Oct. 25, 1966 L. L. ANDERSON 3,281,197

ROLLER ASSEMBLY FOR POSITIONING CORNER SHELF HARDWARE

Filed Sept. 2, 1964 2 Sheets-Sheet 1

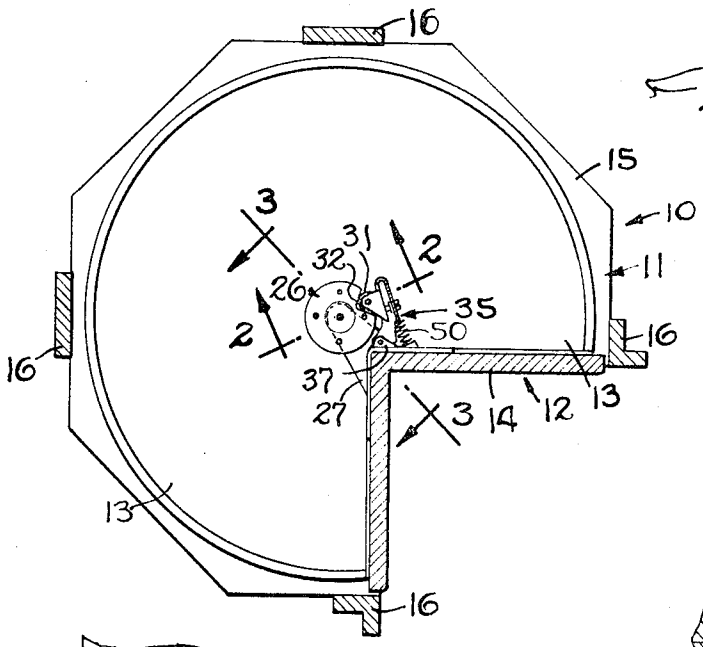


Fig. 1

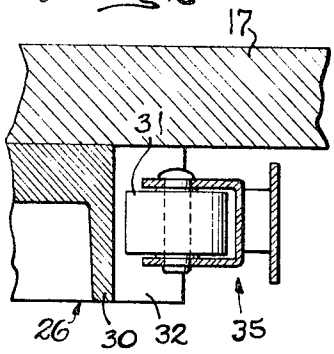


Fig. 2

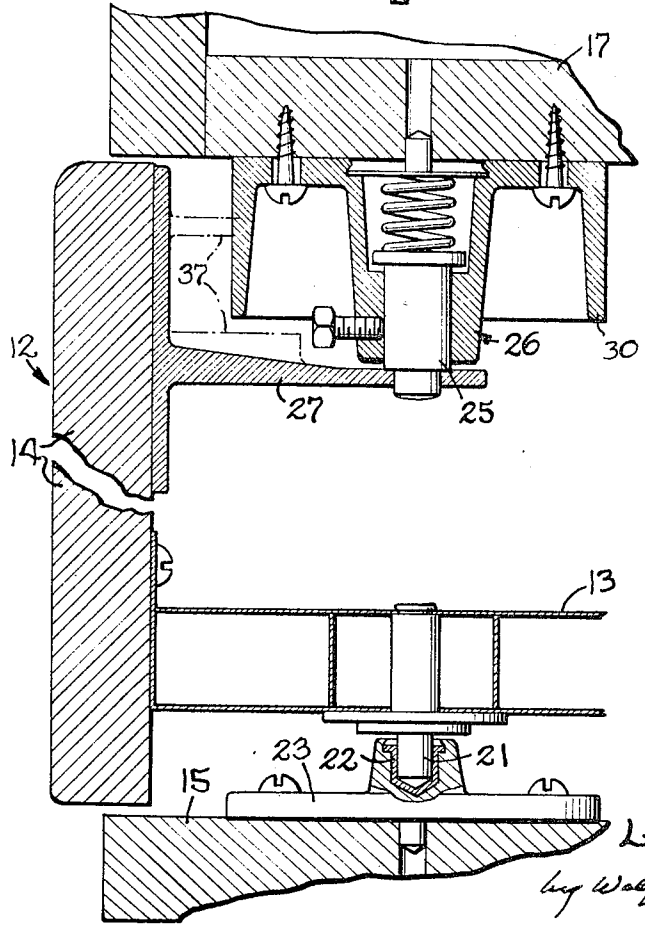


Fig. 3

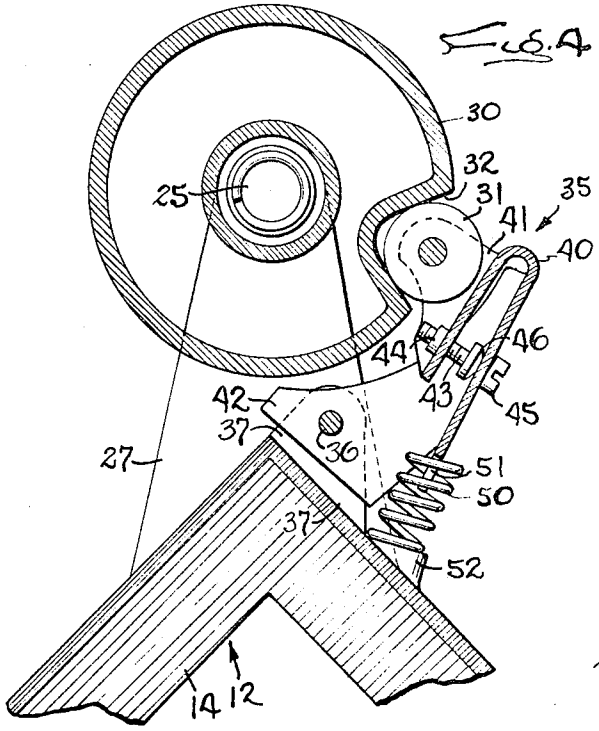
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Fig. 4



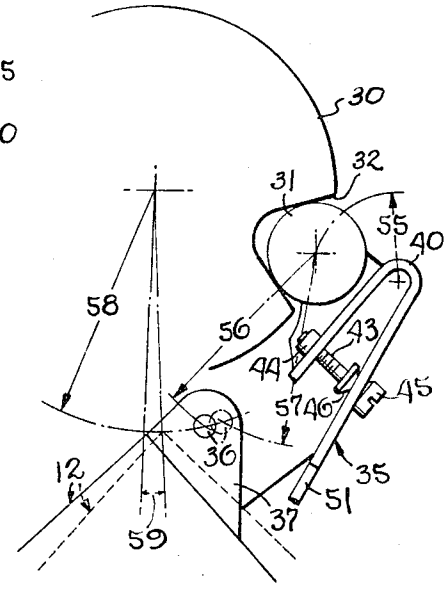
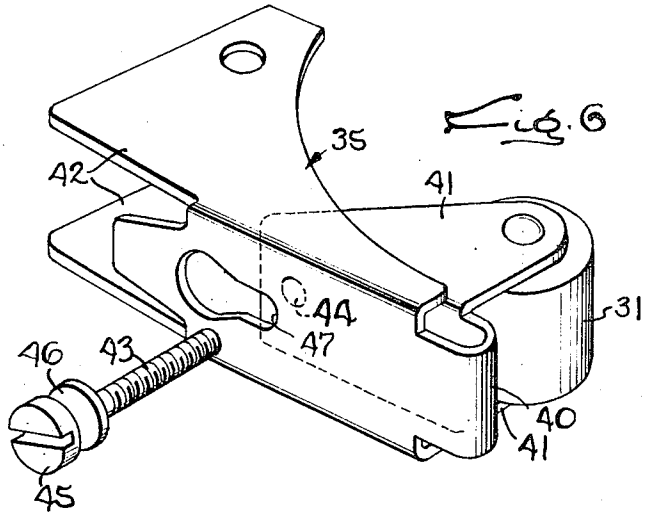


Fig. 5

Fig. 6



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ROLLER ASSEMBLY FOR POSITIONING CORNER SHELF HARDWARE

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5 Claims. (Cl. 312—305)

This invention relates generally to cabinet hardware and more particularly concerns a roller assembly for angularly positioning a swinging cabinet.

The primary aim of the invention is to provide an economical easily adjusted assembly for very closely establishing the closed or normal position of a swingable cabinet.

More particularly, it is an object of the invention to provide an assembly of the above character embodying a sturdy, one piece cam follower support that can be easily and economically manufactured.

A collateral object is to provide a support as described above that can be very finely adjusted since there is little part looseness or play.

It is also an object to provide hardware as characterized above which constitutes a particularly compact, although efficient, assembly.

