

April 18, 1950

J. E. LEGLER  
MUSICAL INSTRUMENT

2,504,547

Filed May 14, 1948

3 Sheets-Sheet 1

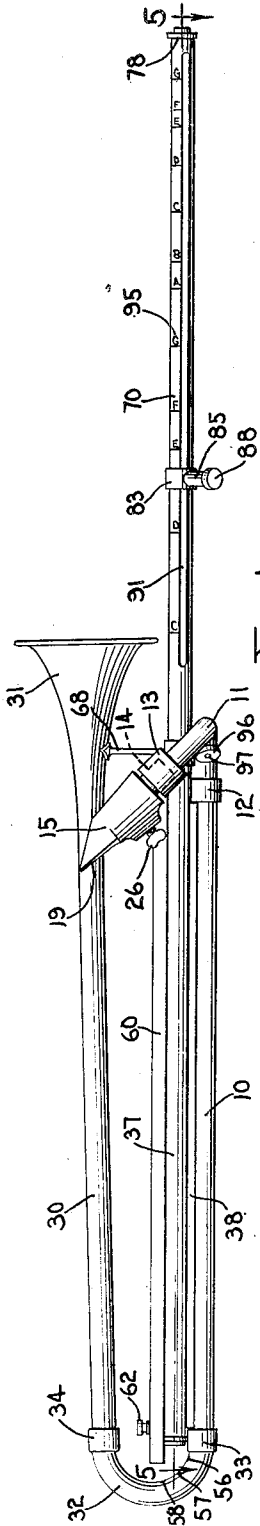


FIG. 1.

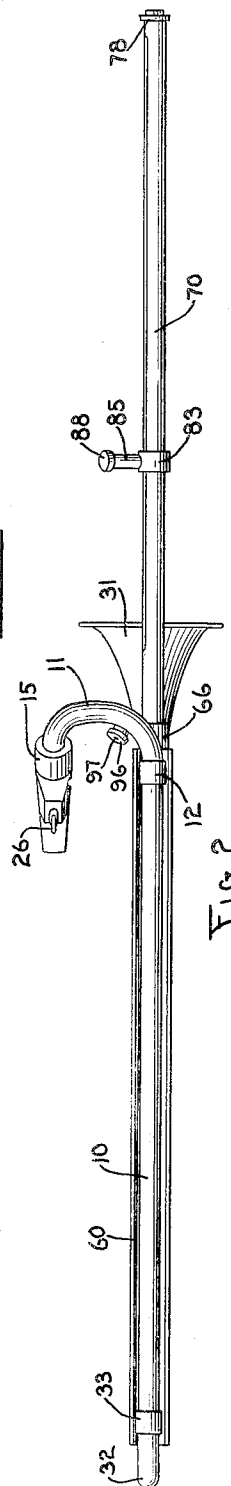


FIG. 2.

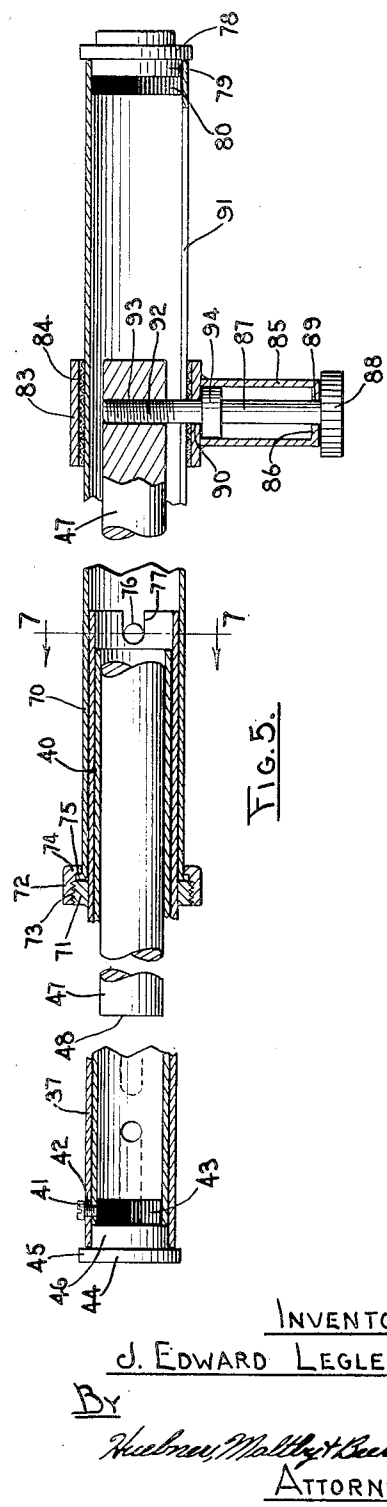


FIG. 5.

