W. H. WEASER.

ATTACHMENT FOR PHONOGRAPHS.

APPLICATION FILED MAR. 26, 1918.

1,275,635. Patented Aug. 13, 1918.

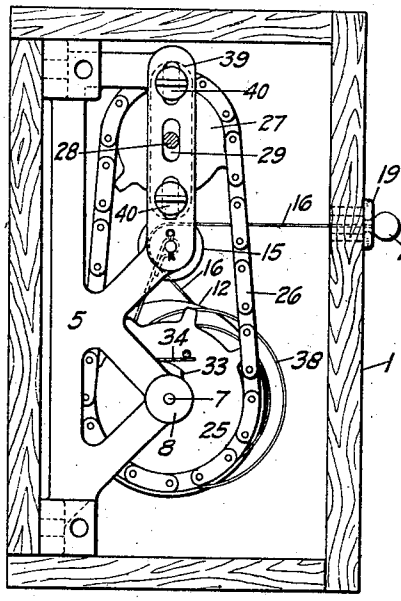


FIG. 1.

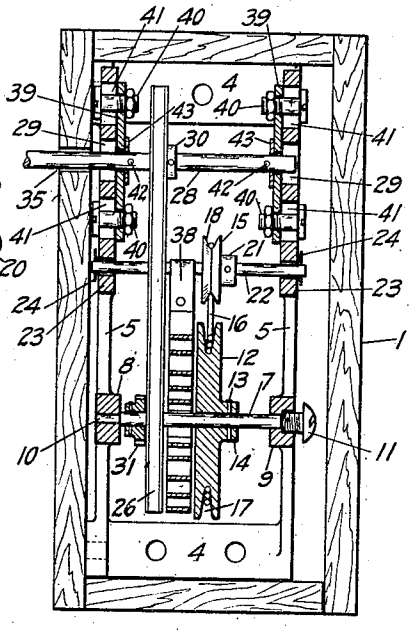


FIG. 2.

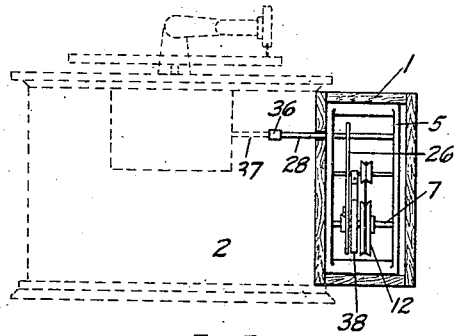


FIG. 3.

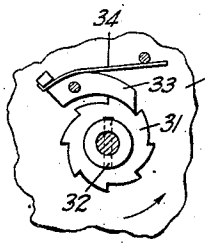


FIG. 4.

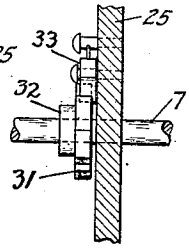


FIG. 5.

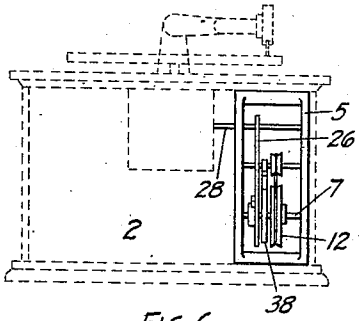


FIG. 6.

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ATTACHMENT FOR PHONOGRAPHS.

1,275,635. Specification of Letters Patent. **Patented Aug. 13, 1918.**

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To all whom it may concern:

Be it known that I, WILLIAM H. WEASER, a citizen of the United States, residing at Pittsfield, in the county of Berkshire and State of Massachusetts, have invented certain new and useful Improvements in Attachments for Phonographs, of which the following is a specification.

This invention relates to attachments for phonographs and similar sound reproducing instruments and, more particularly, to improved means for winding and rewinding the main spring for operating the record carrying mechanism. In the present specification the word "phonograph" is employed in its generic sense, embracing different forms of such reproducing machines.

In the ordinary type of commercial phonograph, it is necessary for an attendant to rewind the mechanism at frequent intervals by means of a small revoluble crank or handle, involving considerable effort, time and inconvenience. The primary object, therefore, of this invention is to minimize the time and effort involved in rewinding the phonographic mechanism, and to otherwise simplify this operation. A further object is to substitute fixed and inconspicuous mechanism for an unsightly crank, which is ordinarily loose and liable to become detached from the machine and lost. This I accomplish by the provision of improved means for rotating the winding-shaft, involving the substitution of a straight line pull for the usual rotary motion applied to a crank.