Other objects and advantages of the invention will become apparent upon reviewing the following detailed description and upon reference to the drawings, in which:

FIGURE 1 is a plan of a cabinet assembly employing hardware embodying the present invention;

FIG. 2 is an enlarged fragmentary section taken approximately along the line 2—2 in FIG. 1;

FIG. 3 is an enlarged fragmentary section taken approximately along the line 3—3 in FIG. 1;

FIGS. 4 and 5 are fragmentary plans partially in section showing, in enlarged form, the structure appearing at the center of FIG. 1; and

FIG. 6 is a perspective of portions of the hardware otherwise appearing in the other views.

While the invention will be described in connection with a preferred embodiment, it will be understood that I do not intend to limit the invention to that embodiment. On the contrary, I intend to cover all alternatives, modifications and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims.

Turning first to FIGS. 1 and 3, there is shown a corner cabinet assembly **10** including a frame **11** and a cabinet **12** pivoted in the frame **11** for swinging movement about a vertical axis. The cabinet **12** includes a shelf panel **13** and an L-shaped front panel **14**. The frame **11** includes a base **15** rigidly supporting a plurality of vertical members **16** which, in turn, rigidly carry a top member **17**. The cabinet assembly **10** is intended for installation in a corner with the vertical or front cabinet panel **14** being fitted flush with adjacent units.

The lower end of the cabinet **12** is pivoted by a pin **21** anchored in the shelf **13** and riding in a bearing cup **22** mounted in a plate **23** fixed to the frame base **15**. The upper end of the cabinet **12** is pivoted by a pin **25** mounted in a bracket **26** that is fixed to the frame top member **17**. The pin **25** rotatably engages a bearing member **27** that is fixed to the cabinet panel **14**.

In accordance with the invention, the cabinet **12** is resiliently held in an angularly adjustable, closed or normal position by the interaction of a peripherally notched cam **30** and a novelly supported cam follower roller **31**. Preferably, the roller **31** is supported on the cabinet **12** and the cam **30** is fixed on the frame **11**. In the illustrated construction, the cam **30** is formed as an integral skirt on the bracket **26** having a generally annular periphery interrupted by a notch **32** that receives the roller **31** and establishes the normal closed position of the cabinet **12**.

The roller **31** is journaled on a support **35** which is pivoted by a pin **36** on a bracket that, preferably, is defined by arms **37** formed integrally with the bearing member **27**. The support **35** is a one piece member having a flexible folded portion **40**. On one side of the folded portion **40** are a pair of flanges **41** journaling the roller **31**, and on the opposite side of the folded portion are an additional pair of flanges **42** which receive the support pivot pin **36**. An adjusting screw **43** interconnects portions of the support **35** on opposite sides of the folded portion **40**. The screw **43** is threaded into a collar **44** formed between the flanges **41** and, at the opposite end, the screw **43** carries a head **45** having a peripheral groove **46** that fits into the narrowed portion of a keyhole opening **47** formed on the support **35** between the flanges **42**. The larger portion of the keyhole opening **47** freely receives the screw head **45** so as to facilitate assembly. That is, the screw can be threaded into the collar **44** until the head **45** passes into the opening **47**, whereupon the groove **46** is slid into the narrowed portion of the opening **47** so as to establish the interconnection between the portions of the support **35** on the opposite sides of the folded portion **40**.

To bias the roller **31** against the cam **30**, a helical spring **50** is anchored over a tongue **51** formed on the support **35** and is compressed against a seat **52** on the bracket defining member **27**.

The parts are assembled so that the line of fold of the folded portion **40**, and the axes of the cabinet **12**, the cam **30**, the support **35** and the roller **31** are all parallel. Thus, rotation of the cabinet about its pivot pin **25** causes the roller **31** to roll freely about the periphery of the cam **30**. With the roller **31** received in the cam notch **32** under the biasing force of the spring **50**, the cabinet **12** is resiliently held in a normal, closed position. Rotation of the cabinet causes the roller **31** to easily roll out of the cam notch **32** with the support **35** swinging about its pivot pin **36** against the force of the spring **50**.

