

No. 770,790.

PATENTED SEPT. 27, 1904.

P. WUEST, JR.  
PNEUMATIC TRACKER BAR.

APPLICATION FILED JAN 19, 1904.

NO MODEL.

FIG. I.

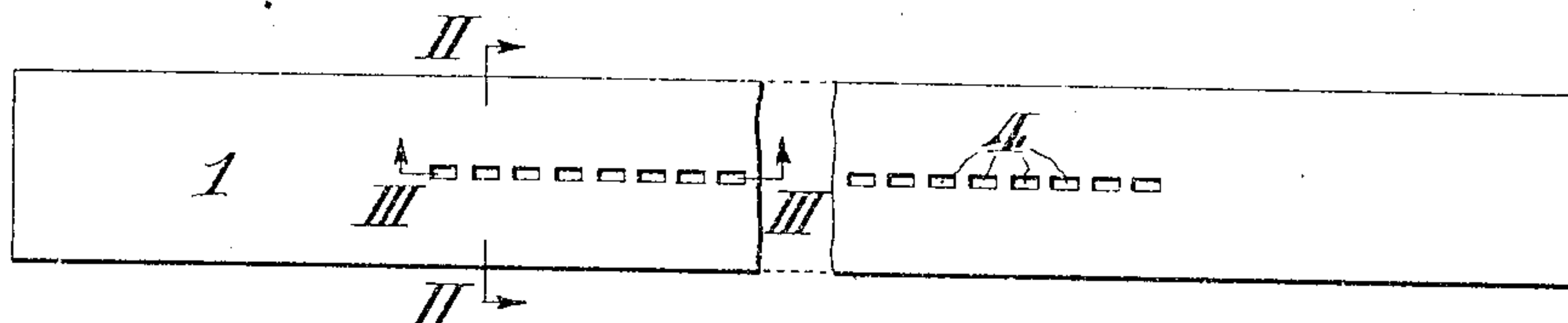


FIG. II.

