

P. WELIN.
 PAPER WINDING MECHANISM FOR MUSICAL INSTRUMENTS.
 APPLICATION FILED MAY 16, 1905. RENEWED APR. 26, 1909.

944,006.

Patented Dec. 21, 1909.

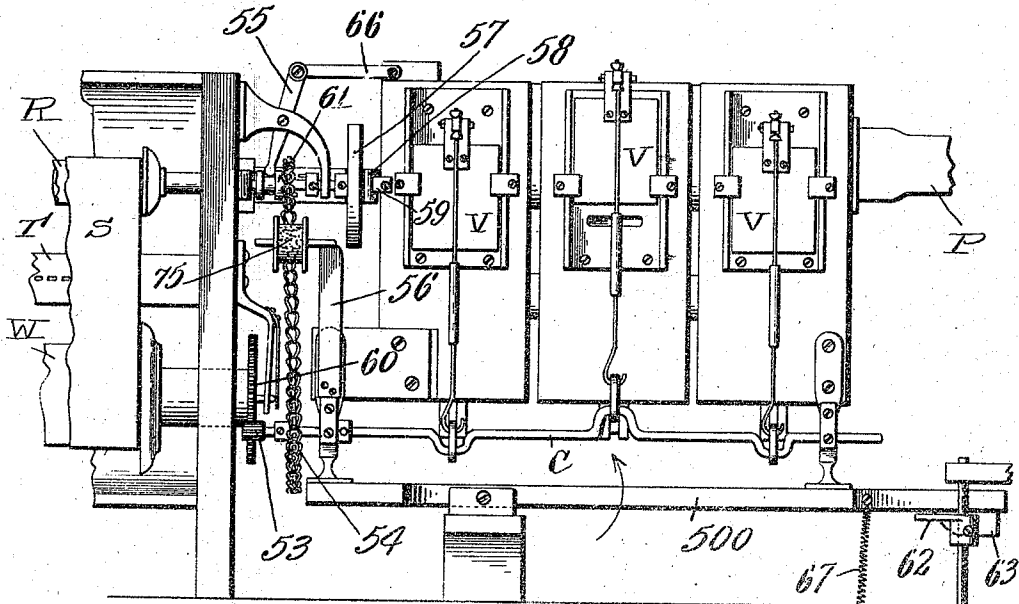


Fig. 1

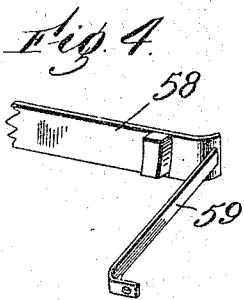


Fig. 4.

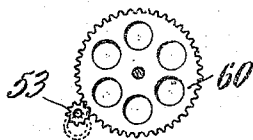


Fig. 3.

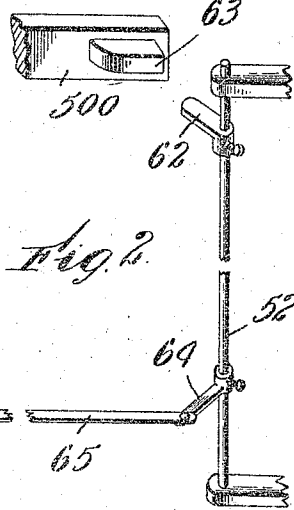
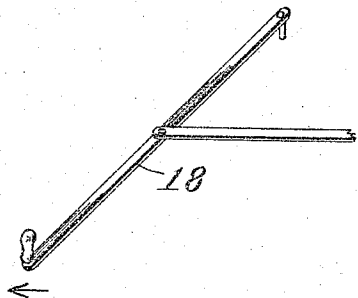


Fig. 2.



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UNITED STATES PATENT OFFICE.

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PAPER-WINDING MECHANISM FOR MUSICAL INSTRUMENTS.

944,006.

Specification of Letters Patent. Patented Dec. 21, 1909.

Application filed May 16, 1905, Serial No. 260,616. Renewed April 26, 1909. Serial No. 492,312.

To all whom it may concern:

Be it known that I, PETER WELIN, a citizen of the United States, residing at Newcastle, in the county of Henry and State of Indiana, have invented a new and useful Paper-Winding Mechanism for Musical Instruments, of which the following is a specification.

This invention relates to that class of musical instruments which are controlled by strips of perforated paper.

The especial object of this invention is to provide simple, efficient and noiseless means for connecting a motor to the winding rolls in such a way that the entire motor is movably mounted so that the same can be shifted to change the connections from the motor for winding or rewinding the paper over the tracker-board.

Further objects of this invention are to provide a simple form of hand-lever for tipping the motor; to provide for tightening the winding chain during re-winding; and to provide for releasing the friction-brake which tensions the music-sheet while being drawn forward over the tracker-board during re-winding.

To these ends, this invention consists of the paper-winding mechanism for musical instruments, and of the combinations of parts therefor as hereinafter described and more particularly pointed out in the claims at the end of this specification.

In the accompanying drawing, Figure 1 is a front view of sufficient parts of a paper-winding mechanism to illustrate the application of this invention thereto. Fig. 2 is a detail view of the re-winding lever and connections controlled therefrom. Fig. 3 is a detail view of the winding gears, and Fig. 4 is a detail view of the friction-brake which tensions the music-sheet and the releasing-finger therefor.

In that class of musical instruments to which this invention relates a number of different constructions have been employed for providing shiftable connections between a motor and the winding-rolls. In constructions which are most generally employed the motor (which may be either the ordinary wind-motor, spring-motor, or other source of power) is mounted in fixed position, and various shifting devices have been employed

for coupling the motor to either wind the music-sheet over the tracker-board, or to re-wind the same when a musical composition is finished. I have found in practice that it is possible to provide a construction in which the entire motor is mounted on a movable support so that the motor can be bodily moved or shifted to provide the desired change of connection, and that this can be done in a construction which is less rattly, and which is less liable to derangement than the connections from a stationarily placed motor which has heretofore ordinarily been employed.

