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EUROPEAN PATENT APPLICATION

21 Application number: 84306056.7

51 Int. Cl.⁴: **G 10 H 1/32**
H 01 H 3/04

22 Date of filing: 31.08.84

30 Priority: 14.10.83 US 542500

43 Date of publication of application:
22.05.85 Bulletin 85/21

84 Designated Contracting States:
AT BE CH DE FR GB IT LI LU NL SE

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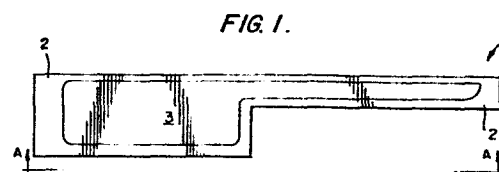
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54 Musical instrument key.

57 A musical instrument key for use in a keyboard controlled tone producing instrument, the keys of which are susceptible to longitudinal displacement, and the surface of which consists of a perimeter of low frictional characteristics with the interior of the key surface having substantially greater frictional characteristics.



MUSICAL INSTRUMENT KEY

The present invention relates to a musical instrument key for use in a keyboard controlled tone producing instrument, being more particularly directed to a novel key surface for a keyboard, the keys of which are intended to be longitudinally displaced to produce musical effects.

The present state of the art in musical instrument keys is to provide a hard, slick surface of ivory, ebony, plastic or other material that will allow easy sliding of the fingers across the keys, for example to produce glissando, while providing a strong attractive keyboard surface. Keyboard instruments, however, have changed to include playing characteristics requiring longitudinal displacement of the keys to produce pitch variation or note bending and the like such as shown in United States Patent 4,068,552, the key surface of which as shown provides ridges for frictional contact but, disadvantageously, without a frictional step for player reference.

It is an object of the invention, therefore, to provide a novel key surface for a keyboard controlled tone producing instrument, the keys of which are intended to be displaced to produce musical effects and that obviate such and other disadvantages of prior key structures.

-2-

Another object is to provide a key surface that has a player reference for finger positioning on each key.

In summary, from one of its broader aspects, the invention embraces a musical instrument key for use in a keyboard controlled tone producing instrument, the keys of which are susceptible to longitudinal displacement, the surface of which consists of a perimeter of low frictional characteristics with the interior of the key surface having substantially greater frictional characteristics. Preferred details and structures are later set forth.

Other and further objects will be explained hereinafter and are more particularly delineated in the appended claims.

The invention will now be described with reference to the accompanying drawings in which:

Fig. 1 is a top plan view of a keyboard key constructed in accordance with the present invention;

Fig. 2 is a cutaway side elevation of Fig. 1 taken along the line A-A;

Fig. 3 is a top plan view of a modified keyboard key constructed in accordance with the present invention; and

Fig. 4 is a cutaway side elevation of Fig. 3 taken along the line B-B.

-3-

In the embodiment of Figs. 1 and 2, the number 1 generally refers to a novel key of the present invention. The key is provided with a hard, slick surface perimeter 2, such as made by polished ivory, ebony or plastic, with the interior
5 3 of the key surface having substantially greater frictional characteristics. Such frictional characteristics can be produced by an inset pad of a high frictional, pliant interior material, such as silicone rubber poured into a pre-cut key and allowed to cure, where the depth of the pad would corro-
10 late with the hard material of the perimeter 2 to give adequate rebound characteristics for traditional percussive playing of the instrument.

The perimeter 2 provides a barrier to protect the softer, pliant material of the interior 3 as well as a frictional step or differential frictional zone to provide a
15 player reference. Specifically, the desired finger placement of a keyboard player is normally centered on a standard key. Prior key surfaces have not provided a tactile surface to aid the keyboard player in feeling the proper playing zone of the
20 key, resulting in mis-struck notes and two adjoining keys being simultaneously and improperly struck. The difference in frictional coefficients between the perimeter 2 and interior 3 of the key surface provides an easy tactile reference of finger-key position.

-4-

In the embodiment of Figs. 3 and 4, the number 4 refers to a second type of novel key of the present invention. The key is provided with lateral ridges 5, or surface undulations, for enabling non-slipping during backward and forward longitudinal displacement of the key. The interior surface 5 may be made of a high friction material or the same material as the perimeter 1 of the key, such as would be formed by laterally cutting or milling the key surface. The key surface, additionally, may be non-planar, such that a tapered depression 6 exists along the width of the key to provide a second tactile player finger-key position reference as well as to increase the frictional capabilities of the ridges 5 during longitudinal displacement. Clearly other types of frictional surfaces interior of the key may also be used.

Further modifications will also occur to those skilled in the art, and such are considered to fall within the spirit and scope of the invention as defined in the appended claims.

-5-

CLAIMS

1. A musical instrument key for use in a keyboard controlled tone producing instrument, the keys of which are susceptible to longitudinal displacement, the surface of which consists of a perimeter of low frictional characteristics with the interior of the key surface having substantially greater frictional characteristics.
2. A key as claimed in claim 1 and in which the surface of the key is planar.
3. A key as claimed in claim 1 and in which the perimeter and interior of the key surface are composed of different materials.
4. A key as claimed in claim 3 and in which the interior material is a sticky material under shear forces.
5. A key as claimed in claim 4 and in which the interior material is silicone rubber.
6. A key as claimed in claim 1 and in which the interior of the key surface is non-planar.
7. A key as claimed in claim 6 and in which the interior of the key surface has raised portions extending substantially across the interior of the key surface in a direction perpendicular to the longitudinal displacement of the key.

