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SUPPORT FOR LIDS, COVERS, AND THE LIKE

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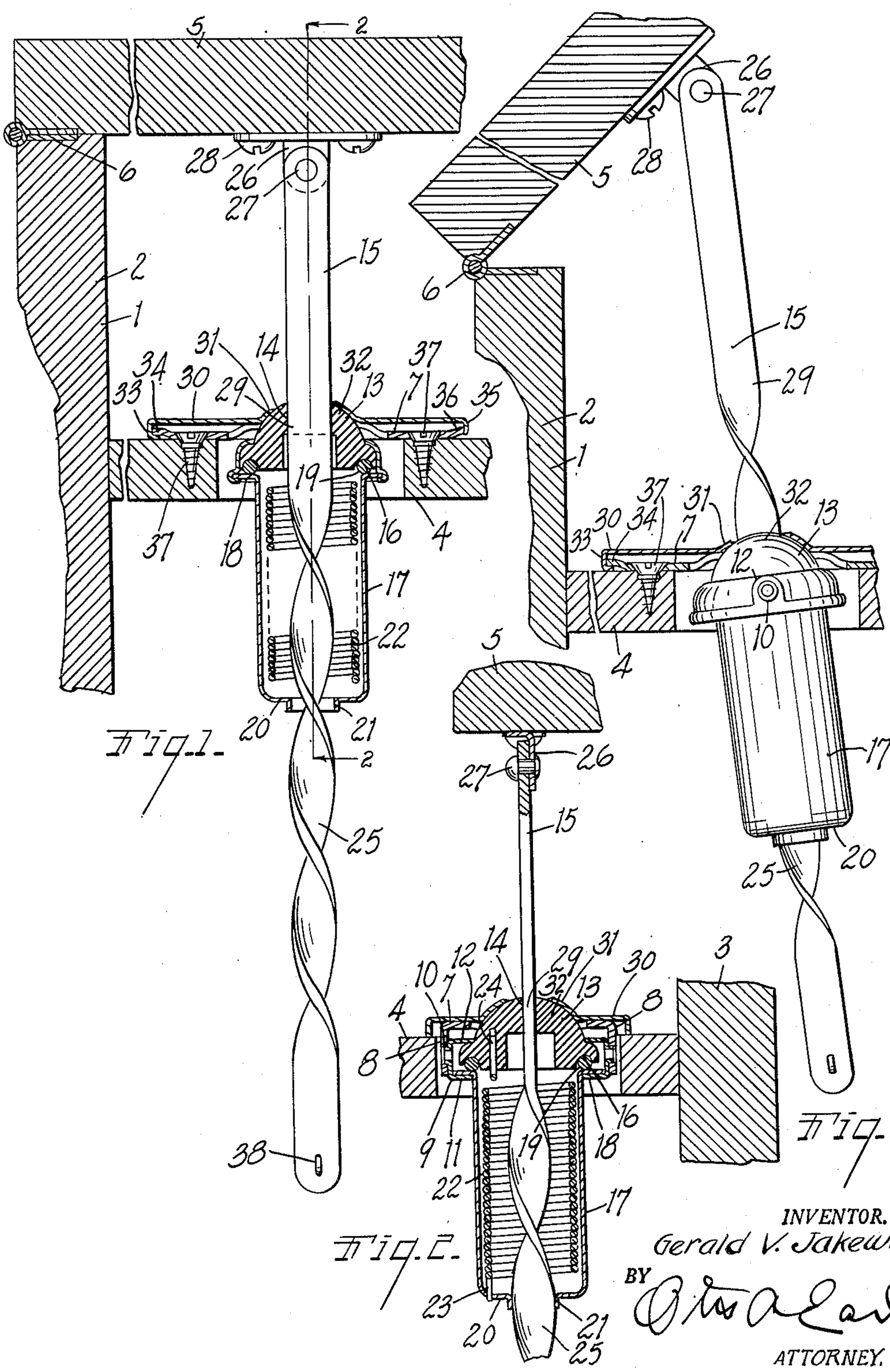

Fig. 1.

