Oct. 23, 1951 D. ROSENHEIM 2,572,818

CHILD'S TOY MUSICAL INSTRUMENT

Filed Jan. 7, 1948 2 SHEETS—SHEET 1

Fig. 1.

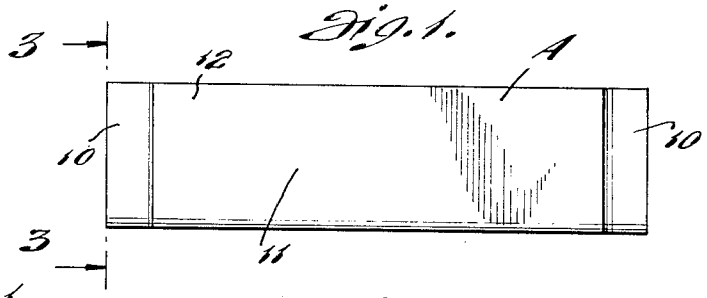


Fig. 2.

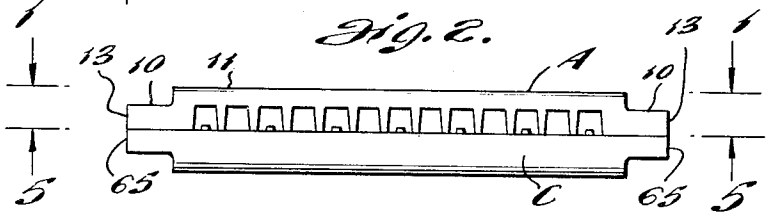


Fig. 3.

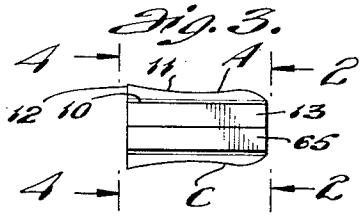


Fig. 4.

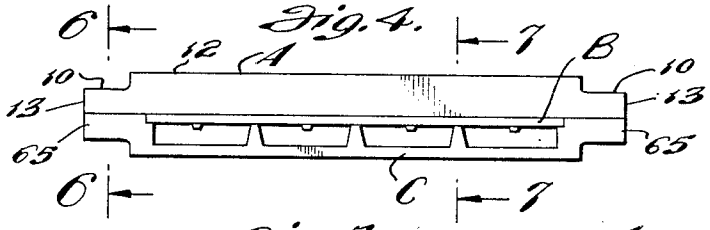
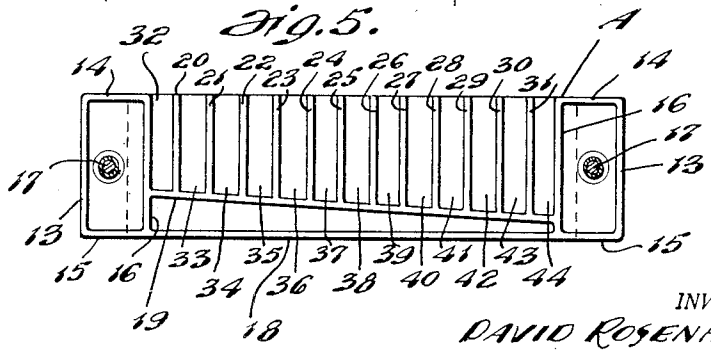


Fig. 5.



INVENTOR.
DAVID ROSENHEIM
BY
ATTORNEY

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Fig. 6.

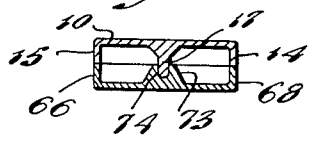


Fig. 7.

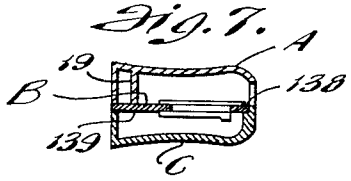


Fig. 8.

