Sept. 8, 1959 D. J. VOLPE 2,902,897

TOY PIANO

Filed Aug. 8, 1956 3 Sheets-Sheet 1

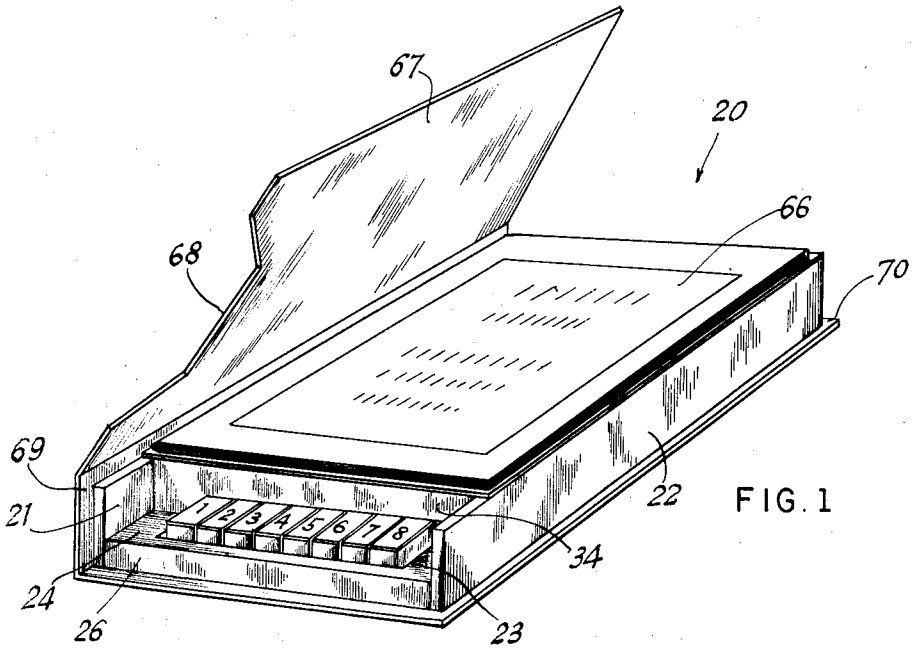


FIG. 1

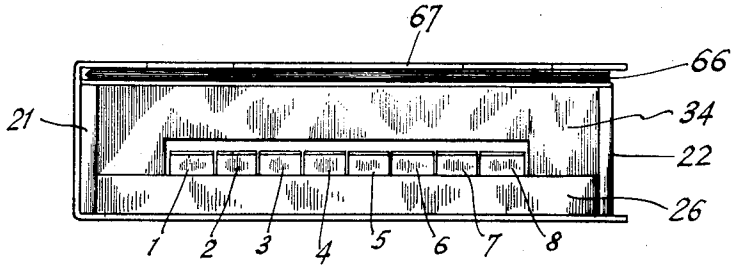


FIG. 2

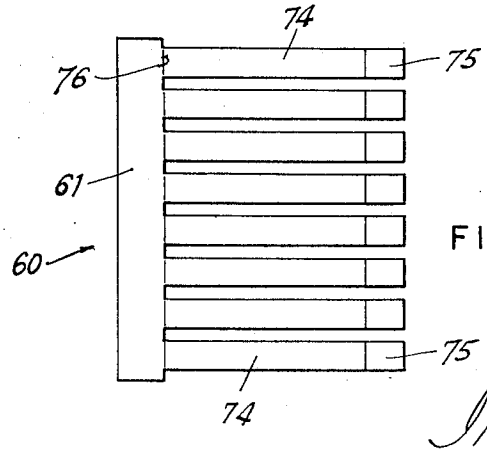


FIG. 13

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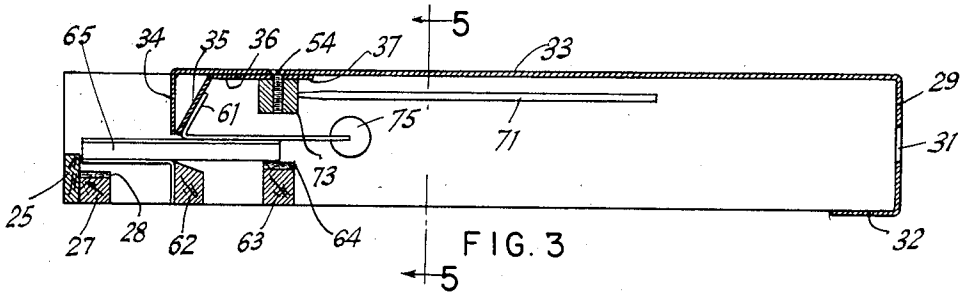


