July 8, 1958 C. F. MURPHY 2,842,278

LID STAY ASSEMBLY

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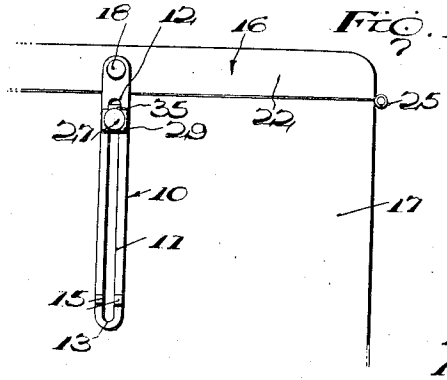


Fig. 1.

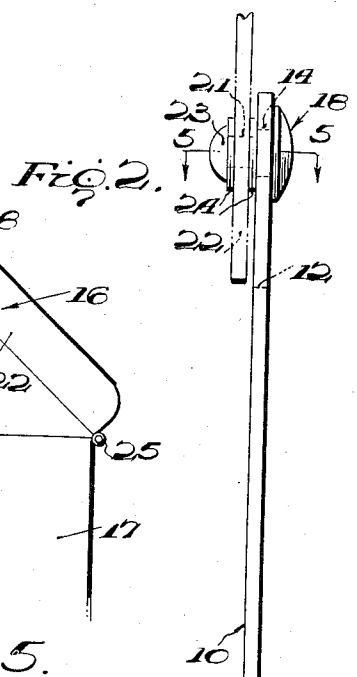
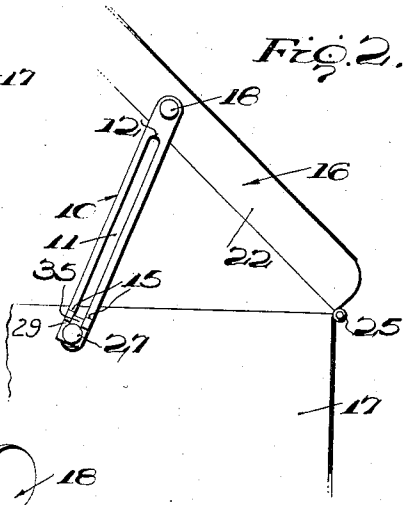


Fig. 2.



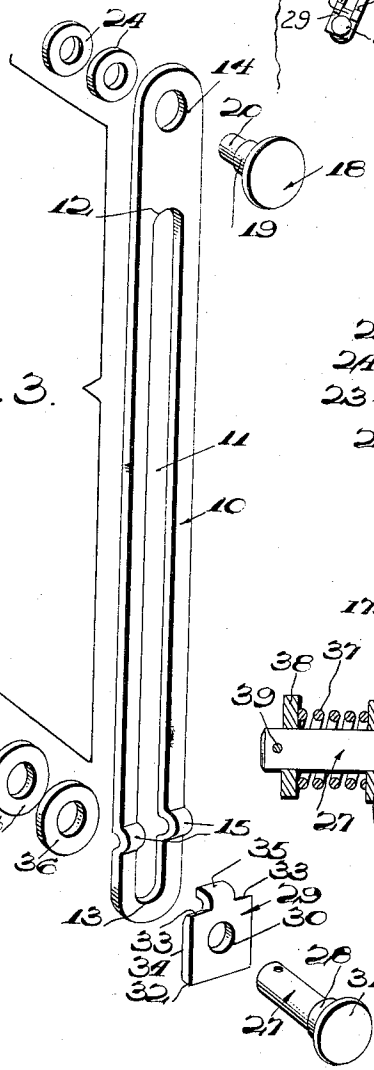


Fig. 3.

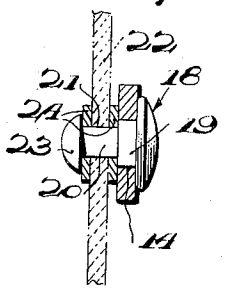


Fig. 5.