With the foregoing and other objects in view my invention consists in the construction, arrangement and combination of parts, hereinafter described and illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation of a preferred form of embodiment of the invention, the inner side-wall of the casing being removed to disclose the inclosed mechanism;

Fig. 2, a front elevation of the same, the front wall of the casing being removed for the like purpose;

Fig. 3, a reduced view similar to Fig. 2, showing the relative position of my device when operatively applied to a phonograph of the usual type, the latter being indicated in dotted lines;

Fig. 4, a detail side view showing a central portion of the main sprocket and ratchet controller mounted upon a shaft;

Fig. 5, a front view of the same; and

Fig. 6, a view similar to Fig. 3, illustrating my device embodied within the phonograph casing.

Within a suitable casing 1, which may be detachably secured in any approved manner to the phonograph casing 2, I provide a frame casting 3 of open structure, preferably comprising a base portion 4, which is detachably secured to the casing walls, and oppositely arranged brackets 5, 5, adapted to support the moving parts of the device.

Revolubly mounted at opposite ends on the brackets 5, 5, is a shaft 7, the ends of the shaft being extended into thickened portions of the brackets which are suitably apertured to form bearings 8, 9, therefor. As shown, one end of the shaft is preferably reduced to form a journal 10, the body of the shaft forming a shoulder in engagement with the inner face of the adjacent bearing, which prevents endwise displacement of the shaft in one direction, while displacement in the opposite direction is normally prevented at the opposite end of the shaft by a removable screw 11 fitted into a suitable tapped opening provided in the outer face of the bearing 9 in alinement with the shaft opening, said screw being adapted to engage the terminus of the shaft.

To displace the shaft 7 for any purpose, the screw 11 is removed to allow a free opening in the bearing 9, through which the shaft may be passed.

Mounted centrally upon the shaft 7 is shown a grooved wheel or drum 12 secured thereto by a removable pin 13 secured transversely through a hub or boss 14 laterally provided on the drum. Said drum is connected to a pulley 15 of reduced diameter by a cord 16 which is secured at its inner end to the drum 12 and wound thereon within the peripheral groove 17 a predetermined length, the free end of the cord being carried from the front side of the drum 12 to the rear side of the pulley 15 and laid in a peripheral groove 18, thence the cord is carried over the top of the pulley and extended forward to the front wall of the casing 1, passing through a suitable eye or bushing 19 provided therein, the outer end of the cord being secured to a suitable pull 20 arranged on the outer side of the casing and having a larger diameter than the opening in the bushing 19.

The pulley 15 is provided with a hub or

boss 21, and fixed in a manner simuar to the drum 12 centrally upon a separate rotatable shaft 22 arranged parallel to the shaft 7 at the upper end of the casing 1, the opposite ends of the shaft 22 being supported upon the brackets 5, 5, and extending through thickened portions thereof provided with suitable apertures and forming bearings 23, 23, the extremities of the shaft projecting beyond the bearings being provided with transversely arranged cotter pins 24, 24, mounted therein to prevent endwise displacement of the shaft in either direction.

Mounted upon the drum-shaft 7 and in spaced relation to the drum 12, is shown a main sprocket 25 which carries on its periphery an endless sprocket-belt 26 which is arranged to also engage the periphery of a separate sprocket 27 which has a smaller diameter than the main sprocket and is mounted to move in the plane of the latter at the upper end of the casing 1, said sprocket 27 being carried upon a winding shaft 28 rotatably supported at opposite points in slots 29, 29, provided in thickened portions of the brackets 5, 5, forming an extension of the bearings 23, 23. The sprocket 27 is provided with a hub or boss 30 and pinned to the shaft 28 similarly to the drum 12 and pulley 15. The sprocket 27 rotates with the main sprocket 25 by means of the belt 26, and in the same direction and at a higher speed, due to its smaller circumference. While the sprocket 25 is free to idle upon the shaft 7 when the latter is reversed by the drum 12 during the operation of winding up, it is forced to move with the shaft, when the drum is unwinding by means of a ratchet 31 mounted on the shaft adjacent the inner face of the sprocket. This ratchet 31 is removably secured to the shaft by a transverse pin 32, and arranged to normally trip on a dog 33 controlled by a spring 34 mounted in adjacent relation on the side of the sprocket 25, said dog and ratchet being adapted to rotate the sprocket 25 synchronously with the drum 12 when the latter is being unwound.

The movement of the sprocket 25 operates to drive the winding-sprocket 27 and therewith the winding-shaft 28, through the medium of the sprocket-belt 26. The inner end of the winding-shaft 28 is arranged to extend through a suitable opening 35 provided in the side wall of the casing 1 and into the interior of the phonograph casing 2, said inner end of the shaft terminating preferably in a suitable socket or head 36 adapted to fit over the outer end of a shaft 37 normally provided within the phonograph casing for winding up the main spring (not shown) of the latter.

In rewinding the drum 12 the operator releases the cord 16, or relaxes the tension thereon sufficiently to permit the drum 12 to be reversely rotated under the impulse of a driving-spring 38, which is arranged to be wound up under the force of the operator's action in drawing out the cord 16 through the medium of the pull 20. Said driving-spring is preferably a flat spring movably secured at one end around the pulley shaft 22 in a plane intermediate the pulley 15 and the sprocket-belt 26, the opposite end of the spring being coiled around the sprocket-shaft 7 and suitably fixed thereto.

