UNITED STATES PATENT OFFICE.

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BRASS WIND MUSICAL INSTRUMENT.


To all whom it may concern:

Be it known that I, FREDERICK W. TODT, a citizen of the United States, residing at Elkhart, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in Brass Wind Musical Instruments, of which the following is a specification.

This invention consists broadly in an adjustable sliding perforated valve for changing the key of a brass wind instrument.

In the drawing, Figure 1 is a view in side elevation of a complete musical instrument embodying the present invention. Fig. 1 A is a fragmentary view in side elevation of an instrument similar to that illustrated in Fig. 1 but in inverted position relative thereto looking in the same direction. Fig. 2 is a detail sectional view through the sliding valve, its casing and associated tubing; Fig. 3 is a front elevation of the sliding valve detached; and Fig. 4 is a detail sectional view showing the locking pin.

While I have, for purposes of illustration, shown my invention as embodied in a melophone, it will be understood that I do not restrict the use of my invention to a melophone, but wish it understood that it may with equal efficiency be used in brass wind instruments, and that the adjustment may be indefinitely extended to other keys than indicated, namely to a greater number of keys or a lesser number of keys.

In the drawing, 1 and 2 represent tubes of the instrument with which the various tubes 3, 4, 5, and 6 communicate. It will be seen that the pipes or tubes 1 and 2 are separate and distinct pipes, one of which communicates with the mouthpiece, while the other is connected to and communicates with a valve casing as at 2. In the present embodiment of my invention, I construct the pipes 3, 4, 5, and 6 of varying lengths so that the keys of C, D, E and F can be obtained by the proper adjustment of the parts as is more clearly described hereinafter. When the air is directed into the tube 3 via the sliding valve a note will be sounded in the key of C, upon the proper manipulation of the valves. If it is desired to play the instrument in the key of D the sliding valve is adjusted so that the air will be directed into the cross tube 4, which is of less length than the tube 3. In this manner the key of the instrument may be successively changed to any desired key by simply adjusting the sliding valve so that the air will be directed into one of the cross tubes, it being understood that the cross tubes are of different lengths. The usual slides provide the means for adjusting the valve tones.

5 is a strut extending between the tubes 1 and 2, from which the hollow bar 6 extends toward the open end of the tubes 1 and 2.

7 is a spring finger secured on the bar 6, to the outer end of which is firmly secured a pin 8, which extends through an opening in the outer end of the hollow bar 6.

The numeral 9 designates the adjustable sliding valve which directs the flow of air from the mouthpiece tube into some one of the cross-tubes 3, 4, 5, or 6 according to its adjustment, whereby the key of the instrument may be changed. This valve is provided with the perforations 10 communicating with the interior of the tubes of the valve, said tubes being closed below the valve. The yoke 11 connects the projecting ends of the sliding valve 9 and is provided with the usual thumb knobs 12, by means of which the valve may be readily moved as desired. Secured to and projecting from the connecting yoke 11 is a rod 13 of the same cross sectional shape as the tube 6 into which it is adapted to slide. This rod 13 is provided with a series of depressions 14, 15, 16 and 17, in the present instance indicated as the keys of C, D, E and F, respectively. While I have shown in the drawing adjustment only for the keys of C, D, E and F, it will be understood that this range may be indefinitely extended to other keys. When the sliding valve is inserted in the tubes 1 and 2 to its full extent, it is held in that position by the pin engaging the depression 17, in which position, in the present instrument, the key of the instrument is set at F. If it is desired to change the key of the instrument to the key of Eb, the pin 8 is raised until it frees the bar 13, whereupon the sliding valve may be drawn out until the pin engages the depression 16, when the instrument is set for the key of E. If it is desired to set the instrument for the key of D or C, the same operation is repeated. As the adjustable sliding perforated tube is moved in the tubes 1 and 2, the perforations 10 are aligned with two opposite...
posite tubes 3 and 4, as will be readily un-
derstood. Thus, it will be seen that by
raising the pin 8, the adjustable sliding
perforated valve can be so adjusted that the
perforations of the slide valve will register
with the open ends of either of the pipes
3, 4, 5° or 6° thereby making it possible to
quickly and accurately change the key of the
instrument as desired.

As above stated, I wish it understood that
the application of my invention is not re-
stricted to melophones, inasmuch as it is
equally as effective in other brass wind in-
struments.

I am aware that changes in details of con-
struction can be made without departing
from the spirit of my invention; hence, I
would have it understood that I do not re-
strict my invention to the precise details of
construction shown.

What I claim as new and desire to secure by
Letters Patent is:

In a brass wind instrument, the com-
bination with parallel tubes, of a hollow bar
secured between said tubes and extending
toward the open ends thereof, and provided
with a perforation near its open end, a
spring bar secured to said hollow bar, a pin
on said spring bar constructed to enter said
perforation, a tuning slide mounted in said
tubes, a bar connected to the slide and con-
structed to enter the hollow bar, and pro-
vided with depressions and key tone indicia,
said pin being constructed to engage the
said depressions and lock the tuning slide
relatively to the parallel tubes for a given
key.

The foregoing specification signed at Elk-
hart Ind. this twenty-ninth day of Novem-
ber, 1909.

FREDERICK W. TODT.

In presence of—
W. J. GRONERT,
WILLIAM F. SEIDEL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."