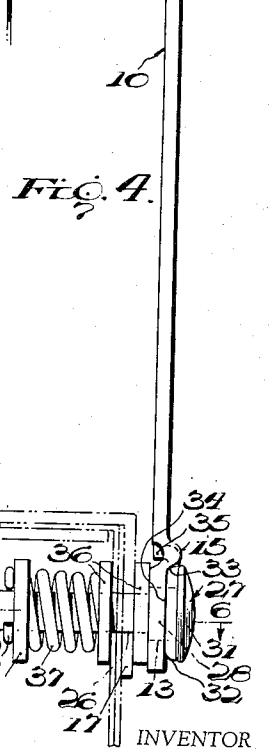


Fig. 4.

Fig. 6.

INVENTOR

Charles F. Murphy.

BY

W. J. Eccleston.

ATTORNEY

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LID STAY ASSEMBLY

Charles F. Murphy, Natick, Mass., assignor to the United States of America as represented by the Secretary of the Army

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3 Claims. (Cl. 217—60)

(Granted under Title 35, U. S. Code (1952), sec. 266)

The invention described herein, if patented, may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to braces or stays for hinged receptacle lids or the like.

An important object of the invention is to provide a brace or stay, so constructed that the receptacle lid with which it is connected will be automatically releasably locked in the elevated position when raised, and automatically released or unlocked for lowering when the user applies downward pressure to the lid.

A further object is to provide yielding means for causing the lid stay to releasably hold the receptacle lid or cover in an open position and allowing it to be readily shifted to the closed position by merely operating the lid with one hand.

A further object is to provide novel and simplified guide and detent or locking means in a lid stay of the above-mentioned character.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are employed to designate like parts throughout the same,

Fig. 1 is a side elevation of a lid brace or stay in its position assumed when the lid is closed,

Fig. 2 is a similar view of the stay when the receptacle lid is in the opened position,

Fig. 3 is an enlarged exploded perspective view of the stay and associated elements,

Fig. 4 is an enlarged edge elevational view of the lid stay and associated elements,

Fig. 5 is a transverse horizontal section on line 5—5 of Fig. 4, and,

Fig. 6 is a similar section taken on line 6—6 of Fig. 4.

In the drawings, where for the purpose of illustration is shown a preferred embodiment of the invention, the numeral 10 designates generally the body portion of my elongated brace or stay, which is preferably formed from a unitary section of heavy sheet metal, plate stock or the like. The body portion 10 is substantially flat throughout its entire length and is provided at its transverse center with an elongated longitudinal slot 11 extending throughout a major portion of the length of the body portion 10, as shown. One end 12 of the slot 11 may terminate short of the corresponding end of body portion 10, as shown, while the opposite end 13 of the slot terminates close to the corresponding end of the body portion. The opposite ends of the body portion 10 and slot 11 are preferably rounded, as shown. At its end nearest the slot end 12, the body portion 10 has an opening 14 formed therethrough for a purpose to be described. Near and inwardly of the slot end 13, the body portion 10 is struck or otherwise formed to provide a pair of laterally opposed substantially cylindrical rounded projections 15, which project somewhat beyond one side of the

body portion 10, at the opposite longitudinal edges of the slot 11. The projections 15 have their axes extending transversely of the longitudinal slot 11, and the tops of the rounded projections are preferably spaced equidistantly from the adjacent side of the body portion 10.

The end of the body portion 10 having the opening 14 is arranged opposite one edge of a hinged cover or lid 16 for a receptacle 17, such as a trunk, box or the like. A suitable rivet 18, pin or the like, has an enlarged portion 19 engaging through the opening 14, and a reducing shank portion 20 of the rivet 18 is received by an opening 21 formed through the adjacent edge portion 22 of the lid 16, Fig. 5. The rivet 18 is headed as at 23, and a pair of flat washers 24 are preferably interposed between the lid portion 22, head 23 and body portion 10, as best shown in Fig. 5. Through the medium of the rivet 18 and associated elements, the brace or stay has one end pivotally connected with the lid 16 a suitable distance forwardly of its hinge 25.

