G. P. BRAND.

TRACKER BAR.

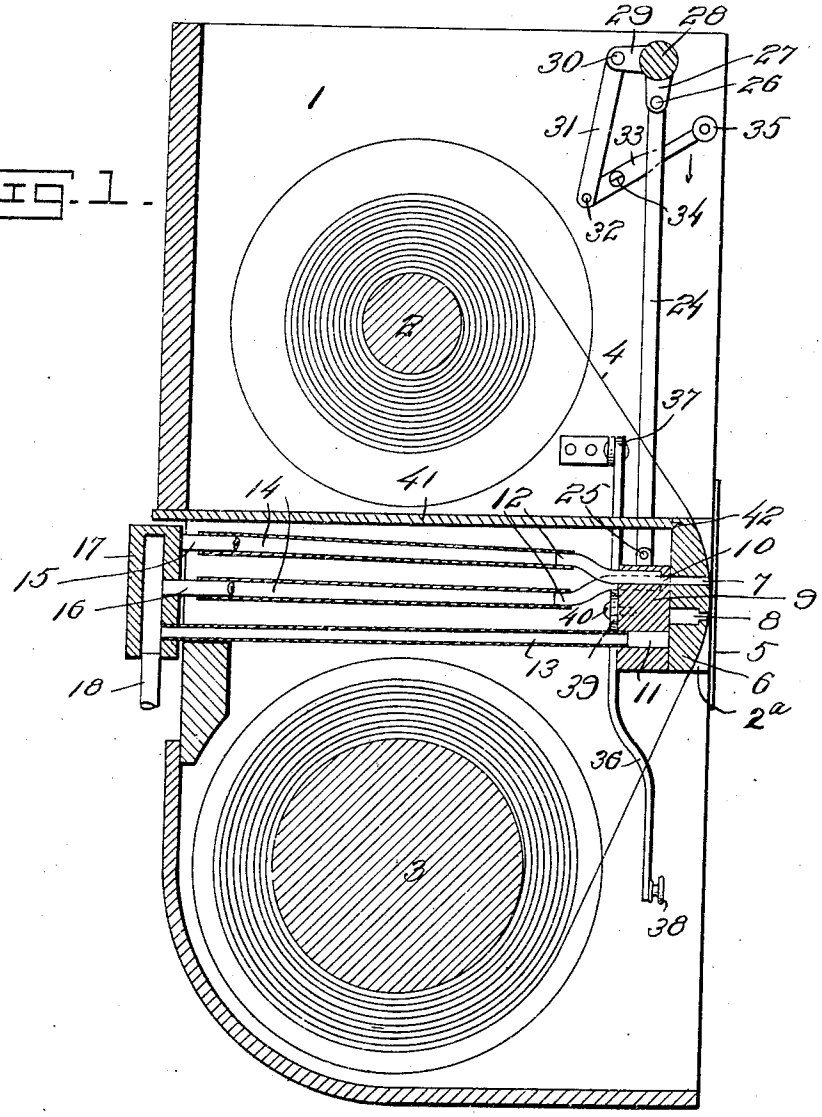
APPLICATION FILED APR. 24, 1908.

909,532.

Patented Jan. 12, 1909.

2 SHEETS—SHEET 1.

Fig. 1.



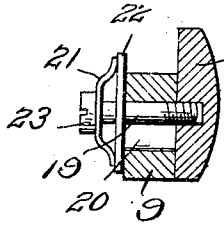


Fig. 2.