FIG. 3

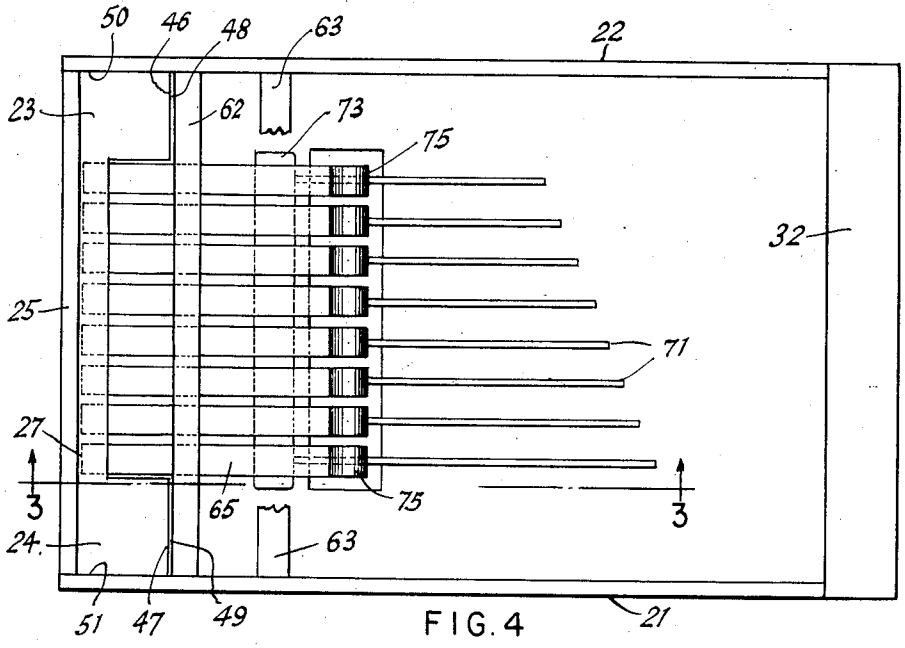


FIG. 4

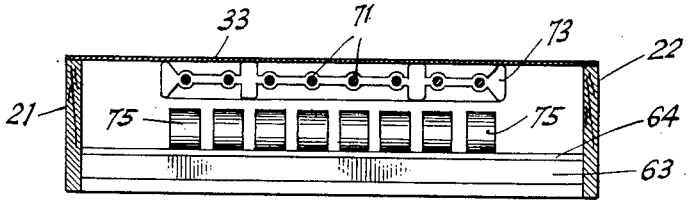


FIG. 5

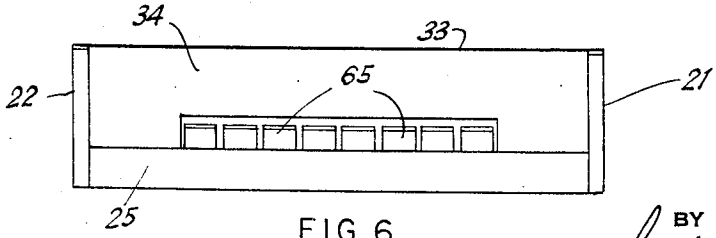


FIG. 6

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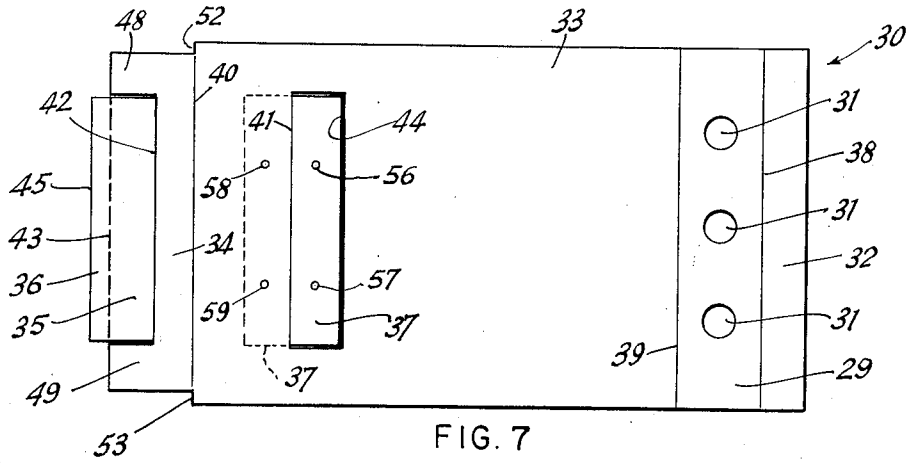


FIG. 7

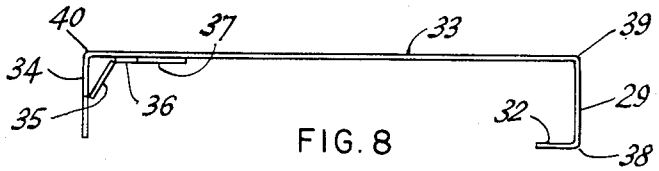


FIG. 8

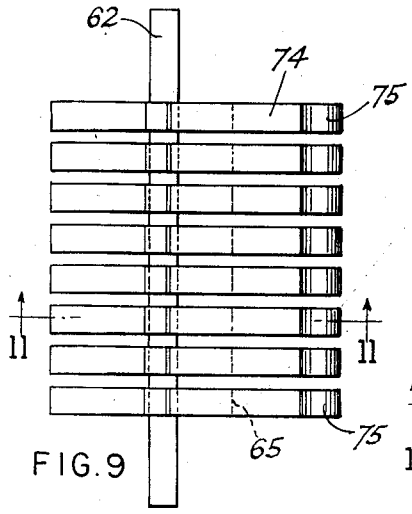


FIG. 9

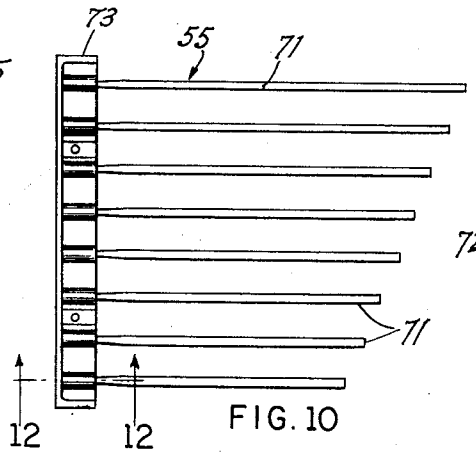


FIG. 10

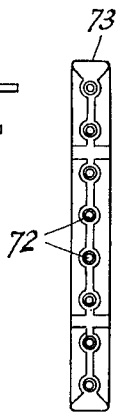


FIG. 14

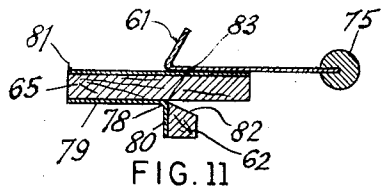


FIG. 11

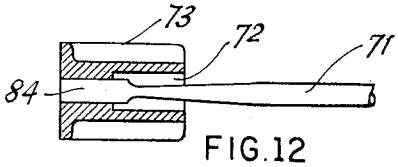


FIG. 12

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TOY PIANO

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Application August 8, 1956, Serial No. 602,770

10 Claims. (Cl. 84—404)

This invention relates to toy pianos and a method of making same and, more particularly, to a novel toy piano construction involving inexpensive materials, a novel and simple action, and a simplified assembly procedure whereby the piano can be produced to sell at a substantially reduced price.

