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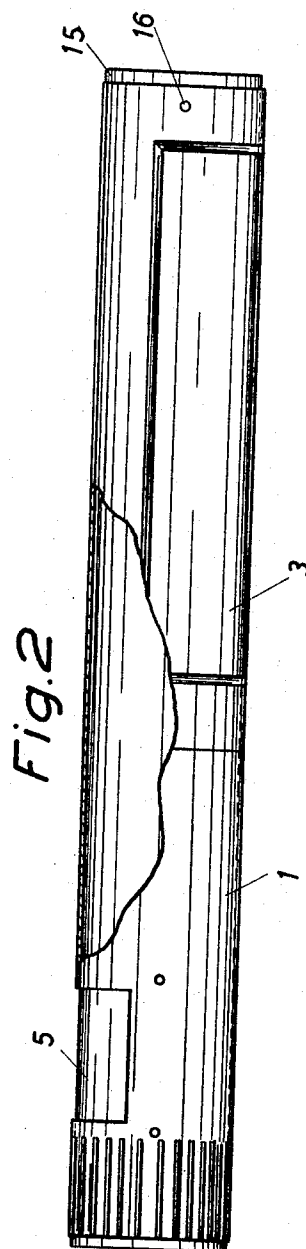
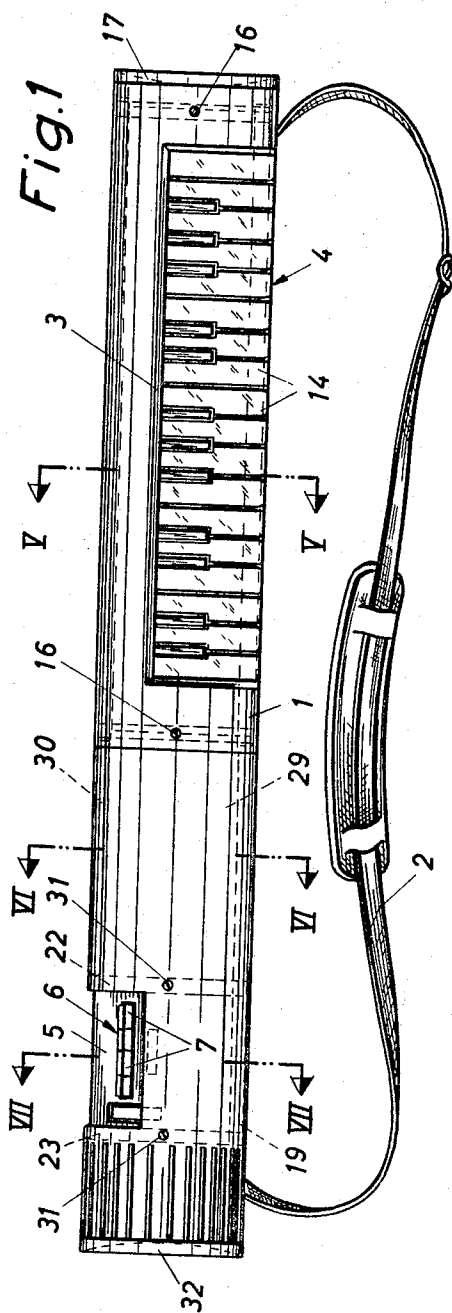
B. O. I. BRODIN

