March 23, 1926. 1,577,899

G. B. DUSINBERRE

HARMONICA

Filed May 31, 1922

Fig. 8.

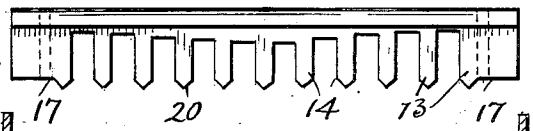


Fig. 9.

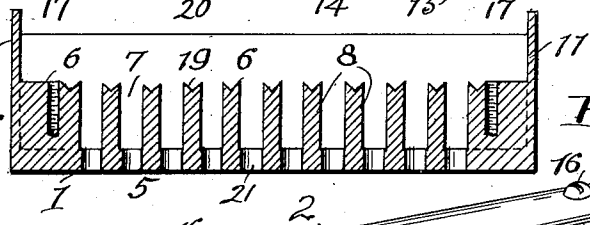


Fig. 10

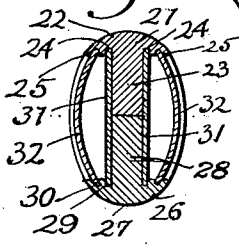
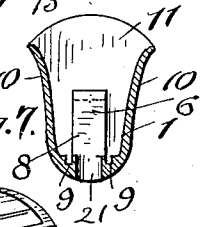


Fig. 6.



Fig. 7.



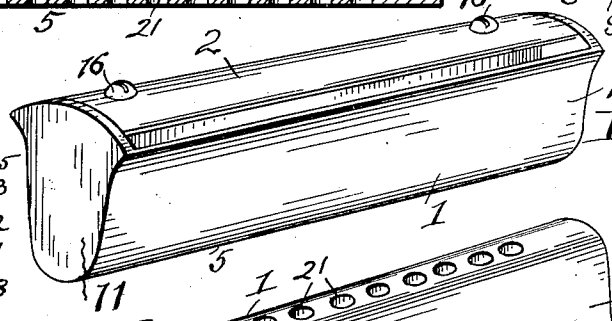


Fig. 2.

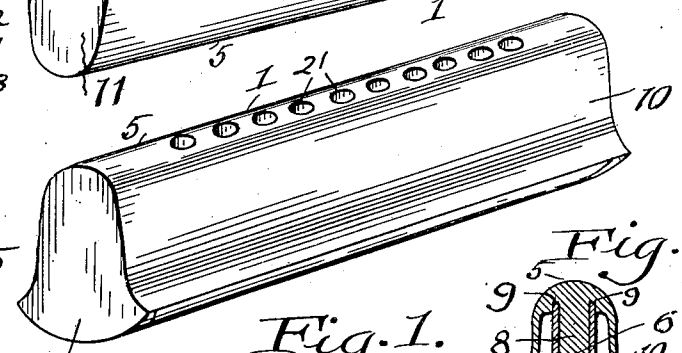


Fig. 1.

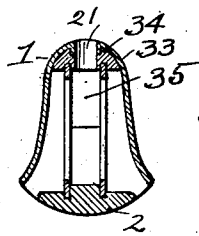


Fig. 11.

Fig. 5.

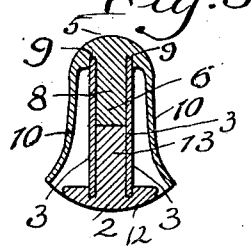


Fig. 3.

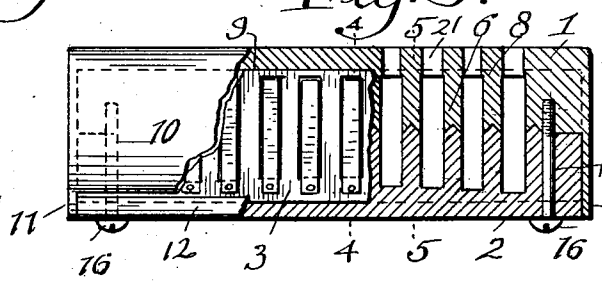
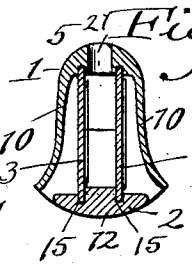


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE B. DUSINBERRE, OF ELMIRA, NEW YORK.

HARMONICA.

Application filed May 31, 1922. Serial No. 564,879.

To all whom it may concern:

Be it known that I, GEORGE B. DUSINBERRE, a citizen of the United States, residing at Elmira, in the county of Chemung and State of New York, have invented a certain new and useful Improvement in a Harmonica, of which the following is a full, clear, and exact description.

This invention relates to musical instruments of the harmonica type, and has for an object to provide an instrument which will present a smooth surface to the mouth of the player and which can be easily sterilized.

A further object is to provide an instrument in which tacks and rivets for securing the various parts in place are eliminated.

