

W. C. DESMOND.
AUTOMATIC MECHANISM FOR RAISING THE COVERS OF MUSIC CABINETS.
APPLICATION FILED MAY 5, 1919.

1,314,950.

Patented Sept. 2, 1919.

FIG. 1.

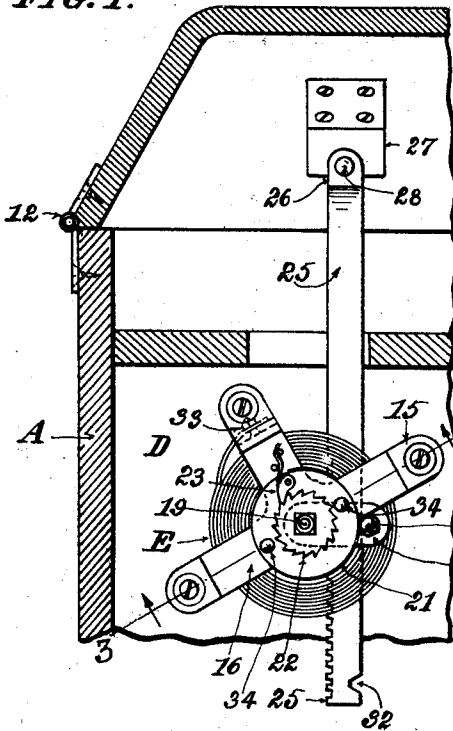


FIG. 2.

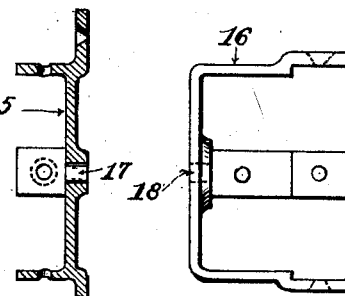
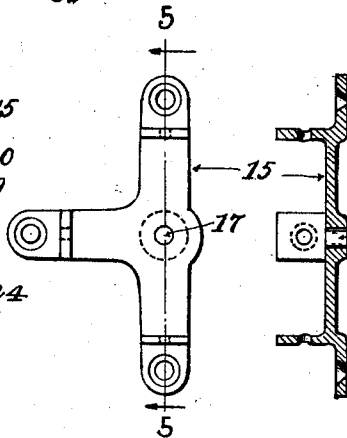
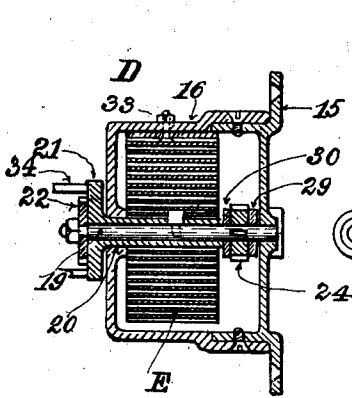
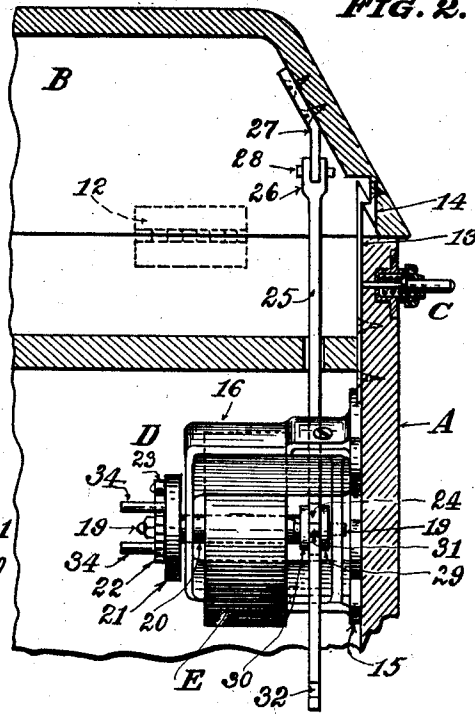


FIG. 3.

FIG. 4.

FIG. 5.

FIG. 6.

WITNESSES:
Ch. Stark.
A. J. Peterson.

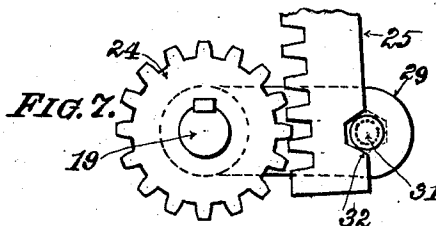


FIG. 7.

INVENTOR:
W. C. DESMOND,
BY
Michael Stark & Son
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM C. DESMOND, OF CHICAGO, ILLINOIS.

AUTOMATIC MECHANISM FOR RAISING THE COVERS OF MUSIC-CABINETS.

1,314,950.

Specification of Letters Patent.