3,335,629

ELECTRICAL MUSICAL INSTRUMENT

Filed Jan. 21, 1966

4 Sheets-Sheet 1



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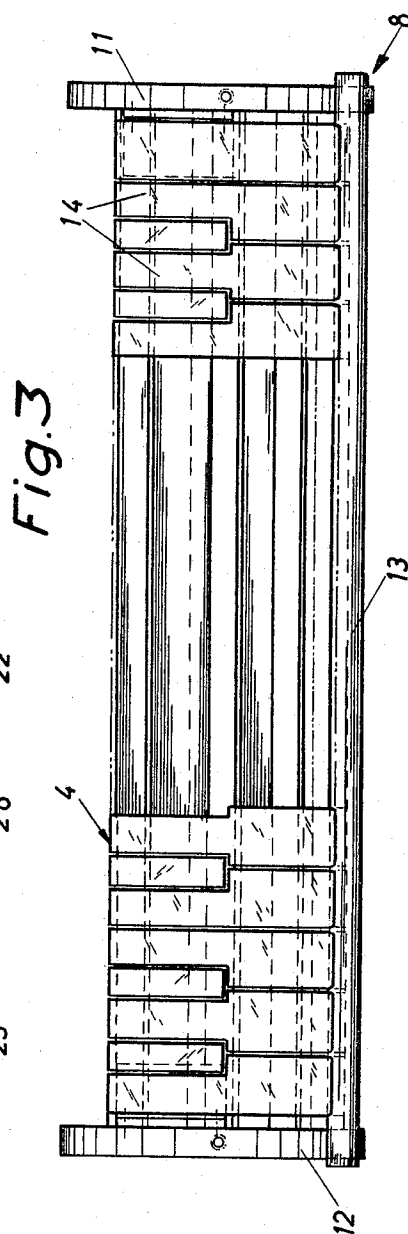
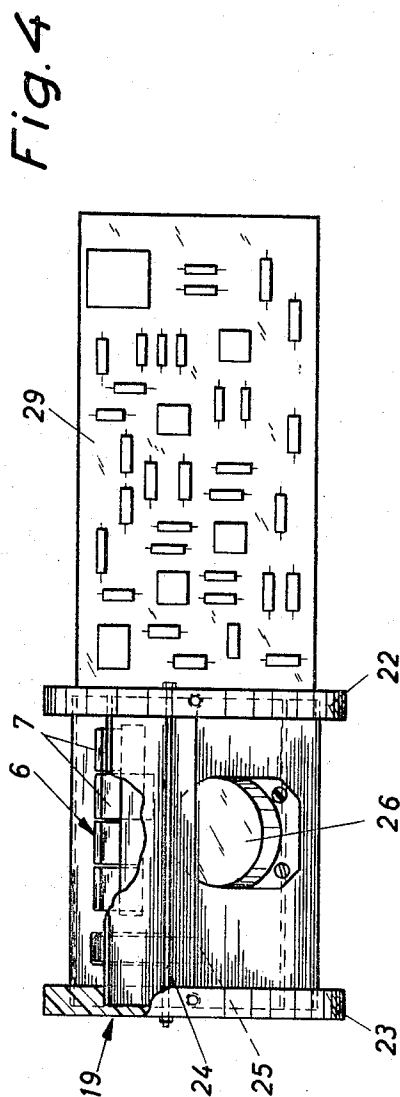
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ELECTRICAL MUSICAL INSTRUMENT

