No. 862,705. PATENTED AUG. 6, 1907.

T. P. BROWN.

AUTOMATIC PLAYING ATTACHMENT FOR MUSICAL INSTRUMENTS.

APPLICATION FILED DEC. 31, 1904.

Fig. 2.

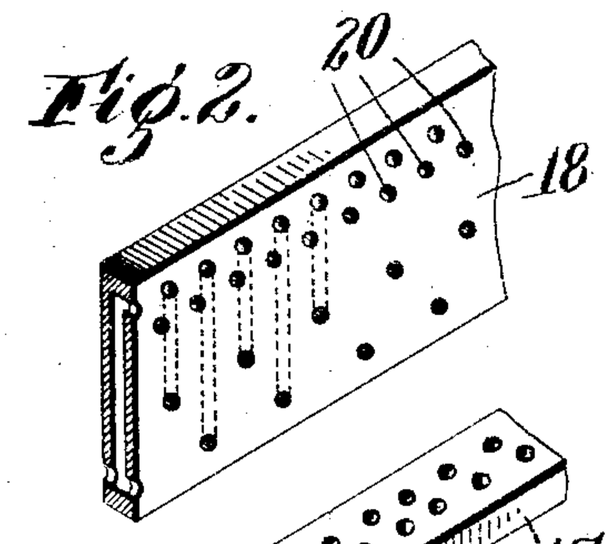
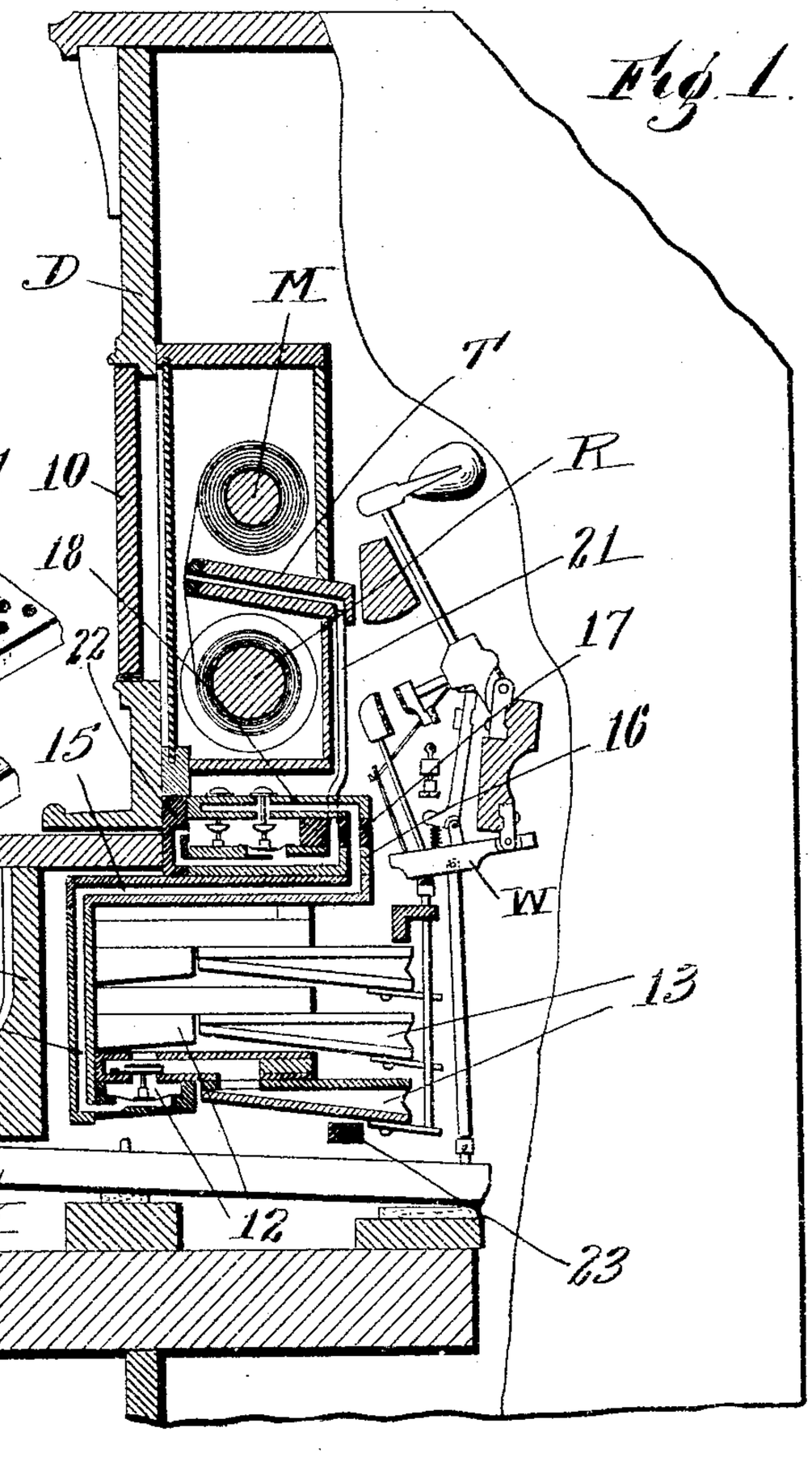