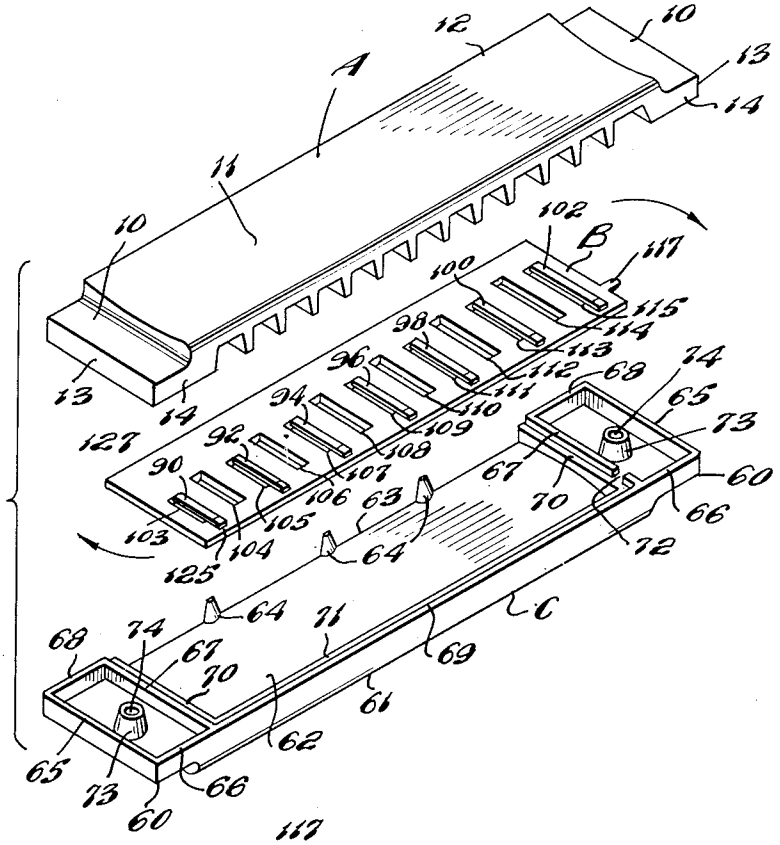
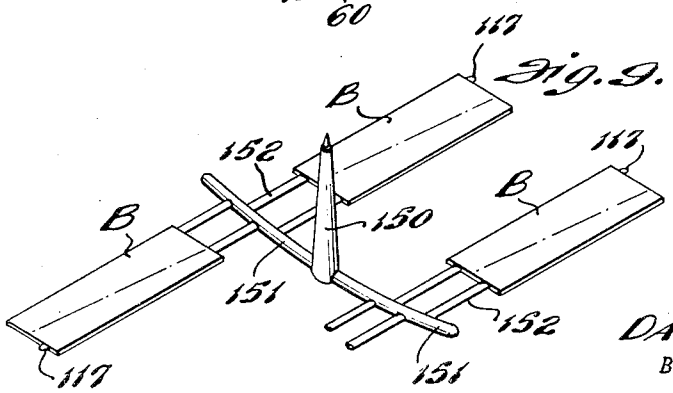


Fig. 9.



INVENTOR.
DAVID ROSENHEIM
BY
ATTORNEY

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CHILD'S TOY MUSICAL INSTRUMENT

David Rosenheim, New York, N. Y., assignor to Lapin Products, Inc., Newark, N. J., a corporation of New York

Application January 7, 1948, Serial No. 908

11 Claims. (Cl. 84—377)

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The present invention relates to a toy and it particularly relates to a children's harmonica toy.

It is among the objects of the present invention to make a harmonica entirely molded of plastic materials which will stand rough usage and have as few elements as possible and which at the same time may be assembled inexpensively from few parts.

Still further objects and advantages will appear in the more detailed description set forth below, it being understood, however, that this more detailed description is given by way of illustration and explanation only and not by way of limitation, since various changes may be made therein by those skilled in the art without departing from the scope and spirit of the present invention.

In accomplishing the above objects it has been found most satisfactory, according to one embodiment of the present invention, to form a harmonica of two casing elements, each casing element molded in one piece of plastic and an intermediate reed element also molded in one piece. These pieces are so formed that they may be readily assembled together with assurance of correct positioning in relation to each other.