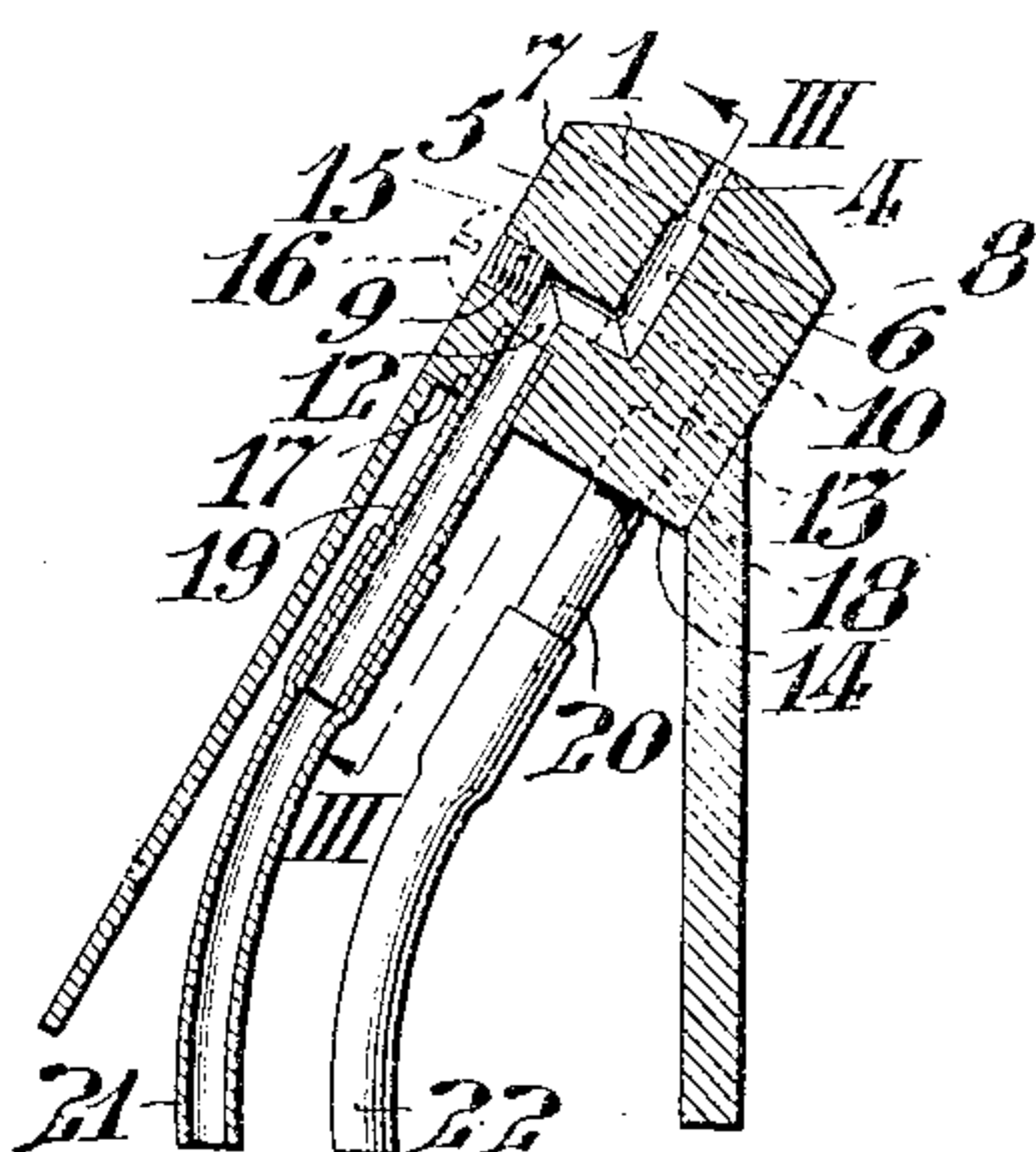


FIG. IV.

