No. 835,776. PATENTED NOV. 13, 1906.

G. P. BRAND.

TRACKER BAR FOR PNEUMATIC PLAYERS FOR MUSICAL INSTRUMENTS.

APPLICATION FILED FEB. 23, 1905.

Fig. 1.

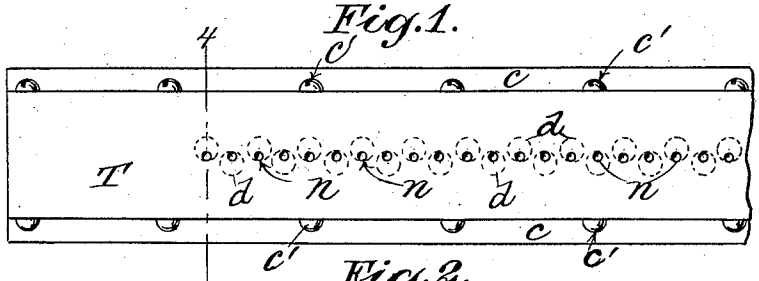


Fig. 2.

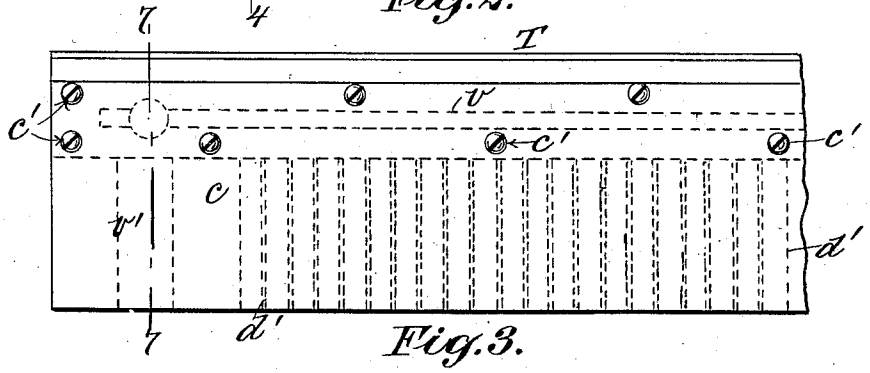


Fig. 3.

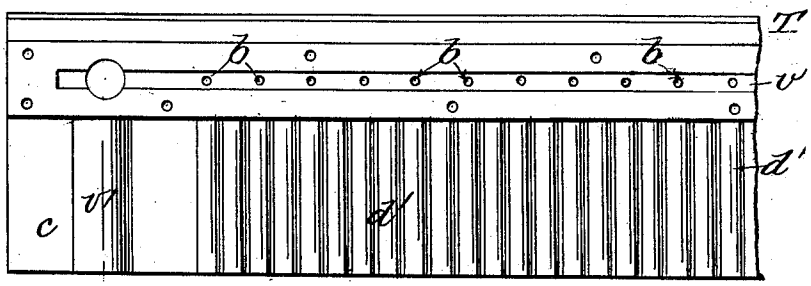


Fig. 5.

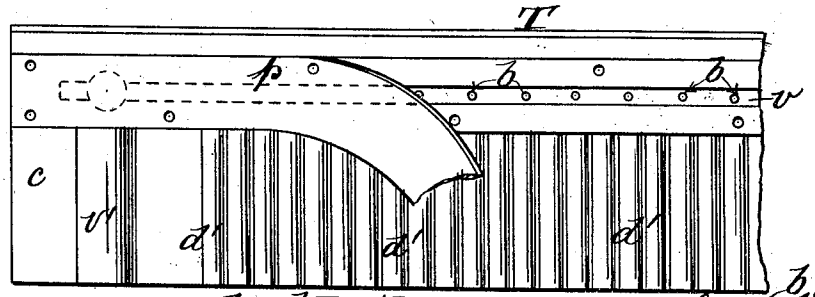


Fig. 7.

