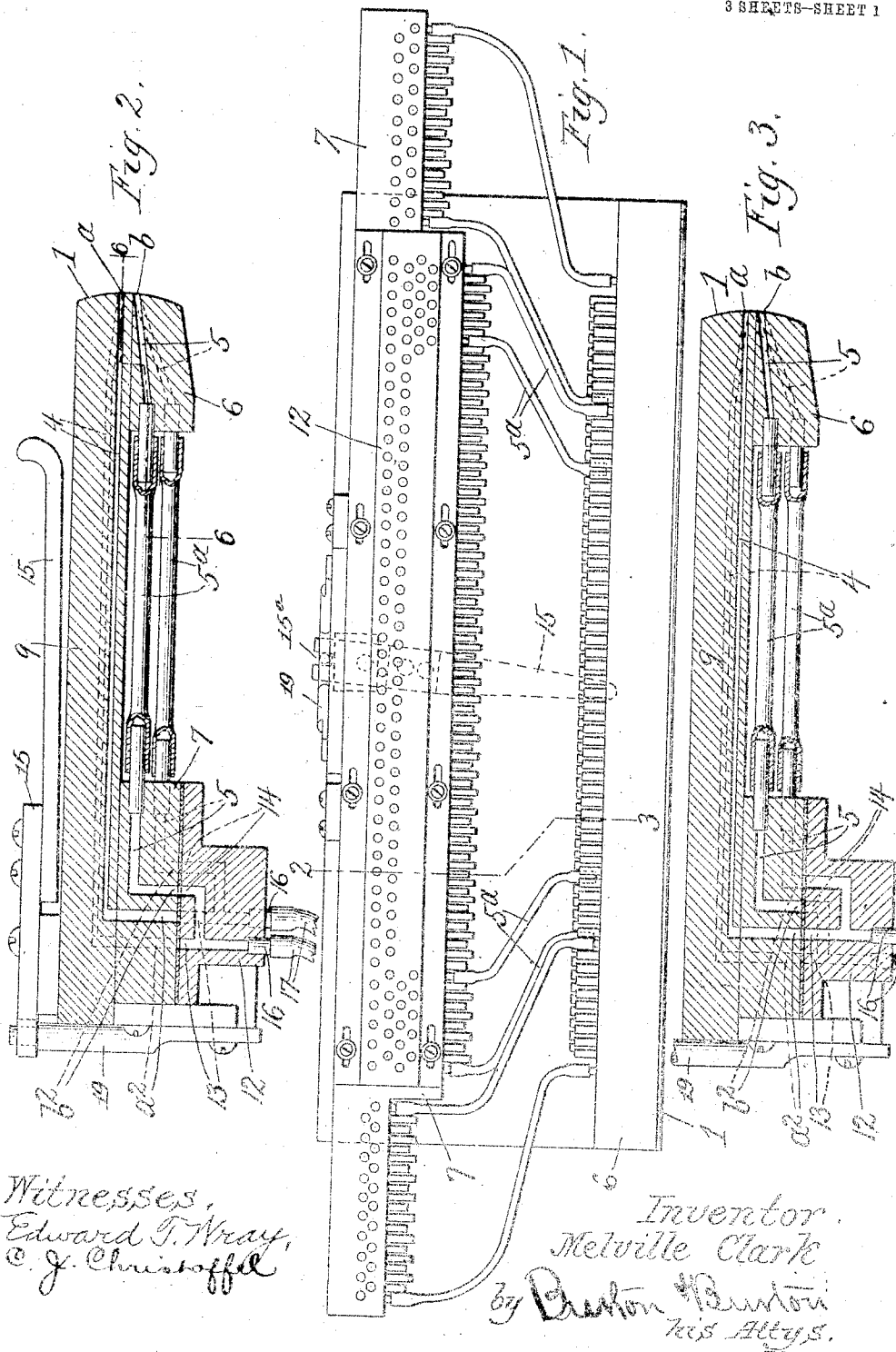


M. CLARK.
TRACKER BOARD CONSTRUCTION FOR AUTOMATIC MUSICAL INSTRUMENTS.
APPLICATION FILED DEC. 6, 1909.

1,011,745.