Fig. 3.

Fig. 2.

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SUPPORT FOR LIDS, COVERS, AND THE LIKE

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6 Claims. (Cl. 217—60)

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This invention relates to improvements in supports for lids, covers and the like.

The main objects of this invention are:

First, to provide a support for the lids or covers of cabinets which is adapted to support the lid in any adjusted open position and at the same time one in which the supported lid is easily manipulated.

Second, to provide a structure having these advantages which is quite compact and inconspicuous and at the same time is easily installed.

Third, to provide a structure of this character in which the parts are simple and economical to produce and easily assembled.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a fragmentary view partially in vertical section of a cabinet such as a radio or phonograph cabinet having my lid support installed therein.

Fig. 2 is a fragmentary view partially in vertical section on a line corresponding to line 2—2 of Fig. 1.

Fig. 3 is a fragmentary view partially in vertical section showing the lid in partially open position.

In the embodiment illustrated in the accompanying drawing, 1 represents a cabinet comprising a rear wall 2, an end wall 3 and a shelf 4. The lid or cover 5 is hinged to the rear wall at its rear edge, the hinge 6 illustrated being of the leaf type.

The support of my invention in the embodiment illustrated comprises a base plate 7 formed as a sheet metal stamping and having downturned ears 8 disposed in spaced relation to receive the annular support member 9 between them. This support member 9 is provided with journals or pivots 10 pivotally engaging these ears. The support member is also desirably formed as a sheet metal stamping and is provided with an inturned bottom flange 11 and an inturned top flange 12. The support is adapted to rotatably receive the torsion element 13 which is provided with an axial slot 14 adapted to slidably receive the supporting bar 15. The torsion member is provided with a downwardly facing annular ball race 16.

The tubular spring housing 17 has an outturned flange 18 at its upper end arranged on and supported by the flange 11 of the support

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member. This flange 18 of the housing member serves as a ball race in opposed relation to the ball race of the torsion member, the bearing balls 19 being arranged between the ball races in coacting relation thereto as is clearly shown in the drawings. The tubular housing 17 has a bottom portion 20 having a central flanged opening 21 therein guidably receiving the supporting bar 15. The coil spring 22 has a terminal portion 23 at its lower end engaging the bottom of the housing and a terminal portion 24 at its upper end engaging the torsion member. This spring applies torsion stress to the torsion member as it is rotated.

The supporting bar 15 has a spirally twisted portion 25 to substantial length which coacts with the torsion member to rotate the torsion member under the tension of the spring as the supporting bar is reciprocated through the torsion member. The supporting bar is provided with an attaching bracket 26 at its upper end to which it is pivotally connected by the pivot 27, the bracket being adapted for attachment to the cover or lid as by means of screws 28. The supporting rod preferably has a straight or untwisted portion 29 above its spirally twisted portion which is adapted to engage the torsion member as the cover approaches its closed position thus allowing the cover to drop during the last portion of its closing movement.

The base plate is covered by means of the cover plate 30 which has a central opening provided with a spherically curved flange 31 engaging the spherically curved top 32 of the torsion member. This base cover plate has an inturned flange 33 at one edge engaging the upwardly offset edge 34 at the rear edge of the base plate and a downturned flange 35 at its front edge engaging the upturned edge 36 of the base plate thus providing a snap-on engagement with the base plate. This provides a finish for the base plate and conceals its attaching screws 37.

With the parts thus arranged the torsion member is subjected to torsional stress which is slightly decreased as the cover is moved toward fully open position but there is at all times frictional gripping or clutching engagement of the torsion member with the supporting bar holding the cover in its adjusted positions except, as stated, when the cover is nearly closed it is allowed to drop thus insuring a complete closing without the operator forcing it all the way to closed position. The pin or stop 38 at the lower end of the supporting bar limits the withdrawal movement thereof.

