A. F. ZEGA.

LID SUPPORT.

APPLICATION FILED FEB. 28, 1919.

1,324,094.

Patented Dec. 9, 1919.

3 SHEETS—SHEET 1.

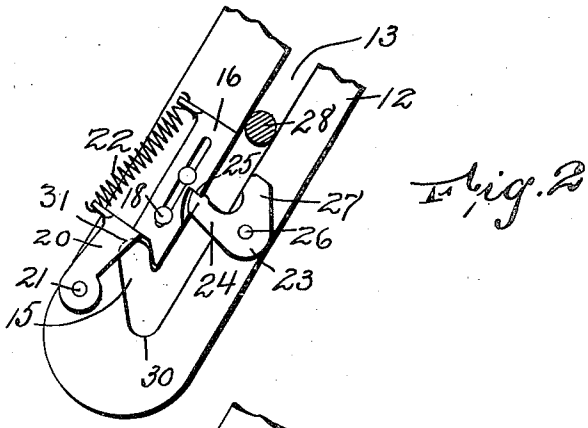


Fig. 2

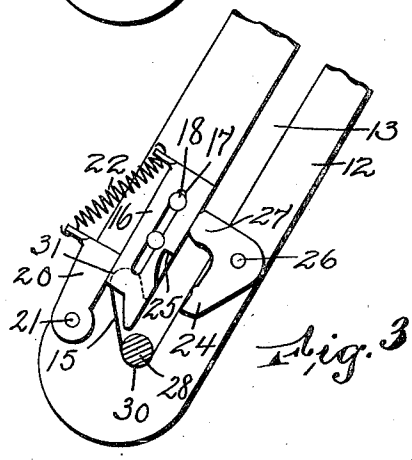


Fig. 3

Fig. 1

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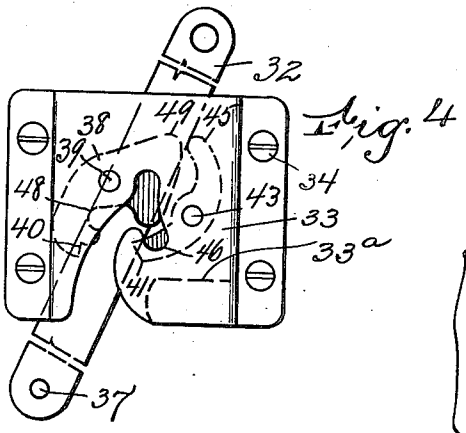


