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A. E. HOSTETTER

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HARMONICA

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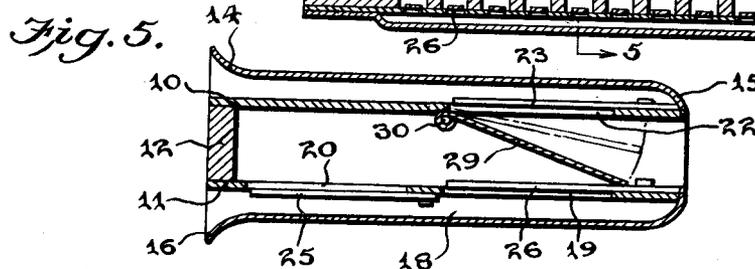
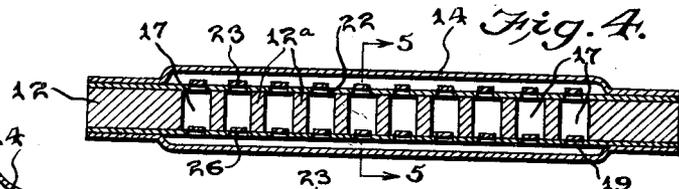
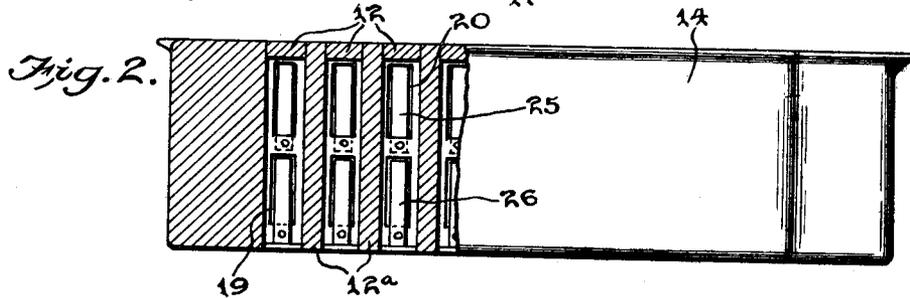
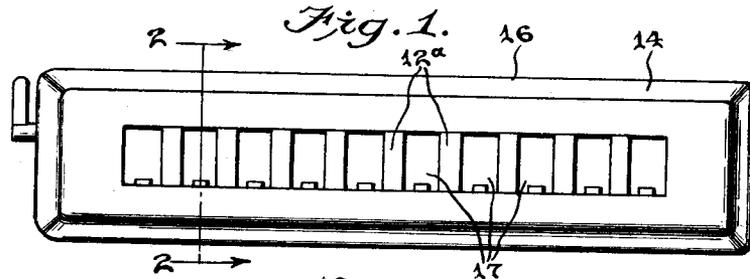
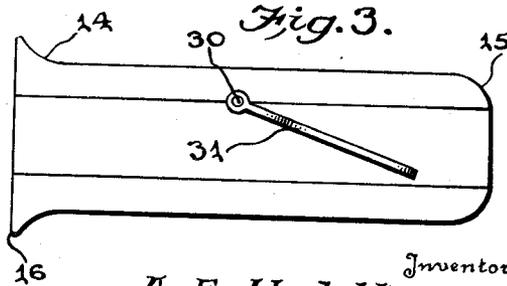


Fig. 6.

Inhaling	f	a	c	f	a	c	f	a	c
Exhaling	c	e	g	c	e	g	c	e	g
Inhaling	d	g	b	d	f	g	b	d	f



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HARMONICA

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The object of the invention is to provide a harmonica in which the chord of the sub-dominant is readily available, without any complications in structure of the instrument, where the character of the music permits or demands; and to provide a wind instrument of this character in which the number of parts are few and the device, therefore, susceptible of cheap manufacture and low marketing cost.

With this object in view the invention consists in a construction and combination of parts of which a preferred embodiment is illustrated in the accompanying drawings wherein:

Figure 1 is a front elevational view of a harmonica constructed in accordance with the invention.

Figure 2 is a top plan view, partly broken away.

Figure 3 is an end elevational view.

Figure 4 is a sectional view on the plane indicated by 4—4 of Figure 2.

Figure 5 is a sectional view on the plane indicated by the line 5—5 of Figure 4.

Figure 6 is a chart of the notes available where the instrument is made non-transposing, as when tuned in the key of C.

