

A. L. MUSTEL.
 TRACKER FOR AUTOMATIC MUSICAL INSTRUMENTS OR ORCHESTRIONS.
 APPLICATION FILED DEC. 17, 1908.

971,465.

Patented Sept. 27, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

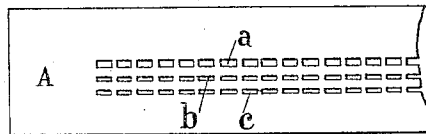


Fig. 2.

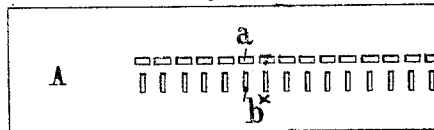
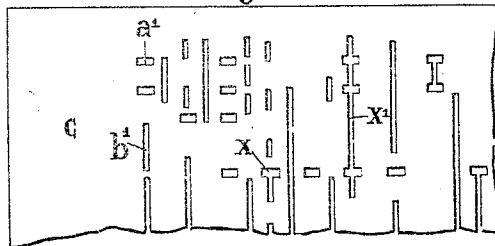


Fig. 3.



WITNESSES

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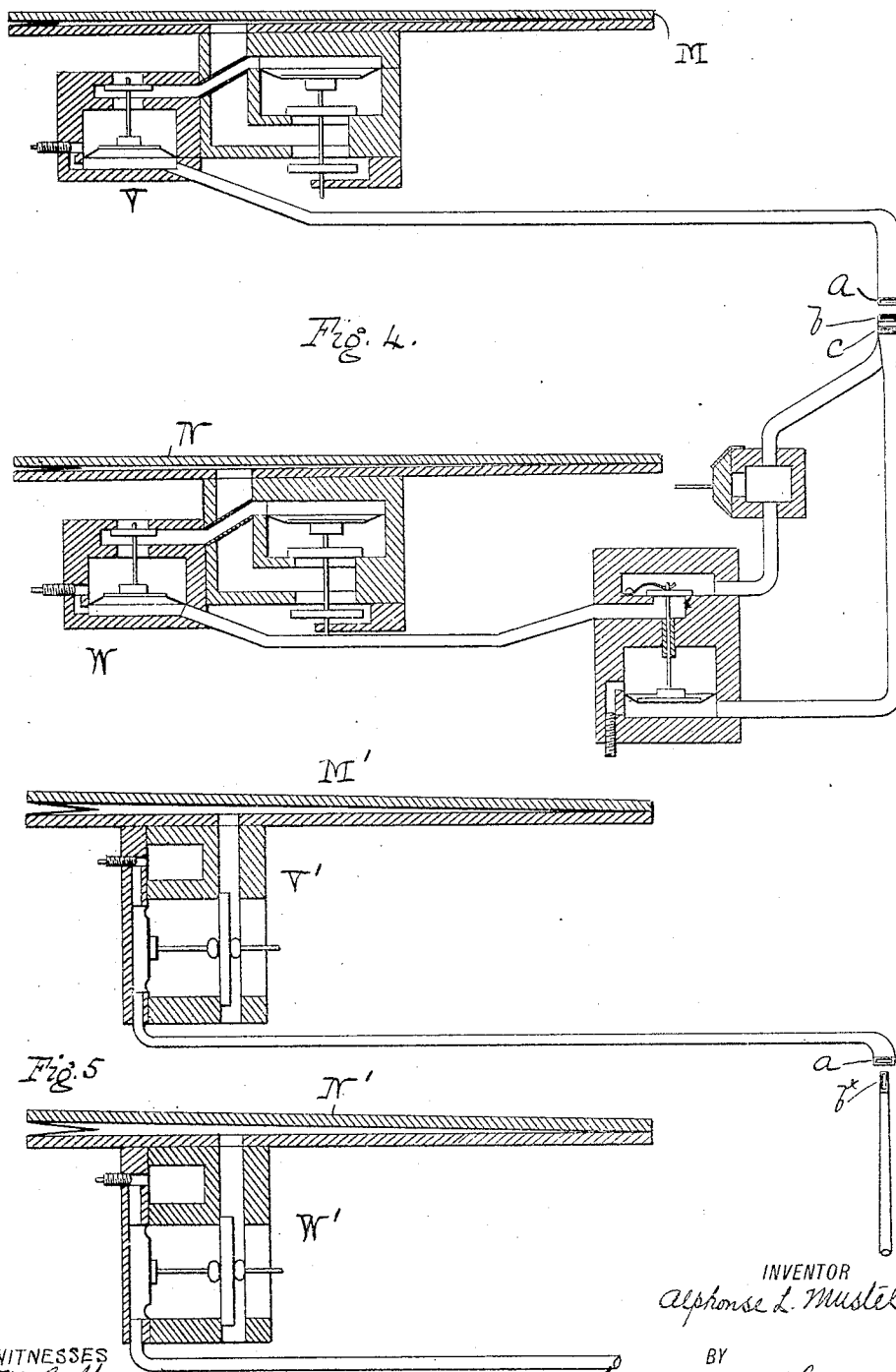
ATTORNEYS