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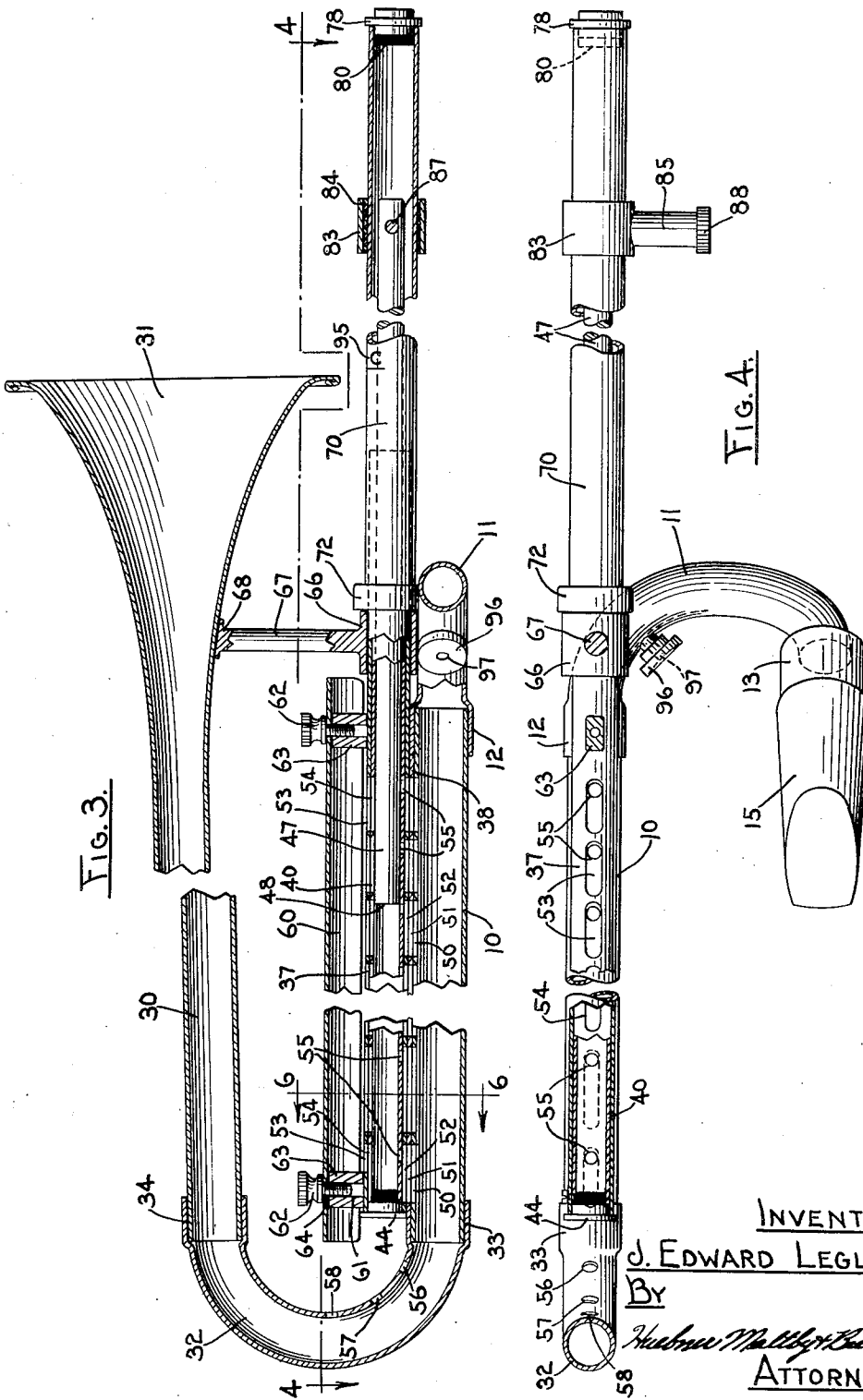


FIG. 3.

FIG. 4.