I have illustrated and described my support in a very practical commercial embodiment thereof. I have not attempted to illustrate and describe other modifications or adaptations as it is believed that this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a support for lids and the like the combination of a base plate provided with spaced depending ears, an annular support member pivotally mounted on said ears, a tubular housing member having an outturned flange at its upper end retainingly engaged with said support member, said flange constituting a bearing race way, a torsion member rotatably supported within said support member and having a bearing race way on its underside opposed to said race way of said housing member, said torsion member having an axial slot therein, bearing balls coacting with said race ways, a coil spring arranged within said housing member with its lower end connected to said housing member and its upper end to said torsion member to apply stress thereto, a supporting bar adapted for attachment to the part supported and reciprocable through said slot in said torsion member and having a spirally twisted portion coacting with the torsion member when the bar is reciprocated therein, the bottom of the housing having an opening therein receiving said bar.

2. In a support for lids and the like the combination of a base plate provided with spaced depending ears, an annular support member pivotally mounted on said ears, a tubular housing member mounted on said support member and having a raceway, a torsion member rotatably supported within said support member and having a bearing race way on its underside opposed to said race way of said housing member, said torsion member having an axial slot therein, a coil spring arranged within said housing member with its lower end connected to said housing member and its upper end to said torsion member to apply stress thereto, a supporting bar adapted for attachment to the part supported and reciprocable through said slot in said torsion member and having a spirally twisted portion coacting with the torsion member when the bar is reciprocated therein.

3. In a support for lids and the like the combination of a base plate provided with spaced depending ears, an annular support member pivotally mounted on said ears, a tubular housing member mounted on said support member, a torsion member rotatably supported within said support member, said torsion member having an axial slot therein and a spherically curved top portion projecting through the base plate, a coil spring arranged within said housing member with its lower end connected to said housing member and its upper end to said torsion member to apply stress thereto, a supporting bar adapted for attachment to the part supported and reciprocable through said slot in said torsion member and having a spirally twisted portion coacting with the torsion member when the bar is reciprocated therein, and a cover for said base plate having snap-on engagement with the base plate and having a central opening therein surrounded by a spherically curved flange coacting with said spherically curved top portion of said torsion member.

4. In a support for lids and the like the combination of a base plate, an annular support member swingably mounted on said base plate, a housing member having an out-turned flange at its upper end retainingly engaged with said support member, said flange constituting a bearing race way, a torsion member rotatably supported within said support member and having a bearing race way on its underside opposed to said race way of said housing member, said torsion member having an axial slot therein, bearing balls coacting with said race ways, a spring arranged within said housing with one end connected to said housing member and its other end to said torsion member, a supporting bar adapted for attachment to the part supported and reciprocable through said slot in said torsion member and having a spirally twisted portion coacting with the torsion member when the bar is reciprocated therein.

5. In a support for lids and the like the combination of a base plate, an annular support member swingably mounted on said base plate, a housing member carried by said support member, a torsion member rotatably supported within said support member, said torsion member having an axial opening therein, a spring arranged within said housing with one end connected to said housing member and its other end to said torsion member, a supporting bar adapted for attachment to the part supported and reciprocable through said opening in said torsion member, said bar and torsion member including means therebetween for converting the reciprocating motion of the bar into rotary motion of the torsion member.

6. In a support for lids and the like the combination of a base plate, an annular support member swingably mounted on said base plate, a housing member carried by said support member, a torsion member rotatably supported within said support member, said torsion member having an axial slot therein, a spring arranged within said housing with one end connected to said housing member and its other end to said torsion member, a supporting bar adapted for attachment to the part supported and reciprocable through said slot in said torsion member and having a spirally twisted portion coacting with the torsion member when the bar is reciprocated therein, and a cover for said base plate having retaining engagement with said torsion member.

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REFERENCES CITED

The following references are of record in the file of this patent:

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144,407	Great Britain	June 17, 1920