Referring to the accompanying drawing for a detail description of an apparatus embodying this invention, as shown in Fig. 1, R designates the music-spool. From the music-spool R the music-sheet S is drawn over the tracker-board T by a winding roll W. These parts are of the ordinary or well-known construction.

At one side of the winding rolls and the tracker-board is a pivoted support 500 which carries the motor. As herein illustrated, the motor may be of the ordinary type of wind-motor, in the present instance, comprising the three sliding valves V which control three operating pneumatics for turning the motor crank-shaft C. The air is exhausted from the wind-motor in the ordinary manner through a pipe P. In Fig. 1 of the drawings, I have shown the valves V mounted in slide-ways and held in place by the ordinary small wooden clips. The crank-shaft C of the motor is provided at its end with a small pinion 53 which normally meshes with a gear 60 on the end of the shaft of the winding roll W. Also mounted on the crank-shaft C is a sprocket-wheel which is connected by a sprocket-chain 54 to a sprocket-wheel mounted on a normally disconnected sliding clutch 61. Engaging the chain 54 is a tightening wheel 75 carried by the spring-arm 56. When the parts are in normal position the chain 54 runs comparatively loosely.

On the shaft of the music-spool R is a friction disk 57 which is normally engaged by a tension brake 58, shown in Fig. 4, and cooperating with the tension-brake 58 is a releasing arm 59. The normally disconnected sliding clutch 61 is controlled by a

lever 55 which is connected by a link 66 to the motor casing.

Considering now the means for tipping or tilting the motor, and the operation which results therefrom, as shown in Fig. 2, 18 designates a shifting lever which is connected by a link 65 to an arm 64 extending from a vertical rock-shaft 52. Near its upper end the rock-shaft 52 is provided with an arm 62 which engages and coöperates with a cam or incline 63 of the motor support 500. The motor may be held in its normal or horizontal position by a spring 67. By means of this construction when the motor is tipped or tilted by the connections from the lever 18, the driving pinion 53 will be moved down out of mesh with the gear 60, as shown by dotted lines in Fig. 3, and at the same time, the sliding clutch 61 will be thrown into mesh so that the music-sheet will be rewound upon the music-spool R. At the same time, the tipping of the motor lowers the tightening roll 75 so that the same bears more strongly upon the sprocket-chain 54 and tends to tension or tighten the same, while, at the same time, the releasing arm 59 tends to move the friction-brake 58 out of engagement with its disk 57. That is to say, in a complete paper-winding mechanism for a musical instrument constructed according to this invention, the change of connections for winding or rewinding the music-sheet is secured by a bodily movement, preferably a tipping or tilting of the motor; and, at the same time, the tension of the drive-chain which is normally loose during the winding of the music is increased during the rewinding operation, and the friction-brake which tensions the music during winding is released during the rewinding.

I am aware that changes may be made in the construction of my paper-winding mechanism for musical instruments to adapt the same to various places and locations without departing from the scope of my invention as expressed in the claims. I do not wish, therefore, to be limited to the paper winding mechanism which I have herein shown and described, but

What I do claim and desire to secure by Letters Patent of the United States is:--

1. In a paper winding mechanism for musical instruments, the combination of winding rolls, a tracker-board, a motor, and means for moving the motor to change the connections from said motor to wind the paper over the tracker board or to rewind the paper onto the music-spool.

2. In a paper winding mechanism for musical instruments, the combination of the winding rolls, a tracker-board, a pivotally mounted motor, and means for tipping or

tilting the motor to change its connection with the winding rolls.

3. In a paper winding mechanism for musical instruments, the combination of the winding rolls, a tracker-board, a pivotally mounted motor, a gear and pinion connection between the crank-shaft of the pivotally mounted motor and the winding rolls, and means for tipping or tilting the motor to disconnect said gear and pinion connection when the paper is to be rewound.

4. In a paper winding mechanism for musical instruments, the combination of the winding rolls, a tracker-board, a pivotally mounted motor, a gear and pinion connection between the crank-shaft of the motor and the winding rolls, and a chain and sprocket-wheel connection between said crank-shaft and the normally disconnected clutch upon the shaft of the music-spool, and means for tipping or tilting the motor to disconnect said gear and pinion connection, and to throw the clutch into operation during rewinding.

5. In a paper winding mechanism for musical instruments, the combination of the winding rolls, a tracker-board, a pivotally mounted motor, a chain and sprocket connection between the crank-shaft of the motor and a normally disconnected clutch, and means operated by the tilting of the motor to tighten the sprocket chain, and throw the clutch into operation when the paper is to be rewound.

6. In a paper winding mechanism for musical instruments, the combination of the winding rolls, a tracker-board, a friction brake for tensioning the music during winding, a pivotally mounted motor, and means operated by the tipping or tilting of the motor to release the friction brake while the paper is being rewound.

7. In a paper winding mechanism for musical instruments, the combination of the winding rolls, a tracker-board, a pivotally mounted motor, a gear and pinion connection between the crank-shaft of the motor and the winding rolls, a chain and sprocket connection between the crank shaft of the motor and a normally disconnected clutch, a friction brake for tensioning the music during winding, and means for tipping or tilting the motor operating to disengage the motor shaft from the winding rolls to throw the clutch into operation and increase the tension of its sprocket-chain, and to release the friction brake.

In testimony whereof I have heretofore set my hand in the presence of two subscribing witnesses.

PETER WELIN.

Witnesses:

C. G. LEACHMAN,
C. L. DENGLE.