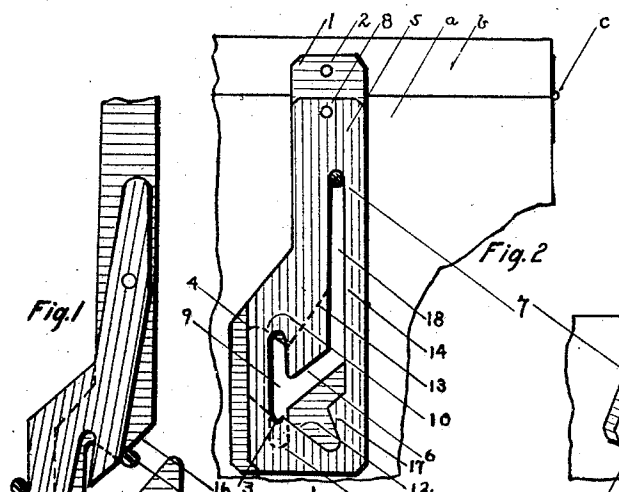
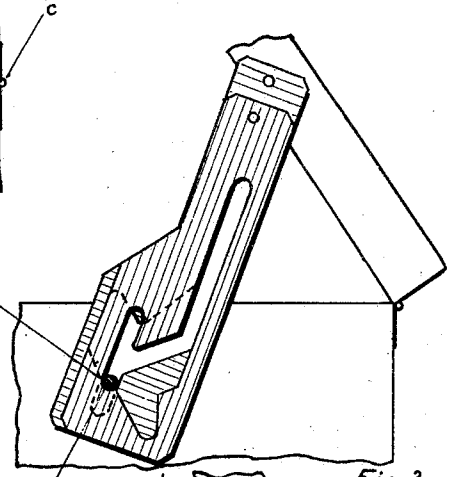
C. AMBRUSTER.

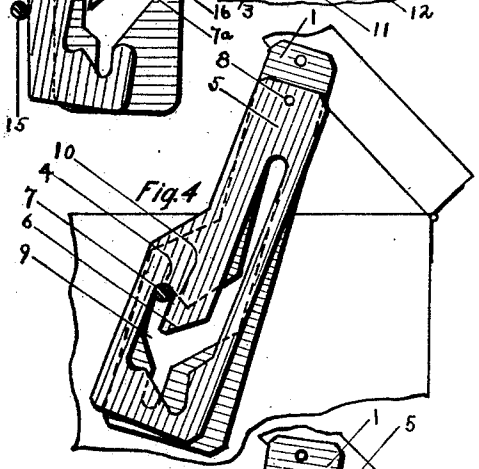
LID SUPPORTER.

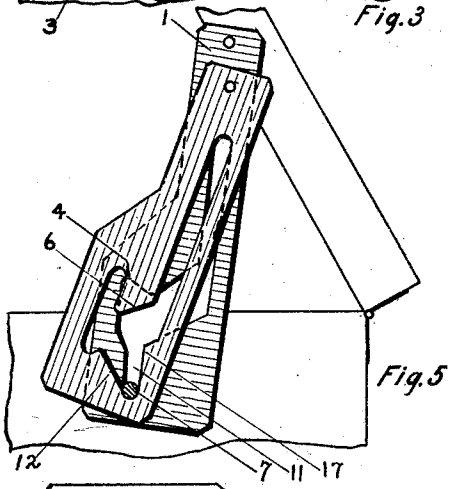
APPLICATION FILED MAY 2, 1917.