A further object is to provide an instrument, the body of which is formed by a mouth piece and a complementary part clamped thereto, both of which parts being of such form that they may be readily cast from metal or moulded from one of the many synthetic compounds that are available.

A further object is to provide an instrument in which the reed plates are so secured that they may be easily and quickly detached and replaced so that the original quality of the instrument may be maintained.

Other objects will be apparent from the following description and annexed drawings, or obvious to one skilled in the art of playing such instruments.

Generally speaking, the invention may be said to comprise the elements and combinations thereof set forth in the accompanying claims.

In said annexed drawings:

Fig. 1 is a perspective view of the harmonica with the front or mouth engaging edge uppermost.

Fig. 2 is a perspective view of the harmonica with the rear edge uppermost.

Fig. 3 is a side elevation partly broken away to show a portion of the instrument in section.

Figs. 4 and 5 are sections on lines 4—4 and 5—5, respectively, of Fig. 3.

Figs. 6 and 7 show transverse sections through the clamping member and mouthpiece, respectively.

Figs. 8 and 9 show longitudinal sections through the clamping member and mouthpiece, respectively.

Fig. 10 is a sectional view showing a modified construction.

Fig. 11 is a sectional view showing a further modification.

Referring to the annexed drawings, the improved harmonica in its preferred form consists of a pair of complementary grid forming body members 1 and 2 and a pair of reed plates 3 which are clamped between the two body members. The member 1 is the mouthpiece and the complementary member 2 serves to complete the grid structure and each of the members 1 and 2 is provided with means for engaging the reed plates 3 to clamp the same in place on opposite sides of the grid structure.

The body member 1 forming the mouthpiece has a head portion 5 formed to provide a smooth rounded outer mouth engaging edge and a web 6 projecting from the inner side of the head 5. The web 6 is the grid forming portion of the member 1 and has transverse recesses extending from the edge thereof substantially to the head 5 whereby a series of regularly spaced teeth 8 are provided. The head 5 is provided with longitudinal grooves 9 at the base of the web 6 and on opposite sides thereof, these grooves being adapted to receive the edges of the reed plates 3 when the instrument is assembled. The outer side covers 10 and ends 11 of the instrument are preferably continuations of the mouthpiece so that a smooth unbroken surface is presented from the mouth engaging edge to the open rear edge. The side and end cover portions may be integral with the head 5 or may be in the form of a sheet metal stamping secured by welding, soldering, or other suitable means to the head 5. The sides 10 of the cover flare outwardly toward the rear or bottom edge of the instrument so that, when the instrument is assembled, air outlet slots or longitudinally extending openings are provided between the free edges of the covers 10 and the clamping member 2.

The clamping member 2 is T-shaped and has a laterally projecting head 12 and a central web 13 formed with spaced teeth 14 corresponding to the teeth 8 of the mouth piece 1 and with grooves 15 in the head 12 on opposite sides of the web 13, corresponding to the grooves 9 in the mouth piece 1 and adapted when the instrument is assembled to receive the edges of the reed

plates 3 opposite those engaged in the grooves 9 of the mouth piece. Screws 16 extend through apertures 17 in the body member 2 and are screwed into the outer edge of the web 6 of the mouth piece adjacent the end members 11 to clamp the parts together.

When the mouth piece 1, member 2 and reed plates are assembled, the teeth 8 and 14 of the mouth piece 1 and complementary member 2 abut end to end and the opposite sides of the webs 6 and 13 forming the grid lie in the same plane so that the reed plates may lie snugly against the grid, the grid together with the reed plates forming a series of wind cells.

The abutting teeth 8 and 14 form the partitions between the cells and the ends of the teeth, and therefore, should be in snug engagement so that air can not leak from one cell into the adjacent cell. This may be accomplished with flat engaging faces but it is considered preferable, in order to obtain a tighter joint and in order to assist in the positioning of the parts in assembling, to provide a tongue and groove connection between the abutting ends of the teeth. As shown in Figs. 1 to 9 the teeth 8 are provided with transverse V-grooves 19 and the teeth 14 are provided with pointed ends 20 adapted to fit in the grooves 19. The V-groove provides a greater area or contact between the abutting ends of the teeth 8 and 14 and a tighter joint at their meeting edges. The head 5 of the mouth piece 1 has apertures 21 formed therethrough leading to the recesses 7 between the spaced teeth 8.

In assembling the instrument the reed plates 3 are inserted in the grooves 9 of the mouth piece with their inner faces lying against the web 6. The complementary body member 2 is inserted between the end plates 11 and slipped down until the upper edges of the reed plates enter into the grooves 15 of the member 2. The screws 16 are then tightened upon the head 12 of the clamping member 2, bringing the teeth 8 and 14 into tight engagement and securely clamping the reed plates in place.