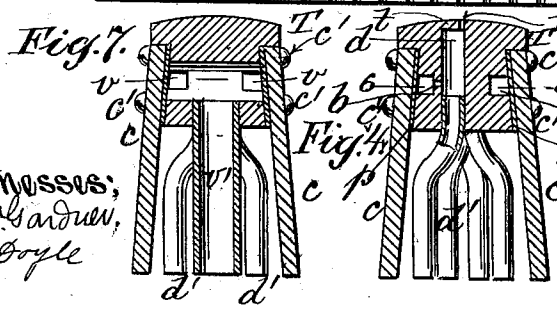
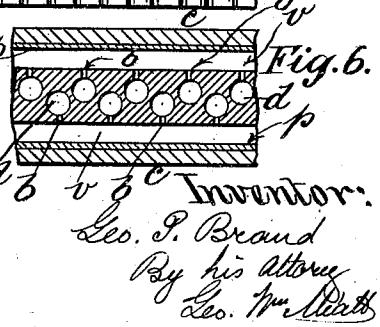


Fig. 4.

Fig. 6.



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UNITED STATES PATENT OFFICE.

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TRACKER-BAR FOR PNEUMATIC PLAYERS FOR MUSICAL INSTRUMENTS.

No. 835,776. Specification of Letters Patent. Patented Nov. 13, 1906.

Application filed February 23, 1905. Serial No. 246,865.

To all whom it may concern:

Be it known that I, GEORGE P. BRAND, a citizen of the United States, residing in the city of New York, borough of Manhattan, county and State of New York, have invented certain new and useful Improvements in Tracker Bars for Pneumatic Players for Musical Instruments, of which the following is a specification.

My improvements relate to what are known as "bridges" or "tracker-bars" in pneumatic apparatus, such as piano and other musical instrument players, in which a perforated tune-sheet is employed.

The object of my invention is to attain a tracker-bar in which the adjoining note-holes are as close to each other as it is practicable to make them, so that a comparatively narrow music-sheet may be used. The invention consists in the construction herein described and claimed specifically.

In the accompanying drawings, Figure 1 is a top view of a portion of my improved tracker-bar broken away in part. Fig. 2 is a side elevation of the same with a detachable cover in place; Fig. 3, a like view with the detachable cover removed. Fig. 4 is a transverse section taken upon plane of line 4 4, Fig. 1. Fig. 5 is a side elevation of a portion of the tracker-board, illustrating the use of a flexible detachable cover for the vent-chamber. Fig. 6 is a section of a portion of the tracker-board, taken upon plane of line 6 6, Fig. 4. Fig. 7 is a section on plane of line 7 7, Fig. 2.

It is a well-known fact that for reasons which need not be entered into here it is expedient to have each bleed-hole as near as practicable to the note-opening in the face of the tracker-bar, and for this reason I make my vent-chambers *v* directly in the body of the tracker-bar itself, one on each side thereof. The tracker-bar is made to accommodate a relatively large number of note-holes *n* in a given length—as, say, fourteen or sixteen to the inch—the individual ducts *d* being arranged alternately on opposite sides of the row of such note-holes in order to afford ducts of a prescribed diameter sufficient to accommodate the tubular conduits *d'*—that is to say, as shown in Fig. 4, the note-holes *n* open into the primary ducts *d*, in each case closed on one side thereof, so that by alternating the primary ducts on opposite sides of the row of note-holes *n* the latter may be made to approximate each other more closely, the primary ducts on one side of the central line of note-holes *n* communicating with the vent-chamber *v* on that side of the bar, while the primary ducts on the other side of said center communicate with the corresponding vent-chamber on the other side of the bar.

Each vent-chamber consists of a groove formed and extending longitudinally in a side of the tracker-bar T, said groove being permanently closed at either end and communicating through a suitable duct *v'* with a tension-chamber.

Each primary duct *d* is preferably made by drilling nearly through the body of the tracker-board T from its inner or under side, only a relatively thin web *t* or thickness of material being left at the face of the board, through which the relatively small hole *n* is formed, and each duct *d* being put in communication with a primary valve or pneumatic by means of a suitable tube or conduit *d'* in any well-known or desired manner.

The depth of the vent channel or chamber *v* is preferably such as to leave but a comparatively thin wall between it and the adjacent side of each of the primary ducts *d* with which it is to communicate, so that the bleed-hole *b* may be very shallow, as well as of minimum diameter, thus increasing its sensitiveness and efficiency and rendering it less liable to become clogged. The vent groove or chamber *v* is closed from end to end by a detachable cover *c*. This cover *c* may be constituted in various ways, the main essential being that it shall hermetically seal the vent-chamber when in place and at the same time be detachable from the tracker-bar. Thus as illustrating two extremes of construction the cover *c* may consist of a plate attached by screws *c'* to the side of the tracker-bar with packing *p* interposed between the opposed surfaces, as in Figs. 2, 4, and 7, or it may consist of a strip of leather or other suitable flexible material secured in position upon the tracker-board by shellac or by any other suitable means, as illustrated in Fig. 5. A detachable cover made of metal and packed with leather is desirable in most cases; but where the tracker-bar is not visible externally, as in automatic or slot machines, leather and shellac may be used for the sake of economy, the leather being easily detached by stripping and as readily replaced by the use of additional shellac.