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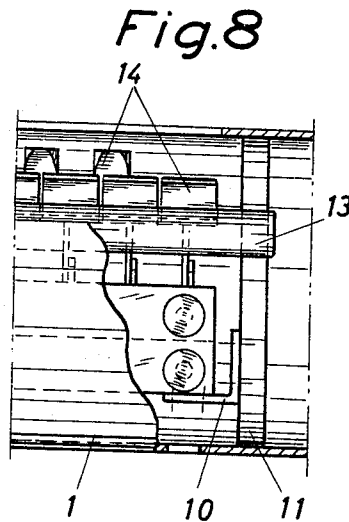
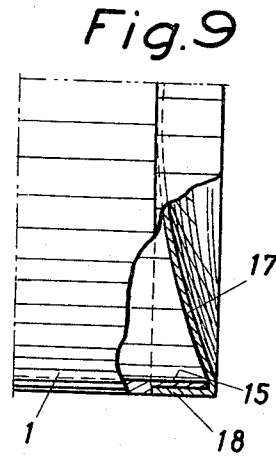
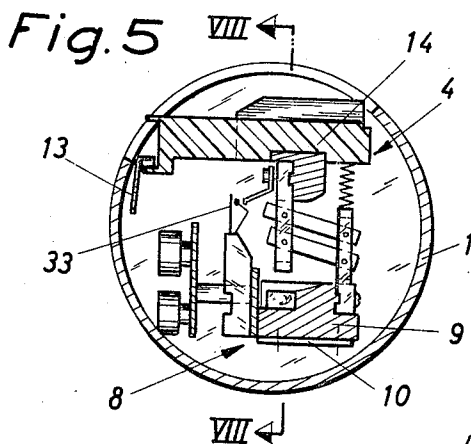
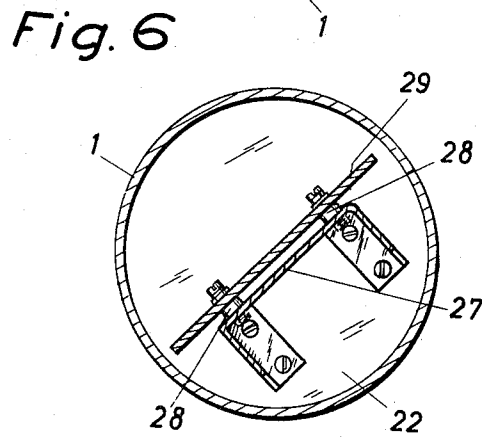
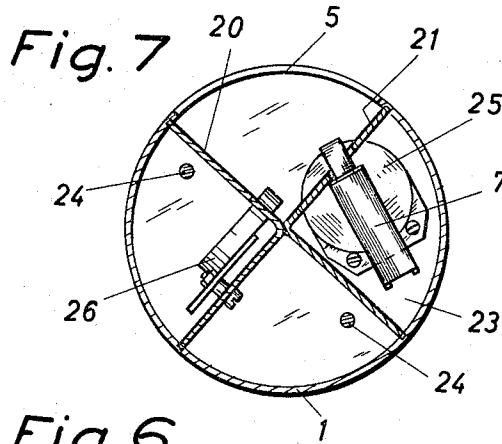
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ELECTRICAL MUSICAL INSTRUMENT

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4 Sheets-Sheet 3



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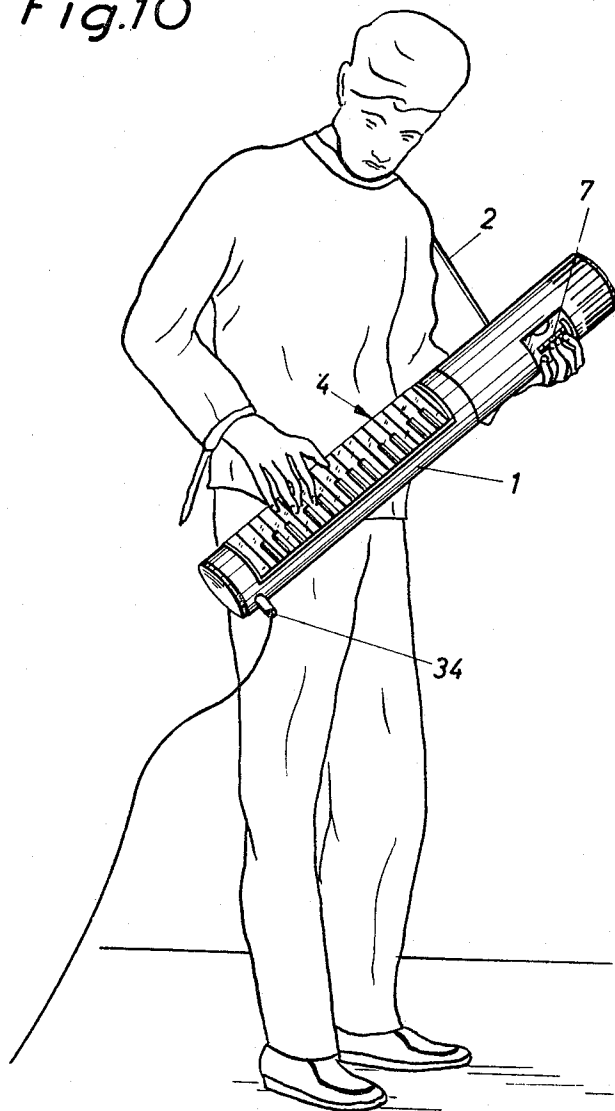
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ELECTRICAL MUSICAL INSTRUMENT

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Fig.10



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## ELECTRICAL MUSICAL INSTRUMENT

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Claims priority, application Sweden, Feb. 16, 1965, 1,957/65

5 Claims. (Cl. 84—1)

The main feature of the invention is to be seen therein instruments with a manual, which instruments with advantage are carried in a shoulder belt.