Witnesses

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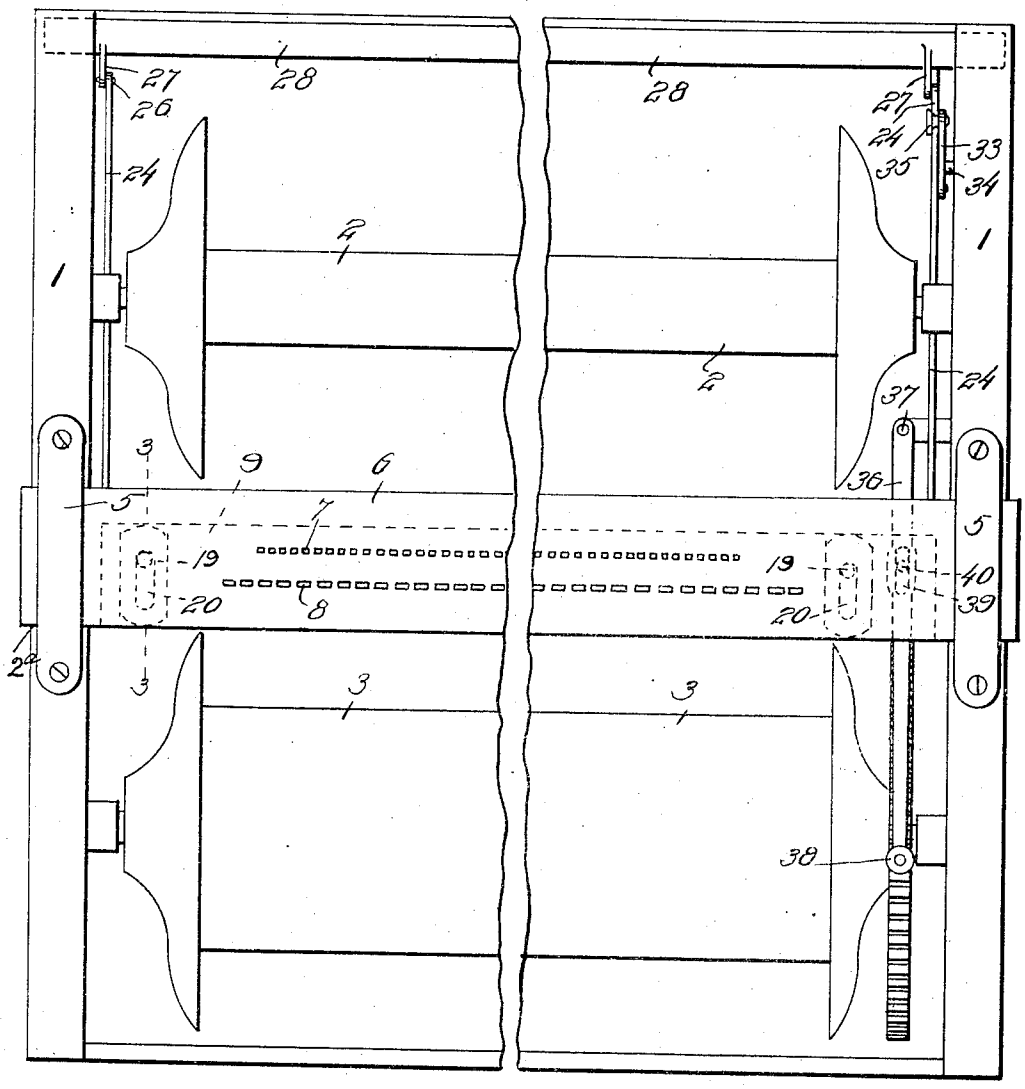

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UNITED STATES PATENT OFFICE.

GEORGE P. BRAND, OF NEW YORK, N. Y.

TRACKER-BAR.

No. 909,532. Specification of Letters Patent. Patented Jan. 12, 1909.

Application filed April 24, 1908. Serial No. 429,072.

To all whom it may concern:

Be it known that I, GEORGE P. BRAND, a citizen of the United States of America, and resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Tracker-Bars, of which the following is a specification.

This invention relates to tracker bars for self-playing musical instruments of that class having a plurality of openings, the openings of one row being formed on a scale of a definite number to the inch and those of the other row of a greater number formed on a scale of a greater number to the inch, thus adapting the tracker bar for use with music sheets having note perforations arranged on different scales.

The present invention has for its objects among others to provide a simple and cheap yet efficient tracker bar adapted by a simple shifting of a portion thereof to serve with perforated music sheets adapted to actuate sixty-five or eighty-eight actions, or any other number.

It has for a further object to provide a tracker bar of this general character which shall occupy minimum space, and in which the two portions thereof may be moved as a whole in the direction of their length to shift or adjust the same to fit the music, that is, to bring the perforations thereof in line with the openings in the tracker bar.

A further object of the invention is to construct and arrange the members of the tracker bar so that the contacting faces thereof shall be flat or plane, and its movable contact disposed upon the face opposite that over which the music sheet passes whereby frictional engagement between the members is decreased and liability of distortion of the acting face is avoided. The general appearance of the tracker bar is the same as that of an ordinary tracker bar having two rows of perforations. I avoid all curved contact surfaces between the main part and the part which serves to alternately open or close one or the other of the rows of perforations.

