C. H. DAVIS.

MUSICAL INSTRUMENT ATTACHMENT.

APPLICATION FILED MAR. 12, 1908.

946,340. Patented Jan. 11, 1910.

Fig. 1.

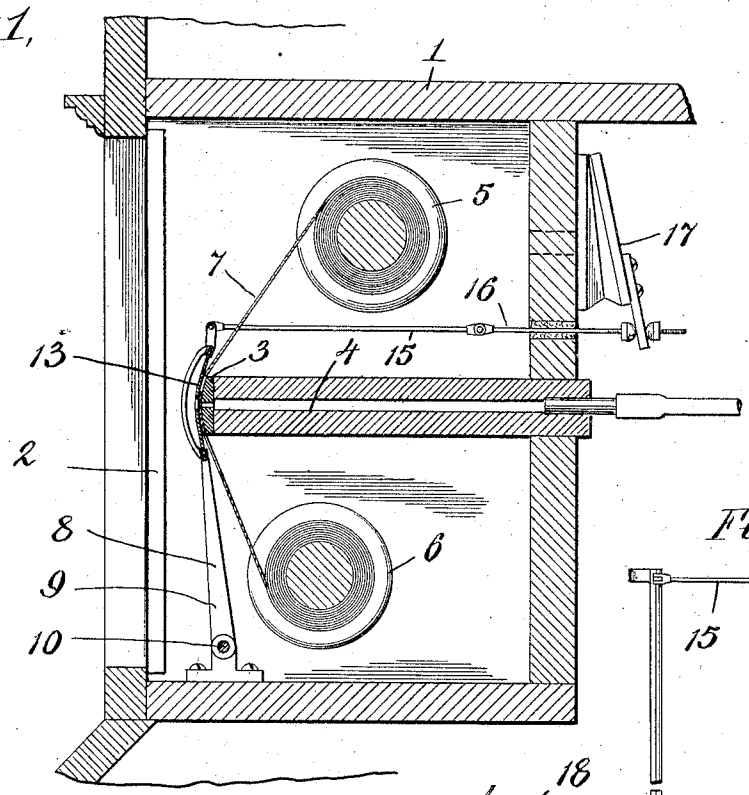


Fig. 4.

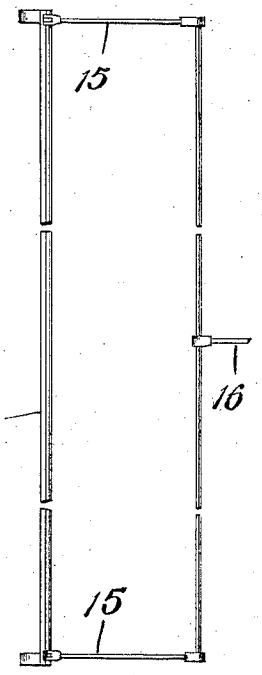


Fig. 5.

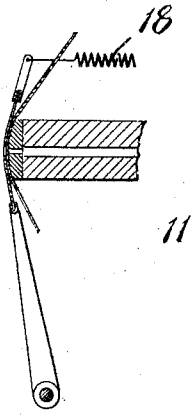


Fig. 2.

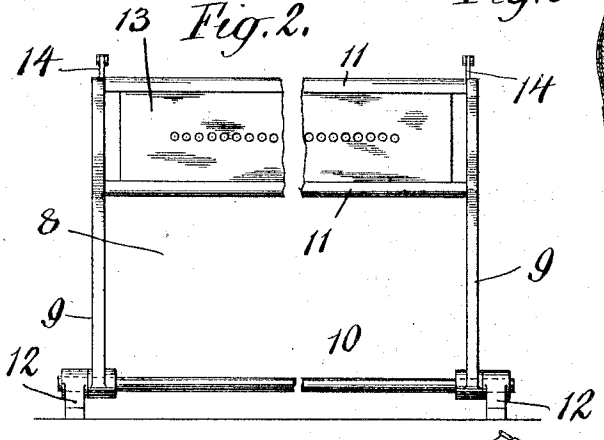
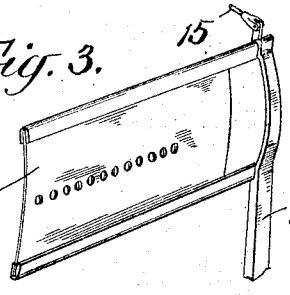


Fig. 3.



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MUSICAL-INSTRUMENT ATTACHMENT.

946,340. Specification of Letters Patent. Patented Jan. 11, 1910.

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To all whom it may concern:

Be it known that I, CHARLES H. DAVIS, a citizen of the United States of America, and resident of the city, county, and State of New York, have invented certain new and useful Improvements in Musical-Instrument Attachments, of which the following is a specification.

My invention relates to tracker boards for self-playing instruments where a music roll, made generally of a perforated sheet of paper or other flexible material, is caused to pass over the tracker board and by opening and closing ducts or ports in the tracker board controls the operation of key movements or valves.

The object of my invention is to provide a device which shall render the operation of a perforated music sheet over a tracker board more perfect and certain and one which is especially adapted to prevent leakage through the ducts in the tracker board due to irregularities in the music sheet or roll, or from any other cause.

