

K. O. CARLSON.  
 AUTOMATIC MUSICAL INSTRUMENT WITH MAGAZINE.  
 APPLICATION FILED JULY 18, 1913.

1,152,787.

Patented Sept. 7, 1915.

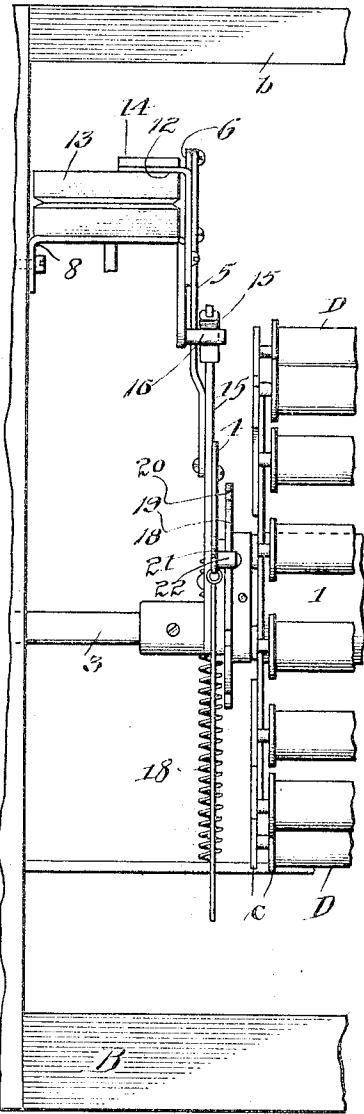
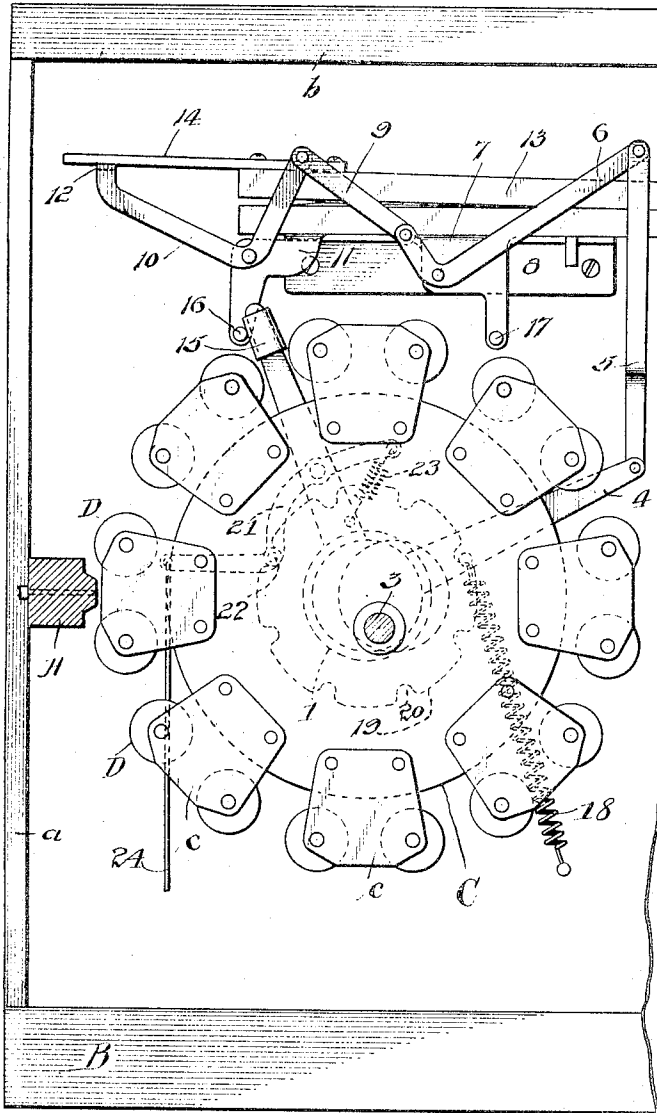
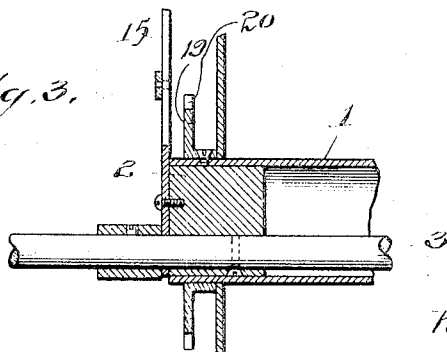


Fig. 1.