The main feature of the invention is to be seen therein that the manual on its chassis is arranged in a tube which is provided with a longitudinal opening in the tube wall through which the manual can be reached with one hand. Due to its simple construction the instrument will be cheap in manufacture. It will further have a low weight and be easy to handle.

When the instrument is provided with a tone selector, as the case is as a rule, the push buttons switchers—carried on a chassis—of the tone selector as a unit arranged in the tube in an extension of the chassis of the manual, the tube wall being provided with a second opening through which the push button switchers can be reached by the other hand.

The invention will now be described with reference to the accompanying drawings which are intended to illustrate the invention which thus is not limited to the embodiments shown and described. In the drawings:

FIG. 1 is a plan view of an instrument according to the invention,

FIG. 2 is a plan view of the tube proper,

FIG. 3 shows on a somewhat enlarged scale a plan view of the manual with its chassis,

FIG. 4 is a plan view of the tone selector with its chassis,

FIG. 5 shows a cross section through the instrument on the line V—V in FIG. 1,

FIG. 6 shows a cross section on the line VI—VI in FIG. 1,

FIG. 7 is a cross section on the line VII—VII in FIG. 1,

FIG. 8 shows on a still larger scale a part of a longitudinal section on the line VIII—VIII in FIG. 5,

FIG. 9 is a side elevation shown partly in longitudinal section of the right hand end of the instrument according to FIG. 1, and

FIG. 10 illustrates how the instrument is intended to be used.

The tube 1 of the instrument is supposed to be manufactured from aluminum or another light metal. However, it could also be manufactured from a synthetic resin. At the two ends of the tube there is attached a shoulder belt 2. The tube is provided with two elongated openings, viz. a longer one 3 for the manual 4 of the instrument and a shorter one 5 for the tone selector 6 of the instrument. The openings 3 and 5 are situated in such a way that when the instrument is carried in the shoulder belt 2 the manual 4 is within comfortable reach of the right hand of the player and the push button switchers 7 of the tone selector 6 are within comfortable reach of the player's left hand as illustrated in FIG. 10.

The chassis 8 carrying the manual 4 is provided with a carrying rail 9 which by means of angular brackets 10 at the ends is arranged on disk-shaped cross pieces 11, 12, fitting the internal diameter of the tube 1. Another rail 13 extends between the cross bars 11, 12 and serves as an abutment for a limiting of the movement upwards of the keys 14 after the pushing down of the same. The manual 4 is of a construction which is independent of the in-

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vention and for this reason it will not be described in detail in this connection. The manual 4 with its chassis 8 could as a unit be inserted from the right hand end 15 and be attached in a position with the manual 4 situated in front of the opening 3 by means of screws 16 which extend through the tube wall and are screwed into the cross bars 11, 12. This end is thereupon closed by means of a cover 17 and provided with a border flange 18 which engages the tube end 15.

The chassis 19 carrying the push button switchers 7 of the tone selector 6 comprises two angular sheets 20, 21 which extend between to disk-shaped cross pieces 22, 23. The cross pieces 22, 23 and the angular sheets 20, 21 serving as distance pieces are kept together by means of bolts 24. The switchers 7 are attached either to the end piece 22 or to the angle sheet 21. The chassis 19 further carries a pair of potentiometers 25, 26 for the volume control and tuning of the instrument. There is at the end of the cross piece 22 situated opposite the tone selector attached a bracket 27 which on isolators 28 carries a so-called printed circuit 29 for the different electric couplings of the instrument.