Patented Dec. 12, 1911

3 SHEETS-SHEET 1



Witnesses,
Edward T. Wray,
C. J. Christoffel

Inventor,
Melville Clark
by *Burton & Burton*
his Attys.

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Fig. 5.

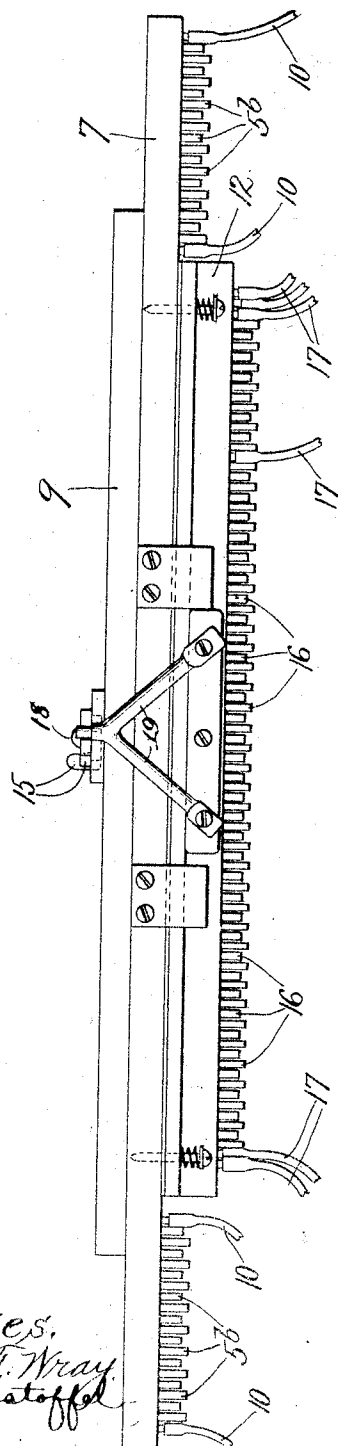
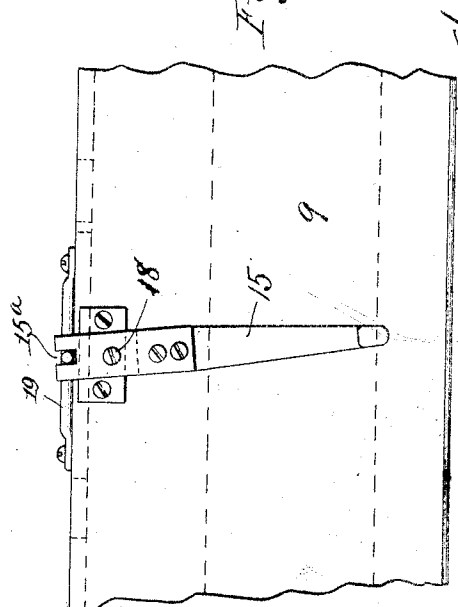


Fig. 4.