Fig. 2.

Fig. 3.



Witnesses:  
 Arthur W. Carlson  
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 Karl O. Carlson.  
 By Frank O. Thomsson,  
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# UNITED STATES PATENT OFFICE.

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## AUTOMATIC MUSICAL INSTRUMENT WITH MAGAZINE.

1,152,787.

Specification of Letters Patent.

Patented Sept. 7, 1915.

Application filed July 18, 1913. Serial No. 779,736.

*To all whom it may concern:*

Be it known that I, KARL O. CARLSON, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented new and useful Improvements in Automatic Musical Instruments with Magazines, of which the following is a full, clear, and exact description.

10 My invention relates to automatic player pianos and particularly to the class of player pianos that are coin-controlled, and are provided with selective devices through the mechanism of which any one of a number of musical selections may be played on the instrument by depositing a coin in a slot opposite the name of the piece to be played. The selective mechanism, the means for mounting the perforated rolls of sheet music and winding or rewinding the same, and other specific details of construction, are shown and described in Letters Patent of the United States granted to Edwin A. Kingsley and myself, No. 1,071,640, dated August 26th, 1913, and No. 1,070,698, dated August 19th, 1913.

The present invention relates to the means for bodily moving the magazine supporting the perforated music sheets toward and from the tracker-board after the selection has been made.

It is the principal object of my invention to accomplish this in as effective a manner as possible, and by the employment of a minimum number of parts all of which are confined within a space of relatively small dimensions. These and other objects I accomplish by the means and in the manner hereinafter fully described, and as more particularly pointed out in the claims, reference being had to the accompanying drawings forming a part hereof, in which—

Figure 1 is a vertical end elevation of a magazine for player pianos showing my improvements applied thereto in playing position. Fig. 2 is a front elevation of one end of said magazine showing my improvements. Fig. 3 is a central longitudinal vertical section of a fragmentary portion of one end of the magazine hub.

Referring to the drawings, A represents a tracker-board of the conventional type that is rigidly mounted upon a suitable standard *a* connecting the base B of the piano frame and the key-bed *b* thereof.

The magazine comprises suitable rotatable end disks C that have a plurality of equidistant carriers *c* secured thereto and projecting beyond the perimeter thereof in which the rollers or spools for the perforated music sheets D are journaled. The hub 1 of the magazine is, preferably, cylindrical or barrel-shaped, as shown in detail in Fig. 3 of the drawings, and the ends thereof are closed by suitable disks 2 upon which said magazine is free to rotate. Said disks 2 are secured eccentrically to a horizontally disposed rock-shaft 3, which latter extends longitudinally through the hub of the magazine and has its ends extend beyond the disks 2, and journaled in any suitable manner in the frame-work of the piano. The eccentric mounting of the magazine hub is for the purpose of moving the magazine toward and away from the tracker-board, in order to bring the perforated-music sheets D into engagement with the same. This movement is accomplished through the instrumentality of suitable levers, etc., that are actuated by means of a bellows, as will hereinafter more fully appear.

Secured to the end edge of one of the disks 2, or directly to the rock-shaft 3, if found more convenient, is a suitable elongated arm 4 that has its rear end connected by a vertically disposed link 5 to the rearwardly extended elongated arm of a bell-crank 6 pivoted at its angle to a down-turned flange or lip 7 of a suitable horizontally disposed bracket 8. The shorter arm of bell-crank 6 is connected to the adjacent end of another bell-crank 10 by a link 9, and bell-crank 10 is pivoted at its angle to the down-turned member 11 of bracket 8. The end of bell-crank 10 opposite link 9 is bent laterally to form a finger 12, and this finger 12 is adapted to be depressed by the collapsing of a suitable bellows 13, which latter has its stationary leaf secured to the bracket 8, and its movable upper leaf provided with an outwardly projecting extension 14, that engages said finger 12. Whenever the bellows 13 is collapsed the bell-cranks 6 and 10 will be rocked, and the latter through pitman 5 will raise arm 4 thus rotating the disks 2 eccentrically on shaft 3 and moving the magazine bodily until the selected perforated-music sheets are brought into engagement with the tracker-board.