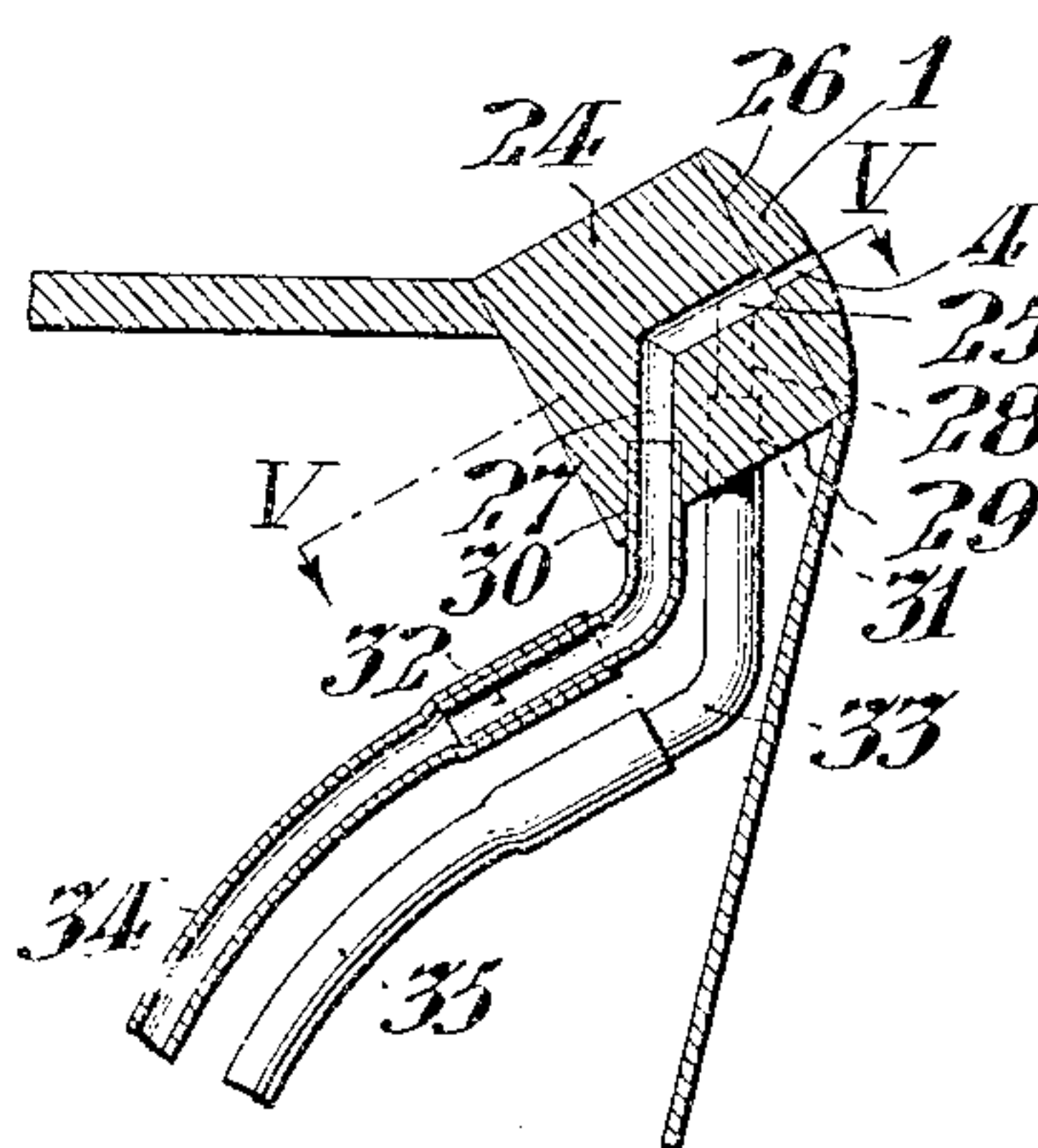


FIG. III.

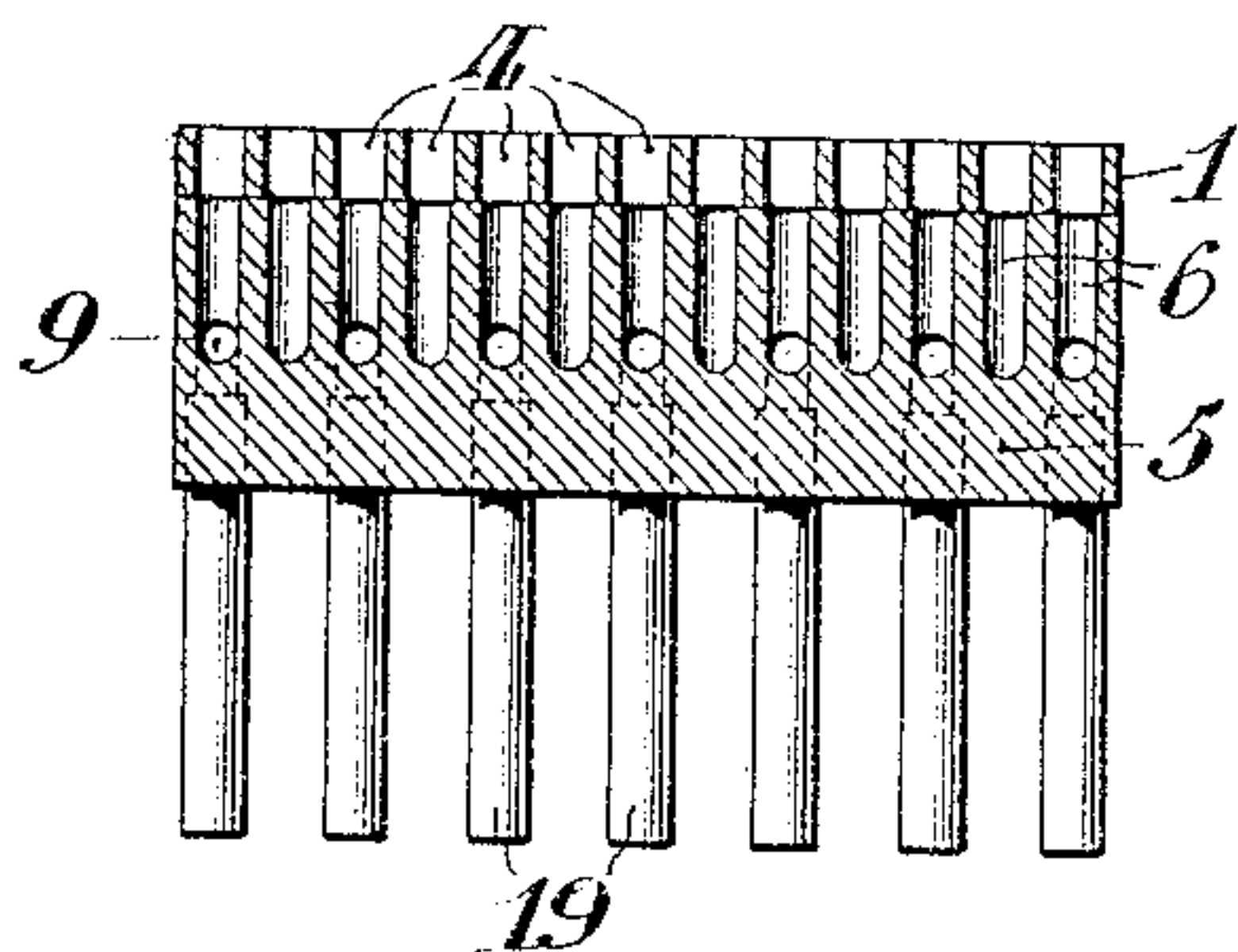


FIG. V.

