supporting base, the contour of which is best shown in Figure 7. As there shown the base is provided with X-shaped apertures **30'**, through which at suitable points securing bolts or screws adapted to fasten the device to the floor may be passed, being adjustable in the irregular apertures to provide means insuring their engaging beams or other solid portions of the floor. The apertures **30'** may be closed by suitable caps **30²**.

As shown in Figure 2 the base may be of hollow construction and provided at its forward extremity with an upstanding apertured boss **42**, in which is rigidly secured the tubular vertical shaft **29**, which rises therefrom and swingably

supports the standard 28, between which and the shaft a suitable combined bearing and cushion for absorbing vibration, the central member of which as 60, comprises a rubber disc, may be interposed. The standard 28 is provided with horizontal supporting bearing portions 28'—28² for the tubular shaft 27, which is journaled therein and which directly supports the machine itself through its sub-base 20. The machine is generally designated 15. The laterally spaced bearing portion 38 is braced by the web 36, and directly above the vertical supporting rod or shaft 29 a substantially cylindrical box 33 is formed in the standard, into which the end of the shaft 27 projects. The sub-base 20 of the machine 15 is rigidly secured to the shaft 27 as by means of the set screw 31. The sub-base is provided with three shaft-engaging portions 20', 20², 20³, the former of which, as shown in Figure 2, fits between the bearing portions 28'—38 of the supporting standard. The shaft-engaging portions 20'—20³ of the sub-base are equally spaced from the centrally disposed shaft-engaging portion 20², thereby making it possible to reverse the entire machine and sub-base with respect to the shaft and standard, by placing the shaft-engaging portion 20³ in the position shown occupied by the shaft-engaging portion 20' of the sub-base and vice versa, thereby turning the machine through one hundred eighty degrees about a vertical axis with respect to the standard. When arranged as shown, the machine is adapted to swing to the left, as viewed in Figure 3, to enable the same to be folded down to such height that it may easily be swung beneath the sink or drainboard.

The weight of the machine is counter-balanced by the torsion spring 32, the inner extremity 32' of which is hooked in the slot 27' in the shaft 27, as shown in Figure 5. As also therein shown the outer extremity of the spring is fixed by an adjustable tension screw 34 passing through an aperture 61 in the housing and held by the adjusting nut 35. When the entire machine and sub-base are reversed upon the horizontal shaft 27 in the manner above described, the machine becomes swingable in the opposite direction (to the right as viewed in Figure 3), and the spring 32 is then reversed with respect to the position in which it is shown in Figure 5, the bolt 34 being passed through the oppositely located aperture 61' provided for such purpose and extending through the wall of the housing 33. A limiting stop 151 which prevents downward swinging of the machine in the wrong direction may be carried by the web 36. It is shown as comprising a supporting angle bracket 152 fastened to the web by screws 153 and having a tapped aperture in its horizontally extending arm in which the stop screw 151 engages, being securable in desired positions of adjustment by the lock nut 154. As shown in Figures 2 and 7, apertures, here shown as slots 43 are formed in the top of the boss 42 in which a vertically slidable detent pin 40 is adapted to engage to lock the standard in desired positions. The slots are here shown so located as to hold the machine in the fully outwardly and fully inwardly swung positions, although they might also be arranged to detain a held device in desired intermediate positions. The plunger 40 is urged downwardly into the slots 43, when aligned therewith, by the compression spring 40' trapped behind the plunger and supplementing the force of gravity. From the plunger, to which it is pivotally connected, a link 48 extends upwardly through the aperture 48² in the standard 28 and the housing 33 to the bifurcated lever 47 fast upon the shaft 45. Extending between and pivoted in the opposed arms 47'—47² of the lever is a cross pin 46, through which the wire link slidably extends being hooked above the cross-pin or threaded for the reception of an adjusting nut, as shown in Figures 2 and 6. This arrangement will be seen to provide lost motion connection between the lever and link, permitting downward movement of the lever and cross-pin without affecting the link, while upon sufficient upward movement of the lever it pulls the link and so the pin 40 upwardly.