1/1
FIG. 1.

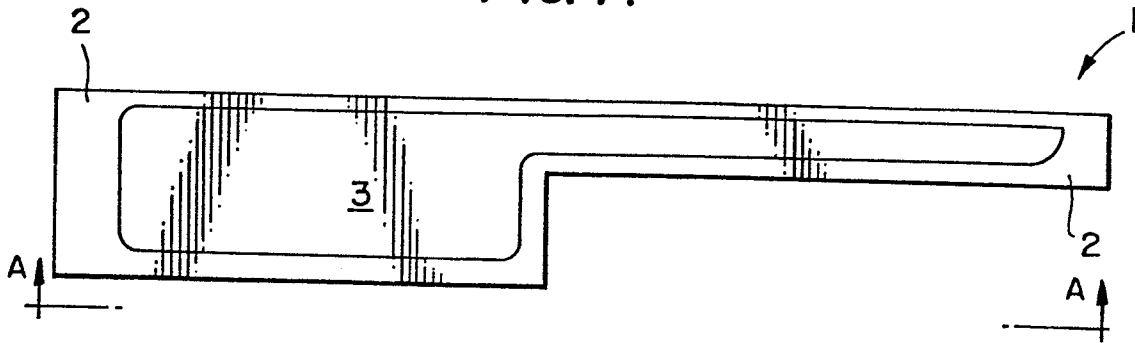


FIG. 2.

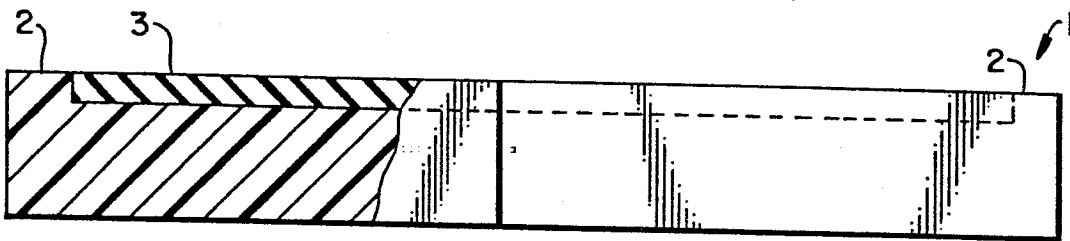


FIG. 3.

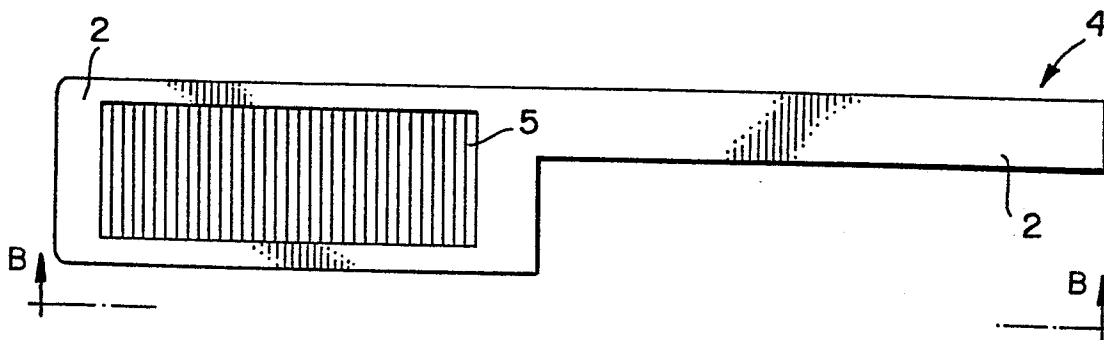
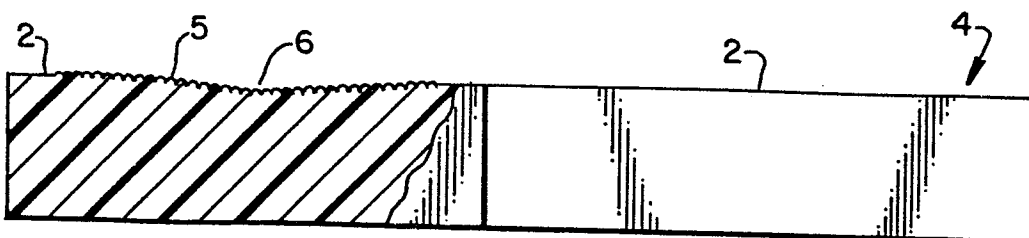


FIG. 4.





EP 84 30 6056

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
D,A	US-A-4 068 552 (J.ALLEN) * Column 3, lines 27-28; figures 1,26 * -----	1	G 10 H 1/32 H 01 H 3/04
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			G 10 H H 01 H
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 15-02-1985	Examiner PULLUARD R.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	