The adjacent side wall of the receptacle 17 is provided near its upper edge and forwardly of the hinge 25 with an opening 26, receiving therethrough a suitable pin 27. This pin has an enlarged portion 28 engaging slidably within the slot 11 and preferably having a smooth running fit therein. A substantially flat rectangular keeper plate 29 is arranged at the outer side of the body portion 10 for sliding contact therewith, and this keeper plate has an opening 30 formed therethrough of a diameter preferably equal to the width of the slot 11, the opening 30 receiving the enlarged portion 28 of the pin 27. Outwardly of the keeper plate 29, the pin 27 has a relatively wide head 31 formed integrally therewith, and bearing against the outer side of the keeper plate 29 over a major portion of its area.

Opposite transverse edges 32 and 33 of the keeper plate 29 are beveled and preferably rounded so as to be gradually inclined upwardly from the adjacent outer side of the body portion 10. The beveled or rounded edges 32 and 33 are adapted to engage and ride over the rounded projections 15 during the operation of the brace or stay when the lid 16 is opened and closed. The inner face 34 of the keeper plate 29 is preferable flat and smooth, so as to slide freely over the outer face of the body portion 10 and over the projections 15.

The keeper plate 29 is provided at its transverse center and at its edge 33 with an integral extension or lug 35, extending substantially at right angles to the body portion of the keeper plate and inwardly thereof, in assembly, for engagement with the longitudinal slot 11. The extension 35 is freely shiftable longitudinally in the slot 11 but is adapted to coact with the side walls of the slot to prevent the keeper plate from pivoting or turning upon the body portion 10. This arrangement maintains the beveled edges 32 and 33 substantially parallel to the rounded projections 15 and substantially at right angles to the slot 11 at all times. The keeper plate 29 may be readily rotatable upon the pin 27, except that it is restrained from rotation by the coaction of the extensions 35 and slot 11. In assembly, the free end of the extension 35 may be substantially flush with the face of the body portion 10 remote from the raised projections 15, see Fig. 4.

A pair of flat washers 36 are preferably arranged upon opposite sides of the side wall of container 17, Fig. 6, and these washers receive pin 27. One of them is disposed between the inner face of the body portion 10 and the outer face of the container side wall, whereas the other washer 36 is arranged at the inner face of the container side wall, as shown. A relatively stiff compressible coil spring 37 surrounds the pin 27 inwardly of the container side wall, and one end of this spring bears against

the inner washer **36**, and its other end bears against a companion washer **38** which is mounted upon the pin **27** near its inner end and maintained in place by a cotter pin **39**, or the like. The spring **37** is tensioned to normally draw the head **31** of the pin **27** inwardly against the keeper plate **29**, for holding the keeper plate in firm engagement with the outer side of the body portion **10**. The body portion **10** in turn bears firmly against the outer washer **36**, under the influence of the spring **37**. The stay body portion **10** is thus provided with a pivotal sliding connection with the relatively stationary pin **27**, and the body portion **10** is freely slidable relative to the keeper plate **29**, although the keeper plate cannot turn or pivot relative to the body portion **10**. The keeper plate **29** is however freely rotatable upon the pin **27**, as previously stated.

In operation, when the receptacle lid **16** is in the closed horizontal position, Fig. 1, the stay body portion **10** is disposed vertically and the pin **27** is near the end **12** of the slot **11**, as shown. The extension or lug **35** is in engagement with the slot **11** so that the keeper plate **29** cannot turn relative to the body portion **10** but may slide freely longitudinally of the slot **11**.

