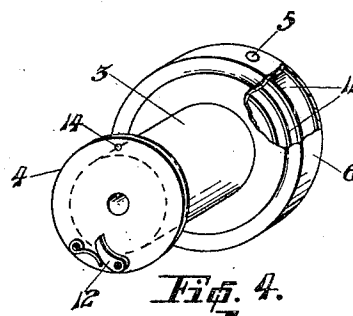
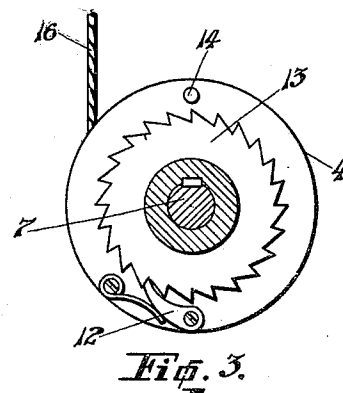
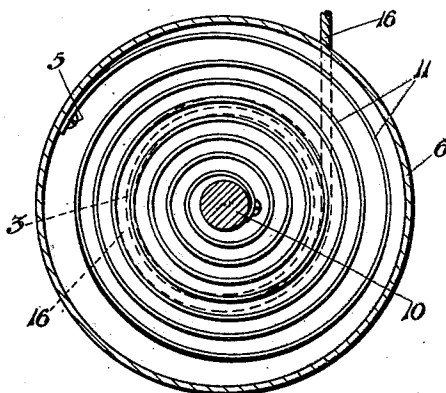
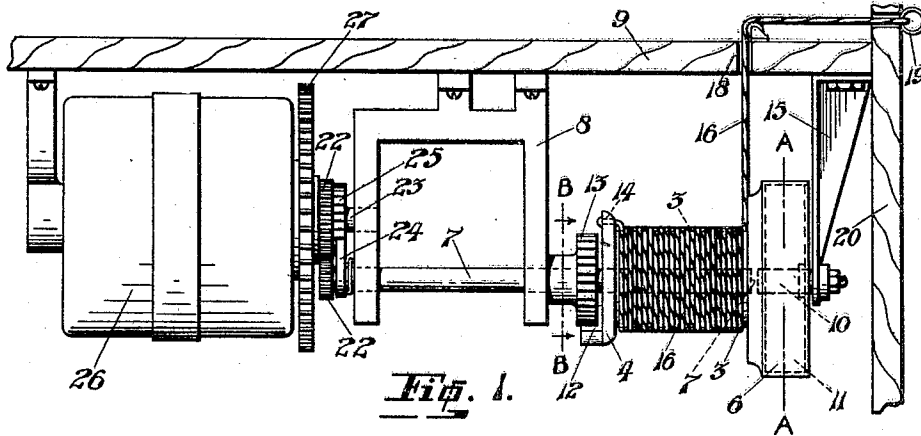


Aug. 5, 1924.

1,503,787

H. S. FOLK
MEANS FOR ENERGIZING OR WINDING THE SPRING MOTORS OF SOUND
REPRODUCING AND OTHER MACHINES
Filed April 16, 1923



Inventor:

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UNITED STATES PATENT OFFICE.

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MEANS FOR ENERGIZING OR WINDING THE SPRING MOTORS OF SOUND-REPRODUCING AND OTHER MACHINES.

Application filed April 16, 1923. Serial No. 632,495.

To all whom it may concern:

Be it known that I, HARRY SPENCER FOLK, a subject of the King of Great Britain and Ireland, and a resident of the city of Melbourne, in the county of Bourke, State of Victoria, Commonwealth of Australia, have invented a certain new and useful Improved Means for Energizing or Winding the Spring Motors of Sound-Reproducing and Other Machines, of which the following is a specification.

This invention relates to the means employed for energizing or winding up the spring motors of sound reproducing machines and other apparatus. Such motors usually employ a projecting crank handle, fixed to an extremity of the motor spindle, for winding up the spring driving mechanism. This form of operating means has been found objectionable, particularly in sound reproducing machines, owing to the tediousness of the prolonged winding operation and the unsightly appearance of the projecting winding handle which, besides adversely affecting the perspective of the cabinet, is liable to damage the wearing apparel of a person coming forcibly into contact therewith.

The primary object of the present invention is to provide improved means to facilitate the operation of energizing or winding up such motors and to dispense with objectionable projecting parts such as the crank handle or the like, the hand operated member which takes the place of such crank handle in accordance with the invention being comparatively small and unobtrusive and offering no obstruction to persons or objects in close proximity thereto. Furthermore it does not mar the symmetrical appearance of the talking machine cabinet and reduces the space occupied by the machine. The invention also minimizes the liability of overwinding the spring motor.

Referring to the drawings which form part of this specification:—

Figure 1 is a side view showing a suitable constructional embodiment of the invention as applied to the motor of a sound reproducing machine.

Figure 2 is an enlarged cross section of part of the invention taken on line A—A of Figure 1.

Figure 3 is an enlarged cross section on line B—B of Figure 1 looking in the direction of the arrows.

Figure 4 is a perspective view of the flanged winding drum of the invention, a portion being broken away to more clearly show the spiral returning spring housed therein.