Patented Sept. 2, 1919.

Application filed May 5, 1919. Serial No. 295,019.

To all whom it may concern:

Be it known that I, WILLIAM C. DESMOND, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Automatic Mechanism for Raising the Covers of Music-Cabinets; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates generally to improvements in automatic mechanism for raising the covers of music cabinets; and it consists essentially, in the novel and peculiar combination of parts and details of construction, as hereinafter first fully set forth and described and then pointed out in the claims.

The object of this invention is the installation, in a music cabinet, of automatic means for raising the cover of these instruments whenever the cover, which in normal condition, is held in closed condition, is released, preferably by a push button, or similar means. This device is especially well adapted for use in talking machines, such as the well-known victrola, graphophone, and the like, all of which reproduce music, etc., from a prepared disk, and which give the best results when the cover of the instrument is closed during the rendition of a piece of music, speech and the like. These covers must be raised every time that a disk is changed, and unless then carefully closed, is liable to drop which may cause injury to the cabinet as well as to the delicate mechanism installed therein. To avoid this objectionable feature, I construct this automatically operating lifting device for the cover, as illustrated in the drawings forming a part of this specification, in which—

Figure 1 is an elevation, partly in section, of a portion of a musical instrument or cabinet, showing the automatic means for raising the cover. Fig. 2 is a similar view illustrating this device in end elevation. Fig. 3 is a sectional view of the spring motor detached, the section being on line 3—3 of Fig. 1, the rack bar connected with this motor which is angularly disposed to the plane of the view, being omitted. Fig. 4 is a plan of one member of the frame of the motor; and Fig. 5 is a sectional view of the same

on line 5—5 of Fig. 4. Fig. 6 is an elevation of the second member of the motor frame. Fig. 7 is a detached view of the gear pinion and a fragment of the rack bar cooperating with said gear pinion.

Like parts are designated by the same characters and symbols of reference in all the figures.

A, in the drawings designates the cabinet or casing of a musical instrument, such as a talking machine, hand organ, and the like; and B, the cover for the same, which cover is generally hingedly connected to the casing by hinges 12, in any approved manner. At one side of this casing there is located a spring hook 13, and in a recess in the cover there is mounted a catch 14, which the hook 13 is constructed to engage to keep the cover in closed condition. At the same side of the casing at which the spring hook 13 is located, there is provided a push button C, which contacts with the spring hook and which, when pressed or pushed, will disengage the spring hook from its catch and permit the cover being lifted. This lifting of the cover is automatically performed as soon as the cover is released, by a motor D, preferably of the spring-actuated type, which, however, may be connected with the electric motor of those musical instruments which are operated by such a motor. This spring motor comprises a frame structure, consisting, preferably, of two parts, viz., the base 15, and the skeleton member 16, both of which are of the crowfoot type, *i. e.* having three toes or members which support the mechanism mounted in this frame structure. There is in the base 15 a bearing 17, Figs. 4 and 5; and in the member 16 there is a corresponding bearing 18, wherein is rotatably mounted a shaft 19, one end of which is journaled in the bearing 17. Upon this shaft 19 there is rotatably mounted a sleeve 20, journaled in the bearing 17.

The sleeve 17 carries at its outer end a disk 21, and the shaft 20 carries at its outer end, adjacent the disk 21, a ratchet wheel 22, while to the disk 21 there is pivoted a dog 23, which engages the ratchet wheel 22 in the usual manner. At the opposite end of the shaft 20 there is fixed a gear pinion 24, wherewith engages a rack bar 25. This rack bar extends upwardly to the cover B, it being bifurcated at its upper end, as at 26, to engage, by a pin 28, a lug 27, secured to the cover B. This rack bar is held in engage-

ment with the gear pinion by two bars 29, 30, mounted on the shaft 19, at the sides of the gear pinion 24, and connected to each other at their outer ends by a bolt 31, bearing
 5 against the back of the rack bar 25. At the lower end of the rack bar there is a notch 32, which when the cover is in raised position, engages the bolt 31, and thereby sustains the cover in elevated position, thereby
 10 dispensing with the cover-supporting devices now in use on instruments of the nature described.

Mounted on the sleeve 20 there is a spiral spring E, of the type usual in clocks, the
 15 inner end of which is hitched to the sleeve, and the outer end of which is secured to one of the bars of the element 16, by a bolt or other suitable means 33. This spring is tensioned to the required degree by rotating
 20 the sleeve 20, which has, for this purpose, suitable means, such as a pair of handles 34, extending from the disk 21, and it is held in tensioned condition by the dog 23 engaging the ratchet wheel 22.

