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PIANO KEY MOUNTING

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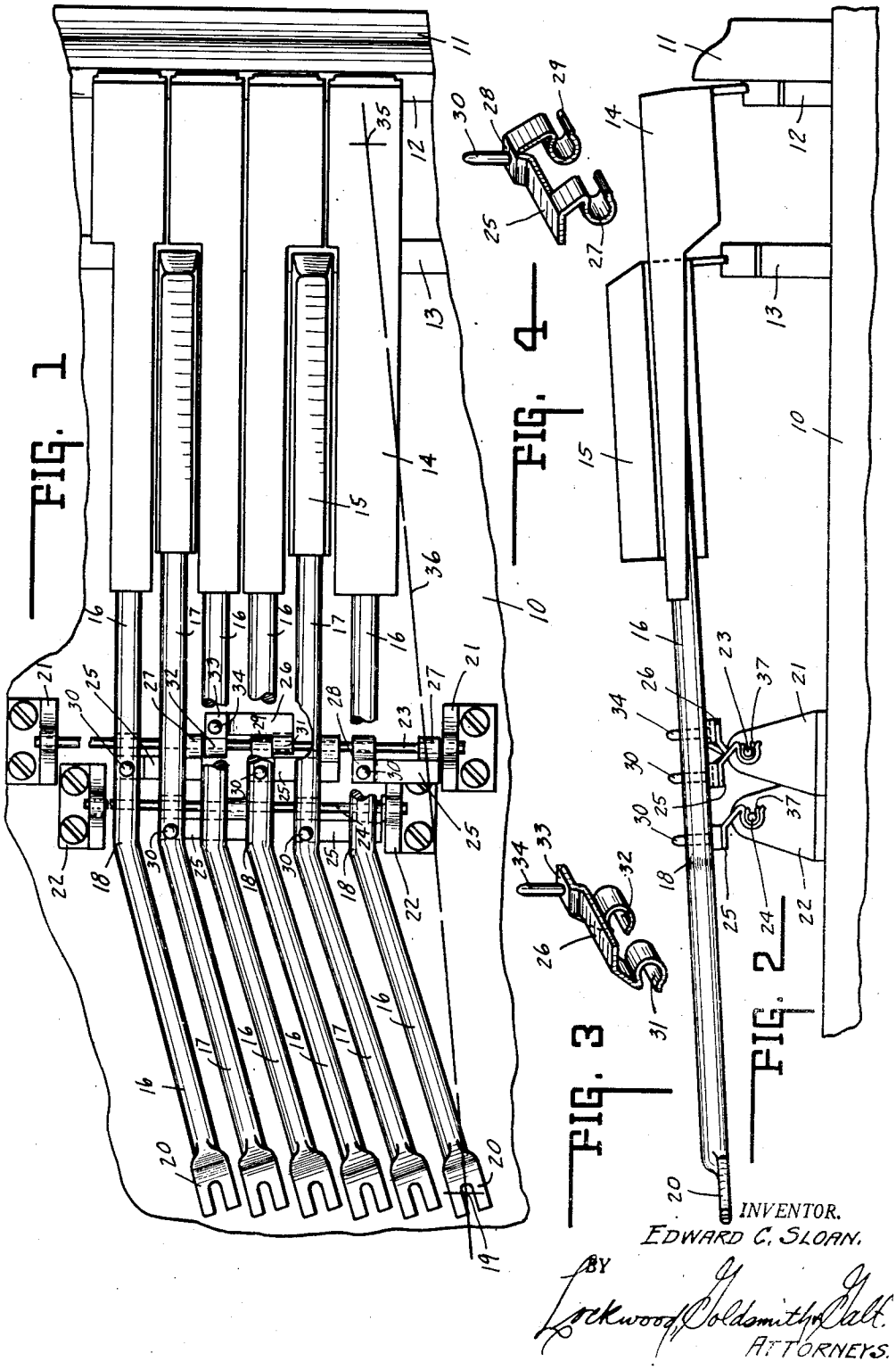


FIG. 1

FIG. 4

FIG. 3

FIG. 2

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PIANO KEY MOUNTING

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10 Claims. (Cl. 84—435)

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This invention relates to a piano key mounting applicable for use in piano key assemblies for both pianos and piano accordions, particularly as to the bearing and bearing guides therefor on the balance rail of the key bed.

The purpose of this invention is to provide a bearing assembly to provide a wide support for the keys on the balance rail such as to prevent cocking or tilting of the keys sidewise, particularly wherein the key rods extend angularly from the keys to the point of lift. By means of such bearing structure each key is provided with a bearing support directly in line with its point of applied pressure and its point of lift.