Fig. 4

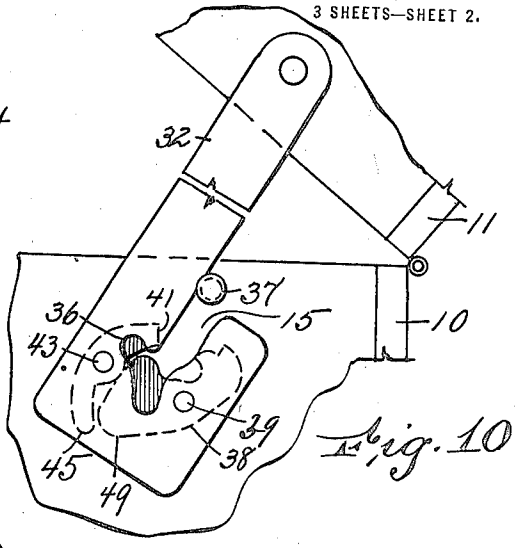


Fig. 10

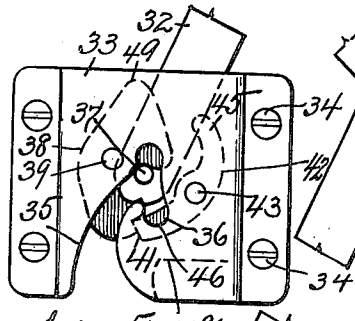


Fig. 5

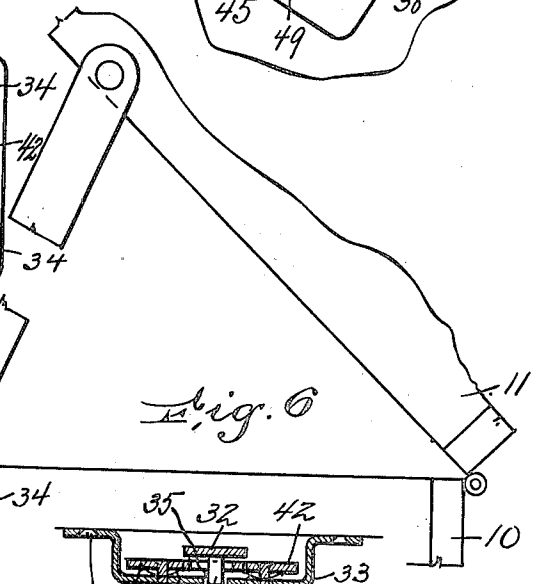


Fig. 6

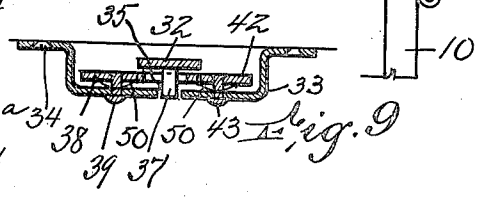


Fig. 9

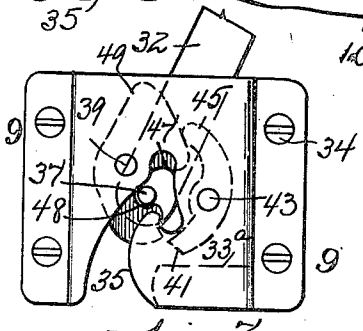


Fig. 7

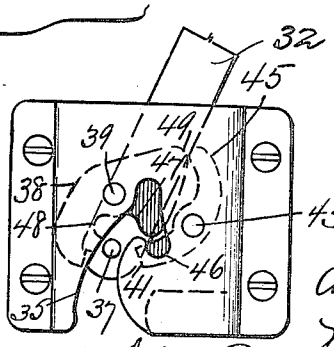


Fig. 8

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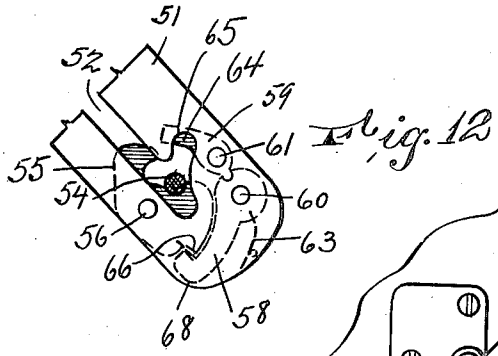