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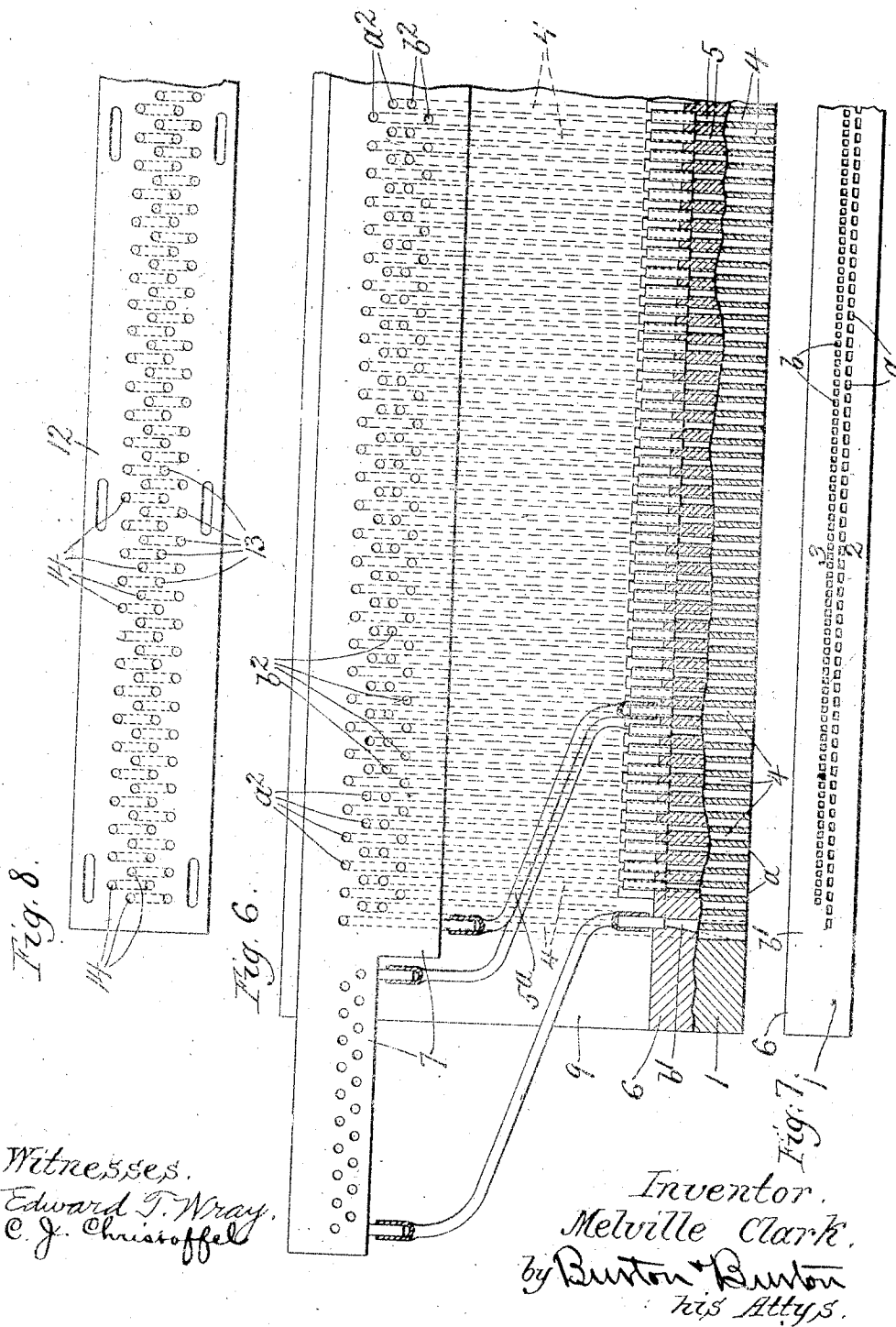
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3 SHEETS-SHEET 3.



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UNITED STATES PATENT OFFICE.

MELVILLE CLARK, OF CHICAGO, ILLINOIS.

TRACKER-BOARD CONSTRUCTION FOR AUTOMATIC MUSICAL INSTRUMENTS.

1,011,745.

Specification of Letters Patent.

Patented Dec. 12, 1911.

Original application filed April 8, 1909, Serial No. 488,625. Divided and this application filed December 6, 1909. Serial No. 531,476.

To all whom it may concern:

Be it known that I, MELVILLE CLARK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Tracker-Board Construction for Automatic Musical Instruments, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This application is a division of my application 488,625, filed April 8, 1909.

It relates to an improvement in the construction of a tracker board having two sets of ducts, and consists in the features of construction shown and described as indicated in the claims.