To adjust the normal closed position of the cabinet **12**, the screw **43** is turned with an ordinary screwdriver. With reference to FIG. 5, rotating the screw **43** so as to thread it into the collar **44** bends the support **35** more sharply about the folded portion **40** so as to swing the roller **31** about an approximate radius **55**. This shortens the distance between the axis of the roller **31** and the support pivot pin **36** as, for example, shortening the distance indicated by the arrow **56** to that indicated by the arrow **57**. This change of distance tends to pull the support pivot pin **36** about an arc whose radius is indicated by the arrow **58** and thus the angular position of the cabinet **12** is varied through the extent of an angle **59**. Rotation of the screw **43** in the opposite direction adjustably rotates the cabinet back in the opposite direction.

Preferably, the axis of the cabinet **12**, the axis of the roller **31** and the line of fold of the folded portion **40** are disposed substantially along a straight line so as to minimize the possible bending effect on the folded portion **40** by the force exerted by the spring **50**. Since the adjustment of the normal cabinet position is achieved by bending a flexible member, it can be seen that a minimum of looseness or play between adjacent parts enters into the angular positioning of the cabinet and hence the closed position can be very accurately established and maintained. Those familiar with this art will also appreciate that the hardware described above may be quite economically manufactured and that, in assembled relation, it provides a compact and efficient mechanism.

I claim as my invention:

1. A swingable cabinet assembly comprising, in combination, stationary pivot structure, a cabinet rotatably mounted on said structure, a generally annular cam having a peripheral notch, a cam follower bracket, means mounting said cam and said bracket one on said structure and the other on said cabinet, a support pivoted on said bracket, a roller journaled on said support, said support having a resilient folded portion between said roller and said bracket pivot, an adjusting screw interconnecting portions of said support on opposite sides of said folded portion so that turning the screw varies the angle of fold and shifts the roller relative to said support pivot, and means biasing said support about its pivot so as to urge said roller against the notched periphery of said cam, the line of fold of said folded portion and the axes of said cabinet, said cam, said support and said roller all being parallel.

2. A swingable cabinet assembly comprising, in combination, stationary pivot structure, a cabinet rotatably mounted on said structure, a generally annular cam having a peripheral notch, a cam follower bracket, means mounting said cam and said bracket one on said structure and the other on said cabinet, a support pivoted on said bracket, a roller journaled on said support, said support having a resilient folded portion between said roller and said bracket pivot, an adjusting screw interconnecting portions of said support on opposite sides of said folded portion so that turning the screw varies the angle of fold and shifts the roller relative to said support pivot, said adjusting screw having a peripherally grooved head with the groove being fitted in the narrow portion of a keyhole opening formed in said support, said opening having a portion larger than the diameter of said head so as to facilitate assembly, and means biasing said support about its pivot so as to urge said roller against the notched periphery of said cam.

3. A swingable cabinet assembly comprising, in combination, stationary pivot structure, a cabinet rotatably mounted on said structure, a generally annular cam having a peripheral notch, a cam follower bracket, means mounting said cam and said bracket one on said structure and the other on said cabinet, a support pivoted on said bracket, a roller journaled on said support, said support having a resilient folded portion between said roller

and said bracket pivot, an adjusting screw interconnecting portions of said support on opposite sides of said folded portion so that turning the screw varies the angle of fold and shifts the roller relative to said support pivot, and means biasing said support about its pivot so as to urge said roller against the notched periphery of said cam, said cam axis, said roller axis and said line of fold of said folded portion lying substantially in a straight line so as to minimize the effect of said biasing means on said line of fold.

4. A swingable cabinet hardware assembly comprising, in combination, a generally annular cam having a peripheral notch, a cam follower bracket, a one piece support pivoted on said bracket, a roller journaled on said support, said support having a resilient folded portion between said roller and said bracket pivot, an adjusting screw interconnecting portions of said support on opposite sides of said folded portions so that turning the screw varies the angle of fold and shifts the roller relative to said support pivot, and means for biasing said support about its pivot against the notched periphery of said cam.

5. In a swingable cabinet assembly, the combination of, a frame member, a cabinet member, pivot means supporting said cabinet member on said frame member to turn about a predetermined axis, a cam mounted on one of said members and having a surface encircling said axis and formed with a peripheral notch, a deformable support mounted on the other of said members adjacent said cam, a roller mounted on said support, means resiliently urging said roller against said surface whereby the roller locates the cabinet as it enters said notch, and means operable to deform said support selectively thereby to vary the location of the cabinet when said roller is disposed in said notch.

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