A feature of the present invention is the provision of novel sub-assemblies of keys and piano "wires" simply and inexpensively assembled in an enclosed casing or cabinet construction chiefly of relatively stiff cardboard stapled to wood framing members. The cardboard cabinet includes a hinged cover overlying an instruction or music book containing numbered notes to correspond to numbered piano keys. The music book is secured to the cardboard top of the piano by an adhesive or by stapling through some of the pages to one of the wood framing members.

The piano "wires" comprise various length metal rods mounted in laterally spaced, substantially parallel relation through openings in a cast metal support member supported by screws or rivets from the cardboard top and a cardboard panel partially underlying the top and forming a double wall behind the metal support member of the piano "wires." The piano keys comprise laminated plywood members attached to a wood cross member by a slitted piece of scored cardboard providing a hinge for each of the piano keys of the key group. The upper faces of the keys are covered with a printed smooth washable paper or plastic indicating the black notes or sharps and flats and the number of the key to correspond with the numbered notes of the instruction or music book. The wood cross member is attached to the opposed wood side frame members. The nocks or strikers are attached to the ends of a scored thin cardboard comb and the opposite end is glued to an inwardly folded angularly disposed portion of the cardboard top, the intermediate portion of the comb overlying the inner ends of the piano keys so that upon depressing the key, the cardboard finger of the comb will cause the striker to hit the overlying piano "wire."

A wood front face member, having a felt strip mounted on a wood slat which acts as a striking cushion when the keys are depressed, is mounted at the front of the piano by nailing it to the side members and extends across the front of the piano and above the bottom edge of each key. The rear portions of the keys rest on a felt strip pasted to a wood cross member which is also nailed to the wood side members.

For an understanding of the invention principles, reference is made to the following description of a typical embodiment thereof as illustrated in the accompanying drawing. In the drawing:

Fig. 1 is a perspective view of the complete piano and book unit with the cover open;

Fig. 2 is a front view thereof with the cover in closed position;

Fig. 3 is a sectional view on the line 3—3 of Fig. 4;

Fig. 4 is a bottom plan view of the piano with the cover removed;

Fig. 5 is a sectional view on the line 5—5 of Fig. 3;

Fig. 6 is a front view of the piano with the cover removed;

Fig. 7 is a plan view of the blank of the die cut cardboard member for assembling the cabinet;

Fig. 8 is a side view of the cardboard member, shown in Fig. 7, in its folded position as it appears when the cabinet is assembled;

Fig. 9 is a plan view of the striker and keyboard units;

Fig. 10 is a plan view of the piano "wire" unit;

Fig. 11 is a longitudinal sectional view of a piano key and striker unit taken through line 11—11 of Fig. 9;

Fig. 12 is an enlarged sectional view of the piano "wire" unit taken through line 12—12 of Fig. 10, showing one of the "wires" in position, the end being broken away;

Fig. 13 is a plan view of the striker unit; and

Fig. 14 is an end view of the piano "wire" unit shown in Fig. 10.

Referring to the drawings, the toy piano 20 comprises a cardboard cabinet enclosing a wood inner frame, a sub-assembly of keys and piano "wires." The inner frame comprises a pair of wood side members 21, 22, with member 22 forming one outer side of the cabinet. The bottom forward ends of members 21, 22, are interconnected by a wood front face member 25 having a vertical face 26 extending between members 21, 22 and portions 23, 24 defining a rearwardly opening recess. A wood block 27, having a felt strip 28 pasted to the top face thereof is secured at the base of such recess between the recessed-defining portions 23, 24 by gluing or nailing to the back face of member 25. Felt strip 28 acts as a striking cushion for the piano keys 65 when depressed.

The side members 21, 22 are interconnected and maintained in parallel relation by a single die cut cardboard member 30 which comprises a rear wall 29, having punched holes 31 to aid the sound in passing through the cabinet, a rear bottom strip 32 for strengthening the assembly, a top member 33, front flange 34, angular strengthening member 35, flange 36 and folding flap 37. Edges 38, 39, 40 are creased; edges 41, 42 are cut scoring lines, and line 43 is a perforated line. Flap 37 is folded downwardly, forward and inwardly against the inside of the top 33 and members 35, 36 are also folded inwardly and upwardly so that edges 44 and 45 abut. Member 35 will assume an angular position, and front flange 34 will be at right angles to top 33, as shown in Figs. 3 and 8.

