H. B. STROHL, D. N. IMBODEN AND J. H. McCASHEN.

FOOT POWER WINDING DEVICE FOR PHONOGRAPHS.

APPLICATION FILED MAY 6, 1919.

1,331,828.

Patented Feb. 24, 1920.

2 SHEETS—SHEET 1.

Fig. 1.

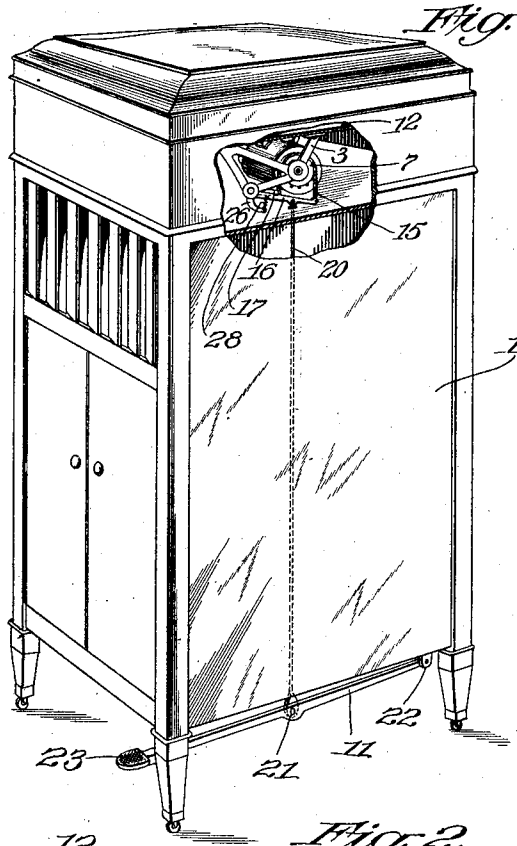


Fig. 3.

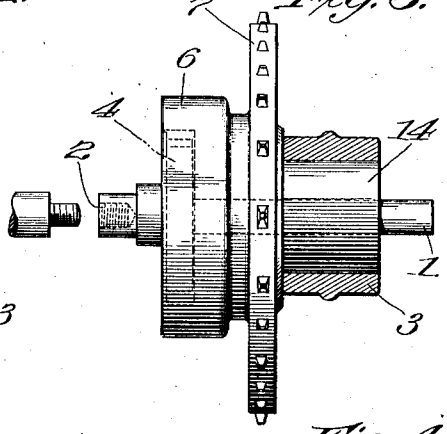


Fig. 4.

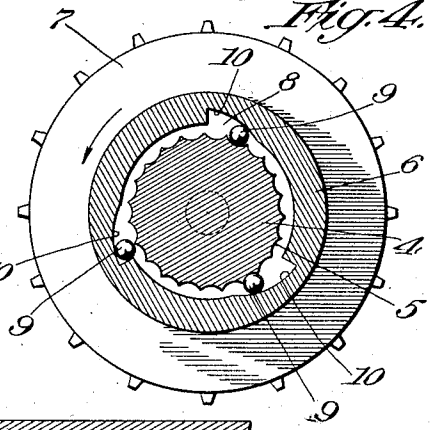


Fig. 2.

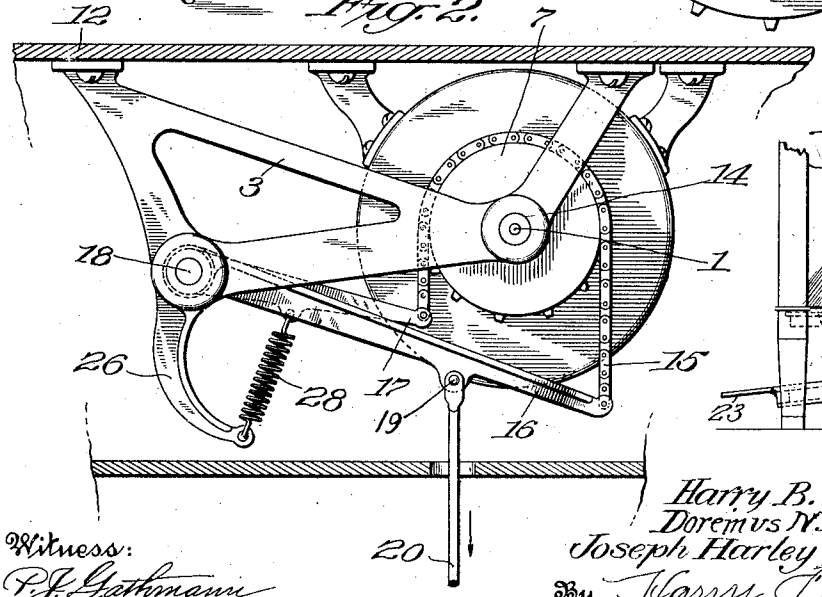
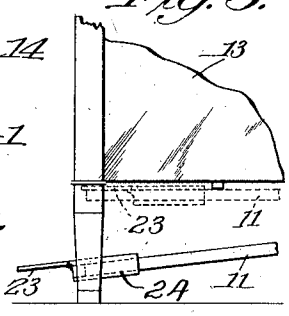


Fig. 5.