Fig. 12

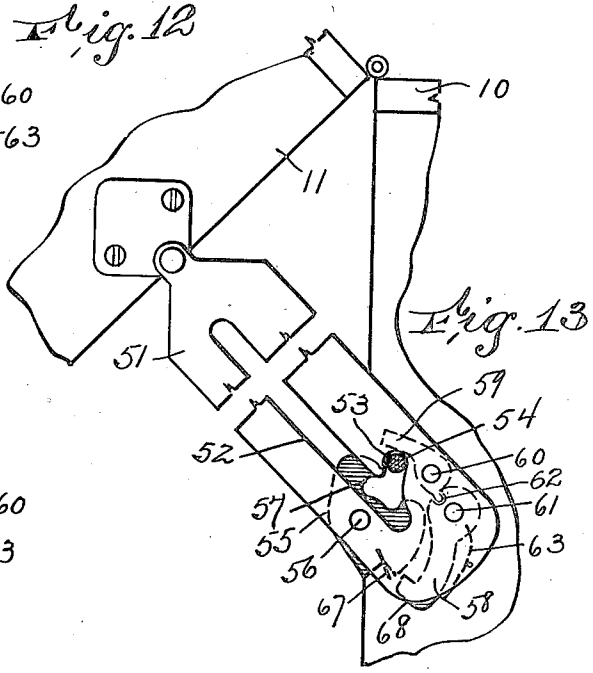


Fig. 13

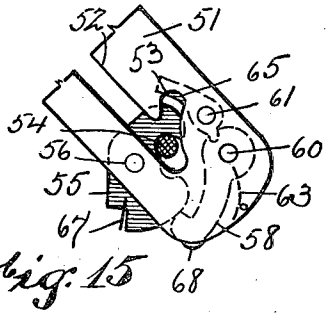


Fig. 15

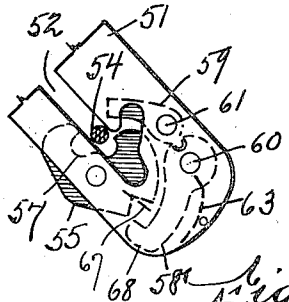


Fig. 11

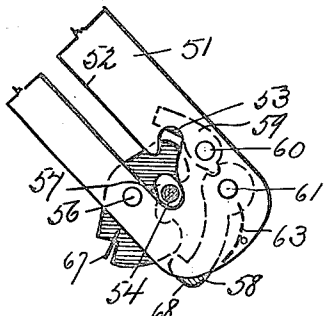


Fig. 14

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UNITED STATES PATENT OFFICE.

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LID-SUPPORT.

1,324,094. Specification of Letters Patent. Patented Dec. 9, 1919.

Application filed February 28, 1919. Serial No. 279,788.

To all whom it may concern:

Be it known that I, ANTHONY F. ZEGA, a citizen of Poland, and a resident of Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Lid-Supports, of which the following is a specification.

This invention relates to an improved support for lids, such as the lids of boxes, trunks, phonograph cabinets, pianos and the like, and is particularly adapted for such lids that are hinged at one end and which, when raised, are held in such raised position automatically. This particular support is adapted to be economical and positive in its operation and is of the kind that can be operated to open it and also to close it by simply manipulating the lid, requiring the use of but one hand, and is thus a decided advantage over the type that requires a moving of the latch when the lid is slightly raised preparatory to its being closed. The simplicity of the device insures its operation, there being but few parts, and these are substantially flat and inconspicuous, and in the case of trunks are easily incased to prevent their being caught in any goods that might be packed in the trunk.

The invention is illustrated in the accompanying drawings, in which Figure 1 is a section of a part of a receptacle with its lid, showing the device in its operative position holding the lid open. Figs. 2 and 3 are detail views on a larger scale showing the operating or guiding parts of the device in different positions. Figs. 4, 5, 6, 7, 8 and 9, inclusive, are different views of a modified form, showing different positions of the parts during the opening and closing of the lid. Fig. 10 is a side view of a still further modified form. Figs. 11, 12, 13, 14 and 15 are side views showing a still further modified form of construction.

It will be understood that the device can be used for holding lids at different angles, this being regulated by the position and adjustment of the device on the box or receptacle, and the lid can be one that swings either horizontally or vertically to an open position.

In the drawings, the body portion of the receptacle is represented by the numeral 10, and 11 is the lid. The support comprises a member which has a slot, in which a stud is arranged to slide, the slot having a hook-shaped end into which the stud is adapted to be seated when the support is in operative or supporting position, but when the stud is in what might be termed the open part of the slot, the support can be put in inoperative or closed position. There is a latch in the device which prevents immediate reëntrance of the stud into either part of the slot after it is removed therefrom in a positive way. In other words, when the lid is open and is allowed to settle on the support, it can be lowered by a positive slight raising of the lid, which so operates the support that its parts resume their inoperative or non-supporting positions.

In Figs. 1, 2 and 3 I show a support comprising a bar 12 having a slot 13 therein, fastened by suitable supporting means, such as the plate 14, to the lid, the slot 13 having a hook-shaped end 15 which is adapted to receive the stud. A latch 16 slides so that it can be moved to close the hook-shaped end of the slot, one form of latch being shown which has a small slot 17 sliding on pins 18, which hold it in alinement and which also limit its movement. The latch is held in its closed position by a tripping device 20 swinging on a pivot 21 and having its end arranged to engage the forward end of the latch 16. A suitable spring, such as the spring 22, acts to pull the parts to their operative positions.