In assembling the cabinet, the die cut cardboard member 30 is laid down with the inside up. The side members 21, 22 are placed upon the longitudinal edges of member 30 with crease line 39 at the rear end of the side members 21, 22. Rear wall 29 is bent upwardly at a right angle to the top 33 so that it abuts the ends of the side members 21, 22. Bottom strip 32 is then folded down upon the bottom edges of side members 21, 22 and secured thereto by staples. The members are then turned upside down so that the unit is right side up in its normal position. The top member 33 is then secured to the top edges of the side members 21, 22 by several staples. The inner edges 46, 47 of recessed portions 23, 24 are then glued to the face of the lower ends of extensions 48, 49 of front flange 34 which has been turned downwardly at right angles to the top member 33 and between the side members 21, 22, shoulders 52, 53 remaining upon the edges of side members 21, 22. The outer edges 50, 51 of recessed portions 23, 24 are also covered with glue. The member 25 and recessed portions 23, 24 are then positioned between the lower front of the side members 21, 22 and further secured with a thin nail through each of the side members 21, 22.

The piano "wire" unit **55**, hereinafter described, is then secured to the top member **33** and flap **37** which has been bent inwardly and upwardly against the inside of the top member **33** and flap **37** which has been bent inwardly and upwardly against the inside of the top member **33**, by screws **54** or rivets through pre-punched holes **56**, **57**, **58**, **59** in the flap **37** and top member **33**, respectively.

The striker unit **60**, Fig. 13, hereinafter described, is then glued by its end portion **61** to the angular member **35**, as shown in Fig. 3.

The keyboard unit, hereinafter more fully described, comprising the eight piano keys **65** and the wood cross member **62** is then secured to the inner edges **46**, **47** of the recessed portions **23**, **24** by two nails which pass through the cross member **62**, the extensions **48**, **49** of front flange **34** and into the recessed portions **23**, **24**. Wood cross member **63**, having a felt strip **64** along its upper face, is then secured between the side members **21**, **22** by nailing through said side members.

A simplified music instruction book **66** then has its rear cover glued to top member **33** and for further security two staples may be driven through several of the end pages and into the top of side member **21**. The book **66** contains known melodies simply arranged with the numbers of the notes beneath each note corresponding to the number on the piano keys **65**. Thus, one need only strike the keys by number to play the songs in the book.

The cover **67**, which has a front cutaway portion **68**, is joined to wall **21** by gluing the inner side wall portion **69**, to which cover portion **68** is hinged, to side member **21** and gluing the inner back cover **70** to rear bottom strip **32**, front member **25**, wood block **27** and cross members **62**, **63**. For further security, if desired, several staples may be driven through back cover **70** into the bottom edge of side member **22**. This completes the assembly.

The piano "wire" unit **55** comprises various length steel pins or rods **71** having flattened ends **84** corresponding in number to and aligned with keys **65**. Rods **71** are secured in parallel, laterally spaced relation by mounting through holes **72** by pushing the ends **84** through the smaller opening of hole **72** and hitting ends **84** with a hammer. The support bar **73** of cast metal is then secured by rivets or screws **54** in the holes **56**, **57**, **58** and **59** in top member **33** and folding flap **37**. The rods **71** are force fitted in holes **72** as described.

The striker unit **60**, shown in Fig. 13, is formed of a single die cut flat cardboard member cut like a comb with a series of strips **74** of uniform length, the ends of which have attached thereto by gluing, a series of uniform slitted strikers **75**. The end portion **61** opposite the strikers **75** has a scoring line **76** and is bent upwardly, as shown in Fig. 3, and glued to the angular strengthening member **35**. The intermediate portion of the comb or striker unit **60** overlies the inner ends of the piano keys **65**. When the key is pressed downwardly, the strip or finger **74** of the comb causes the striker **75** to hit the overlying piano "wire" **71**.

