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SUPPORTS FOR BOX LIDS AND THE LIKE

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3 Claims. (Cl. 217—60)

This invention relates to supports for box lids and the like and provides a positive support for a hinged lid as used on boxes—particularly cabinets for electrical instruments, radio cabinets, the lids of pianos and the like, where it is desired to movably support the lid in any desired point between the full open and closed positions thereof.

Objects and advantages of the invention will more fully appear from the following specification where—by way of illustration—a preferred embodiment of the invention is disclosed: It will be understood, however, that modifications can be made in the construction and arrangement of the parts as shown, the invention being as defined by the appended claims.

In the accompanying drawings:

Figure 1 is a side view partly in section of a box with its lid in closed position and with the support constituting this invention in place;

Figure 2 is the box Figure 1 with the lid partially open;

Figure 3 is the box Figure 1 with the lid in fully opened position;

Figure 4 is a sectional view of of the box substantially on the line 4,4 of Figure 1;

Figure 5 is an enlarged diagrammatic view of the support members to illustrate their cooperative relationship, as more fully described herein.

The numeral 10 denotes the body of the box and the numeral 11 the lid thereof. The lid is hinged to the body by a hinge indicated at 12, which may be of any suitable character.

Secured to the inner surface 13 of the lid is the lid member generally indicated by the numeral 14 and this may be secured to the lid in any suitable manner as by screws 15, 15, which extend through the upper horizontal portion 14a of said member so that the member depends from the lid.

The member 14 has curved arcuate camming devices 16, 17 extending from the upper portion thereof to the tip 18, said surfaces lying within and between the lines shown in broken lines at 19, 20, Figure 5, these lines having their axes at the hinge 12. Thus the depending member 14 moves in a curvilinear path.

A pair of arms 21, 22 are pivoted at 23 to the inner surface 24 of the box, and a tension spring 25 is connected to the upper free ends of said arms to draw them together, with the member 14 lying therebetween.

A guard 26 overlies said arms and may be secured to the inner surface of the box, the arms being freely slidable over the outer surface of the member 14 and the inner surface of said guard.

The free upper ends of said arms 21, 22 are equipped with cam rollers 27, 28 which are held in engagement with the curved camming surfaces 16, 17 of the member 14 being held thereagainst by the tension of spring 25.

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Referring to Figure 2 which shows the lid in an intermediate position, it will be seen that the rollers 27, 28 will grip the member 14 therebetween at any point along the camming surfaces 16, 17 thereof, because of the tension of spring 25. This will hold the lid in any intermediate position in which it is left.

Now referring to Figure 1 where the lid is shown fully closed, the roller 28 has passed over the end 29 of surface 17 and moves inwardly because of the flat section 30 forming a continuation of surface 17. Thus—just as the lid is about to close, the downward motion of same is slightly accelerated because of the partial release of tension at the point 29, and the lid is held closed under somewhat greater tension than when held in any intermediate position, as the roller, being on the flat 30 as described, requires more upward pressure on the lid to displace it over the point 29 of the camming surface 17. This is a desirable feature of the device.

Now referring to Figure 3 where the lid is in extreme open position, it will be seen that the rollers 27, 28 engage and fall into the notches 31, 32 on the member 14 and securely lock the lid open so that extra force must be applied to displace the said rollers from said notches in order to close the lid.

From the foregoing, it will be observed that the invention provides means for holding a lid in fully open or closed position, and at all positions therebetween without any parts which must be positioned or adjusted and without the user having to reach inside of the lid of the box to operate the device.

It will also be observed that the device is entirely enclosed in the box and that there are no projecting catches or hinges or latches.

What is claimed is:

1. In a device of the character described, a movable flat member having arcuate camming surfaces formed by the edges thereof; a pair of jaws; rollers carried by the outer ends of said jaws engaging said camming surfaces whereby said flat member may be grasped by said jaws at any part along its length of movement; a pivot member securing the lower ends of said jaws together and upon which said jaws are free to turn; and a spring having its ends secured to said jaws and tending to urge said rollers into free sliding frictional engagement with said camming surfaces on said first member.

2. A device as claimed in claim 1 wherein said flat member has an integral portion extending horizontally at one end thereof, means comprising screws passing through said horizontal portion for securing same to the lid of a box.

3. A device as claimed in claim 1 wherein said flat member is secured to the hinged lid of a box to move therewith in an arc about said hinge and said pivot member is secured to the side wall of the box.

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