On the opposite side of the slot is arranged a re-setting device 23 having a nose 24 which engages a notch 25 in the latch, the re-setting device swinging on a pivot 26 and having a lug 27 projecting therefrom. To the casing or receptacle 10 is secured a stud 28. When the lid is closed the stud rests in the upper end 29 of the slot 13, but when the lid is raised the slotted arm slides along the stud and the stud passes down the slot, as shown in Fig. 2, to the lower end 30 of the slot. This limits the upward swinging of the lid 11, and during this momentary stoppage of the lid the weight of the bar swings it so that the stud enters the hook-shaped end, and as the weight of the lid comes down on the bar 12 the extremity 31 of the hook-shaped end engages the stud, as shown in Fig. 1. The tripping device 20 overlaps this extremity 31 to a small extent, as shown in Fig. 2, and when the stud 28 hits the tripping device 20 it forces it so that the latch 16 is released, and instead of resting against the tripping

device 20 the latch rests against the stud 28. This is clearly shown in Fig. 1.

When the lid is to be closed it is slightly raised, this causing the stud to occupy the end 30 of the slot in the bar 12, as shown in Fig. 3, this movement of the stud releasing the latch so that it slides down to the position shown in Fig. 3, preventing any reentrance of the stud into the hook-shaped end until the stud has passed the re-setting device. As the lid is lowered the stud engages the lug 27 on the re-setting device and swings the device on its pivot 26, the nose 24 engages the notch 25, which swings the latch back to the position shown in Fig. 2, the spring 22 operates to swing the tripping device 20 into operative position and the parts are again re-set in the position shown in Fig. 2.

It will thus be seen that an upward movement of the lid and a slight downward movement puts the device in supporting position, as shown in Fig. 1, and another slight upward movement of the lid releases the parts, as shown in Fig. 3, and the lid is then ready to be lowered, and in the lowering operation the latch is re-set.

In the modification shown in Figs. 4 to 9, inclusive, the rod 32 is fastened to the lid 11 and the plate 33 is fastened, as by suitable screws 34, to the receptacle or box 10, the plate having a slot 35 with a hook-shaped end 36, and within this slot the stud 37 on the bar 32 is adapted to slide. As the stud enters the slot 35 it engages the latch 38, which is pivoted at 39, such engagement being shown in Fig. 5, which swings the latch so that the part 40 engages the end 41 of the tripping device 42, which, in turn, is pivoted at 43 and has a nose 45 thereon. This limitation of the swinging of the latch causes a stopping of the movement of the stud and the lid, when then lowered slightly, causes the stud to move into the hook-shaped end and rest therein, as shown in Fig. 6, this causing the tripping mechanism to be moved, as the stud engages the part 41, to overlap slightly the extremity 46 of the hook-shaped end and swings it far enough to release the latch and the latch is thus free to swing on its pivot 39.

When the lid is to be closed it is raised slightly, which engages the stud-receiving part 47 of the latch, this stud-receiving part being formed in the shape of a recess with two rounded ends 47 and 48 to receive the stud, and as the stud engages the part 47 and moves it into the end of the slot, it pulls the part 48 up to a point where it closes off the hook-shaped end of the slot, and instead of passing into said hook-shaped end, the stud 37 rests in the end 48 of the recess and is carried thereby around the pivot 39 on which the latch swings, as shown in Fig. 7, and conducted to the slot 35 and it passes out of the slot, swinging the latch back, as shown in Fig. 8, the cam part 49 engaging the nose 45 to swing the tripping device to its operative position where it will act to limit the swinging of the latch on the reëntrance of the stud into the slot 35. To prevent the parts from having too free a movement I may provide them with flat springs 50 which surround their pivotal pins and bear against the swinging members to cause them to stay in the position to which they are last operated. Behind the block 33 I prefer to insert a block 33ª, which is usually made of rubber or similar soft material, such as felt, against which the bar 30 slides when the stud is not in the slot, and the sliding is therefore made practically soundless.

Fig. 10 shows a modification in which the bar 32 is provided with a slot and the stud 37 is fastened to the box or receptacle 10. The latch and tripping members are the same as shown in Figs. 4 to 9, inclusive, and the operation of the device will be clearly apparent.