To lock the machine against swinging movement about the horizontal shaft, the horizontally slidable detent pin 50 is provided, reciprocable in slideways 51—54, the former formed in the standard 28 through the wall of the box 33 abutting the leg 19 of the machine, as shown in Figure 2, while the latter is formed in the cover plate 55 of the compartment 33, for which purpose an inwardly opening hollow boss is provided upon the cover plate, the aperture in which is deep enough to house the compression spring 54 behind the pin. The spring of course tends to urge the pin into the slot 52 in the leg when the machine is in upright position, to rigidly so hold it. The pin 50 extends across the interior of the box 33, and a slot 57 is formed in its side in which engages a lever 58, which is also fast upon the shaft 45 and formed with a cam-like end 59 engageable with the rear of the slot. It will be seen that when the handle 44 is moved to the left (as viewed in Figure 2), the lever 58 will be moved in the same direction, and its upper extremity 59 will engage the rear surface of the slot 57 to force the pin 50 out of the locating slot 52 and so free the leg 19 of the machine. The machine is of course then free to be swung downwardly about the horizontal axis to the position in which it is shown in Figures 3 and 4. The handle may then be moved in the opposite direction (to the right as viewed in Figure 4) since the leg 19 no longer interferes. This movement of the handle lever raises the pin 40 out of the positioning slot 43 in the base 30, and permits swinging the machine about the vertical shaft 29 to the completely folded away position shown in dotted lines in Figure 4. It will be seen that by virtue of this arrangement it is impossible to swing the machine so that it strikes the sink or drainboard, since the handle lever 44 cannot be moved toward the machine to release the pin 40 until the machine has been folded over so that it will safely pass beneath the drain board or sink.

While I have described my improved standard as utilized to support a particular type of machine in such manner that it may be folded beneath a sink and drainboard, it is to be understood that it is easily adaptable to the support of many and various other devices and objects, in such manner that they may be arranged to fold either beneath any desired elevated object, into a cupboard or the like, or, it may be, installed in the open and merely folded to reduce the space the supported device occupies, and while it will be apparent that the illustrated embodiment of my invention herein disclosed is well calculated to adequately fulfill the objects and advantages primarily stated, it is to be understood that the invention is susceptible to variation, modification and change

within the spirit and scope of the subjoined claims.

What I claim is:

1. In combination with a member desired to be supported, a foldable standard for so supporting the same that it may be swung beneath an elevated shelf or the like when desired, comprising a base, a sub-base carried thereby and swingable about both vertical and horizontal axes, means for locking the sub-base against undesired swinging movement, a latch controlling member movable in one direction to release the sub-base for swinging movement about one axis, and movable in another direction to release the sub-base for swinging movement about another axis, said controlling member being arranged to be blocked against movement in one direction by the supporting member until it has been swung in the other possible direction.

2. In combination with a member desired to be supported, a foldable standard for so supporting the same that it may be swung out of the way when not in use, comprising a base, a sub-base supported thereby and separately swingable about a plurality of axes, individually releasable means for locking the sub-base against undesired swinging movement about each axis, and a controlling member movable in one direction to release one such locking means and in another direction to release another, said controlling member being so disposed as to be blocked by the supported member against releasing movement to free the sub-base with respect to one axis of rotation except when it is in a desired position with respect to another.

3. In combination with a member desired to be supported, a foldable standard for so supporting the same that it may be swung out of the way when not in use, comprising a base, a sub-base supported thereby and separately swingable about substantially vertical and horizontal axes, detent means for preventing undesired rotative movement of the sub-base about the vertical axis, detent means for preventing undesired rotative movement of the sub-base about the horizontal axis, and a controlling member movable in one direction to release one such detent means and movable in another direction to release the other detent means, and means for preventing release of the swingable sub-base with respect to one axis by the controlling member when the supported member is in one position.

4. In combination with a member desired to be supported, a foldable standard for so supporting the same that it may be swung out of the way when not in use, comprising a base, a sub-base supported thereby and separately swingable about substantially vertical and horizontal axes, means for preventing undesired swinging movement of the sub-base about the vertical axis, means for preventing undesired swinging movement of the sub-base about the horizontal axis, and a controlling lever pivoted on the standard adjacent the supported member, movable in different directions to release the sub-base for swinging movement about each axis, and in such manner that when the supported member is in one position it blocks movement of the controlling lever in one direction.

5. In a foldable supporting standard, a base, a frame carried thereby and swingable about a substantially vertical axis, a sub-base carried by said frame and independently swingable about a substantially horizontal axis, and locking means substantially centered in an extended plane common to both axes for locking both the frame and sub-base against swinging movement, including an operating handle for the locking means movable in one direction to release the sub-base for horizontally swinging movement and in another direction to release said sub-base for vertical swinging movement.

6. In a foldable support, a base, a frame carried thereby and swingable about a substantially vertical axis, a sub-base carried by said frame and independently swingable about a substantially horizontal axis, and means arranged generally in an extended plane passing through both axes for locking both the frame and sub-base against swinging movement.

7. In a foldable support, a base, a frame carried thereby and swingable about a substantially vertical axis, a sub-base carried by said frame and swingable about a substantially horizontal axis, a machine supporting member carried by said sub-base, and means including a pair of detent members each movable in a path substantially parallel to one of said axes for locking both the frame and sub-base against swinging movement, one detent being engageable with the frame and base, and another being engageable with the frame and machine supporting member, and means for retracting each detent.

GEORGE K. PARSONS.