In the drawings: Figure 1 is an inverted plan view of a tracker board embodying this invention. Figs. 2 and 3 are sections at the lines 2—3 on Fig. 1, showing the parts adjusted to different positions for utilizing the two sets of ducts respectively. Fig. 4 is a detail top plan view showing a portion of the tracker board comprising the adjusting devices. Fig. 5 is a rear elevation of the tracker device. Fig. 6 is a partly sectional inverted plan view of the tracker with the sliding-valve-bar removed, said tracker being partly broken away and shown in section at the line 6—6 on Fig. 2. Fig. 7 is a detail front edge elevation of portion of the tracker. Fig. 8 is a plan view of a sliding-valve-bar which coöperates with the main tracker-board, said view showing the surface of said valve-bar which faces the main tracker-board.

The tracker board shown in the drawings, as a whole comprises a mouthpiece, 1, having two rows of duct mouths, the first row, 2, comprising 88 apertures a , cut on a wider scale than the other row, 3, which comprises 126 note playing apertures, b , and an additional aperture, b^1 at each end, only one end being shown, for purposes hereinafter mentioned. The 128 apertures in row 3, are cut on a narrower scale than the 88 apertures in the row 2, so that the two rows of apertures require substantially the same length of mouthpiece. In the mouthpiece, 1, ducts, 4, from the mouths or apertures a and ducts, 5, from the mouths or apertures, b , extend rearward for connection by flexi-

ble tubes to the pneumatic actions. Preferably the tracker has two longitudinal ribs, 6, and 7, which contain respectively, the forward and rear portions of the ducts, 5, said portions being connected by flexible tubes, 5^a. The ducts, 4, are conveniently formed in the body, 9, of the tracker extending from front to rear therein. Said ducts, 4, open through the lower surface of the tracker board at the rear portion thereof in apertures, a^2 , which are comprised in two rows in the customary staggered arrangement for obtaining suitable intervals longitudinally between the apertures of each row. The ducts, 5, in the rib, 6, are diverged alternately upward and downward for issue from the rear edge of said rib in two rows, so that in each row they may be spaced sufficiently for the nipple connection for the flexible tubes, 5^a; and a similar double-row arrangement for connection with said flexible tubes is provided at the forward edge of the rear rib, 7. 88 ducts, 5, of set 3, being all but 20 at each end of said set opening down through the surface of the rear rib, 7, of the board 9, in two parallel rows of ports b^2 , corresponding to and spaced equally with the two rows of ports a^2 , in the same surface of the board. But the corresponding ports of the two sets, a^2 , and b^2 , are staggered oppositely with respect to the other, that is so that any two consecutive ports of one set are in an oblique line whose inclination is opposite that of the line in which the two corresponding consecutive ports of the other set stand.

The difference between the longitudinal spacing of the ports of the set, b^2 , and the spacing of the mouths, b , of the set, 3, at the edge of the mouthpiece of the tracker board, is covered by the divergence or splaying of the flexible tubes, 5^a, between the two ribs, 6, and 7. The remainder of the ducts, 5, of the set, 3, being twenty at each end of the set, open down through the end portions of the rear rib, 7, which is extended beyond the end of the main board, 9, and into the ports of said ducts on the lower side of said extended ribs there are fitted nipples, 5^b, for connection of flexible tubes, 10.

Upon the lower surface of the rib, 7, there is mounted a slide, 12, which is of the character of a valve-bar having in the surface

facing said rib, 7, two sets of ports, 13, and 14, each of said sets being comprised in two rows, the spacing from each other of the four rows being the same as that of the four rows of ports, a^2 , and b^2 , in the lower face of said rib, the ports of the two rows, 13, and also the ports of the two rows, 14, being staggered with respect to each other, the spacing of the ports in all of the rows being the same, and being equal to the spacing in their rows of the ports, a^2 , and b^2 , of said rib, 7; but the corresponding ports of the sets, 13, and 14, of the sliding valve bar, 12, are not relatively staggered but instead, are directly opposite to each other transversely of the rows. With this construction, it will be seen that the valve bar, 12, at one position may have the ports, 13, registering with the ports, a^2 , of the rib, 7, and being moved longitudinally half the distance between the consecutive ports in the rows, the ports, 13, will be carried out of registration with the ports, a^2 , while the port, 14, will be carried into registration with the port, b^2 , thus changing the connection from the tracker duct mouths, a , of the set, 2, to the tracker mouths, b , of the set, 3, to the extent of the 88 middle notes of the set, 3.