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2 SHEETS—SHEET 2.

Fig. 6.

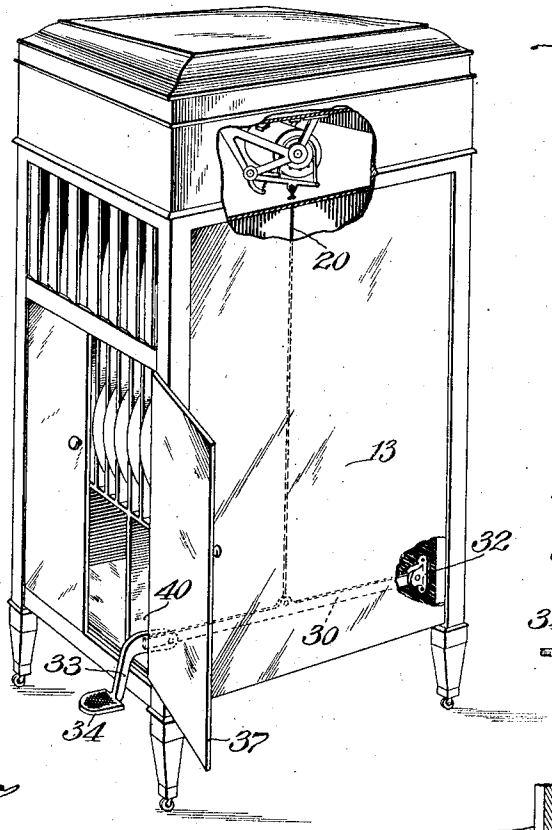


Fig. 8.

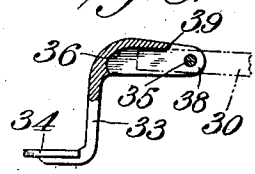
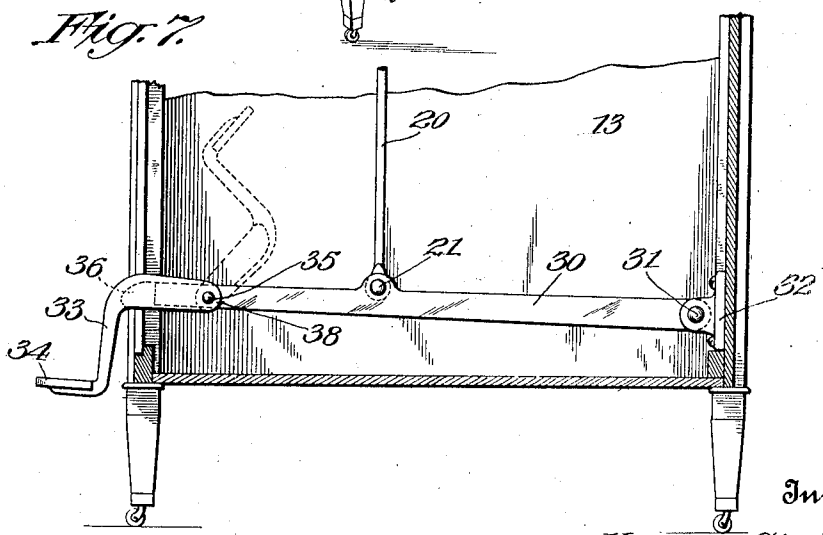


Fig. 7.



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UNITED STATES PATENT OFFICE.

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FOOT-POWER WINDING DEVICE FOR PHONOGRAPHS.

1,331,828. Specification of Letters Patent. Patented Feb. 24, 1920.

Application filed May 6, 1919. Serial No. 295,184.

To all whom it may concern:

Be it known that we, HARRY B. STROHL, DOREMUS N. IMBODEN, and JOSEPH HARLEY McCASHEN, citizens of the United States, residing at Sidney, in the county of Shelby and State of Ohio, have invented certain new and useful Improvements in Foot-Power Winding Devices for Phonographs, of which the following is a specification.

The invention relates to a foot power winding device for phonographs.

The object of the present invention is to provide for phonographs a simple, practical and efficient foot power winding device of strong, durable and comparatively inexpensive construction, designed particularly for use on cabinet machines and capable of enabling the motor of a phonograph to be easily and conveniently wound by foot power and adapted, when not in use, to be entirely concealed from view, so as not, in any manner, to affect the ornamental appearance of the cabinet phonograph.