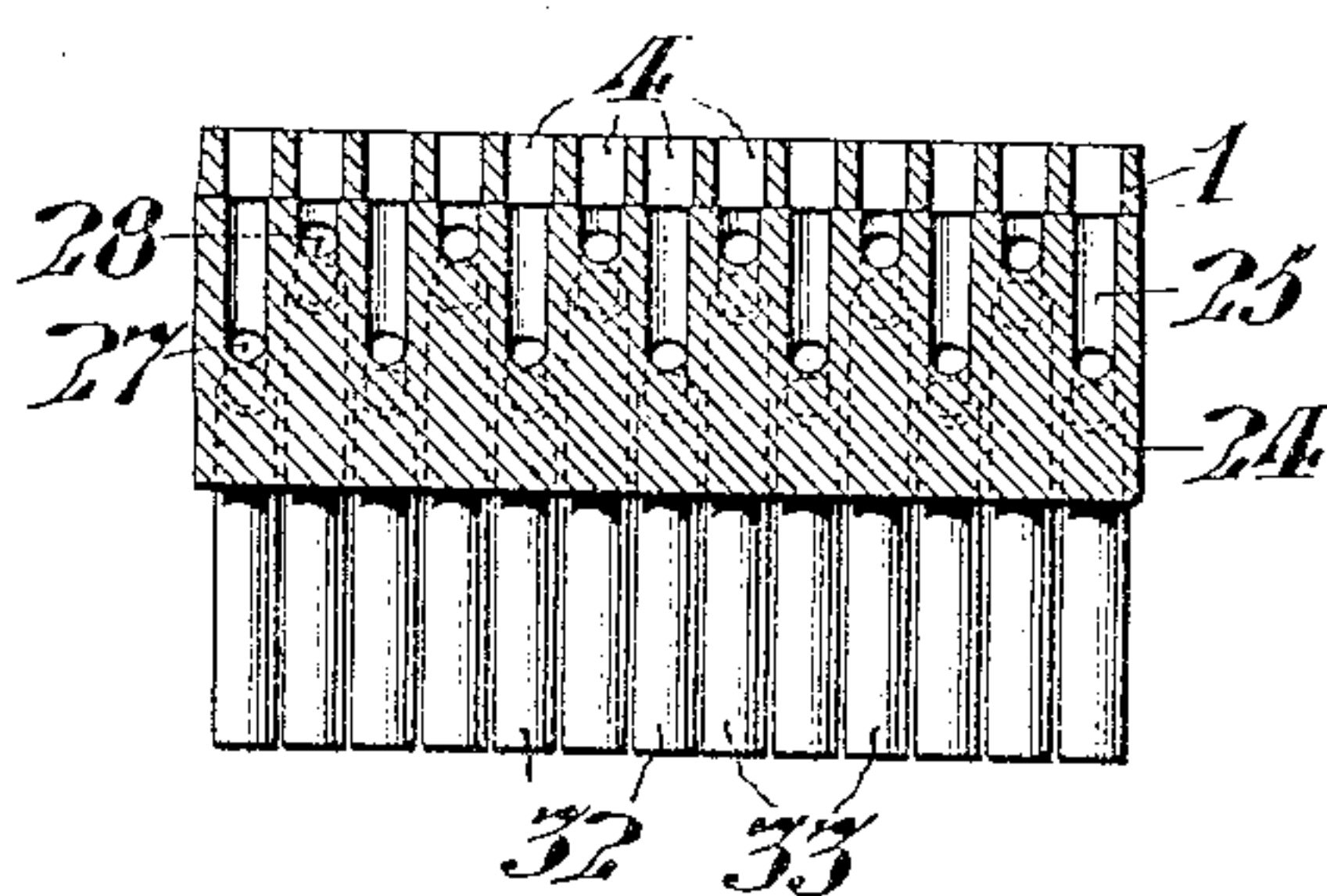
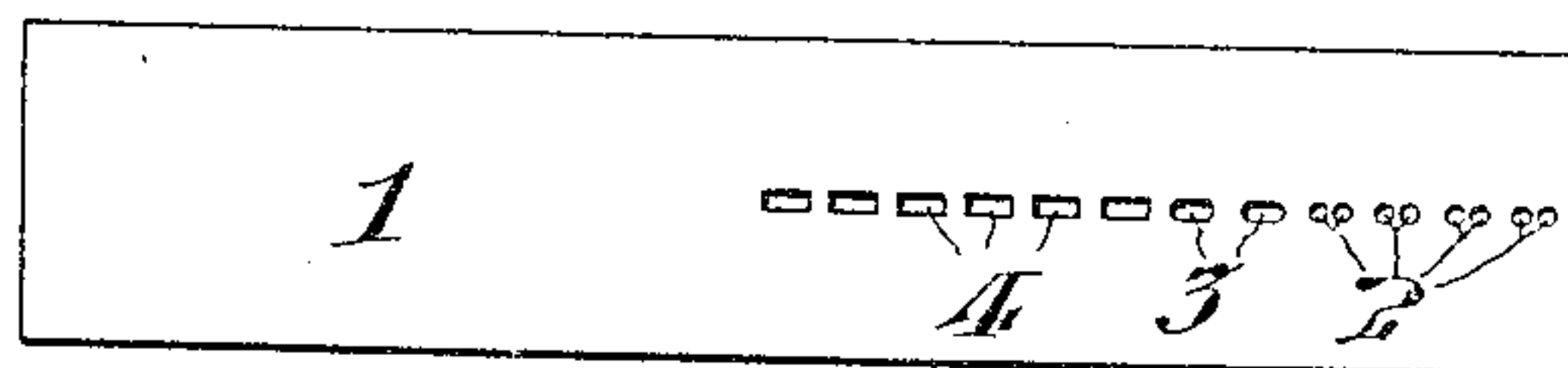