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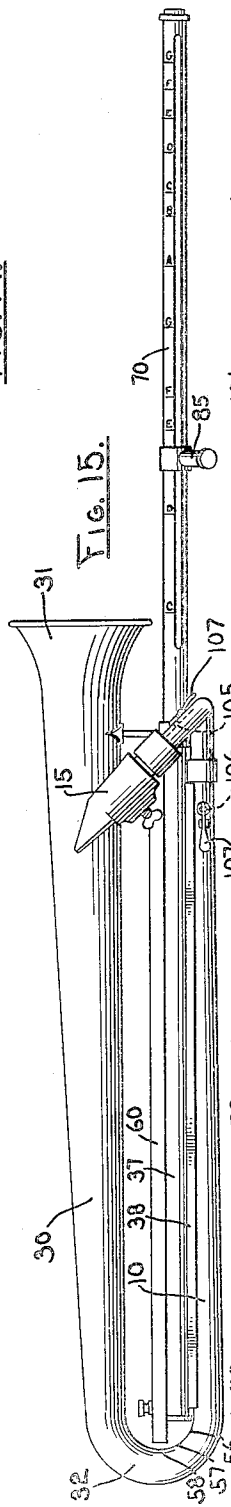
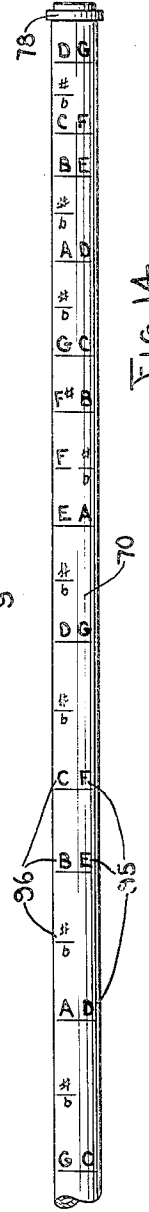
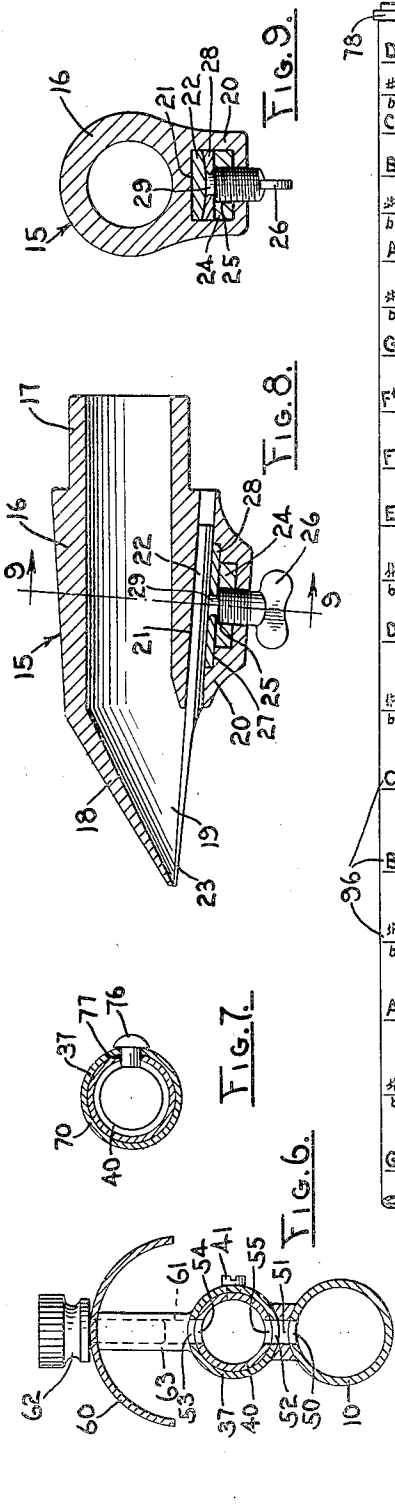
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3 Sheets-Sheet 3



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## UNITED STATES PATENT OFFICE

2,504,547

## MUSICAL INSTRUMENT

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Application May 14, 1948, Serial No. 27,008

15 Claims. (Cl. 84—385)

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This invention relates to musical instruments and more particularly to a musical instrument of the slide valve type in which the notes are easy to form and easy to locate.

The musical instrument of the present invention is somewhat a hybrid of a slide trombone and a saxophone or clarinet, using a reed mouthpiece as is used on either the saxophone or clarinet and having a slide valve similar to, but distinguished from that used on the slide trombone. One particular advantage of the present invention over the well known slide trombone is that the slide and a guide therefor extends out on front in view of the player of the instrument whereby the player may by visual reference to the guide, position the slide to obtain a particular note desired at the exact pitch established according to predetermined measurement.

Another advantage of the present instrument over other well known musical instruments is in the use of a reed mouthpiece, as used on a saxophone or clarinet, in combination with the slide that can be easily seen by the player of the instrument. One difficulty with the trombone is in learning how to shape the mouth against the mouthpiece to form the notes at the mouthpiece. The beginner or novice has difficulty holding the desired fundamental note and often plays an undesirable overtone. With a reed mouthpiece the notes are much easier to form and hold to the fundamental vibration frequency.

Another object of the invention is to provide a brass musical instrument that has a new, distinctive and desirable tone that is easily and accurately achieved. This instrument is of the brass instrument variety having a tone of the brass instrument quality but having the easily employed reed mouthpiece having a reed which forms the notes therein.

Another object of the invention is to provide a musical instrument that is easy to assemble or disassemble whereby it can be placed and carried in a small carrying case.

A still further object is to provide a resonator for the musical instrument whereby the tone produced is mellowed and modified thereby obtaining pleasing tones therefrom.