A further object of the invention is to provide a foot power winding device of this character adapted to be readily applied to various phonographs and capable of use on various machines and devices employing a spring motor.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size and minor details of construction, but within the scope of the appended claims, may be resorted to without departing from the spirit of or sacrificing any of the advantages of the invention.

In the drawings:

Figure 1 is a perspective view of a foot power winding device for phonographs constructed in accordance with this invention, the cabinet being partly broken away and portions of the phonograph being omitted.

Fig. 2 is an enlarged detailed view of a portion of the winding mechanism, illustrating the construction of the bracket and the arrangement of the sprocket gearing and the lever connections.

Fig. 3 is a side elevation of the sprocket clutch.

Fig. 4 is a sectional view illustrating the construction of the ball clutch of the sprocket.

Fig. 5 is a fragmentary detail.

Fig. 6 is a perspective view showing the treadle lever mounted interiorly of the cabinet and having a pivoted pedal arm adapted to swing into and out of the cabinet.

Fig. 7 is an enlarged vertical sectional view of the lower portion of the phonograph showing the pedal arm extended.

Fig. 8 is a detailed sectional view illustrating the construction of the pedal arm.

In the accompanying drawing, in which like numerals of reference designate corresponding parts in the several figures and in which is illustrated the preferred embodiment of the invention, the foot power winding device for phonographs comprises in its construction a shaft 1 provided with an interiorly threaded socket 2 adapted to receive the winding shaft of the motor of a phonograph and to be substituted for the threaded crank ordinarily employed for winding such a motor. The shaft 1 which is journaled in a bearing bracket 3, has mounted on it a wheel or rotary element 4 provided with ball receiving recesses 5 and constituting an inner member of a sprocket ball clutch, which is also provided with an outer member 6 having sprocket teeth 7, and provided with tapered, interiorly arranged ball receiving recesses 8, co-acting with the peripheral recesses 5 of the inner member 4 to control balls 9. The inner recesses of the outer clutch member are tapered and present inclined or angularly disposed walls or faces 10 for frictionally engaging the balls and for causing the same to lock the outer clutch member to the inner clutch member for rotating the shaft 1 of the winding device when the outer clutch member is rotated in the direction of the arrow in Fig. 4 by depressing a foot lever 11. The bearing bracket, which is of approximately triangular form, as clearly shown in Fig. 2 of the drawings, is secured to the underside of the motor carrying board or partition 12 of the phonograph cabinet 13, and an outer clutch member 6 which is provided with sprocket teeth 7, has a hub portion 14 mounted for rotary movement on the shaft 1. The sprocket wheel or member 6 of the clutch, receives a

sprocket chain 15 arranged upon the upper half of the sprocket member and depending at the front and back thereof and connected at its ends with levers 16 and 17 fulcrumed on a suitable pivot 18 carried by the bracket at the front portion thereof. The lever 16, which is of greater length than the lever 17, is pivoted at its front end and it is connected at its rear end to the rear end of the sprocket chain, while the shorter lever 17, which is also pivoted at its front end, is connected to the front end of the sprocket chain 15. The lever 16 is connected by a suitable pivot 19 to the upper end of a rod 20 which extends downwardly through the bottom of the phonograph cabinet 13, and is pivoted at its lower end by a pin 21 or other suitable fastening device to the foot lever 11. The foot lever 11 is located beneath the phonograph cabinet and is pivoted at its rear end 22 and is provided at its front end with a pedal plate 23 for slidable connection at 24 with the front portion of the foot lever and adapted to be moved inwardly or rearwardly when the winding device is not in use, so that the foot lever and the treadle will be concealed from view. When it is desired to use the winding device, the pedal or foot plate is drawn outwardly to a slightly projecting position with relation to the front of the phonograph cabinet and it is adapted to be readily depressed by the foot to wind the spring of the motor of the phonograph. The downward movement of the lever carries the inclined faces 10 of the recesses 8 into engagement with the balls of the ball clutch and causes the sprocket member to rotate the shaft 1 and the winding shaft of the motor. The foot or treadle lever is moved upwardly by a coiled spring 28 connected to an arm 26 of the bearing bracket and to the short lever 17. The coiled spring is distended and placed under tension by the downward movement of the lever and it is adapted to maintain the lever 11 in a raised position against the bottom of the cabinet when the winding device is not in use, as indicated in dotted lines in Fig. 1 of the drawing.