FIG. VI.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

PHILIP WUEST, JR., OF PHILADELPHIA, PENNSYLVANIA.

## PNEUMATIC TRACKER-BAR.

SPECIFICATION forming part of Letters Patent No. 770,790, dated September 27, 1904.

Application filed January 19, 1904. Serial No. 189,731. (No model.)

*To all whom it may concern:*

Be it known that I, PHILIP WUEST, Jr., of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improve-  
5 ments in Pneumatic Tracker-Bars, whereof the following is a specification, reference being had to the accompanying drawings.

My invention relates to a musical instrument comprising a pneumatic tracker-bar provided with apertures over which perforated webs of paper or similar fabric are progressed to control the operation of pneumatic valves in the instrument. Heretofore, such tracker-bars have comprised pieces of wood glued together to embody a series of adjoining rectangular ducts respectively in communication with the adjoining apertures in the face of the tracker-bar or have comprised a metallic face-plate embodying the series of apertures and directly supporting diverged sheet-metal nozzles in connection with tubes leading to the pneumatic valves in the instrument.

It is the object of my invention to provide a metallic tracker-bar which is more substantial and durable than the wooden structures aforesaid, which may be more readily and economically constructed than the prior metallic tracker-bars aforesaid, and which independently of its face-plate affords a substantial support for the nozzle-terminals of the tubes leading to said valves.

A tracker-bar constructed in accordance with my invention, as hereinafter described, comprises a primarily-separate face-plate of metal containing a series of apertures. Said face-plate is permanently connected with a solid bar of metal having circular-drilled ducts, which ducts respectively correspond and are in registry with the apertures in said face-plate immediately adjoining the latter and terminate remote from each other at another face or side surface of said bar in nozzles which are permanently secured in and supported by said bar independently of said face-plate and are respectively connected with tubes leading to the pneumatic valves in the instrument.

My invention comprehends the various novel features of construction and arrangement hereinafter more definitely specified.

In said drawings, Figure I is a front view of a tracker-bar conveniently embodying my improvements, the central portion being broken away. Fig. II is a transverse sectional view of said tracker-bar, taken on the line II II in Fig. I. Fig. III is a longitudinal sectional view of said tracker-bar, taken on the line III III in Figs. I and II. Fig. IV is a transverse sectional view of a modified form of tracker-bar embodying my improvements. Fig. V is a longitudinal sectional view of said tracker-bar, taken on the line V V in Fig. IV. Fig. VI is a front view of a portion of the face-plate shown in Fig. I, illustrating different steps in its construction.