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In order to limit the bodily movement of the magazine, a suitable radial arm 15 is secured to the disk 2 nearest the said actuating bell-cranks and disks at substantially right angles to the arm 4 so that when said disks rotate, the said radial arm will come in contact with suitable stops 16 and 17 carried by the bracket 8. I prefer to return the magazine to its position farthest from the tracker-board by means of a coiled contraction spring 18 connected at one end to the arm 4, and at its opposite end to one of the standards or other suitable member of the piano.

After the selection has been made, and the magazine has been rotated through the proper mechanism until the selected perforated-music sheets are opposite the tracker-board, it is necessary to lock the magazine against further rotation, and this I accomplish by securing a flanged disk 19 adjacent the end of the hub of said magazine. This disk is provided on its periphery with a plurality of recesses 20 corresponding in number to the music roll carriers. A pawl 21 pivoted mediate its ends on arm 15 has a roller 22 on one end that is adapted to engage said recesses. The opposite end of this pawl is provided with a contraction spring 23 that normally tends to raise the roller end of the pawl away from the disk. The roller end of pawl 21 is connected by a vertically disposed rod 24 to suitable means that are adapted to control the selective mechanism of the piano, substantially as described and shown in the aforesaid Letters Patent Numbers 1,070,698 and 1,071,640, granted to Edwin A. Kingsley and myself.

The operation of the device just described may be similar to the selective mechanism illustrated and described in the applications for Letters Patent aforesaid, or it may be operated in any other suitable manner.

What I claim as new is:

1. In an automatic player-piano, a magazine having rotatable disks, a support for said magazine mounted so as to have a partial rotative movement on its own axis to which the axis of said magazine is eccentric, a tracker-board, a plurality of rollers upon which perforated music sheets are mounted and which are journaled in the disks of said magazine parallel to the axis thereof and to said tracker-board, and means for rocking said support so as to bring said perforated sheets into engagement with said tracker-board.

2. In an automatic player piano, a magazine having rotatable disks, a support for said magazine mounted so as to have a rotative movement on its own axis to which the axis of said magazine is eccentric, a tracker-board, a plurality of rollers upon

which perforated music sheets are mounted and which are journaled in the disks of said magazine parallel to the axis thereof and to the tracker-board, a bellows, and means including links for connecting said bellows to said support.

3. In an automatic player piano, a magazine having rotatable disks, a support for said magazine mounted so as to have a rotative movement on its own axis to which the axis of said magazine is eccentric, a tracker-board, a plurality of rollers upon which perforated music sheets are mounted and which are journaled in the disks of said magazine parallel to the axis thereof and to the tracker-board, a bellows, and means including links for connecting said bellows to said support and rocking the same.

4. In an automatic player piano, a magazine having rotatable disks, a support for said magazine mounted so as to have a rotative movement on its own axis to which the axis of said magazine is eccentric, a tracker-board, a plurality of rollers upon which perforated music sheets are mounted and which are journaled in the disks of said magazine parallel to the axis thereof and to the tracker-board, a bellows, means including links for connecting said bellows to said support, and a spring for automatically returning said means.

5. In an automatic player piano, a magazine having rotatable disks, a rock-shaft supporting the same, to the axis of which the axis of said magazine is eccentric, a horizontal stationary tracker-board to which the rock-shaft is parallel, an overhead collapsible bellows, a support, an arm projecting from said support, and devices including links and levers connected to the leaves of said bellows for moving said arm and support.

6. In an automatic player piano, a magazine having rotatable disks, a rock-shaft supporting the same to the axis of which the axis of said magazine is eccentric, a horizontal stationary tracker-board to which the rock-shaft is parallel, an overhead collapsible bellows, a support, an arm projecting from said support, devices including links and levers connected to the leaves of said bellows for moving said arm and support, and a contraction spring engaging said arm and adapted to restore the same and said magazine to their original positions away from said tracker-board.

In witness whereof I have hereunto set my hand this 12th day of July, 1913.

KARL O. CARLSON.

Witnesses:

J. A. BONNELL,  
E. B. SHERMAN.