My invention consists in providing a screen or pressure plate adapted to press the moving music sheet against the face of the tracker board and to hold the same in true position and to flatten out any irregularities such as wrinkles or imperfections in the surface of the music sheet.

My invention consists further in the form and character of said pressure plate, in the means for holding it in position and in the means for causing it to exert the required pressure upon the music sheet.

In the drawings accompanying and forming a part of this specification, Figure 1 is a cross sectional view of the music rolls and chest in which they are contained, of a self-playing instrument showing one of the embodiments of my invention. Fig. 2 is a front view of the pressure plate and frame for holding the same, Fig. 3 is a perspective view of the pressure plate, Fig. 4 is a plan view showing the connections between the pneumatic and the pressure plate frame, and Fig. 5 is a partial section corresponding to Fig. 1 showing a modification.

The reference characters are used in the same sense throughout the drawing and specification.

Numeral 1 represents a chest or chamber in which the music rolls and tracker board are contained. The chamber is provided with a glass front 2 which permits the music roll or music sheet to be seen while in operation. The tracker board 3 made in the usual manner with ducts 4 leading to pneumatics which operate keys, valves or electric contacts, is located in the chamber and there is a difference in pressure between that of the air in the chamber and the air in the ducts 4 except at such times as communication is established between the ducts and the chamber by means of the perforations in the music sheet, as is well understood. This difference in pressure may result from maintaining a pressure in the chamber above that of the atmosphere or by maintaining a partial vacuum in the ducts, as is also well understood.

Numeral 5 represents a roll of music which consists of a perforated sheet of paper or other flexible material having perforations in it.

Numeral 6 represents a roll attached in any convenient manner to a suitable motor upon which the perforated sheet is wound up while the instrument is in operation.

Numeral 7 represents the perforated sheet.

A suitable frame 8, consisting of side bars 9, pivotal rod 10 and the cross bars 11, is mounted in the brackets 12, the said brackets being secured to the base of the chamber 1. The side bars 11 are grooved on their inner edges and receive the pressure plate 13 which is perforated with holes which register with the ducts or openings 3 in the tracker board. This pressure plate is preferably made of transparent material, such as celluloid or glass, in order not to obscure the markings on the music sheet. At the upper extremities of the side bars 9 are extensions 14 to which are connected the rods 15, which in turn are connected by means of rods 16 with a pneumatic 17. When the instrument is operated by having the pressure in chamber 1 above the normal or atmospheric pressure, the pneumatic 17 communicates with said chamber. In this way, it will be readily seen, whenever the instrument is in operation or playing a piece, the pressure upon the pneumatic will cause the pressure plate to exert a certain pressure upon the music sheet and whenever there is no pressure in the chamber 1 the pressure plate will exert no pressure upon the music sheet. It is customary in instruments of this kind to have the pressure shut off from the chamber 1 when the instrument is not being played and at such times as the sheet is being re-wound

on the roll 5. It is therefore seen that the pressure of the pressure plate 13 in such instruments, by means of my invention, will be automatically released and consequently will not retard the movement of the sheet while it is being re-wound. In instruments where the movement of the keys is controlled by maintaining a partial vacuum in the ducts 4, the pneumatic 17 may be properly connected with the vacuum during the playing of the piece with the same effect as in the particular arrangement shown. The pressure plate may be connected with a spring as shown at 18, in the modified form shown in Fig. 5.

Considerable difficulty has heretofore been experienced in the operation of self-playing instruments of this class by the failure of the music sheet to lie flat upon the tracker board. By means of my invention this difficulty is largely if not wholly overcome in a convenient and efficient manner and the normal operation of the perforated music sheet and the mechanism which controls it is not modified or in any way interfered with.

One of the advantages of my invention is that it can be readily applied to instruments in use.

The screen 13 may be made of a fabric such as silk or cotton, attached to the cross bars 11 in such a manner as to keep it taut and when made of such material it may be perforated, or a fabric of the character of bolting cloth or one which is porous and will readily permit air to pass through it may be used without perforations.

Having thus described my invention, what I claim is:

1. The combination with a tracker board having air ducts therein, of a transparent pressure plate adapted to bear upon said tracker board having perforations therein adapted to register with said air ducts.

2. The combination with a tracker board having air ducts therein of a pivoted frame, a transparent perforated plate carried by said frame and means for causing said plate to press against said tracker board.

3. The combination with a tracker board having air ducts therein of a pivoted frame, a transparent perforated screen carried by said frame, means for causing said screen to press against said tracker board and means for regulating the pressure of said screen against said tracker board.

4. The combination with a tracker board having air ducts therein, of a pivoted frame, a transparent screen carried by said frame adapted to press against the surface of the tracker board and having holes adapted to register with said ducts.

5. The combination with a closed chamber, of a tracker board in said chamber having ducts therein leading to a point outside of said chamber, a pressure device adapted to engage said tracker board and a pneumatic in communication with said chamber and connected with said pressure device.

6. The combination with a tracker board of a pressure device adapted to bear against said tracker board, a pneumatic having a movable member actuated by air pressure, and a connection between said movable member and said pressure device.

7. The combination with a tracker-board of a pressure device adapted to bear against said tracker-board and having perforations therein registering with the openings in said tracker-board and a pneumatic connected with said pressure device.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES H. DAVIS.

Witnesses:

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RUDOLF EICKEMEYER.