Fig. 1.



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UNITED STATES PATENT OFFICE.

THEODORE P. BROWN, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO SIMPLEX PIANO PLAYER COMPANY, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

AUTOMATIC PLAYING ATTACHMENT FOR MUSICAL INSTRUMENTS.

No. 862,705. Specification of Letters Patent. Patented Aug. 6, 1907.

Application filed December 31, 1904. Serial No. 239,081.

To all whom it may concern:

Be it known that I, THEODORE P. BROWN, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Automatic Playing Attachment for Musical Instruments, of which the following is a specification.

This invention relates to that class of automatic playing attachments for musical instruments which are controlled by rolls or strips of perforated paper.

The especial objects of this invention are to provide a simple, compact and efficient pneumatic action which is adapted to be housed within a casing of a piano in such way that the same is readily accessible for repairs or renewals; to arrange the air channels of a pneumatic action so that the tracker-board passages are interspaced among the operating passages, whereby access may be had to the interior of the wind trunk of the primary valves by removal of a front board.

To these ends this invention consists of the automatic playing attachment for a musical instrument and of combinations of parts therein as hereinafter described and more particularly pointed out in the claims at the end of this specification.

In the accompanying one sheet of drawings, Figure 1 is a side view partly in section of sufficient parts of a piano to illustrate the application of this invention thereto, and Fig. 2 is a fragmentary perspective view showing the two bottom channel boards, the rear channel-board, the top channel board, and the removable front piece which form the wind trunk of the primary valves.

In that class of automatic pianos to which this invention relates the pneumatic action and the music sheet winding devices have been arranged inside the piano casing in a variety of locations.

In an automatic piano constructed according to this invention I preferably locate the pneumatic action and the winding connections in the space immediately above the piano keys. To accomplish this result, I have provided a pneumatic action which is very compact, and in order to facilitate the adjustment, repair and cleaning of the pneumatic action I have arranged the wind channels in such relation to each other that the board which forms the front of the primary valve wind trunk may be taken off allowing access for the inspection of the primary valves, and also permitting the bleeding passages or leak-openings to be cleaned out when repaired.

Referring to the accompanying drawings and in detail, the casing of a piano embodying this invention comprises the key-board ledge L, the fall-board F, the name board S, and the music desk D. These parts may be of any of the ordinary or approved constructions, except that the music desk D is preferably provided with an opening having a door 10 which may be opened to permit access to the music winding devices, and the parts F, S and D are preferably made removable the same as in many of the ordinary piano cases.

Located above the key-board ledge are the ordinary keys K, each one of which is connected to operate a whippen W of the piano action in the ordinary manner.

The pneumatic action constructed according to my invention, as herein illustrated, comprises a channel-board 11, and carried at the rear of the channel-board 11 are casings for the operating valves 12 and the bank of upwardly striking main pneumatics 13. Each of the main pneumatics is connected by an upright rod to a whippen W of the piano action at a point giving the pneumatic a slightly greater leverage than the piano key.

Located above the bank of main pneumatics 13 is a channel-board 15 containing the operating channels leading to the operating valves, and above the channel board 15 is a board 16 which contains the primary pneumatics. Also extending through the board 16 are operating channels connecting with the channels of the board 15.