Means are provided for keeping the two members of the tracker bar in close contact at all times, and I utilize this means for stops to limit the motion of the movable member in either direction and at the same time to hold it in position endwise relatively to the other member. The openings in the movable member of the tracker are connected by suitable means with a connector or coupling which is movable with said movable member and is adapted to be connected with the first series of valves of the pneumatic action.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be particularly pointed out in the appended claims.

The invention, in its preferred form, is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—.

Figure 1 is a vertical section taken transversely of the axes of the music rolls and of the length of the tracker bar. Fig. 2 is a front elevation with a portion broken away. Fig. 3 is a transverse section on the line 3—3 of Fig. 2. The several figures of the drawings are made actual size.

Like numerals of reference indicate like parts throughout the several views.

Referring to the drawings 1, 1 designate the cheek pieces or plates, 2 the music spool and 3 the take-up roll or spool and 4 the perforated music or note sheet of known construction, all of any well known or approved construction and adapted for use in the ordinary way and herein shown in a conventional way, it being understood that the box or casing inclosing the rolls and music and the tracker bar is open at the front and upper end.

The outer portion of the tracker bar is retained against outward movement by means of the plates or bars 5 secured to the cheek pieces or plates, as seen best in Fig. 2, and, as will be clearly understood from Fig. 1, it is set in recesses 2^a in the faces of the cheek pieces or plates and thus held against movement transversely of its length, and by such recesses is guided in its endwise movement when shifted to adapt it to the width of the music sheet to bring the rows of perforations therein in line with the perforations of the music sheet. This outer portion 6 of the tracker bar is provided with two rows of perforations one row indicated by reference numeral 7 being formed on a scale of a definite number to the inch, say nine, making eighty-eight perforations in the row, while the other row indicated by the numeral 8 has its openings formed on a scale of a lesser number to the inch, say six, making sixty-five to the row. It is evident, however, that the numbers of

perforations in these rows may be varied according to the requirements, those above specified being given merely as an example. Over the outer face of this member 6 the note sheet travels in the usual way.

9 designates the outer member of the tracker bar, in the present instance being the movable member. It is arranged back of the member 6 and the two contacting faces are made straight and plane and faced to make a perfect air-tight joint. This movable member is provided with two rows of perforations similar in every respect to those of the member 6, at the contacting face, 10 designating the perforations formed for the greater number of notes and 11 the perforations formed for the lesser number of notes, it being understood that in the movable member the perforations 10 are staggered as seen by dotted lines in Fig. 1 for a well known purpose, that is, because the perforations are so close together. 12 are the tubes communicating with the perforations 10 and 13 are the tubes communicating with the perforations 11. The tubes 12 are connected by suitable means, as the rubber or flexible tubes 14 with the nipples or the like 15 and 16 leading to the interior of the connector or coupling 17, it being understood that the nipple 15 connects with one channel and the nipple 16 with the adjacent channel. The connector 17 is provided with a nipple 18 for the attachment of a rubber tube or the like for connection with the primary pneumatic of the pneumatic action, not shown but which will be understood is of the ordinary or approved form of construction.

The movable member 9 of the tracker bar is connected to the member 6 so as to move therewith in the longitudinal movements thereof by means of a screw or the like 19, there being one near each end of the tracker, as seen in dotted lines in Fig. 2. In order to allow the movement of the member 9 relatively to the member 6, and transversely thereof, said member 9 is provided near each end with a slot 20 through which the screws 19 pass, and in order to keep the adjacent faces of the members 6 and 9 in close contact I provide upon each screw 19 a spring plate 21, the ends of which bear against a washer or the like 22 which in turn bears against the adjacent face of the member 9, the head 23 of the screw bearing against the said spring plate, as seen clearly in Fig. 3, by adjustment of this screw the tension of the spring plate can be easily adjusted. The length of the slot 20 is proportioned to the distance the movable member 9 is moved to bring its rows of perforations 10 or 11 coincident with the perforations 7 or 8 of the member 6. The opposite side walls of the said slot limit the movement of the member in one direction or the other, and the frictional engagement of the parts aided by the spring plate 21 is sufficient to keep the movable member in either of its adjusted positions without extraneous means.