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2 SHEETS—SHEET 2.



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TRACKER FOR AUTOMATIC MUSICAL INSTRUMENTS OR ORCHESTRIONS.

971,465.

Specification of Letters Patent. Patented Sept. 27, 1910.

Original application filed November 4, 1907, Serial No. 400,681. Divided and this application filed December 17, 1908. Serial No. 468,087.

To all whom it may concern:

Be it known that I, ALPHONSE LAURENT MUSTEL, a citizen of the Republic of France, and a resident of Paris, France, have invented certain new and useful Improvements in Automatic Player-Pianos and the Like, of which the following is a full, clear, and exact description.

The present application is a divisional of the application Serial No. 400,681, filed by me on November 4, 1907.

This invention relates to an improved tracker for instruments of the type mentioned, and it is particularly intended for instruments having more than a single key board.

The object of my invention is to provide a suitable tracker for this purpose, which is of the usual width and preserves the customary 4 mm. interval between adjacent tracker holes, while at the same time arranging the holes for the different series of keyboards, one behind the other in the line of travel of the usual perforated band, whereby the necessity for excessive delicacy in the adjustment and positioning of the band is avoided.

It is a further object of my invention to so construct the tracker that it may be employed with bands perforated in the usual way for either of the instruments embodied in my combination instrument, while at the same time being adapted for service with bands perforated so as to operate the combined instruments at the same time.

Two embodiments of the principle of the tracker with superposed holes and the arrangement of the perforations in the band of paper employed with this tracker are illustrated in the accompanying drawing.

In this drawing Figures 1 and 2 are diagrammatic front elevations of two forms of the tracker; and Fig. 3 illustrates diagrammatically an example of the band of perforated paper unwound in front of the tracker. Fig. 4 is a diagrammatic sectional elevation showing the pneumatic, its valve mechanism and the connection to the perforations in the tracker in the form shown in Fig. 1; and Fig. 5 is a similar view of the mechanism as arranged for a tracker in the form shown in Fig. 2.

Referring to the tracker A represented in Fig. 1, which is adapted for use in a xylo-

phone-organ or a piano-organ or the like, that is to say for operating two different instruments simultaneously and alternately, this tracker comprises three lines of holes *a*, *b* and *c* of equal length, the interval between the lines of holes *b* and *c* being such that it is equal to at least the width of the holes *a* transversely of the tracker, the holes *b* and *c* being each of the same transverse width but the latter being not so great as that of the holes *a*. The holes in the three lines are of the same length and are aligned transversely of the tracker. The holes *a* are connected with the mechanism for operating the piano-xylophone and the holes *b* and *c* with the mechanism for operating the organ. Fig. 2 represents a modified construction of this tracker A in which the holes *a* are similar to those in Fig. 1, while the two holes *b* and *c* of Fig. 1 are replaced by a single hole *b* of less length longitudinally but greater length transversely of the tracker.