In said figures, 1 is the face-plate, which is first drilled to form a series of circular perforations 2. (Shown at the right-hand side of Fig. VI.) The metal between pairs of said perforations is then removed, conveniently by a punching operation, to form apertures 3, elongated in the direction of the length of said face-plate. Said apertures 3 are then filed at their ends and when finished, as at 4, are of uniform rectangular cross-sectional area throughout the thickness of said plate 1.

Referring to the form of my invention shown in Figs. II and III, the solid metal bar 5 is drilled through its front surface to form a series of ducts 6 in straight alinement and in correspondence with the series of apertures 4 in the face-plate. Said bar 5 is then drilled from respectively opposite sides 7 and 8 to form ducts 9 and 10, which respectively communicate with alternate ducts 6 in said series. The ducts 12 and 13 are then drilled through the rear surface 14 of said bar parallel with said ducts 6 and respectively in communication with said ducts 9 and 10. The ends of said ducts 9 and 10, primarily opening through the sides 7 and 8 of said bar 5, are finally closed by plugs 15, which, as indicated in Fig. II, may be conveniently formed from round-headed screws, whose heads 16 are subsequently removed, so as to leave the outer ends of said plugs flush with the side surfaces of said bar. It is to be understood, however, that plugs which are smooth and slightly conical upon their longitudinal surfaces may be driven into the outer ends of



said ducts 9 and 10 in lieu of said screw-plugs 15. The outer ends of said ducts 12 and 13 are conveniently recessed, as indicated at 17 and 18, to receive nozzles 19 and 20, which, 5 being tightly driven in said recesses, are adapted to engage the terminals of the flexible tubes 21 and 22, leading to the pneumatic valves within the musical instrument.

In the form of my invention shown in Figs. 10 IV and V a metallic face-plate 1, such as is shown in Figs. I and II, is mounted upon the solid metal bar 24, which has a series of ducts 25 drilled through its front face 26 in correspondence with the apertures 4 in said face-plate 1, like the ducts 6, (shown in Figs. II 15 and III,) except that said ducts 25 are conveniently drilled to different depths, as indicated in Fig. V, so as to communicate with ducts 27 and 28, which are drilled diagonally 20 through the side face 29 of said bar 24 in staggered relation. The outer ends of said ducts 27 and 28 are recessed at 30 and 31 to receive the nozzles 32 and 33, which are adapted to engage the terminals of the flexible 25 tubes 34 and 35, leading to the pneumatic valves in the musical instrument. Said face-plates 1 and bars 5 or 24 being provided with corresponding apertures and ducts, the contiguous faces of said plates and bars are separately coated with films of solder, and said 30 members being assembled in proper relation are then permanently connected by heating them until their solder-coated surfaces are fused together. During the soldering operation aforesaid it is of course necessary to 35 maintain said members in proper relative position by dowel-pins or by temporary attaching means, such as wires or clamps.

It is obvious that various modifications may 40 be made in the details of my invention without departing from its essential features. Therefore I do not desire to limit myself to the precise details of construction and arrangement herein set forth.

45 I claim—

1. In a tracker-bar, the combination with a metallic face-plate provided with a series of apertures; of a solid metal back bar permanently secured to said face-plate, comprising 50 a series of circular-drilled ducts, whose front ends respectively register with the apertures in said face-plate and whose rear ends terminate remote from each other at another side surface of said bar, substantially as set forth.

55 2. In a tracker-bar, the combination with a metallic face-plate provided with a series of apertures; of a solid metal back bar permanently secured to said face-plate, comprising a series of circular-drilled ducts, whose front 60 ends respectively register with the apertures in said face-plate and whose rear ends terminate remote from each other at another side surface of said bar; recesses in the rear ends of said ducts; and, nozzles fitted in said recesses, substantially as set forth. 65

3. In a tracker-bar, the combination with a metallic face-plate provided with a series of apertures of rectangular cross-sectional area throughout the thickness of said plate; of a solid metal back bar permanently secured to 70 said face-plate, comprising a series of circular-drilled ducts, whose front ends respectively register with the apertures in said face-plate and whose rear ends terminate remote from each other at another side surface of said bar, 75 substantially as set forth.