A still further object is to provide for a replaceable liner by which the exact notes are formed whereby when a liner becomes worn it may be easily replaced.

Other objects and advantages of the present invention will appear in the following description, taken in connection with the accompanying drawings in which:

Fig. 1 is a side elevational view of a musical instrument made in accordance with the construction of my invention.

Fig. 2 is a bottom plan view thereof.

Fig. 3 is a fragmentary enlarged vertical longitudinal axial sectional view through the musical instrument.

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Fig. 4 is a fragmentary enlarged horizontal longitudinal sectional view through the instrument taken along line 4—4 in Fig. 3, with the rear end portion of the upper note forming tube and liner in axial horizontal longitudinal section.

Fig. 5 is a further enlarged fragmentary horizontal longitudinal sectional view through the upper note forming tube or valve tube and the slide valve of the musical instrument, taking along line 5—5 in Fig. 1, looking in the direction of the arrow.

Fig. 6 is an enlarged vertical transverse sectional view through the note forming tubes of the musical instrument, taken along line 6—6 in Fig. 3, looking in the direction of the arrows.

Fig. 7 is a vertical transverse sectional view through the upper note forming tube, taken along line 7—7 in Fig. 5, looking in the direction of the arrows.

Fig. 8 is a longitudinal vertical sectional view through the mouthpiece of the musical instrument.

Fig. 9 is a vertical transverse sectional view through the mouthpiece, taken along line 9—9 in Fig. 8, looking in the direction of the arrows.

Fig. 10 is a fragmentary horizontal sectional view through a portion of the upper slide housing showing the longitudinal note openings therethrough.

Figs. 11, 12 and 13 are fragmentary horizontal sectional views through a portion of the liner for the upper note forming tube each showing a different form of note openings.

Fig. 14 is a diagrammatic plan view of the valve guide tube showing the note indicia thereon.

Fig. 15 is a side elevational view of a modified form of musical instrument with a tapered horn or body.

Referring to the details of the drawings and particularly to Fig. 1, the musical instrument comprises a lower note forming or tone tube 10 with a gooseneck 11 attached thereto at 12 extending outwardly and upwardly therefrom terminating in an enlarged mouthpiece holder 13 having a cylindrical, axial opening 14 in the outer end thereof. A mouthpiece 15, made of plastic or the like, as best shown in Fig. 8, has a hollow generally cylindrical body 16 with an integral cylindrical sleeve 17 extending rearwardly therefrom which is adapted to be frictionally, slidably and adjustably received in the opening 14 in the holder 13. The mouthpiece thus extends upwardly and rearwardly in a convenient position to be blown by the player thereof with the tone tube held in a substantially horizontal position. The mouthpiece at its rear terminal end is formed in the downwardly formed portion 18 with the mouthpiece having an opening 19 at its rear, lower side. The body 16 of the mouthpiece 15 is extended downwardly in the portion 20 which has a rectangular opening 21 angularly therein for the reception of the shank.

22 of a reed 23, with the free end of the reed lying along the underside of the opening 19. The opening 21 is rectangularly recessed at 27 at its under side. A rectangular washer 28 having a transversely arcuate upper side is located in the recess 27. The shank of the reed is held rigidly in the mouthpiece by molding a rectangular metal block 24 in the portion 20 of the mouthpiece below the recess 27, the block having a tapped opening 25 vertically therethrough which threadedly receives a thumbscrew 26. The thumbscrew 26 is reduced in diameter at 29 and is rotatably received in a central opening through the washer 28, the end of the screw swaged outwardly holding the thumbscrew and washer rotatably together. The thumbscrew is adapted to be tightened with a shoulder against the under side of the washer 28 with the arcuate upper side of the washer held against the under side of the shank 22 of the reed 23, thereby holding the reed in the proper position in the mouthpiece for the playing of musical notes by the player of the instrument.

A horn portion 30, which is flared at its forward end in a bell 31, is attached at its rear end to the rear end of the tone tube 10 by a return-bend tube 32, attached at 33 to the lower tube 10 and attached at 34 to the rear end of the horn 30.

An upper note forming tubular slide valve housing 37 is secured longitudinally above the tone tube 10 with a spacer bar 38 located therebetween being brazed or sweated to both tubes thereby forming an airtight joint between the two note forming tubes. A replaceable or renewable liner tube 40 is removably located in the housing 37 and is held in place by a screw 41 threadedly received in aligned, tapped openings 42 through both the tubes 37 and the liner 40. The rear end of the liner tube 40 is atmospherically closed by a plug 43 made of rubber or similar resilient material forced therein and frictionally held. The housing 37 is also closed at its rear end by a metal plug 44, having an enlarged flange 45 and a reduced cylindrical portion 46, with the reduced portion extending into the rear end of the housing 27 and the flanged portion 45 against the rear end thereof and the plug brazed or sweated in place.