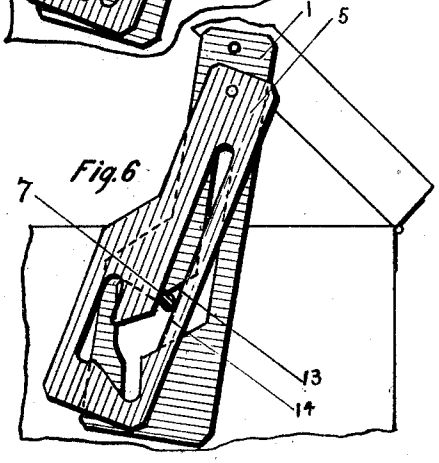
1,367,681. **Patented Feb. 8, 1921.**











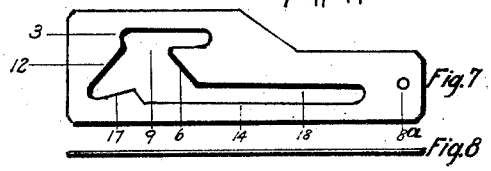


Fig.8

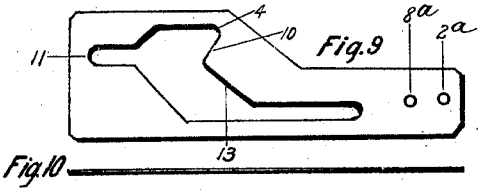


Fig.10

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UNITED STATES PATENT OFFICE.

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LID-SUPPORTER.

1,367,681. Specification of Letters Patent. **Patented Feb. 8, 1921.**

Application filed May 2, 1917. Serial No. 166,054.

To all whom it may concern:

Be it known that I, CORNELIUS AMBRUSTER, a citizen of the United States, and a resident of Roslyn, in the county of Montgomery and State of Pennsylvania, have invented a certain new and useful Lid-Supporter, of which the following is a specification.

The principal object of the present invention is to provide a lid supporter of which the parts shall be positively actuated and which, when the lid is opened and dropped a little, will hold it in open position and which will permit of the closing of the lid by raising the lid a little and then closing it.

The invention will be claimed at the end hereof, but will be first described in connection with the accompanying drawings forming part hereof, and in which

Figure 1, is a front view illustrating a lid supporter embodying features of the invention.

Figs. 2 to 6 are side views illustrating another form of lid supporter embodying features of the invention in different positions.

Figs. 7 and 8 are a front and an edge view of one of the parts of the lid supporter; and

Figs. 9 and 10 are like views of the other part of the supporter.

In the drawings *a* is, for example, a box or case such as might contain a phonograph and *b* is the lid which is hinged to the box or case as at *c*.

1 is a lid supporting arm pivoted to the lid as at 2 and provided with a shoulder 4. In Fig. 9, the pivot hole is marked 2^a. 7, is a fixed supporting pin projecting from the part *a*, and upon which the shoulder 4 is adapted to rest to hold the lid in normal open position. 5, is a switch movable in respect to the shoulder 4 and having a cam surface 6 adapted to slide on the pin 7 and prevent the engagement of the shoulder 4 with the pin 7 to permit the lid to close. As shown the arm 1 and the switch 5 are pivoted together as at 8 so that they may work something like the blades of a pair of scissors, but there is sufficient friction in the pivot to retain them in any position in which they may be put, while at the same time affording them capacity for movement. In Figs. 7 and 9, the pivot holes are marked 8^a. There are cams for said arm and switch whereby the latter is brought into switching position when the lid, after having been raised, is lowered into its normal supported position and again raised to its extreme position preparatory to closing it. These cams will now be described.

In Fig. 4 the wall of the generally oblong opening 9 in the switch 5 in coöperation with the wedge-like wall 10 of the opening in the arm 1 cause the arm and wedge-like cam to be shifted scissor-wise, by the action of the pin 7, when the lid is dropped or lowered from its highest position. This brings the switch into position for being put into switching position. When the lid is again raised, Fig. 5, the lower part 11 of the opening in the arm 1 in coöperation with the lower wedge-like part 12 of the opening in the switch produces a further scissor-like movement of the parts which brings the working face 6 of the switch in front of the shoulder 4 and into position for sliding on the pin 7 when the lid is lowered to shut it. The wall 17 of the opening in the switch operates to limit the movement of the switch and to assist in accurately positioning the face 6. As the lid is closed, Fig. 6, the parts 1 and 5 are returned to their initial positions. The relative shape of the walls 13 and 14 of the prolongations of the openings in the parts 1 and 5 in coöperation with the pin 7 is a means for effecting this result in the construction shown in Figs. 2 to 10. In the construction shown in Fig. 1, this is accomplished by the pins 7^a and 15 upon one of which, 15, the left-hand wall of the switch bears and upon the other of which, 7^a, the inclined wall 16 of the arm bears. The construction shown in Fig. 1, is as has been described in connection with the construction of the other figures, except that one wall, the right-hand one as shown in the drawings, of each of the openings in the respective members is omitted and as has been said the pin 15 is employed, acting on the left-hand wall of the switch.