The invention also consists in certain new and original features of construction and combination of parts hereinafter set forth and claimed and as to its other objects, features and advantages, the mode of operation and manner of its organization, these, inter alia, may be better understood by referring to the following description considered in connection with the accompanying drawings forming a part thereof in which:

Fig. 1 is a top plan view of the harmonica upon the line 1—1 of Fig. 2;

Fig. 2 is a front edge elevational view;

Fig. 3 is an edge elevational view upon the line 3—3 of Fig. 1;

Fig. 4 is a back elevational view upon the line 4—4 of Fig. 3;

Fig. 5 is a transverse sectional view upon the line 5—5 of Fig. 2;

Fig. 6 is a transverse vertical sectional view upon the line 6—6 of Fig. 4;

Fig. 7 is a transverse sectional view upon the line 7—7 of Fig. 4;

Fig. 8 is an exploded perspective view showing the various parts before assembly; and

Fig. 9 is a top perspective view showing one method of forming the reed plates.

Referring to Figs. 1 to 9, the toy mouth organ consists of an upper casing member A, an intermediate reed plate B and a lower casing C.

The casing member A has the side members 10 and a central elevated portion 11 curving upwardly to the rear as indicated at 12. The members 10 of casing member A interiorly have the depending end walls 13, the front walls 14, the rear walls 15 and the inside walls 16 which form a cage around the depending studs or nipples 17.

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The walls 13, 14, 15 and 16 form a cage around the studs or nipples 17.

The central portion 11 has the rear wall 18, the oblique wall 19 and the varying length walls 20 to 31 forming the sound chambers 32 to 44.

The lower casing member B has the end portions 60 and the central portion 61 sloping outwardly and downwardly as indicated at 62. The rear edge 63 is provided with spacer points 64 for contacting the reed plate B.

The side or end elements 60 have the end walls 65, the front walls 66, the inside walls 67 and the rear walls 68. The central portion 61 has the front wall 69.

Along the walls 67 and 69 are the ledges or reed plate supports 70 and 71. One of the walls 67 is notched as at 72.

Inside of the walls, 65, 66 and 67, are the mounds 73 with the recesses 74 for receiving the ends of the nipples 17.

The reed plate B has the alternately upwardly extending and downwardly extending reeds 90 to 102 which cover the slots 103 to 115. These slots increase in length from left to right as do the chambers 32 to 44. The end of the plate B has an outstanding lug 117 fitting into the recess or notch 72 which will locate it when the plate B is placed upon the ledges 70 and 71.

The bases or roots 125 of the reeds 90 to 102 extend beyond the ends of the slots 103 to 115 substantially to the forward and rear edges 126 and 127 of the reed plate B. They may be glued on or molded on integrally.

The reeds 90 to 102 as shown in Fig. 10 have oblique sides 128 and are slightly narrower than the slots 103 to 115 as indicated by the spacing 129. Similarly the oblique ends 130 of reeds 90 to 102 are slightly short of the ends of the slots 103 to 115 as indicated by the clearance 131. The enlargements 132 on the ends 130 of the reeds 90 to 102 will vary to give such weight to the reed as will produce the desired tone.

The elements A, B and C may all be molded integrally in the manner indicated in Fig. 9 which shows molding of the reed plates B by way of example. The reed plates B may be molded by injection molding. The device formed in the mold will have the form shown in Fig. 9 with the central inlet, section 150, the transverse flow section 151, the final inlet flow sections 152 and the molded reed plates B. When the mold is opened, sections 150, 151 and 152 are removed and the reed plates B may be broken off. The mold cavity may be made in sections correspond-

ing to the number of sound chambers 32 to 44 and reeds 90 to 102.

In assembly, the edges of the walls 13, 14, 15, 16, 18, 19 and 20 to 31, as well as the end of the nipple 17 are wetted with an adhesive or plastic solvent and then pressed against the sub-assembly of the plate B and base C. A short contact will result in a permanent and durable connection.

As clearly appears, the harmonica of the present invention, which may be made of three elements, namely the upper casing member A, the reed plate B and the lower casing C, by injection-molding of polystyrene, after cementing will form a substantially integral one-piece unit as shown in Figs. 1 to 4.