When the lid **16** is elevated to the position of Fig. 2, the pin **27** will be disposed at the end **13** of the slot and the keeper plate **29** will slide over the outer face of the body portion **10** until its beveled edge **32** contacts the rounded projections **15**. When this occurs, a slightly increased upward force on the lid **16** will cause the keeper plate **29** to ride over the projections **15**, and the spring **37** will be compressed somewhat to permit this. After passing over the projections **15**, the keeper plate **29** will be arranged below the projections, as best shown in Fig. 4, and the spring **37** will again hold the keeper plate in firm engagement with the outer face of the body portion **10**. The projections **15** will now cooperate with the keeper plate **29** to releasably lock the lid **16** in the elevated or open position.

When it is desired to lower the lid **16**, it is merely necessary to exert a downward force upon the lid sufficient to cause the beveled edge **33** of the keeper plate to ride up over the projections **15**, and the spring **37** will again yield to allow the keeper plate **29** to pass bodily over the projections **15** in the opposite direction, and subsequently firmly engage the outer side of the body portion **10** beyond the projections **15**. The lid **16** will then readily close by gravity.

It is thus seen that a novel and simplified automatically operating brace or stay is provided which will maintain a receptacle cover or lid releasably locked in the open position and yet permit the closing of the lid with one hand by merely applying a downward force thereon. There are no parts to be adjusted or regulated, and the lid is operable with one hand, and the locking and unlocking action of the stay is entirely automatic. While I have shown and described the brace or stay in connection with a receptacle **17** of the box or trunk type, it should be understood that the stay may be used with equal facility at various applications such as on the trunk lid of an automotive vehicle, refrigerator locker lid or the like.

It is to be understood that the form of the invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of the invention or the scope of the subjoined claims.

I claim:

1. A lid stay for a container lid or the like comprising a bar having a longitudinal slot and adapted for connection with the lid, a projection formed upon one side of said bar near one end of said slot, a keeper element slidably contacting said one side of said bar and having a portion adapted to engage and pass over said projection during movement of the lid between open and closed positions, an element fixed to said keeper element and engaging in the longitudinal slot in said bar to maintain the said portion of said keeper element in a predetermined position of alignment with respect to said projection, keeper anchoring means projecting through said slot and adapted for attachment to the body of said container or the like and resilient means cooperating with said anchoring means to urge the keeper element toward said one side of the bar to cooperate with said keeper anchoring means in constraining said bar for predetermined endwise movement during opening or closing movement of said lid.

2. A device of the character described comprising an elongated member having a longitudinal slot, projection means carried by said member near one end of the slot on one side of the member, means for pivotally connecting one end of said member to a hinged container lid or the like, a pin for connection with the body portion of the container and extending slidably through said slot and having a head spaced beyond the side of said member having the projection means, a keeper plate mounted upon said pin between said head and side of the member having the projection means and having beveled edges adapted to ride over the projection means when the pin moves longitudinally through the slot, a lug secured to the keeper plate and engaging the slot and serving to prevent the keeper plate from turning relative to said member and maintaining said edges of the keeper plate substantially at right angles to the slot, and a spring connected with the pin and urging it in a direction causing the head of the pin to hold the keeper plate in firm sliding engagement with the side of the member having the projection means.

3. Stay means for the hinged lid of a container comprising a bar having an elongated slot formed therethrough, a pair of transversely opposed rounded projections struck from said bar near and inwardly of one end of the slot and projecting beyond one side of the bar and having a common axis substantially at right angles to said slot, means for pivotally securing one end of the bar to the hinged lid, a pin secured to the container and extending through the slot and shiftable longitudinally of the slot and rotatable therein and having a head spaced from the side of the bar having said projections, a keeper plate mounted upon said pin between the head and said side of the bar and slidable upon said side of the bar and having a pair of transverse beveled edges adapted to engage and ride over the rounded projections when the pin moves longitudinally of the slot, an element carried by the keeper plate and extending into said slot to prevent the keeper plate from turning relative to the bar and maintaining the beveled edges substantially parallel with the common axis of said projections, and a spring connected with said pin and urging the pin in a direction causing the head of the pin to hold the keeper plate firmly against said side of the bar.

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