4. In a tracker-bar, the combination with a metallic face-plate provided with a series of apertures; of a solid metal back bar permanently secured to said face-plate, comprising 80 a series of circular-drilled ducts, whose front ends respectively register with the apertures in said face-plate and whose rear ends terminate remote from each other in staggered relation, forming two series respectively comprising the alternate ducts throughout the 85 length of said bar, substantially as set forth.

5. In a tracker-bar, the combination with a metallic face-plate provided with a series of apertures; of a solid metal back bar permanently secured to said face-plate, comprising 90 a series of circular-drilled ducts, whose front ends respectively register with the apertures in said face-plate and whose rear ends terminate remote from each other in staggered relation, forming two series respectively comprising the alternate ducts throughout the 95 length of said bar; recesses in the rear ends of said ducts; nozzles fitted in said recesses and having their free ends eccentric to the axes of the front ends of said ducts, substantially as set forth. 100

6. In a tracker-bar, the combination with a metallic face-plate provided with a series of apertures; of a solid metal back bar permanently secured to said face, comprising a series of circular-drilled ducts, whose front ends 105 respectively register with the apertures in said face-plate and whose rear ends are in staggered relation to each other; recesses in the rear ends of said ducts; metallic nozzles fitted in said recesses; and, means permanently securing said face-plate, bar and nozzles in 110 fixed relation, substantially as set forth.

7. In a tracker-bar, the combination with a 115 metallic face-plate provided with a series of apertures; of a solid metal back bar permanently secured to said face-plate, comprising a series of circular-drilled ducts extending to two side surfaces of said bar; and, plugs closing 120 said ducts at one side of said bar, substantially as set forth.

8. In a tracker-bar, the combination with a metallic face-plate provided with a series of apertures; of a solid metal back bar permanently secured to said face-plate, comprising 125 a series of circular-drilled ducts, respectively registering with the apertures in said face-plate; and, another series of ducts respectively in communication with the first series afore- 130



said and opening through another side surface of said bar, in eccentric relation to said first series of ducts, substantially as set forth.

9. In a tracker-bar, the combination with a  
5 metallic face-plate provided with a series of apertures; of a solid metal back bar permanently secured to said face-plate, comprising a series of circular-drilled ducts, extending at right angles to said face-plate; a second series  
10 of circular drilled ducts in communication with the first series aforesaid and opening through another side surface of said bar; and, plugs closing said ducts at one side of said bar, substantially as set forth.

10. In a tracker-bar, the combination with a  
15 metallic face-plate provided with a series of apertures; of a solid metal back bar permanently secured to said face-plate, comprising a series of circular-drilled ducts, extending at right angles to said face-plate; a second series  
20 of circular-drilled ducts in communication with the first series aforesaid and opening through another side surface of said bar; plugs in the outer ends of said second series  
25 of ducts; a third series of ducts in communication with said second series of ducts, opening through another side surface of said bar; and, nozzles in the outer ends of said third series of ducts, substantially as set forth.

11. In a tracker-bar, the combination with a  
30 metallic face-plate provided with a series of apertures adjoining each other in straight longitudinal alinement; of a solid metal back bar permanently secured in said face-plate, comprising a series of circular-drilled ducts extending at right angles to said face-plate; a  
35

second series of circular-drilled ducts in communication with the first series aforesaid and opening through another side surface of said bar; plugs in the outer ends of said second  
40 series of ducts; a third series of ducts in communication with said second series of ducts, opening through another side surface of said bar; recesses in the outer ends of said third series of ducts; nozzles respectively seated in  
45 said recesses; and, means securing said face-plate, bar, plugs and nozzles in permanent relation, substantially as set forth.

12. In a tracker-bar, the combination with a face-plate provided with a series of apertures;  
50 of a solid metal back bar permanently secured to said face-plate and comprising a series of circular-drilled ducts, extending at right angles to said face-plate and terminating in eccentric relation to said apertures, substan-  
55 tially as set forth.

13. In a tracker-bar, the combination with a face-plate provided with a series of apertures, of rectangular cross-sectional area; of a solid metal back bar permanently secured to said  
60 face-plate and comprising a series of circular-drilled ducts, extending at right angles to said face-plate, and terminating in eccentric relation to said apertures, substantially as set forth.  
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In testimony whereof I have hereunto signed my name at Philadelphia, Pennsylvania, this 16th day of January, 1904.

PHILIP WUEST, JR.

Witnesses:

ARTHUR E. PAIGE,  
ANNA F. GETZFREAD.