As many changes could be made in the above children's toy musical instrument, and many apparently widely different embodiments of this invention could be made without departing from the scope of the claims, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Having now particularly described and ascertained the nature of the invention, and in what manner the same is to be performed, what is claimed is:

1. A three-piece toy children's plastic mouth organ comprising an upper plastic casing, a lower plastic casing and an intermediate plastic reed plate, said reed plate being clamped between said casings one of said casings being closed at the front and having openings at the rear and the other of said casings being closed at the rear and having openings at the front, said front openings permitting spaced and separated streams of air to be forced into and drawn out of the casings and said rear openings affording access to an elongated chamber closed at one side by the reed plate and said casings being cemented together to form closed compartments at the ends and at the rear of the reed plate and the slots in said reed plate having straight parallel sides and the sides of said reeds being bevelled so that the sides of the reeds will converge together away from the slots.

2. A three-piece toy children's plastic mouth organ comprising an upper plastic casing, a lower plastic casing and an intermediate plastic reed plate, said reed plate being clamped between said casings, said casings forming end attachment boxes and a plurality of sound chambers of varying transverse length being formed between one of said casings and the reed plate one of said casings being closed at the front and having openings at the rear and the other of said casings being closed at the rear and having openings at the front, said front openings permitting spaced and separated streams of air to be forced into and drawn out of the casings and said rear openings affording access to an elongated chamber closed at one side by the reed plate and said casings being cemented together to form closed compartments at the ends and at the rear of the reed plate and the slots in said reed plate having straight parallel sides and the sides of said reeds being bevelled so that the sides of the reeds will converge together away from the slots.

3. A three-piece toy children's plastic mouth organ comprising an upper plastic casing, a lower plastic casing and an intermediate plastic reed plate, said reed plate being clamped between said casings, one of said casings being cemented ings having a notch and lug connection to fix the reed plate in respect to the casings one of said casings being closed at the front and having openings at the rear and the other of said casings being closed at the rear and having openings at the front, said front openings permitting spaced and separated streams of air to be forced into and drawn out of the casings and said rear openings affording access to an elongated chamber closed at one side by the reed plate and said casings being cemented together to form closed compartments at the ends and at the rear of the reed plate and the slots in said reed plate having straight parallel sides and the sides of said reeds being bevelled so that the sides of the reeds will converge together away from the slots.

4. A three-piece toy children's plastic mouth organ comprising an upper plastic casing, a lower plastic casing and an intermediate plastic reed plate, said reed plate being clamped between said casings, said reed plate being cemented to one of said casings and not to the other casing one of said casings being closed at the front and having openings at the rear and the other of said casings being closed at the rear and having openings at the front, said front openings permitting spaced and separated streams of air to be forced into and drawn out of the casings and said rear openings affording access to an elongated chamber closed at one side by the reed plate and said casings being cemented together to form closed compartments at the ends and at the rear of the reed plate and the slots in said reed plate having straight parallel sides and the sides of said reeds being bevelled so that the sides of the reeds will converge together away from the slots.

5. A three-piece toy children's plastic mouth organ comprising an upper plastic casing, a lower plastic casing and an intermediate plastic reed plate, said reed plate being clamped between said casings, one of said casings being cemented independently to the reed plate and other casing one of said casings being closed at the front and having openings at the rear and the other of said casings being closed at the rear and having openings at the front, said front openings permitting spaced and separated streams of air to be forced into and drawn out of the casings and said rear openings affording access to an elongated chamber closed at one side by the reed plate and said casings being cemented together to form closed compartments at the ends and at the rear of the reed plate and the slots in said reed plate having straight parallel sides and the sides of said reeds being bevelled so that the sides of the reeds will converge together away from the slots.

6. A three-piece toy harmonica comprising two plastic casing elements and a plastic reed plate clamped therebetween, said reed plate having a plurality of closely spaced slots and integrally molded reeds alternately extending over and under said slots one of said casings being closed at the front and having openings at the rear and the other of said casings being closed at the rear and having openings at the front, said front openings permitting spaced and separated streams of air to be forced into and drawn out of the casings and said rear openings affording access to an elongated chamber closed at one side by the reed plate

and said casings being cemented together to form closed compartments at the ends and at the rear of the reed plate and the slots in said reed plate having straight parallel sides and the sides of said reeds being bevelled so that the sides of the reeds will converge together away from the slots.