25 The operation of this device is substantially as follows:

As long as the cover B is held in closed condition by the hook and catch hereinbefore described, the spring E is held in tensioned
 30 condition, but as soon as the cover is released by manipulating the push button C, the spring will unwind and by rotating the sleeve 20 and the disk 21, and the dog 23 acting on the ratchet wheel 22, cause the rotation
 35 of the shaft 20 and its gear pinion 24, which, in turn, causes the rack bar 25 to rise and lift the cover B. The speed at which the cover performs its upward movement is perfectly controlled by a proper tensioning
 40 of the spring E; and this movement of the cover is entirely noiseless and without jar or jolt.

The cover B is closed in the usual manner by depressing it until it seats upon the casing A and the spring catch 13 engages the
 45 hook 14 to hold it in closed position. This downward movement of the cover rewinds the spring E, and restores it to its original tension, so that after it has been once adjusted to suit the weight of the cover, and
 50 the speed at which it shall move, it will require no further attention thereafter. And it may now be noted that should a person depressing the cover allow it to slip out of
 55 his or her hand, it cannot drop and hit the casing with a decided thump, but will again rise by the efforts of the spring E, and thus overcome one of the objectionable features of the present music cabinets.

60 Attention is now invited to Fig. 7 of the drawings, which shows the rack bar 25 in elevated position to retain the cover in raised condition, and, therefore, engages the bolt 31 by its notch 32. This rack bar is
 65 not entirely disengaged from the pinion 24,

but is still acted upon by said pinion and the spring mechanism in the frame structure. The action of the gear pinion on the rack bar has a tendency to push the rack
 70 bar away from the pinion, and this action affords automatic means for moving the rack bar to engage the bolt by its notch 32. Before closing the cover, it will be necessary to disengage the rack bar from the bolt, in
 75 an obvious manner.

While I have hereinbefore described the preferred embodiment of my invention, I desire it to be understood that I am aware that changes may be made in the details of
 80 construction of this device, and that parts may be omitted without departing from the scope of my invention as defined in the appended claims.

Having thus fully described this invention, I claim as new, and desire to secure to
 85 myself by Letters Patent of the United States—

1. In a device of the nature described, the combination, of a casing, a cover hingedly
 90 connected to said casing, means for retaining said cover in closed condition, said means including a resilient member, means for releasing said cover from said resilient member, and means for automatically lifting said
 95 cover after it has been released from said resilient member, said lifting means including a motor, a rotatable shaft in said motor, and means for converting the rotative movement of said shaft into linear movement, said
 100 means including a serrated rod to connect said shaft to said cover.

2. In a device of the nature described, the combination, of a casing, a cover hingedly
 105 connected to said casing, resilient means in said casing for retaining said cover in closed position, manually operated means for actuating said resilient means to release said
 110 cover, a spring-actuated motor in said casing, means connected to said motor and said cover for lifting said cover after it has been released from said retaining means, said connecting means being also the means for retaining said cover in elevated position.

3. In a device of the nature described, the combination, of a casing, a cover hingedly
 115 connected to said casing, a spring catch constructed to retain said cover in closed position, a push button for releasing said cover from said spring catch, a motor in said casing, a rack bar connected to, and vertically
 120 movable by, said motor, said rack bar being pivotally connected to said cover, said motor being constructed to operate automatically as soon as said cover is released.

4. In a device of the nature described, the combination, of a casing, a cover hingedly
 125 connected to said casing, a spring catch constructed to retain said cover in closed position, a push button for releasing said cover from said spring catch, a motor in said cas- 130

ing, a rack bar connected to, and vertically movable by, said motor, said rack bar being pivotally connected to said cover, said motor including a tensioned spiral spring, a shaft 5 rotatably connected to said spring, a gear pinion on said shaft engaging said rack bar, said motor being constructed to operate automatically when said cover is released.

5. In a device of the nature described, the 10 combination, of a casing, a cover hingedly connected to said casing, means for retaining said cover in closed position, means acting on said retaining means for releasing said cover, and mechanism for automatically lifting 15 said cover after it has been released from said retaining means, said mechanism including a frame, said frame comprising two connected skeleton members, a shaft rotatably mounted in said frame, a sleeve on 20 said shaft, a clock spring hitched at one end

to said sleeve and at the other end to said frame, said sleeve having at one end a disk, said shaft having at the corresponding end a ratchet wheel, a dog pivotally mounted on said disk and constructed to engage said 25 ratchet wheel, a gear pinion at the other end of said shaft, bars mounted on said shaft, one at each side of said gear pinion, a bolt connecting said bars, a rack bar mounted between the aforesaid two bars, said rack 30 bar being constructed to engage said gear pinion, the upper end of said rack bar being pivotally connected to said cover, the lower end of said rack bar having a notch constructed to engage said bolt to retain said 35 cover in elevated position.

In testimony that I claim the foregoing as my invention, I have hereunto set my hand.

WILLIAM C. DESMOND.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."