The keyboard unit is formed by taking a single piece of wood the size of eight piano keys **65**; then pasting on the top side a single piece of printed coated paper or plastic sheet **81** denoting the numbers of the keys and the simulated sharp and flat notes; then a piece of black fiber board **79** which has been scored with a lateral scoring line at **78** is covered with glue and the paper covered piece of wood is secured to the fiber board with the printed paper side up; the keyboard unit **77** is then turned upside down and the end strip **80** is folded back upon itself and the wood cross member **62**, having an angular top face **82** presenting a knife or sharp edge **83** against the underside of the key **65**, is secured to the end strip **80**; the keyboard unit in its upside down position is then saw cut by passing it through once between seven multiple

circular blades which cut all eight keys simultaneously. The knife edge **83** acts as a fulcrum permitting the keys **65** to pivot.

When the piano is fully assembled, as described aforesaid, and when the cover **67** is opened, music book **66** is exposed and lies on the top member **33**.

While a specific embodiment of the invention has been shown and described in detail to illustrate the application of the invention principles, it will be understood that the invention may be embodied otherwise without departing from such principles.

What is claimed is:

1. A toy piano comprising, in combination, a frame including a pair of parallel wooden side wall members, a wood front face member extending between and interconnecting the forward ends of said side wall members, said face member having a rearwardly opening, transversely elongated recess; a unitary relatively stiff cardboard back, top and front wall member having a top wall portion extending along the top edges of said side wall members and secured thereto, a back wall portion extending along the back edges of said side wall members and having a flap extending underneath the latter and secured thereto, and a front wall portion extending down from said top wall portion, adjacent the rear edge of said face member, and secured to the rear edges of portions of said face member defining the recess therein, said front wall portion having a recess in its lower edge coextensive with that in said face member and extending above said face member; a key assembly supported in said frame with the keys disposed through the recess in said front wall portion and in the recess in said face member; and a piano wire assembly supported in said frame for actuation by said key assembly.

2. A toy piano as claimed in claim 1 including a striker assembly mounted in said frame intermediate said key and piano wire assemblies, and separate therefrom, for actuation by the keys to strike the piano wires.

3. A toy piano as claimed in claim 1 including a relatively stiff cardboard base, side wall and cover member unit, said base and side wall being secured to said frame to cooperate with said back, top and front wall member and with one of said side wall members in enclosing said assemblies except for the fingering portions of the keys, and the cover portion being hinged to the upper edge of the side wall portion to overlie said top wall portion.

4. A toy piano as claimed in claim 1 including a relatively stiff cardboard base, side wall and cover member unit, said base and side wall being secured to said frame to cooperate with said back, top and front wall member and with one of said side wall members in enclosing said assemblies except for the fingering portions of the keys, the side wall portion of said cover member unit overlying one of said side wall members, and the cover portion being hinged to the upper edge of the side wall portion to overlie said top wall portion.

5. A toy piano as claimed in claim 1 including a wooden bar extending along the base of the recess in the face member underneath the forward ends of the keys, and having a felt strip on its upper surface for engagement by the keys when depressed.

6. A toy piano as claimed in claim 2 including a flap extending from the upper edge of the recess in the front wall portion and folded inwardly and diagonally upwardly with its end secured to the inner surface of said top wall portion; said striker assembly being secured to said flap.

7. A toy piano as claimed in claim 2 including a flap extending from the upper edge of the recess in the front wall portion and folded inwardly and diagonally upwardly with its end secured to the inner surface of said top wall portion; said striker assembly comprising a flexible element including a base secured to said flap and fingers extending perpendicularly rearwardly from said

base, and strikers secured to the free ends of said fingers in respective alignment with the piano wires.

8. A toy piano as claimed in claim 1 in which said key assembly comprises a wooden bar extending between and secured to said side wall members just rearwardly of said front wall portion; a flexible element including a base extending along and secured to the front face of said bar and fingers extending forwardly horizontally from said base toward said face member; and wooden keys secured to and along each of said fingers and extending rearwardly beyond said bar.

9. A toy piano as claimed in claim 8 including a bar extending between and secured to said side wall members beneath the rear ends of said keys, and having a felt strip secured along its upper surface.

10. A toy piano as claimed in claim 1 in which said top wall portion has a flap struck therefrom rearwardly of said front wall portion and folded back against the undersurface of said top wall portion to reinforce the latter; and said piano wire assembly is mounted in said frame by fastening means extending through said reinforcing flap and top wall portion.

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