In Figs. 6 to 8 inclusive, the treadle lever 30 is shown mounted interiorly of the cabinet 13 and is connected at its inner or rear end by a suitable pivot 31 to a bracket 32 or other suitable supporting means. The rod 20 is connected at the lower end by its pivot 21 to the treadle lever 30 intermediate of the ends thereof and the said treadle lever is equipped at its front end with the pedal arm 33 consisting of an L-shaped shank and a pedal plate 34. The shank is pivoted at 35 to the outer portion of the lever 30 adjacent to the outer end thereof and is provided with a recess 36 to enable it to fit over the outer terminal portion of the said lever 30 when the pedal arm is in its extended position. The pedal arm is adapted to be swung outwardly into a projecting position, as illustrated in Figs. 6 and 7, when the cabinet is open and it is in position to enable the motor to be readily wound by the means before described. After the motor has been wound the pedal arm is swung into the cabinet and the door 37 closed. The recessed portion of the pedal arm is provided with projecting ears 38 to receive the pivot 35 and a shoulder 39 is formed at the inner ends of the ears and is adapted to rest upon the upper edge of the lever 30 to support the pedal arm in an upwardly extending position as illustrated in dotted lines in Fig. 7 of the drawing. The compartment 40 is preferably provided to receive the treadle lever and the pedal arm and the pedal arm is supported in position to be readily extended to enable the device to be operated for winding the motor. In the form of the device shown in Figs. 6 to 8 inclusive, the foot power winding device is housed entirely within the cabinet and is concealed from view when not in use and the cabinet closed.

The foot power winding device is exceedingly simple in construction and is adapted to be readily substituted for the crank of a phonograph motor and while it is particularly adapted for use on phonographs, it may be advantageously employed for winding various other spring motors and the like.

What is claimed is:

1. A winding device of the class described, including a clutch having inner and outer members, a flexible element arranged on one of the members and co-acting therewith to rotate the same, a pair of levers connected with the flexible element, means connected with one of the levers for enabling power to be applied to the device for moving the flexible element in one direction and means connected with the other lever for automatically moving the flexible element in the opposite direction.

2. A winding device of the class described, including a clutch having inner and outer members, a flexible element arranged on one of the members and co-acting therewith to rotate the same, a pair of levers connected with the flexible element, a foot lever or treadle connected with one of the levers for enabling power to be applied to the device for moving the flexible member in one direction, and a spring connected with the other lever for moving the flexible element in the opposite direction.

3. A winding device of the class described, including a bracket, a clutch mounted in the bracket and having inner and outer members, the inner member being provided with means for connecting it with the winding shaft of a motor, a flexible element ar-

ranged on and coacting with the outer member, a pair of levers pivotally mounted on the bracket and connected with the ends of the flexible element, a treadle or foot lever connected with one of the levers and a spring connected with the other lever.

4. A winding device of the class described, including a bracket, a clutch mounted in the bracket and having inner and outer members, the inner member being provided with means for connecting it with the winding shaft of a motor, a flexible element arranged on and co-acting with the outer member, a pair of levers of unequal length mounted in the bracket and connected to the ends of the flexible member, a treadle connected with the longer lever and a coiled spring connected with the bracket and with the shorter lever.

5. The combination, with the phonograph cabinet, of a foot power winding device, comprising a bracket mounted within the cabinet, a clutch carried by the bracket and having means for connecting it with the winding shaft of a motor, levers of unequal length mounted in the bracket and connected with the ends of the flexible element, a spring connected with the shorter member, a foot lever mounted beneath the cabinet and carried by the same, means for connecting the foot lever with the longer one of the said levers, and a pedal or foot plate slidably mounted on the foot lever and adapted to be arranged in a projecting position and to be moved beneath the cabinet.

6. A winding device of the class described, including a clutch provided with means for connecting it with the winding shaft of a motor, a foot lever or treadle, a pedal arm pivotally mounted on the outer portion of the said lever and arranged to swing inwardly and outwardly to extend it for operation and to house it when not in use and means for transmitting motion from the foot lever or treadle to the clutch.

7. The combination with a phonograph cabinet of a foot power winding device, comprising a clutch having means for connecting it with the winding shaft of a motor, a flexible element arranged to operate the clutch, a spring for moving the flexible element in one direction and a foot lever or treadle pivoted at its inner end within the cabinet and connected to the other end of the said flexible connection for moving the same against the action of the spring and the pedal arm having a pedal plate and pivotally connected to the said foot lever or treadle and arranged to swing into and out of the cabinet to project it for operation and to house it when not in use.

8. The combination with a phonograph cabinet of a foot power winding device, comprising a clutch having means for connecting it with the winding shaft of a motor, a flexible element arranged to operate the clutch, a spring for moving the flexible element in one direction and a foot lever or treadle pivoted at its inner end within the cabinet and connected to the other end of the said flexible connection for moving the same against the action of the spring and a pedal arm comprising a pedal plate and an approximately L-shaped shank pivoted to the outer portion of the foot lever or treadle and arranged to swing into and out of the cabinet and having means for engaging the foot lever or treadle to support the pedal plate in its extended and folded positions.

In testimony whereof we have affixed our signatures.

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JOSEPH HARLEY McCASHEN.