A tubular valve rod 47 is located within the liner 40 with a close sliding fit having the rear end thereof cut off sharply at 48 for the playing of notes of the exact pitch desired. Openings 50, 51 and 52 are formed longitudinally in vertical alignment through the upper side of the lower tone tube 10, through the spacer 38 and through the under side of the valve tube 37, respectively. These openings are formed longitudinally of each tube and located therealong at the approximate position for each note. Other openings 53 and 54 are formed vertically through the upper sides of the housing 37 and the liner 40, respectively, longitudinally thereof in vertical alignment with the openings 50, 51 and 52.

Another series of small circular openings 55 are formed vertically through the lower side of the liner tube 40 and are located longitudinally thereof with the forward edge of each opening in the exact location for each note to be played on the instrument. When any one of these openings 55 is uncovered by the end 48 of the slide valve 47, and the instrument is played, the column of air in the tone tube 10 and gooseneck 11 to the mouthpiece vibrates to a certain predetermined wave length producing a certain tone

or note, each of the openings 55 being located to provide a different note of exact pitch. When the liner 40 becomes worn by the sliding movement of the valve 47 therein it may be replaced by a new or different one by removing the screw 41 thereby allowing the worn liner to be removed and a new one inserted therein.

An opening 56 is pierced through the inner wall of the return bent tube 32 whereby the lowest note produced by the instrument is played when the valve rod is moved inwardly and abuts against the rubber plug 46. When this is done the column of air in the tone tube 10 and the gooseneck 12 between the opening 56 and the mouthpiece determines this lowest note. Other openings 57 and 58 are pierced through the inner wall of the return bent tubes 32 spaced rearwardly from the opening 56 whereby the tone produced through the opening 56 is amplified and modified.

A resonator 60, of semi-cylindrical form, is located over the series of opening 53 in the housing 37 to modify the tone of the instrument and to prevent dirt and dust from entering the openings 53. This resonator is supported on blocks 63 brazed or otherwise secured in spaced relation to the upper side of the housing 37. Thumbscrews 62 extend downwardly through openings 64 in the resonator and are threadedly received in tapped openings 61 in each of the blocks 63. The resonator is located longitudinally of the housing 37 with its concave side downwardly disposed whereby the sound waves strike the inner side thereof and are modified in quality thereby.

The horn portion 30 is held rigidly in spaced relation to the housing 37 by providing an annular ring 66 brazed or otherwise secured around the outer or forward end of the housing 37 with an integral post 67 extending upwardly therefrom with a pad 68 at its upper end brazed or otherwise attached to the underside of the bell 31 of the horn.

A guide 70, for the forward or outer end of the slide valve 47, is of tubular form having an internal diameter of such size whereby it will telescope over the forward end of the housing 37. Means are provided for holding the guide tube thereon by securing an annular ring 71 to the housing 37 a distance from its end. A collar 72 having an inwardly extending annular flange 74 is slidably located over the guide tube 70. The guide tube is flared annularly outwardly at 75 at its rear end and the outer collar 72 is threadedly received on the ring 71 as at 73 whereby the flared portion 75 may be tightly held between the flange 74 and the forward face of the ring 71. The guide 70 is thus held on the forward end of the upper tube 37.

Means are also provided to prevent relative rotation between the housing 37 and the tubular guide 70 and consists of a pin 76 extended radially inwardly into the guide 70. An open-end slot 77 is formed inwardly from the outer end of housing 37 which is located around the pin 76 when the guide is in proper assembled position on the housing 37 thus preventing relative rotation therebetween.

The outer forward end of the guide tube 70 is closed by a plug 78 having a flanged outer end and a reduced portion 79, with the reduced portion of the plug brazed into the outer end of the guide 70. A bumper 80, made of rubber or other resilient material is secured to the inner face of the plug 78 against which the outer end of the valve rod 47 may engage.

Means are provided for manually moving the slide valve rod 47 to the proper extended position to obtain the desired note from the instrument. This means includes an annular sleeve 83 having a piece of padding such as velvet cloth 84 secured to its inner surface and slidably located on the valve guide 70. A hollow cylindrical finger grip 85 is secured to the sleeve 83 and extends radially outwardly therefrom. The finger grip 85 is closed at 86 at its outer end and a rod 87 having an enlarged knurled head 88 extends inwardly through an opening 89 in the end 86 of the finger grip 85, through an opening 90 in the sleeve 83, through a slot 91 formed longitudinally of the guide 70 and is threaded at 92 at its inner end and is threadedly received in a tapped opening 93 transversely through the valve rod 47 near the outer forward end thereof. This rod 87 is provided with an integral annular ring 94, slidably within the finger grip 85 which prevents the removal of the rod from the finger grip when the rod is unscrewed from the valve rod 47.