The band of perforated paper C (Fig. 3) employed with this tracker comprises one set of perforations *a'* which are always of uniform size corresponding substantially with the size of the holes *a* and communicating with the mechanism for striking the piano or xylophone note and another set of perforations *b'* which are elongated transversely of the tracker to various lengths and cooperate with the holes *b* and *c* of Fig. 1 or the holes *b* of Fig. 2 to open the organ pipes. These perforations *a'* and *b'* may succeed each other immediately as at *x* or be superposed as at *x'*. The duration of the organ note depends naturally upon the length of the hole *b'*. To prolong the note of the piano or of the xylophone which is sounded through the perforation *a'*, the usual damper is raised by a device not shown or forming a part of the present invention. As the band of paper passes over the tracker and a perforation *b'* crosses hole *a* it uncovers the latter only partially. The motor M controlled by this hole being so adjusted through its valve mechanism V that it is not operated unless the hole is completely uncovered, the corresponding piano or xylophone note is not sounded. The perforation *b'* continuing its travel covers either the entire hole *b* (Fig. 2) or crosses both of the holes *b*, *c* (Fig. 1) and the organ motor *n*

is actuated to sound the corresponding organ note. When now the perforation a^1 reaches the perforation a , the latter is entirely uncovered and its corresponding motor sounds the piano or xylophone note. As the perforation a^1 passes over the hole b (Fig. 1) it opens the latter, but the valve mechanism w is so regulated that the corresponding organ motor is not actuated unless both holes b and c are opened simultaneously, and before the perforation a^1 has reached the hole c it has left the hole b , as before explained, and consequently the corresponding organ note is not sounded. Similarly in Fig. 2, the width of the perforation a^1 is less than the width of the hole b^* transversely of the tracker. Consequently the organ note corresponding to the latter is not sounded since its motor N^1 is actuated only when the hole b has been completely opened. The valve mechanism V^1 and W^1 for the motors M^1 and N^1 may be made identical for this form of tracker.

It will of course be readily understood that the same notes of the piano and organ may be simultaneously sounded by arranging that a perforation b^1 shall lie over the holes b , c (Fig. 1) or b^* (Fig. 2) at the same time that a perforation a^1 lies over the hole a . And it is furthermore obvious that a band of perforated paper provided with perforations for one of the two instruments only would actuate this instrument as if it were isolated without actuating the other.

Modifications in this structure which do not depart from my invention may be devised and I do not limit myself to the precise structure shown, but claim as my invention:

1. A tracker bar having a plurality of sets of apertures in its working face aligned transversely of the tracker, independent sets of pneumatics communicating therewith respectively, each set of apertures occupying a different extent transversely of the bar, substantially as described.

2. A tracker bar having a plurality of sets of passages corresponding sets of sound operating pneumatics communicating therewith respectively, corresponding sets of apertures in the working face of said tracker opening into said passages, said apertures being aligned in the direction of the travel of the music sheet transversely of said bar and occupying a different extent transversely of the bar, substantially as and for the purpose described.

3. A tracker bar having a plurality of sets of apertures in its working face aligned transversely of the tracker, independent sets of pneumatics communicating therewith respectively, each set of apertures occupying a different extent transversely of the bar, in combination with a music sheet provided with a plurality of sets of perforations of different length, the perforations of one set serving to operatively open but a single set of apertures in the tracker, substantially as described.

4. A tracker bar having a plurality of sets of apertures in its working face aligned transversely of the tracker and communicating with independent sets of pneumatics, each set of apertures occupying a different extent transversely of the bar, in combination with a music sheet provided with a plurality of sets of perforations of different length, the perforations of each set serving to operatively open a different set of apertures in the tracker, substantially as described.

5. A tracker provided in its working face with a plurality of sets of apertures opening to independent sets of pneumatics for operating different sound producing instruments, one set of apertures extending a greater distance transversely of the tracker than the other, in combination with a perforated music sheet provided with two sets of perforations, one comprising separate perforations of constant area and the other comprising perforations of less width and greater length, each set serving to operatively open but a single set of apertures.

6. A tracker provided in its working face with two parallel sets of apertures aligned transversely of the tracker and communicating with independent sets of pneumatics for operating different sound producing instruments, in combination with a perforated music sheet provided with two sets of perforations, one comprising separate perforations of constant dimensions and the other comprising perforations of less width and of greater length, each set of perforations serving to operatively open but a single set of apertures, substantially as described.

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

ALPHONSE LAURENT MUSTEL.

Witnesses:

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H. C. COXE.