In Fig. 10 of the drawing a modified form of the invention is shown. In this modification the T-shaped mouth piece 21 has a head 22 and a toothed web 23 similar to the web of the mouth 1 in the modification first described. The head 22 of the mouth piece has reed plate receiving grooves 24 on opposite sides of the web 23 and adjacent thereto outside the grooves 24 the head 22 is provided with cover plate receiving grooves 25 parallel with the grooves 24. The complementary body member 26 is T-shaped and has a head 27 and a toothed web 28 corresponding to the head and web of the mouth piece. The head 27 of the clamping member has reed plate grooves 29 formed therein along opposite sides of the web 28 and cover plate receiving grooves 30 outside the grooves 29 and parallel therewith.

The body members 21 and 26 are clamped together in a manner similar to that shown in connection with the preferred embodiment first described and when so clamped they hold the reed plates 31 and the cover plates 32 between the heads 22 and 27 with their edges seated in the grooves 24 and 29 and 25 and 30 respectively.

In the modification shown in Fig. 11 the construction is substantially the same as that shown in Figs. 1 to 7 except that the cover 33 instead of being integral with the head of the body member forming the mouth piece, consists of sheet metal stamped or otherwise suitably formed to provide a smooth continuous surface and suitably secured to the head 34 of the mouth piece body member 35.

It is not essential in any of the modifications above described that both the body members be formed with teeth, since, if desired, one of the body members may be provided with teeth of sufficient length to form the partitions between the cells.

Having described my invention, I claim:—

1. In a harmonica, a cell forming body comprised of a pair of members, each having a head portion and a toothed web portion projecting therefrom, said members being secured together with their teeth in engagement, one of said members having apertures in the head portion thereof between the teeth.

2. A harmonica, comprising a pair of members having projecting toothed web portions and head portions, extending laterally from the web portions, reed plates interposed between the head portions of said members on opposite sides of the webs thereof, and means for securing said members together with the teeth thereof in engagement and with said reed plates clamped between the head portions thereof.

3. A harmonica, comprising a pair of cell forming body members, one of said members being apertured and forming the mouthpiece, the other of said members being T-shaped in cross-section and having a web portion with transverse grooves therethrough forming spaced teeth and intervening cell spaces, means for securing said body members together with the apertures of the mouthpiece member registering with said cell spaces, and a pair of reed plates clamped between said members, said members having longitudinal grooves in which opposite edges of the reed plates fit.

4. A harmonica, comprising a pair of reed plates, a pair of body members each having a head and a toothed web projecting therefrom and longitudinal grooves in the heads thereof at the bases of said webs, and means

for clamping said body members together with their toothed webs abutting end to end and with the reed plates seated in the grooves thereof.

5. A harmonica, comprising a pair of cell forming body members, a pair of reed plates, said body members having cell forming web portions and lateral projections provided with longitudinal grooves adapted to receive the edges of the reed plates and means for securing said body members together with the reed plates clamped between said projections.

6. A harmonica, comprising a pair of cell forming body members, each having transverse grooves forming teeth between them and having lateral projections, the teeth of one of said members having grooved ends and the teeth of the other of said members having their end portions formed to fit in said grooves, reed plates positioned between the lateral projections of one of said members and the lateral projections of the other, and means for clamping said body members together with their teeth abutting end to end and with said reed plates clamped between said projections.

7. In a harmonica, a pair of cell forming body members, one of said members having apertures leading to the cells and integral side flanges forming the side cover plates of the harmonica, the other of said members being clamped to said first member within said cover portion.

8. A harmonica, comprising a pair of cell forming body members, said members having abutting transversely grooved webs forming the cells, one of said members having apertures leading to the cells and portions integral therewith forming the side cover plates of the harmonica, a pair of reed plates and means for clamping said members together and for holding said reed plates against said webs.

9. A harmonica, comprising a pair of cell forming body members, one of said members having integral cover forming side flanges, a web portion extending longitudinally between said side flanges and transversely grooved to provide teeth which form partitions between the cells and apertures leading to the spaces between said teeth, reed plates on opposite sides of said web portion, and means for clamping the other of said body members upon the web portion of the first body member and for holding said reed plates in place.

10. A harmonica, comprising a mouth piece having a rounded edge, side flanges forming a continuous extension of said rounded edge and forming the side cover plates of the harmonica, and spaced apertures in the rounded edge portion, a cell forming structure within the side flanges of said mouth piece and spaced inwardly therefrom, and means for securing said structure to said mouth piece.

11. A harmonica, comprising a mouth piece having integral side and end flanges forming the sides and ends of the instrument and having spaced apertures from end to end, cell forming parts within the side and end flanges of the mouth piece, said apertures communicating with the cells, and clamping means for securing said cell forming parts in place.

In testimony whereof, I hereunto affix my signature.

GEORGE B. DUSINBERRE.