The body of the instrument consists of the reed plates 10 and 11, the spacer blocks 12 to which the reed plates 10 and 11 are secured, and the cover plates 14 disposed over the reed plates and spaced therefrom but curving over and connecting with the reed plates at the forward side of the instrument as indicated at 15. At the rear side, the cover plates are flared outwardly from the reed plates as indicated at 16. The intermediate spacer blocks 12^a are uniformly spaced and together with the reed plates define air chambers 17 which are in communication with the lower air space 18 defined by the lower cover plate and the reed plate 11 through slots 19 and 20. The air chambers 17 are also in communication with the air space 21 defined by the remaining cover plate and the reed plate 10 through slots 22, the latter slots being formed in the reed plate 10 and the slots 19 and 20 in the reed plates 11. Reeds 23 are secured to reed plate 10 in covering relation to the slots

22 and the bank of reeds is constructed to vibrate at the frequencies of the notes represented at 24 in the chart in Figure 6. Reeds 25 and 26 are secured to the plate 11 in covering relation respectively to the slots 20 and 19, the former vibrating at frequencies represented by the notes indicated at 27 in the chart in Figure 6 and the latter vibrating at frequencies represented by notes indicated at 28 in said chart, the chart indicating the notes played when the instrument is tuned in the key of C. The chambers 17 are open at the forward side of the instrument, so that the reeds may be actuated by blowing into the chambers or extracting air from them by suction, the reeds 25 and 23 being actuated by inhalation and the reeds 26 by exhalation. Since the reeds 25 and 23 are designed for actuation by inhalation and since they would produce dissonances if actuated simultaneously, means must be provided for preventing the actuation of the bank 23 when the bank 25 is actuated and vice versa. This means comprises swinging tongues 29 positioned one each in each of the air chambers 17 but all carried on a common shaft 30 which is exteriorly exposed at one end of the instrument and provided with a finger lever 31. When the lever is raised the tongues are in a position of closure for the slots 22 and thus suction through the instrument will actuate only the reed bank 25, air entering the air space 18, passing through the slots 20 and vibrating the reeds 25 and then passing out of the chamber 17 at the front side of the instrument. With the tongues 29 in the same position, exhaling will pass air through the chambers 17, the slots 19 and out through the air space 18, resulting in vibration of the reeds 26. Thus either notes of the tonic or dominant chords will be produced, depending on whether the performer is exhaling or inhaling. If the lever 31 be depressed, the tongues 29 leave the position of closure for the slots 22 and their extremities dropping on the reeds 26, passage of air in either direction through the slots 19 or 20 is precluded, the only passage of air through the chambers 17 being through the slots 22, so that the reed bank 23 will be actuated if the air currents

be produced by exhalation, since the reeds 23 are mounted to be thus actuated although it is obvious that they may be mounted for actuation by exhalation. The air currents in the actuation of the reeds 23 pass through the air passage 21 the slots 22 and the air chambers 17. Notes of the subdominant chord are thus produced.

The invention having been described what is claimed as new and useful is:

1. A harmonica comprising reed banks for sounding the tonic, dominant, and subdominant chords, means for vibrating the reed banks by the processes of exhalation and inhalation, and means for shielding one of the banks during the operation of either of the other two and vice versa, said means being finger actuated.

2. A harmonica comprising a body divided into air chambers and provided with reed plates, banks of reeds mounted on said reed plates and subject to vibration by the air passing through said air chambers, and means disposed in each chamber and simultaneously actuated for selectively shielding one bank of reeds or the other two.

3. A harmonica comprising a body consisting of reed plates and spacer blocks defining a plurality of air chambers and cover plates spaced from the reed plates and defining air passages, banks of reeds mounted on the reed plates and subject to vibration by air passing through the air chambers and air passages, and tongues mounted in the air chambers and provided with actuating means for simultaneously shifting them into shielding relation with the banks of reeds of one reed plate or on the other.

4. A harmonica comprising a body consisting of reed plates and spacer blocks defining a plurality of air chambers and cover plates spaced from the reed plates and defining air passages, banks of reeds mounted on the reed plates and subject to vibration by air passing through the air chambers and air passages, and tongues mounted in the air chambers and provided with actuating means for simultaneously shifting them into shielding relation with the banks of reeds of one reed plate or on the other, the actuating means for the tongue consisting of a rockingly mounted shaft for all of the tongues and provided with an exteriorly exposed finger lever.

In testimony whereof he affixes his signature.

ABRAM E. HOSTETTER.