By forming the vent-chamber and bleeds directly within the body of the tracker-bar and closing the vent-chamber by means of a detachable cover I facilitate access to the bleed-holes, and thereby greatly lessen the cost of keeping the apparatus in running order by dispensing with the need of skilled labor in case of obstruction in any of the bleed-holes.

By reference to the drawings it will be seen that with the exception of the detachable covers *c* my tracker-bar is made in one piece with the relatively small note-holes *n* in a longitudinal row, which is preferably central on the face of the bar and with the relatively large laterally-disposed primary ducts *d* alternating on either side of said central longitudinal row of note-holes *n*, the bleed-holes for each duct *d* connecting directly with the longitudinal vent-chamber *v* in the adjacent side of the bar, as shown clearly particularly in Figs. 4 and 6.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In pneumatic apparatus, a tracker-bar formed in one piece with a longitudinal row of relatively small note-holes, and with a series of relatively large cylindrical primary ducts formed in the body of the bar alternately on opposite sides of said longitudinal row of note-holes, each of said primary cylindrical ducts having one of said relatively small note-holes opening into it at its side adjacent to the said longitudinal row of note-holes, whereby the distance between the adjacent note-holes is reduced to the minimum for the purpose described.

2. In pneumatic apparatus, a tracker-bar formed with a central row of note-holes and with a series of primary ducts formed alternately on opposite sides of said central row of note-holes and each having a note-hole opening into it at its side next the central row of note-holes, whereby the distance between the adjacent note-holes is reduced to the minimum as set forth, said tracker-bar also having a longitudinal tension-chamber formed directly in each side wall, each of said tension-chambers being connected by bleed-holes with the primary ducts on that particular side of the central row of note-holes, substantially as and for the purpose set forth.

3. In pneumatic apparatus, a tracker-bar formed in one piece with a longitudinal row of relatively small note-holes, and with a series of relatively large cylindrical primary ducts for the reception of tubular conduits, said cylindrical primary ducts being formed in the body of the bar by boring through the under side of said bar alternately on opposite sides of said longitudinal row of note-holes which latter are bored through the thin web left at the face of the bar, each note-hole entering one of the cylindrical ducts on the side thereof adjacent to the said longitudinal row of note-holes, whereby the cylindrical ducts are arranged in close proximity to each other, and the distance between adjoining note-holes is reduced to the minimum for the purpose described.

4. In pneumatic apparatus, a tracker-bar formed in one piece with a longitudinal row of relatively small note-holes, and with a series of relatively large cylindrical primary ducts for the reception of tubular conduits, said cylindrical primary ducts being formed in the body of the bar alternately on opposite sides of said longitudinal row of note-holes, each of said laterally-disposed cylindrical primary ducts having one of said relatively small note-holes opening into it at its side adjacent to the said longitudinal row of note-holes, each of said cylindrical ducts being also connected by a bleed-hole with a longitudinal tension-chamber together with said longitudinal tension-chamber formed directly in the tracker-bar for the purpose described.

5. In pneumatic apparatus, a tracker-bar formed in one piece with a central longitudinal row of relatively small note-holes in its face, with a series of relatively large cylindrical primary ducts for the reception of tubular conduits, said cylindrical primary ducts being formed in the body of the bar by boring through the under side of said bar on opposite sides of said central longitudinal row of note-holes, which latter are bored through the thin web left at the face of the bar, each note-hole entering one of the said cylindrical ducts on the side thereof adjacent to the said longitudinal row of note-holes, said tracker-bar also having a longitudinal tension-chamber formed directly in each side wall, and each of said tension-chambers being connected by bleed-holes with the cylindrical primary ducts on that particular side of the central row of note-holes, whereby the spaces between the adjacent cylindrical ducts and the distance between adjoining note-holes is reduced to the minimum, for the purpose described.

GEORGE P. BRAND.

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