A flanged nipple 95 is secured to the inner curved side of the goose neck 11 and has a central opening 97 therethrough communicating with the interior of the gooseneck. This opening 97 is covered with the left thumb of the player of the instrument during the playing of notes in the normal register but when the opening is uncovered, the instrument will render a note an octave plus a fifth above the note rendered with the opening covered. As shown in Fig. 14, the fundamental notes produced with the instrument with the opening 97 closed are indicated at 95 along the right side of the valve guide tube 70, while the overtone notes, an interval of an octave plus a fifth above the fundamental note, are indicated, longitudinally adjacent the fundamental indications, as shown at 96, along the upper side of the valve guide tube 70. By the easily viewed location of the indicia 95 and 96 the player of the instrument can perceive exactly where to locate the finger grip 85 along the valve guide tube 70 to produce the note desired.

As shown in Fig. 10, the longitudinal tone slots 50, 51, 52, 53 and 54 formed in the tubes 10, 37, spacer 38 and liner 40 may be long enough to include one, two, three or more notes with bridges 100 between the slots. The openings 55 in the liner tube 40 may be long enough in some instances to include two half notes as played in the diatonic scale, as shown at 101 in Fig. 11. The openings 55 may have a length and spacing a half tone apart thus allowing the playing of the chromatic scale, as shown at 102 in Fig. 12. These openings 55 may be made long in the form of slots or may be round or circular openings, as shown at 103 in Fig. 13, the outer or forward edge of the openings only controlling the exact pitch of the resulting tone regardless of the size or shape of the openings 55. The openings 55 in the lower side of the liner tube 40 may be a quarter note or less apart, as shown at 103 in Fig. 13, whereby variations in the pitch of the notes played with the instrument may be obtained.

With the slots 55 elongated, as shown at 101 in Fig. 11, with a short bridge between the slots a glissando effect may be played with the instrument on longitudinal sliding movement of the valve rod 47. With the opening 55 shorter and with a longer bridge between the slots, as shown at 102 in Fig. 12, a chromatic scale effect is produced on movement of the valve rod.

### Second form

A second form of musical instrument is shown in Fig. 15, in which the lower tube 10, the return-bend tube 32 and the horn portion 30 are formed with a continuous taper from the mouthpiece end of the lower tube 10 to the bell 31 of the horn 30. This gives the instrument a tone similar to that of a saxophone and a somewhat different appearance. This second form also has spaced overtone openings 105 and 106 pierced through the note tube 10 and the gooseneck 11, the openings being yieldably closed by finger operated valves 107.

The instrument may be disassembled whereby it may be placed in a case only slightly longer inside than the distance from the rear end of the return-bend portion 32 to the forward side of the bell 31 of the horn portion 30. This is done by removing the guide tube 70 from the upper tube 37. This is accomplished by unscrewing the flanged collar 72 from the ring 71 on the valve tube 37. The guide tube then is free to be slid off the end of the upper tube. Before the guide tube 70 can be entirely removed from the valve tube 37, the rod 87 must be unscrewed from the tapped opening in the end of the valve rod 47. This is done by turning the knurled head 88 at the outer end of the rod 87 until the rod is threadedly disengaged from the tapped opening 93 in the outer end of the valve rod 47. When this is done the guide tube 70 may be completely removed from the upper tube 37 and the annular ring 94 on the rod 87 prevents the rod from being removed from the finger grip 85. The instrument, with the guide tube removed, is considerably shorter than when assembled and will fit into a smaller case. The instrument may be assembled by the reverse process for the disassembling thereof.

### Operation

When the musical instrument, as described, is in its carrying case, the mouthpiece 15 is removed from the mouthpiece holder 13 and the guide tube 70 is slidably removed from the forward or outer end of the housing 37 and the finger grip is disconnected from the forward outer end of the tubular slide valve rod 47. When it is desired to use and play the musical instrument it is removed from its case and the guide tube 70 is telescoped onto the forward outer end of the housing 37 and held thereon by screwing the threaded flanged collar 72 tightly onto the threaded ring 71 on the housing 37, the pin 76 and slot 77 connection preventing relative rotation between the guide tube and the upper tube. The rod 87 within the finger grip 85 is thereafter screwed into the end of the valve rod 47 whereby the valve rod will move longitudinally within the liner 40 on manipulation of the finger grip 85 along the guide tube 70. The mouthpiece 15, with the reed 23 properly tightened in place thereon, is forced into the mouthpiece holder 13 to such an extent to obtain the proper pitch with all of the notes of the instrument. The instrument is then in condition to be played.

The instrument is placed over the left shoulder of the player, with the left hand grasping the forward ends of the upper and lower tubes with the left thumb closing the overtone opening 97. With the player holding the finger grip 85 with his right hand the valve rod 47 may be moved to the proper position to obtain any desired note when the player blows on the mouthpiece. The indicia 95 on the guide tube 70 shows the player

exactly where to locate the finger grip 85 to obtain the desired note. This indicia is in clear view of the player so he can easily select the note desired.