The invention includes a winding drum comprising preferably a barrel portion 3, and two flanged ends 4 and 6. Said drum is freely mounted on a spindle 7 suitably supported in a bearing bracket 8 depending from a part 9 of the talking machine cabinet or other convenient member. The flanged end 6 of the drum is preferably made hollow to form a housing for a spiral tape spring 11, the outer end of which may be fixed to the periphery of the housing or flange 6 as at 5, while its inner end is secured to a suitable stationary part such as the bearing member 10 which may project axially from the bracket 15 to freely support one end of the winding drum, the other end of the latter being freely supported by the spindle 7, as in Figure 1. The bracket 8 is forked, as shown, and the spindle 7 projects therethrough and extends toward and in axial alinement with the bearing pin or member 10.

Suitably secured to the outer face of the flanged end 4 of the winding drum is a spring pressed pawl 12, an extremity of which bears against the toothed periphery of a ratchet wheel 13 which may be integral with or suitably fixed to the spindle 7. An eyelet 14 may be formed in the flanged end 4 to retain one end of a flexible pull line or cord 16 which coils around the barrel portion 3 of the drum and provides the means for operating the latter as herein-after described.

The outer end of the flexible pull line may pass through apertures 18 and 28 suitably located in the walls 9 and 20 of the talking machine cabinet and may be attached to a ring handle or other suitable hand piece 19. This hand piece 19 may be enclosed within the doors of the cabinet or disposed outside the latter as desired.

Suitable driving connections such as toothed gears 22 are provided to transmit the rotary motion of spindle 7 to the motor spindle 23 which may be provided with the usual pawl and ratchet gear 24, 25 whereby the motor spindle is held against reverse rotation when the spring motor in the casing 26 is running down. Said motor

drives the revolving record table of the talking machine or other driven element through the usual transmission gears, one of which is indicated at 27. It will be evident, however, that this part of the apparatus does not form a feature of the invention and may vary considerably according to the particular make or type of motor employed.

To energize the motor 26 in accordance with the invention, the flexible line 16 is pulled outwardly by means of the hand piece 19 and is thus uncoiled from the winding drum 3, thereby rotating the latter in a forward direction. By engagement of the spring controlled pawl 12 on the drum with one of the teeth of the ratchet wheel 13, rotary motion is transmitted to the spindle 7 and consequently energizes or winds up the motor 26 when the winding drum is thus rotated in a forward direction. During this outward movement of the flexible line 16, tension is imparted to the spiral spring 11 housed within the hollow flange 6 of the drum, so that when the pulling effort on the flexible line is relaxed the drum is rotated in the opposite direction and returned to its normal position under the influence of said spring 11 which thus causes the pull line 16 to be re-wound onto the drum. During this reverse rotation of the winding drum, the pawl 12 runs freely back over the ratchet wheel 13 which remains stationary with the spindle 7 as the flexible line is re-wound onto the drum. The foregoing pulling action upon the flexible line 16 may be repeated several times if necessary to fully energize the motor.

It will be seen from the foregoing that the manual operation required by the invention is very simple and does not call for any sustained or laborious effort on the part of the operator. In addition all external projecting parts associated with the winding operation are eliminated, with the consequent advantages referred to.

The foregoing description refers more particularly to the spring motors of sound reproducing machines but it will be obvious that the invention is similarly applicable to the energizing or winding up of spring motors used for other purposes.

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

1. A winding device for spring motors,

comprising a winding spindle adapted to be connected to the motor shaft; a ratchet fixed to the spindle; a winding drum loosely mounted on said spindle and embodying a central barrel and flanged end members, one end member being remote from the ratchet and made hollow so as to form a housing; a pawl pivoted to the other end member of the drum to engage said ratchet; a pull-cord adapted to be wound on and unwound from the drum barrel and to rotate the same during its unwinding; a fixed bearing member for the drum projecting loosely into said housing in line with the spindle; and a return spring coiled within said housing and connected thereto at one end and at the other end to said fixed bearing member to automatically rotate the drum in the opposite direction when the pull-cord is released at the conclusion of the unwinding operation.

2. The combination of a support; a pair of vertical brackets secured thereto in spaced, parallel relation, one of said brackets being forked; a winding spindle journaled in alining bearing openings in the forked bracket and projecting beyond the same toward the other bracket; a bearing pin fixed to said other bracket and extending toward and in axial alinement with the spindle; a ratchet fixed to the projecting portion of said spindle; a winding drum loosely mounted upon said projecting portion and embodying a central barrel and flanged end members, one end member being remote from the ratchet and forming a hollow housing into the center of which said bearing pin loosely projects; a pawl pivoted to the other end member to engage said ratchet; a pull-cord adapted to be wound on and unwound from the drum barrel and to rotate the drum, during its unwinding, in a direction to cause said pawl to drive said ratchet and spindle; and a return spring coiled within said housing and secured at one end thereto and at the other end to the fixed bearing pin, to automatically rotate the drum in the opposite direction, so as to wind up the pull-cord, when the latter is released at the conclusion of the unwinding operation.

In testimony whereof I affix my signature.

H. S. FOLK.

Witness:

VICTOR J. KELSON.