For shifting the connection as above described, a lever, 15, is provided by the screw, 18 on the tracker board, and connected with a sliding-valve-bar, 12, by means of a bracket, 19, secured to the rear edge of said bar and projecting upward therefrom past the rear edge of the tracker-board for engagement in the notch, 15^a, in the rear end of said lever, as seen in Fig. 4.

The ducts from the corresponding ports, 13, and 14, unite within the valve-bar, 12, and emerge at the opposite surface of the slide in ports which are fitted with and indicated by the nipples, 16, for connection with flexible tubes, 17, leading to the pneumatic action or actions (not shown) to be controlled by said ducts.

I claim:—

1. In an autopneumatic playing mechanism for keyed instruments, a tracker board having two sets of ducts opening through two parallel rows of mouths, one set being at their said mouths spaced on a wider scale than the other set, said two sets of ducts opening through the same surface of the tracker at a distance from their mouths in ports spaced on the same scale, each set in a plurality of rows, the ports in each row of each set at said surface being opposite the intervals between consecutive ports of the corresponding row of the other set; a valve bar having at one surface duct ports corresponding to an equal number of the said ports of both sets of the tracker board, and having the corresponding ports of the two sets opposite each other and the ducts from such corresponding ports uniting in the bar and

opening through the opposite side thereof in a single set of ports, and means for moving the valve-bar longitudinally of the rows for shifting the registration of the ports of the valve-bar and of the tracker board from one set to the other.

2. In an autopneumatic playing mechanism for musical instruments, a tracker having two sets of ducts opening for registration with a controller sheet through parallel rows of mouths, one set being at their said mouths spaced on a wider scale than the other, said two sets opening through the same surface of the tracker board at a distance from their mouths in ports spaced on the same scale, each set in a plurality of rows; a valve bar having a like plurality of rows of ports in two sets opening through one surface, the spacing from each other of the several rows comprising said two sets of ports of the bar being the same as that of the like number of rows of ports of the tracker board, the ports of one of the sets of the bar being offset longitudinally of the rows from the position of the corresponding ports of the corresponding set of the tracker when the other sets of ports of the tracker and bar are registered, and means for moving the bar longitudinally of the rows for shifting the registration from one set to the other.

3. In an autopneumatic playing mechanism for musical instruments, a tracker having two sets of ducts opening through two parallel rows of mouths, one set being at their mouths spaced on a wider scale than the other, and comprising a lesser number of ducts than the other within substantially the same length of tracker mouth piece, said two sets opening through the same surface of the tracker at a distance from their mouths, a portion of the more numerous set equal to the total number of the other set having their ports at said surface equally spaced with ports of the other set; a valve bar mounted against said surface of the tracker and having at its surface in contact therewith duct ports corresponding to all said last mentioned duct ports of the set comprising the lesser number, and also duct ports corresponding to said equal number of the other set; said valve bar being positioned upon the tracker for covering all said duct ports of the lesser set of the latter and said equal number of ports of the other set, and having the ducts from the corresponding ports of the two sets uniting in said valve bar and opening through the opposite surface thereof in a single set of ports, the two sets of ports in the first mentioned surface of said bar being positioned relatively to the corresponding two sets of ports of the tracker for registration of only one of said sets at a time with its corresponding set; means for moving the bar

longitudinally for shifting such registration, and flexible tubes connected respectively with all the duct ports in said opposite side of the valve bar and the remaining ducts of the racker of the set having the greater number.

In testimony whereof, I have hereunto set

my hand, at Chicago, Illinois, this 2nd day of December, 1909.

MELVILLE CLARK.

Witnesses:

C. J. CHRISTOFFEL,
M. GERTRUDE ADY.