The outer or forward end of the valve rod 47 may be guided by means other than the specific structure shown, the object being to move the forward end of the valve along the guide in clear view in front of the player on the instrument. The outer end of the valve rod may be guided, not by a valve tube 70 around the valve rod, but by a guide tube or flat rod extending forwardly of the valve tube and parallel to and closely adjacent the valve rod with a connector removably attached to the forward end of the valve rod and slidable longitudinally on the guide rod.

The forward end of the valve rod 47 may be guided and the exact positions for each note indicated by providing two spaced parallel rods or tubes removably attached to the valve tube lying parallel to the valve rod, one being each side of the rod. A slide indicator being slidable located on the spaced guide rods with a connecting portion therebetween removably attached to the forward end of the valve rod 47.

The column of vibrating air between the mouthpiece and the nearest opening 55 uncovered by the valve rod 47 determines wave length and thus the vibration frequency of the note that is played, hence it is the forward edge or outer edge of each opening 55 that controls the exact pitch of the note so emitted.

When it is desired to play a note above the highest fundamental note indicated, the player opens the overtone opening 97 thereby shortening the vibrating column of air next to the mouthpiece and the instrument will play the overtones an interval of an octave plus a fifth above the fundamental tone indicated.

In the second construction of the instrument, as shown in Fig. 15, with the tapered body, an overtone of a fundamental note is produced whenever one of the openings 195 and 196 is uncovered. The opening 195 is uncovered by the finger operated valve 197 to produce overtones of notes above G# and the opening 196 is uncovered to produce overtones of notes under G#.

From the foregoing it will be seen that I have invented a musical instrument in which the easy-to-play reed type of mouthpiece is used whereby a novice can easily learn to play the instrument in which the exact location of the slide is indicated in clear view of the player whereby he may conveniently and accurately play the note that is desired.

Although I have herein shown and described my invention in what I have conceived to be the most practical and preferred embodiments, it is recognized that departures may be made therefrom within the scope of my invention, which is not to be limited to the details disclosed herein, but is to be accorded the full scope of the claims so as to embrace any and all equivalent devices.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A musical instrument comprising a housing tube and a tone tube secured longitudinally adjacent each other with a series of longitudinally spaced openings between the tubes, a reed mouthpiece attached to one end of the tone tube, a valve rod slidable longitudinally within the valve housing tube, and means extending forward of the valve housing tube for manipulating the valve rod.

2. A musical instrument comprising a housing tube and a tone tube secured together in side to

side arrangement with a series of longitudinally spaced openings extending from one tube to the other, a reed mouthpiece attached to one end of the tone tube, a valve rod slidable longitudinally within the housing tube, a valve tube rod guide extending from one end of the housing tube, and means slidable on the guide for slidably moving the valve rod.

3. A musical instrument comprising a housing tube and a tone tube secured together in side by side arrangement with a series of longitudinally approximately spaced openings extending from one tube to the other, a reed mouthpiece attached to the forward end of the tone tube, a liner tube attached within the housing tube having longitudinally aligned openings in the exact longitudinally spaced position for a series of notes, a valve rod slidable longitudinally within the liner, and means extending forwardly of the housing tube for manipulating the valve rod longitudinally of the liner.

4. A musical instrument comprising a housing tube and a tone tube secured longitudinally together adjacent each other, having forward and rearward end portions and a series of longitudinally spaced openings communicating between the tubes, a mouthpiece attached to the forward end of the tone tube, a valve rod slidable longitudinally within the housing tube, a valve guide attached to and extending forwardly of the valve tube, means slidable along the guide attached to the valve rod for manipulating the valve rod longitudinally in the housing tube, and indicia on the guide for indicating the proper location of the manipulating means.

5. A musical instrument comprising a housing tube and a tone tube secured longitudinally together adjacent each other and having a series of longitudinally spaced openings extending from one to the other, a horn attached to the rear end of the tone tube being return bent and extending forwardly parallel and spaced therefrom, a mouthpiece attached to the forward end of the tone tube extending upwardly and rearwardly therefrom, a valve rod slidable longitudinally within the housing tube adapted to consecutively cover and uncover the openings in the housing tube, and means extending forwardly of the housing tube for manually moving the valve longitudinally therein.

6. A musical instrument comprising a housing tube and a tone tube secured longitudinally together adjacent each other with a series of longitudinally spaced openings communicating therebetween, a horn attached to the rearward end of the tone tube, a mouthpiece removably attached to the forward end of the tone tube, a valve rod slidable located within the housing tube, a valve rod guide attached to and extending forwardly of the forward end of the housing tube, and means slidable on the guide and attached to the valve rod for longitudinally moving the valve rod to any desired longitudinal position.