The chassis 19 with its different portions is as a unit insertable from the left hand end in such a way that the printed circuit 29 will be situated in a space 30 in the tube 1 between the tone selector 6 and the manual 4. The chassis 19 is attached by means of screws 31 which extend through the tube wall and are screwed into the cross pieces 22, 23. This end of the tube 1 is then closed by means of a cover 32. A number of electric wires (not shown in the drawings) connect the printed circuit 29 with the electric contacts 33 under the manual 4. The instrument (FIG. 10) is by means of a terminal connectable to an amplifier and loudspeaker.

It is obvious from the above that the mounting of the different parts of the instrument is simple to carry out. During the playing the keys 14 of the manual 4 and also the push button switchers 7 of the tone selector 6 are easily available.

The invention has been described in the foregoing for purposes of illustration only and is not intended to be limited by this description or otherwise except as defined in the appended claims. Thus, the different parts of the instrument could be modified in many ways without departure from the inventive idea. The chassis 8 and 19 could be given other forms than the ones shown in the drawings. Further, it is possible to connect the two chassis 8 and 19 and to insert them as a unit from one side of the tube 1. The tube may comprise two halves with the joint (or joints) extending in the longitudinal direction of the tube.

The tube has in the drawings been shown as having a circular cross section. However, it may also have an oblong or square cross section or another polygonal cross section. It is also possible to manufacture the tube in two interconnected halves the parting plane of which extends in the longitudinal direction of the tube.

I claim:

1. In an improved electrical instrument, a manual, a shoulder belt for carrying said instrument, said manual arranged on a chassis, said chassis arranged in a tube, said tube provided with a longitudinal opening in its wall, said opening giving access to said manual.

2. In an improved electrical instrument, a manual, a shoulder belt for carrying said instrument, said manual arranged on a chassis, said chassis arranged in a tube, said tube provided with a longitudinal opening in its wall, said opening giving access to said manual, a tone selector provided with push button switchers, a chassis carrying said push button switchers and shaped for being inserted as a unit into the elongation of said chassis of said manual, said tube having in its wall a second opening

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through which said push button switchers can be reached by the hand not playing on the manual.

3. In an improved electrical instrument, a manual, a shoulder belt for carrying said instrument, said manual arranged on a chassis, said chassis arranged in a tube, said tube provided with a longitudinal openings in its wall, said opening giving access to said manual, said chassis of said manual comprising a number of carrying rails, said carrying rails being parallel to each other and with their ends arranged at cross pieces fitting the internal diameter of said tube, said cross pieces, after the insertion into said tube of the unit comprising said manual and said chassis, attached to said tube preferably by means of screws extending through the tube wall.

4. In an improved electrical instrument, a manual, a shoulder belt for carrying said instrument, said manual arranged on a chassis, said chassis arranged in a tube, said tube provided with a longitudinal opening in its wall, said opening giving access to said manual, a tone selector provided with push button switchers, a chassis carrying said push button switchers and shaped for being inserted as a unit into the elongation of said chassis of said manual, said tube having in its wall a second opening through which said push button switchers can be reached by the hand not playing on the manual, said push button switcher chassis comprising two cross pieces arranged at a certain distance from each other and fitting the internal diameter of said tube and two angle sheets, said sheets arranged

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between said cross pieces and serving as distance pieces and also as carrying means for said switchers.

5. In an improved electrical instrument, a manual, a shoulder belt for carrying said instrument, said manual arranged on a chassis, said chassis arranged in a tube, said tube provided with a longitudinal opening in its wall, said opening giving access to said manual, a tone selector provided with push button switchers, a chassis carrying said push button switchers and shaped for being inserted as a unit into the elongation of said chassis of said manual, said tube having in its wall a second opening through which said push button switchers can be reached by the hand not playing on the manual, said push button switcher chassis comprising two cross pieces arranged at a certain distance from each other and fitting the internal diameter of said tube and two angle sheets, said sheets arranged between said cross pieces and serving as distance pieces and also as carrying means for said switchers, said cross pieces of said tone selector chassis situated in the vicinity of said manual carrying a printed circuit for the electric couplings of the instrument, said printed circuit arranged on a bracket extending into a space in said tube between said two chassis.

No references cited.

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