Fig. 2 shows the arm and switch in the relative position which they occupy when the lid is closed. The prolongations 13 and 14 of the openings of each of the members are in alinement and the part 10 of the arm underlaps and extends beyond the wall of the opening in the switch. As the lid is raised to its highest position, Fig. 3, there is no relative movement of the arm and switch, but the pin 7 engages the shoulder 3 near

the bottom part of the opening in the switch and so operates to limit the raising movement of the lid. When the lid is dropped, Fig. 4, the pin 7 working on the overlapping edges of the two parts 1 and 5 shifts them relatively about their pivot 8 in such a way as to present the edges at the lower part of the openings in these two parts in overlapping relation preparatory to bringing the switch into active position. The lid, of course, is supported by the shoulder 4 and remains in open position. To close the lid it is first raised, Fig. 5, and this motion causes the pin 7 to act upon the walls of the overlapping parts at the bottom of the openings shown in Fig. 4, and thus the parts are relatively shifted so that the wall 6 is made to overlie the shoulder 4. As the lid is closed the part 6 slides on the pin and this prevents the shoulder 4 from reëngaging the pin. Continued closing movement of the lid, Fig. 6, causes the pin 7 coöperating with the openings 13 and 14, or more accurately, with the walls thereof to return the parts to their initial position. From the foregoing description it is evident that the relative movements of the parts 1 and 5 are positive and not dependent upon the action of gravity.

It will be evident that modifications may be made in details of construction and arrangement so that the invention is not limited as to those matters or otherwise than as the state of the art and the appended claims may require.

What I claim is:

1. An automatic lid support comprising the combination of a pivotal lid supporting arm having a shoulder, a fixed supporting pin upon whi h said shoulder is adapted to rest to hold the lid in normal open position, a switch pivoted to the arm and movable in respect to the shoulder and adapted to slide on said pin and prevent engagement of the shoulder with the pin to permit the lid to close, cams for said arm and switch whereby the latter is positively brought into switching position to prevent engagement of the shoulder with the pin when the lid is lowered into its supported position and again raised preparatory to closing it, and a means acting on the switch for positively positioning it out of switching position as the lid is closed.

2. An automatic lid support comprising the combination of a fixed pin, a pivotal arm and a switch pivoted together and each provided with a cam surface on which the pin works, the walls of said cam surfaces comprising a pin engaging shoulder for supporting the lid in open position, a cam face adapted to overlie the shoulder and divert it from the pin, and two sets of coöperating cam faces adapted to coöperate with the pin, to put the switch into and out of switching position.

3. A lid support comprising the combination of a link connecting two hinged parts, as a box and its lid, said link comprising an arm attached to the one part having a cam surface which engages a pin attached to the other part, a shoulder upon said arm with which the said pin will engage when the hinged parts are open to prevent their immediate closing, an auxiliary part pivoted to the arm and which when the hinged parts are again further opened is shifted with respect to the arm so as to prevent the pin reengaging with the supporting shoulder, and so permits the hinged parts to be closed, and cam means for positively returning the arm and auxiliary part to their original positional relation so as to permit the cycle to be repeated when the hinged parts are opened again.

4. In a lid supporter the combination of a supporting pin, a shoulder adapted to engage with the pin, a single pivoted element constituting a switch adapted to cover and uncover the shoulder preventing and permitting engagement with the pin, and positively acting cam means provided on the shoulder and switch element for positively positioning the switch with relation to the shoulder during movement of the lid, substantially as described.

CORNELIUS AMBRUSTER.

Witnesses:
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J. W. ACHARD.