7. A musical instrument as described in claim 6 including indicia on the guide to indicate the proper location of the rod moving means to obtain the note desired.

8. A musical instrument comprising a housing tube and a tone tube secured longitudinally together adjacent each other and having a series of longitudinally spaced openings communicating therebetween, a horn attached to the rearward end of the tone tube, a reed mouthpiece removably and adjustably attached to the forward

end of the tone tube and extending upwardly and rearwardly therefrom, a valve rod closely slidable within the housing tube, a valve rod guide removably attached to the forward end of the housing tube and extending forwardly therefrom, a finger grip slidably mounted on the guide removably attached to the outer end of the valve rod, and indicia on the guide to facilitate the proper location of the valve rod to obtain the note desired.

9. A musical instrument comprising a housing tube and a tone tube secured longitudinally together adjacent each other with a series of longitudinally spaced longitudinal slots communicating therebetween, a mouthpiece removably attached to the forward end of the tone tube, a valve rod closely slidable longitudinally within the housing tube, and means extending forwardly of the valve tube for longitudinally moving of the valve rod.

10. A musical instrument comprising a housing tube and a tone tube secured longitudinally together adjacent each other having a series of longitudinally approximately spaced longitudinal slots communicating therebetween, a mouthpiece removably attached to the forward end of the tone tube, a liner removably located within the housing tube having a series of exactly longitudinally spaced openings communicating with the approximate openings, a valve rod closely slidable longitudinally within the liner, and means for moving the valve rod longitudinally.

11. A musical instrument comprising a housing tube and a tone tube secured longitudinally together adjacent each other with a series of longitudinally approximately spaced longitudinal slots communicating therebetween, a reed mouthpiece removably and adjustably attached to the forward end of the tone tube, a horn attached to the rearward end of the tone tube, a liner removably secured longitudinally within the housing tube having exactly spaced longitudinal slots communicating with the approximately spaced slots in the tubes, a valve rod closely slidable within the liner, a valve rod guide removably attached to the forward end of the housing tube and extending forwardly therefrom, a finger grip slidably mounted on the rod guide attached to the forward end of the valve rod, and indicia on the valve rod guide to indicate the proper locations of the valve rod.

12. A musical instrument comprising a housing tube and a tone tube secured longitudinally together adjacent each other with a series of longitudinally spaced openings communicating therebetween and a like series of longitudinally spaced openings through the housing tube diametrically opposite the first openings, a horn attached to the rearward end of the tone tube, a mouthpiece removably attached to the forward end of the tone tube, a valve rod closely slidable located within the housing tube, means for longitudinally moving the valve rod, and a semi-cylindrical resonator located longitudinally adjacent and spaced from the housing tube at the side of the valve tube near the second series of openings.

13. A musical instrument comprising a housing tube and a tone tube secured longitudinally together adjacent each other with a series of longitudinally spaced openings communicating therebetween, a hollow gooseneck secured to the forward end of the tone tube, a reed mouthpiece removably attached to the terminal end of the

gooseneck, an overtone opening extending through the gooseneck, a valve rod slidably located in the housing tube, and means for manually moving the valve rod.

14. A musical instrument comprising a housing tube and a tone tube secured longitudinally together adjacent each other with a series of longitudinally spaced openings communicating therebetween, a gooseneck secured to the forward end of the tone tube extending rearwardly and upwardly therefrom, an overtone opening extending through the gooseneck, a reed mouthpiece removably and adjustably attached to the gooseneck, a horn secured to the rear end of the tone tube, a valve rod slidably within the housing tube, a valve guide extending forwardly from the housing tube, a finger grip slidably on the valve guide and attached to the valve rod for manually manipulating the valve rod.

15. A musical instrument comprising a tone tube and a housing tube secured longitudinally together adjacent each other with a series of longitudinally approximately spaced longitudinal openings communicating therebetween, the housing tube having a series of diametrically oppositely positioned longitudinal slots aligned with the first openings, a hollow gooseneck secured to the forward end of the tone tube extending forwardly being return bent and extending rearwardly and upwardly, a reed mouthpiece removably and adjustably attached to the terminal end of the gooseneck, a horn secured to the rear end of the tone tube being return bent upwardly and extending forwardly therefrom, a tubular liner within the housing tube having longitudinally spaced openings aligned with the second mentioned openings in the housing tube and a series of longitudinally spaced openings in the liner adjacent the first mentioned openings between the housing tube and the tone tube, a resonator in spaced parallel relation to the housing tube adjacent the second mentioned openings, a valve rod slidable longitudinally within the liner, a valve guide member removably attached to the forward end of the housing tube, a finger grip slidably longitudinally of the guide member removably attached to the forward end of the valve rod, and indicia on the guide member indicating the location of the finger grip along the valve guide.

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