The rear and top of the primary valve wind trunk are formed by channel-boards 17 and 18 respectively. The channel board 17 is provided with channels for receiving the ends of the tracker-board pipes 21, and with operating channels, while the top board 18 is provided with the operating channels which are controlled by the primary valves and also with channels 20 which are interspaced with the operating channels and receive the tracker-board pipes 21.

In pneumatic actions as heretofore constructed, the tracker-board pipes are arranged at one side of the primary valve wind trunk, while the operating channels open from the other side of the primary valve wind trunk. By interspacing the channels which connect with the tracker-board pipes among the operating channels, I have been enabled to provide a form of pneumatic action which is more readily repairable than the pneumatic actions heretofore constructed. This is due to the fact that the front side of the primary valve wind trunk is closed by a channel-board 22 which carries the perforated disks forming the bleeding passages for exhausting the air from the channels which connect with the tracker-board pipes.

In the operation of an automatic playing attachment for a musical instrument of the class to which this in-

vention relates one cause which may prevent some of the notes from sounding is often due to the choking of the bleeding openings by small particles of dust or foreign matter.

In an instrument constructed according to my invention by taking off the front board 22 of the primary valve wind trunk the bleeding openings can be readily brushed off and cleaned, and this will also open up the primary valve wind trunk permitting ready access and inspection of the primary valves. The tracker-board pipes 21 are connected at their upper ends to the ordinary tracker-board T which is located in a box or casing, Coöperating with the tracker-board T is the ordinary music roll M, and winding roll R.

I am aware that many changes may be made in the construction of instruments embodying this invention by those who are skilled in the art without departing from the scope of this invention as expressed in the claims, and I am also aware that certain features of this invention may be used in instruments of different types from the automatic piano which I have herein shown and described. I do not wish, therefore, to be limited to the special construction herein shown, but

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

1. In an automatic piano, the combination with a piano casing comprising a name board, of the keys therefor, a bank of main pneumatics located immediately behind the name board and above the keys, and a wind-trunk located immediately above the bank of main pneumatics and behind the top of said name board, said wind trunk being formed of a plurality of boards placed one above the other and having channels, and a front board extending across all the other boards and having bleeding channels therein, said front board being removable from the remainder of the wind-trunk to provide access to the primary valves and permit cleaning of the bleeder channels.

2. In an automatic playing attachment for musical instrument, the combination with a tracker-board, pipes therefor, and operating channels of channel-boards forming the primary valve wind trunk, the boards forming the top and rear of said wind trunk having channels connected with the tracker-board pipes interspaced with the operating channels, and the board forming the front of said wind trunk carrying perforated disks whose perforations form the bleeding passages and which front board is removable to permit the cleaning of the bleeder passages, and to provide access to the primary valves.

3. In an automatic piano, the combination of a piano casing, keys and a pneumatic action located above the keys of the piano, and comprising a tracker-board having operating channels, pipes therefor a bank of main pneumatics, and a primary valve wind trunk arranged above the bank of main pneumatics, channel-boards forming the bottom and rear of the primary valve wind trunk having channels connected with the tracker-board pipes interspaced with operating channels, while the front board of the primary valve wind trunk is provided with bleeding channels and removable to permit cleaning of the bleeder opening and to provide access to the primary valves.

4. In a music playing device, the combination with a bank of main operating pneumatics, and a tracker-bar having channels of a main wind-trunk located adjacent thereto and consisting of a plurality of parallel boards, and a front board extending across the ends of the other boards, said parallel boards having operating channels and channels for connection with the tracker-bar, and said front board having bleeding channels connected with the tracker-bar channels and being removable from the other boards.

5. A wind-trunk for a music playing device having a tracker-bar provided with channels, comprising a bottom board having a series of operating channels, a middle board having a series of operating channels, a suction chamber, primary pneumatics in the suction chamber and channels connected with the tracker-bar, said channels connected with the tracker-bar being alternately interspaced with the operating channels of the middle board and the operating channels being located near the edge of said middle board, a top board having channels for connection with the tracker-bar and communicating with the channels which are connected with the tracker-bar and also having operating channels connected with the operating channels of the middle board and with the primary pneumatics, and a front board for closing the channels and suction chamber in the other boards, said front board being removable whereby access may be had to the primary pneumatics.

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

THEODORE P. BROWN.

Witnesses:
LOUIS W. SOUTHGATE,
PHILIP W. SOUTHGATE.