The movable member 9 may be shifted in any suitable manner. In Figs. 1 and 2 I have shown what at the present time appears to be a convenient means for accomplishing this end, which will now be described, but it is to be understood that the present invention is in no wise restricted to this or any other form of device or devices for giving the movable member its requisite movements. In the construction shown, 24 is a rod connected at one end, as at 25, with one end of the movable member 9 and at the other end pivotally connected, as at 26, with an arm 27 extending from a rod or shaft 28 which extends the entire width of the box or casing, as seen clearly in Fig. 2, its ends being suitably mounted in apertures in the cheek pieces 1 so that the said rod or shaft is free to rotate. It is to be understood, as will be seen in Fig. 2, that this shaft 28 has an arm 27 near each end and also that there is a rod 24 at each end pivotally connected with said arms. The shaft or rod 28 at one end is provided with an arm 29 rigid therewith and extending therefrom at substantially a right angle to the arm 27. Pivotally connected with this arm 29, as at 30, is a bearing 31, the other end of which is pivotally connected, as at 32, with one end of a lever 33 pivotally mounted, as at 34, to the inner wall of one of the cheek plates and at the other end provided with a knob or handle 35, as seen best in Fig. 1. When it is desired to shift the movable member 9 from the position in which it is seen in Fig. 1 to that in which the perforations 11 will be coincident with the perforations 8 in the member 6, the outer end of the lever 33 is moved downward in the direction of the arrow which forces the arm 31 upward, as seen by the arrow and this rocks the shaft 28 in the direction of the arrow thereon in Fig. 1, thereby moving the member 9 upward, said member being stopped in proper position by engagement of the lower walls of the slots 20 with the screws 19. In the movements of the members 9 the coupling or connector 17 is moved therewith, the movement being slight, and sufficient rigidity or connection between the member 9 and the connector 17 is provided by means of the tubes 13 which are of metal.

In order to move the two members of the tracker bar in the direction of their length so that the perforations therein shall register with those of the music sheet, I provide a lever 36, seen best in Fig. 1, pivoted at one end, as at 37, to the inner wall of the cheek plate 1 and at its other end provided with a knob or handle 38, said lever intermediate

its ends being provided with a slot 39 receiving a screw or the like 40 projecting from the inner face of the movable member 9, as seen clearly in Fig. 1.

41 is a partition within the box to hide the tubes. The front end of this partition is tapered, as seen at 42, and is engaged in a groove in the rear face of the member 6, as seen in Fig. 1.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What is claimed as new is:—

1. In a tracker, a relatively fixed member, a member movable thereupon upon the face opposite that over which the note sheet travels, a connector movable therewith, and tubes joining said connector and movable member, said connector being movably mounted, said tracker, as a whole, being movable in the direction of its length.

2. In a tracker, a relatively fixed member, a member movable thereupon upon the face opposite that over which the note sheet travels, a connector movable therewith, and tubes joining said connector and movable member, said connector being movably mounted, said tracker, as a whole, and said connector being movable transversely of the path of movement of the note sheet.

3. A tracker comprising two members, one relatively fixed and the other movable, with their contacting faces opposite that over which the note sheet moves, each of said members having a plurality of rows of openings formed on different scales, those of the two members being alike, said members being mounted also for movement in the direction of their length.

4. In an automatic musical instrument or player, the combination of a traveling controller, a tracker device having two sets of duct mouths differently spaced, said tracker device being built up of a plurality of elements, one element adapted for connection with the player action, another element over which the controller travels, and a third element movably mounted and situated between the first two elements for connecting either set of ducts with the player action, and connections between said first and third elements.

5. In an automatic musical instrument or player, the combination of a traveling controller, a tracker device having two sets of duct mouths differently spaced, said tracker device being built up of a plurality of elements, one element adapted for connection with the player action, another element over which the controller travels, and a third element movably mounted and situated between the first two elements for connecting either set of ducts with the player action, and flexible connections between said first and third elements.

6. In an automatic musical instrument or player, the combination of a traveling controller, a tracker device having two sets of duct mouths differently spaced and over which the controller travels, tubes from the duct mouths, an element receiving the tubes from the duct mouths and adapted for connecting with the player action, and another element for connecting either set of ducts with the first element, one of said elements being movable with relation to the tracker device.

7. In an automatic musical instrument or player, the combination of a traveling controller, a tracker device having two sets of duct mouths differently spaced, said tracker device being built up of a plurality of elements, one element adapted for connection with the player action, another element over which the controller travels, and a third element movably mounted and situated between the first two elements for connecting either set of ducts with the player action, and connections between said first and third elements, said tracker device as a whole being movable transversely of the length of the note sheet to register the perforations therein with those of the music sheet.

Signed by me at Washington, D. C., this 11th day of April, 1908.

GEORGE P. BRAND.

Witnesses:

ROBERT A. BOSWELL,

E. H. BOND.