E. B. SHERMAN.

AUTOMATIC PLAYER PIANO.

APPLICATION FILED JULY 18, 1913.

1,152,852. Patented Sept. 7, 1915.

Fig. 1.

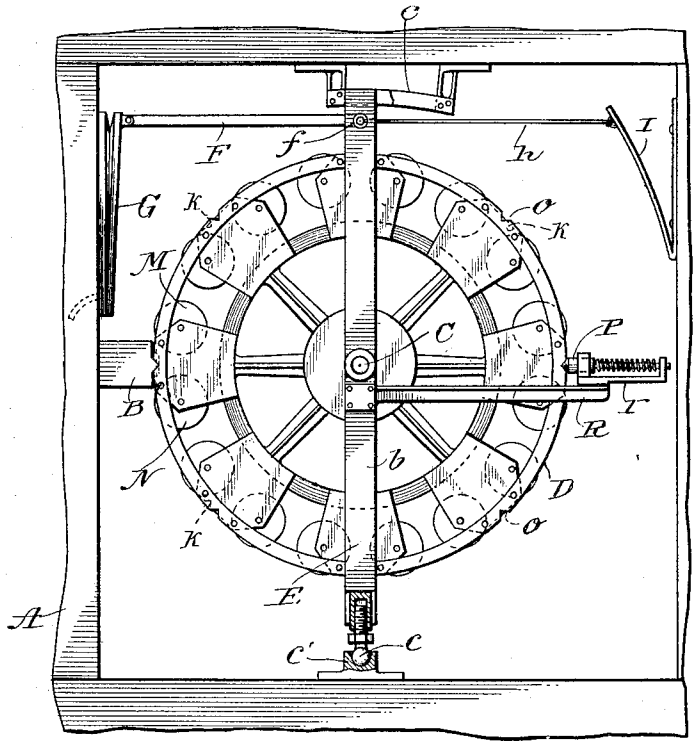
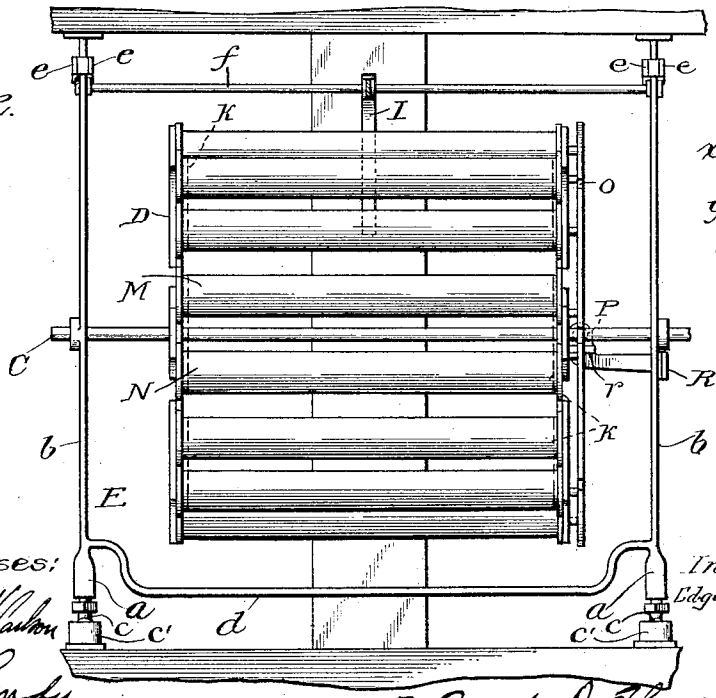


Fig. 2.



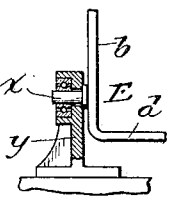


Fig. 3.

Witnesses:

Arthur W. Cashon

E. E. Lundy.

Inventor:

Edgar B. Sherman,

By Frank D. Thomason.

Atty

UNITED STATES PATENT OFFICE.

EDGAR B. SHERMAN, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO NATIONAL PIANO MANUFACTURING COMPANY, OF GRAND RAPIDS, MICHIGAN, A CORPORATION OF ILLINOIS.

AUTOMATIC PLAYER-PIANO.

1,152,852. Specification of Letters Patent. Patented Sept. 7, 1915.

Application filed July 18, 1913. Serial No. 779,749.