A still further modification is shown in Figs. 11 to 15, inclusive, the lid 11 having a slotted bar 51, the slot 52 of which has a hook-shaped end 53 which receives the stud 54, the stud being fastened to the box or receptacle. The latch 55 swings on the pin 56 and has a stud-receiving recess 57. When the lid is raised the stud slides through the slot 52, as shown in Fig. 11, and engages the recess 57, this swinging the latch to the position shown in Fig. 12, this swinging being limited by reason of a tripping mechanism, which consists of two levers 58 and 59 swinging on their respective pivots 60 and 61 and being connected at 62 to move in unison, being held in normal position by a spring 63, a portion 64 of the lever 59 projecting within the limits of the extremity 65 of the hook-shaped end 53 of the slot. The shoulder 66 of the latch has a short spring 67 therein, and when the lid is let down the stud 54 fits in the end of the hook-shaped part of the slot, as in Fig. 13, and operates the tripping device by pushing the lever 59, which swings the lever 58, which releases the short spring 67 so that if the latch does not move slightly the spring moves it sufficiently to prevent the return of the nose 68 of the lever 58.

If the lid is to be closed it is slightly raised to swing the parts to the position shown in Fig. 14, and when the lid is let down the recessed part 57 carries the stud 54 around its pivot 66, as shown in Fig. 11, the latch acting to close the hook-shaped end, and the stud can pass freely up the slotted member and the lid is free to be closed.

It will be evident that changes can be made in the modification and shape of the different parts without departing from the

scope of my invention. The device is economical to make, is simple in its operation and is not operated by merely slight movements of the lid. In fact, a positive movement of the lid by the hand is necessary to cause a release of the support. This support is adapted particularly for trunks, where no danger can result to the person filling or emptying a trunk, inasmuch as the lid is held positively in its open position, and furthermore, the parts can be so disposed as to be prevented from coming into contact with the contents of the trunk, preventing any tearing of the contents or any interference with the operation of the device.

I claim:

1. A lid support comprising a stud, a slotted member in sliding relation to the stud, the slot having a hook-shaped end, and means disposed so as to be operated by the stud when in the hook-shaped end for preventing immediate reëntry of the stud into said end.

2. A lid support comprising a stud, a slotted member in sliding relation to the stud, the slot having a hook-shaped end, a latch disposed so as to prevent the movement of the stud into the hook-shaped end when the latch is released, and means for releasing the latch when the stud is at the end of the hook-shaped end.

3. A lid support comprising a stud, a slotted member in sliding relation to the stud, the slot having a hook-shaped end, a latch disposed so as to prevent the movement of the stud into the hook-shaped end when the latch is released, and a tripping device for holding and releasing the latch, said tripping device being disposed so as to be actuated to release the latch when engaged by the stud moving inward through the hook-shaped end.

4. A lid support comprising a stud, a slotted member in which the stud slides, the slot in the member having a hook-shaped end, a latch to control the direction of the stud, a tripping device engaged by the stud when it is in the hook-shaped end to release the latch, the latch being disposed so that it directs the stud to prevent its reëntrance into said hook-shaped end, and a re-setting device actuated by the stud on its reverse passage through the slot.

5. A lid support comprising a slotted rod, the slot having a hook-shaped end, a stud fitting in the slot and adapted to slide therein, a latch for preventing entrance of the stud into the hook-shaped end, a tripping device for releasing the latch, the tripping device being actuated by the stud when the stud is at the end of the hook-shaped end of the slot, and a re-setting means disposed so as to be actuated by the stud on its reverse passage through the slot.

6. A lid support comprising a slotted rod, the slot having a hook-shaped end, a latch sliding on the rod to close the hook-shaped end, a tripping device for holding the latch open, said device projecting normally over the hook end of the slot, and a re-setting device for engaging the latch and returning it to the control of the tripping device, said re-setting device being actuated by the stud on its reverse passage through the slot.

In testimony that I claim the foregoing, I have hereto set my hand, this 26th day of February, 1919.

ANTHONY F. ZEGA.