7. A three-piece toy harmonica comprising two plastic casing elements and a plastic reed plate clamped therebetween, said reed plate having a plurality of closely spaced slots and integrally molded reeds alternately extending over and under said slots, said reed plate being adhesively connected to one of said casing elements one of said casings being closed at the front and having openings at the rear and the other of said casings being closed at the rear and having openings at the front, said front openings permitting spaced and separated streams of air to be forced into and drawn out of the casings and said rear openings affording access to an elongated chamber closed at one side by the reed plate and said casings being cemented together to form closed compartments at the ends and at the rear of the reed plate and the slots in said reed plate having straight parallel sides and the sides of said reeds being bevelled so that the sides of the reeds will converge together away from the slots.

8. A three-piece toy harmonica comprising two plastic casing elements and a plastic reed plate clamped therebetween, said reed plate having a plurality of closely spaced slots and integrally molded reeds alternately extending over and under said slots, the reeds of said reed plate having bevelled side edges and having slight edge clearance in respect to said slots one of said casings being closed at the front and having openings at the rear and the other of said casings being closed at the rear and having openings at the front, said front openings permitting spaced and separated streams of air to be forced into and drawn out of the casings and said rear openings affording access to an elongated chamber closed at one side by the reed plate and said casings being cemented together to form closed compartments at the ends and at the rear of the reed plate and the slots in said reed plate having straight parallel sides and the sides of said reeds being bevelled so that the sides of the reeds will converge together away from the slots.

9. A three-piece toy harmonica comprising two plastic casing elements and a plastic reed plate clamped therebetween, said reed plate having a plurality of closely spaced slots and integrally molded reeds alternately extending over and under said slots, one of said casings being recessed to receive said reed plate one of said casings being closed at the front and having openings at the rear and the other of said casings being closed at the rear and having openings at the front, said front openings permitting spaced and separated streams of air to be forced into and drawn out of the casings and said rear openings affording access to an elongated chamber closed at one side by the reed plate and said casings being cemented together to form closed compartments at the ends and at the rear of the reed plate and the slots in said reed plate having straight parallel sides and the sides of said reeds being bevelled so that the sides of the reeds will converge together away from the slots.

10. A three-piece toy harmonica comprising

two plastic casing elements, and a plastic reed plate clamped therebetween, said reed plate having a plurality of closely spaced slots and integrally molded reeds alternately extending over and under said slots, one of said casings having a recess and said reed plate having a location controlling lug fitting into said recess controlling the assembly of said reed with said casings one of said casings being closed at the front and having openings at the rear and the other of said casings being closed at the rear and having openings at the front, said front openings permitting spaced and separated streams of air to be forced into and drawn out of the casings and said rear openings affording access to an elongated chamber closed at one side by the reed plate and said casings being cemented together to form closed compartments at the ends and at the rear of the reed plate and the slots in said reed plate having straight parallel sides and the sides of said reeds being bevelled so that the sides of the reeds will converge together away from the slots.

11. A children's molded plastic toy harmonica comprising a three-piece molded plastic construction consisting of a single injection-molded reed plate and upper and lower injection-molded casings integrally cemented together and to the reed plate, the upper casing having a non-perforate back wall and a front wall with a plurality of openings to enable blowing of air thereinto or drawing of air therefrom by the mouth of the user and separating transverse walls integral with said upper casing and rearwardly from said openings and forming said openings, and said lower casing having a non-perforate front wall and a perforate rear wall with a plurality of openings without separating walls whereby the lower casing forms one large chamber extending inwardly from the rear of the harmonica, and the upper casing forms a plurality of small non-communicating transverse chambers positioned side by side extending inwardly from the front of the harmonica, the reed plate separating said chambers and said reed plate having a reed and slot combination corresponding to each transverse chamber and constituting the only means of communication between said chambers within the harmonica, said reed and slot combinations including a slot with straight side walls and a reed overlying said slot with bevelled end edges slightly spaced inside of the sides and ends of said slots.

DAVID ROSENHEIM.

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