To all whom it may concern:

Be it known that I, EDGAR B. SHERMAN, 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 Player-Pianos, of which the following is a full, clear, and exact description.

My invention relates to means for bringing the perforated-music rolls or sheets carried by the revolving drum or magazine of an automatic player piano into and out of operative contact with the tracker-board thereof. Heretofore these drums or magazines have had to be lifted to enable them to bring the music rolls or sheets into engagement with the tracker-board, and the weight thereof and of the music rolls or sheets carried thereby required the employment of powerful pneumatic contrivances, and the use of comparatively heavy and complicated mechanism and materials, and, consequently, the construction of the piano cost more than it otherwise would have cost.

It is the object of my invention to avoid the necessity for lifting such weight; to simplify the mechanism required to accomplish the movement of the magazine and music rolls or sheets toward and from the tracker-board; to reduce the weight of the said mechanism and simplify the construction of the support therefor very appreciably, and to cut down the cost of the same. This I accomplish by the means hereinafter fully described, and as more particularly pointed out in the claims.

In the drawings: Figure 1 is a side view of my improvements inside of the supporting frame and casing of a player piano portions of which are broken away. Fig. 2 is a front elevation thereof.

Referring to the drawings, A represents the supporting frame-work of a player piano that surrounds the area within which the revolving drum or magazine is located. This frame-work has upright members in front of the drum or magazine to which a horizontal tracker-board is secured in a position parallel to the shaft C of said drum D.

Shaft C is journaled in bearings made in the upright members of a tilting frame E about their centers of height. The lower ends *a* of these upright members *b* are made tubular and interiorly screw-threaded from their lower ends, and the screw-threaded shanks of casters or feet *c* enter the lower ends of each of said upright members, and are screwed into or out of the same in order to raise or lower said uprights and to horizontally aline the drum and its shaft with the tracker-board. The lower ends of these casters are, preferably, made with a suitable ball-shaped or spherical foot, which is seated and journaled in the open bearings *c'* secured to the base or floor of the piano. The lower ends of said upright members, *b*, near their lower ends, are suitably connected by a cross-member *d* that extends in a horizontal plane a suitable distance below the periphery of the drum, and the upper ends of said upright members extend above the periphery of the drum and pass between parallel guide-rails *e*, *e*, which latter describe a segment struck from the center of bearings *c'*, and guide and prevent any lateral motion of said upright members of the tilting frame which carries the drum. At a point just below their upper ends said upright members, *b*, are connected by a suitable cross-bar *f*, and the center of this cross-bar is pivotally connected to the rear end of a link F, whose forward end is pivotally connected to a lug projecting rearwardly from the movable plate or leaf of a bellows G, the forward stationary leaf of which latter is, preferably, secured to the upright portion of the same frame-work in front of the drum to which the tracker-board is secured. The cross-bar *f* is also connected by a suitable link or cable *h* to the forward resilient member of a V-shaped spring I, the upright branch or plate of which is screwed or otherwise attached to the vertical part of the piano frame-work located in the rear of the drum or magazine.

By exhausting the air from bellows G, the tilting frame is moved into a vertical position and carries the web *k* of a perforated-music roll or sheet into engagement with the tracker-board. When the air reënters bellows G, the pull of the spring, I, will be sufficient to move the tilting frame, and the drum or magazine carried thereby, a sufficient distance to the rear to disengage said web from the tracker-board.

The perforated-music rolls or sheets are

each mounted upon the supply roller M, and the latter is journaled in a suitable carrier secured to and projecting from the rim of the tilting supporting-frames of the drum, and said rolls or sheets are wound upon a take-up roller, N, also journaled in bearings in said carrier at the same distance from the center of the drum as the journals of the supply-roller. These rollers are arranged in pairs, and the drum is provided with a series of these rollers adjacent its periphery that are located at equal distances apart.