Relative adjustment of the position of the winding-shaft 28 may be regulated to insure proper alinement with the winding-shaft of the phonograph and also a proper tension of the sprocket-belt 26 by means of adjustable plates 39, 39, carried on the inner faces of the brackets 5, 5, and provided centrally with suitable openings to receive the winding-shaft. As shown, the plates 39, 39, are secured to the brackets 5, 5, by means of bolts 40, 40, etc., carried at opposite ends of the plates and extending through suitable round openings therein and also through slotted openings 41, 41 etc. provided in the brackets 5, 5, and arranged to allow the plates to be moved to a limited extent upward or downward. Endwise displacement of the winding-shaft 28 is prevented preferably by means of cotter-pins 42, 42, carried on the winding-shaft adjacent the inner faces of the adjusting-plates 39, 39, while anti-frictional washers 43, 43, are preferably interposed between the said cotter-pins and plates.

The operation of my device which is controlled by the pull 20, will be sufficiently understood from the foregoing description.

While I prefer to employ a separate casing to receive the mechanism of my device, it will be understood that I do not limit the use of my invention thereto and that the casing 1, or a casing similar thereto, and the inclosed mechanism, or such mechanism without the casing, may be mounted within the phonograph casing, as illustrated in Fig. 6.

It will be further understood that I do not limit my invention to the use of a link belt employed in connection with sprockets as a driving medium, but that the scope of my invention embraces other mechanism such as a friction belt or suitable meshing gear as a medium for transferring motion from the drum shaft to the winding shaft.

I claim:

1. In a sound reproducing machine, the combination with driving mechanism, including a winding shaft, for rotating the sound record, of means for revolving said winding shaft, and including oppositely arranged supports, a separate shaft revolubly mounted on the supports, a drum mounted to rotate with said last-mentioned shaft and carrying a flexible pull member secured

thereto at one end and having a free end wound peripherally thereon, means for adjusting the relative position of said shafts, and means movably connecting said drum shaft with said winding shaft for rotating the winding shaft when the drum is revolved through the medium of the pull member.

2. In a sound reproducing machine, the combination with driving mechanism, including a winding shaft and a sprocket mounted on the winding shaft, for rotating the sound record, of means for revolving said shaft and sprocket and including oppositely arranged supports, a separate shaft revolubly mounted on the supports, a drum mounted to rotate with the last-mentioned shaft and carrying a pull member secured thereto at one end and having a free end wound peripherally thereon, a separate sprocket loosely mounted on the drum shaft, an endless belt carried on said sprockets for rotating the winding shaft when the drum is revolved through the medium of the pull member, and means for reversely rotating the drum to rewind the pull member thereon without revolving the winding shaft.

3. In a sound reproducing machine, the combination with driving mechanism, including a main winding shaft, for rotating the sound record, of means for revolving the main winding shaft, and including oppositely arranged supports, an auxiliary winding shaft mounted to revolve on the supports, means for detachably connecting said auxiliary winding shaft with the main winding shaft, a sprocket mounted to rotate with the auxiliary winding shaft, a drum shaft mounted to revolve on said supports and arranged in parallel relation to the auxiliary winding shaft, a separate sprocket of larger circumference than said auxiliary winding shaft sprocket and loosely mounted on the drum shaft, means for rotating said last-mentioned sprocket with the drum shaft in one direction, an endless belt movably connecting said sprockets, means for adjusting the position of the auxiliary winding shaft with relation to the main winding shaft and also with relation to the drum shaft, a drum mounted to rotate with the drum shaft, a flexible pull member secured at one end to the periphery of the drum and arranged to be wound thereon and having a free end, and means for rotating the sprocket on the drum shaft with the drum shaft when the pull member is unwound from the drum.

4. In a sound reproducing machine, the combination with driving mechanism, including a main winding shaft, for rotating the sound record, of means for revolving the main winding shaft, and including oppositely arranged supports, an auxiliary winding shaft adjustably mounted on the supports, means for movably connecting said auxiliary winding shaft with the main winding shaft for rotating the same, a sprocket mounted to rotate with the auxiliary winding shaft, a drum shaft mounted to rotate on said supports and arranged in parallel relation to the auxiliary winding shaft, a separate sprocket of larger circumference than the sprocket before mentioned and movably mounted on the drum shaft, means including a pull member for rotating said last-mentioned sprocket with the drum shaft in one direction, an endless belt carried on said sprockets, and means for automatically rewinding the pull member on the drum after being unwound.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

WILLIAM H. WEASER.

Witnesses:
JNO. J. WHITTLESEY,
MICHAEL L. EISNER.