My improvements are particularly adapted to be used in connection with a player piano of the kind described in the application for Letters Patent of the United States of John P. Ioor, filed August 7, 1912, Serial No. 713,716, for automatic piano players, in which the drum or magazine carrying the music-rolls is automatically revolved to bring a roll of perforated-music, into such position that when the said drum or magazine is bodily moved transversely to its axis, said perforated-music roll or sheet will engage the tracker-board. In order to retain the drum stationary, in the position in which this engagement of perforated-music roll or sheet and tracker-board can take place all during the time the web of said roll or sheet is moving past the tracker-board, I provide the outer edges of the said carriers with equi-distant depressions or notches *o*, that correspond in number to the perforated-music rolls or sheets employed, and are engaged by a spring-bolt P, that is carried by a guide-frame *r* secured on the end of a bracket R, the opposite end of which latter is fastened in any suitable manner to one of the upright members *b* of the tilting frame. The pressure of this bolt in the depression or notch with which it may be engaged, is not so great but that the drum may be revolved by mechanism employed for that purpose, while at the same time will be sufficient to brake and hold the drum stationary when it is not being so revolved.

I have not described the means for rotating the drum nor for actuating the receiving-roller of the perforated-music rolls, as said means are, preferably, the same as that described in connection with the automatic player piano described and illustrated in the aforesaid Ioor application. While I prefer the coöperation of said Ioor mechanism, however, it is obvious that my improvements may be used in connection with any suitable means for rotating the drum to bring the selected perforated-music roll in operative position opposite the tracker-board, and when said perforated-music is in contact with said tracker-board, to automatically revolve the receiving roller. Moreover, it is apparent that the construction and dimensions of the parts of my improvements may be changed without departing from the principle of construction of the same. All such changes and modifications, I desire to be considered as coming within the scope of my invention.

What I claim as new is:

1. In a player piano, a horizontal tracker-board, a revoluble drum, the axis of which is parallel to the said tracker-board, a series of music rolls mounted in annular arrangement on said drum, a tiltable frame in which said drum is journaled, the axis around which said frame tilts being parallel to the tracker-board, a suitable support for said frame, a collapsible bellows, and means connecting said bellows to move said tiltable frame.

2. In a player piano, a horizontal tracker-board, a revoluble drum the axis of which is parallel to the said tracker-board, a series of music rolls mounted in annular arrangement on said drum, a tiltable frame in the upright members of which said drum is journaled, the axis around which said frame tilts being parallel to the tracker-board, a suitable support for said frame, a collapsible bellows, and means connecting said bellows to move said tiltable frame.

3. In a player piano, a horizontal tracker-board, a revoluble drum the axis of which is parallel to said tracker-board, a series of perforated music rolls mounted in annular arrangement in said revoluble drum, a tiltable frame in which the drum is journaled, the axis around which said frame tilts being parallel to the tracker-board, a suitable support to which the ends of said frame are pivoted a collapsible bellows connected to the tiltable frame and adapted to move said frame toward said tracker-board, and means for automatically returning said frame.

4. In a player piano, a horizontal tracker-board, a revoluble drum the axis of which is parallel to said tracker-board, a series of perforated music rolls mounted in annular arrangement in said revoluble drum, a tiltable frame in which the drum is journaled, the axis around which said frame tilts being parallel to the tracker-board, a suitable support for said frame a collapsible bellows connecting to the tiltable frame and adapted to move said frame toward said tracker-board, and a spring for automatically returning said frame.

5. In a player piano, a horizontal tracker-board, a revoluble drum the axis of which is parallel to said tracker-board, a series of music rolls mounted in annular arrangement on said drum, a tiltable frame in which said drum is journaled, the axis around which said frame tilts being parallel to the tracker-board, a suitable support to which said frame is pivoted, adjustable feet carried by said frame, bearings in which said feet engage, a collapsible bellows, and means connecting said bellows to said tiltable frame.

6. In a player piano, a horizontal tracker-board, a revoluble drum the axis of which is

parallel to said tracker-board, a series of music rolls mounted in annular arrangement on said drum, a tiltable frame in which said drum is journaled, the axis around which said frame tilts being parallel to the tracker-board, a suitable support to which said frame is pivoted, adjustable feet carried by said frame, bearings in which said feet engage, a superposed guide frame engaged by the tiltable frame, a collapsible bellows, and means connecting said bellows to move said tiltable frame.

7. In a player piano, a horizontal tracker-board, a revoluble drum having means for carrying a plurality of music sheets, the axis of said drum being parallel to said tracker-board, a tiltable frame in which said drum is journaled, the axis around which said frame tilts being parallel to the tracker-board, a suitable support for said frame, and means for tilting said frame.

In witness whereof I have hereunto set my hand this 11 day of July 1913.

EDGAR B. SHERMAN.

Witnesses:
W. Ioor,
J. A. Bonnell.