Another feature of the invention resides in the bearing support for the keys such as may be readily removed and replaced with respect to the balance rail.

Still a further feature of the invention resides in the spaced hinge elements of the bearing support of each key, such as to provide for and maintain more perfect alignment of the keys in the keyboard than was possible with the usual single bearing point, as heretofore employed.

A further feature of the invention resides in the two point bearing construction such as to provide spaced bearing points for engagement with the balance rail in overlapping relation. This permits of the keys or their key rods being closely associated in comparison with the width of their bearing supports.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims:

Fig. 1 is a plan view of a key assembly with parts broken away.

Fig. 2 is a side elevation thereof.

Fig. 3 is a perspective view of one of the hinge bearing elements.

Fig. 4 is a perspective view of an associated hinge element for interlocking with the hinge element of Fig. 3.

In the drawings there is illustrated a key bed shown herein as being particularly applicable for use with a piano action, but which is also applicable with variations to a piano accordion action. Said key bed includes a key bed support 10 having a front molding 11, front rail 12 for the natural keys and front rail 13 for the sharp keys. Said key bed also includes the natural keys 14 and sharp keys 15. Each of said natural keys is supported by an extension thereof, here shown as a key rod 16, and each of the sharp keys is similarly supported by an extension which may comprise a key rod 17. To accommodate the keys

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to the action, said rods may be bent at 18 so as to extend at an angle from their bearing point to a point of lift indicated at 19. Said key rods terminate at the point of lift in a flattened bifurcated portion 20 for suitable connection with the piano or accordion action.

For hingedly supporting the several keys at their fulcrum point, there is mounted at spaced intervals upon the key bed support 10 the upstanding brackets 21 and 22. Supported by said brackets transversely of the key bed there are balance rails 23 and 24, respectively. The balance rail 23 hingedly supports the natural keys, whereas the balance rail 24 hingedly supports the sharp keys. Said rails are shown herein in the form of cylindrical rods.

Each of said keys with its respective rod is hingedly supported on the balance rail by a removable hinge bearing element. The hinge bearing element 25, shown in Fig. 4, is designed to provide a bearing support for each of the sharp key rods 17 on their balance rail 24. Said element 25 similarly provides the bearing support for certain of the natural key rods 16, as shown in Fig. 1. The hinge bearing element 26 shown in Fig. 3, is similar to that of Fig. 4, but reversed to provide the support for those natural keys 14 lying adjacent the natural keys supported by the hinge element 25, the reverse arrangement of the hinge elements being such as to overlap and interlock in respect to those natural keys lying adjacent each other.

The hinge bearing element 25 is formed of spring sheet metal having an elongated top plate adjacent one end of which there is provided a spring bearing clamp 27. The other end of said plate is formed with a raised platform 28 from which is formed the spring bearing clamp 29. Said bearing clamps are reversely looped to spring about one or the other of the balance rails 23, 24. Upstanding from the platform 28 there is a hinge pin 30 extending through an aperture provided in the key rod to be hinged thereby. Similarly, the hinge bearing element 26 is provided with spring bearing clamps 31, 32, platform 33 and hinge pin 34.

By reason of the close spacing of the adjacent pair of natural keys 14 located between the sharp keys 15, one of said keys is mounted on the hinge bearing element 25 and the other on element 26. Said elements being reversely arranged, and as shown in Fig. 1, the spring bearing clamp 29 of the hinge element 25 is mounted on the balance rail intermediate the spring bearing clamps 31, 32 of the element 26. Since the

remaining natural keys **14** are spaced apart by the sharp key **15**, their hinge bearing elements need not overlap. The same is true of the sharp keys which are spaced apart by the natural keys. Therefore, the hinge element **26** is employed in overlapping relation with the element **25** only in the mounting of one of the pair of natural key rods **16** lying between the sharp key rods **17**. It may be noted that the raised platforms **28** and **33** are sufficiently elevated to support their respective key rods above the laterally extended and elongated top plates of the hinge elements so that the extended portions thereof on the bracket **21** will not interfere with the operation of the keys, particularly the sharp keys carried by the brackets **22**.

By means of this arrangement a wide bearing support is provided for each of the keys such as to stabilize them and prevent cocking, particularly wherein the point of lift is offset from the point of pressure applied to the keys in actuating them. As shown in Fig. 1, the point of pressure is indicated at **35** and it will be observed that the line **36** drawn between said point and the point of lift **20** passes through the bearing point of the spring bearing clamp **27**. A corresponding line drawn between the point of pressure and point of lift of each of the other keys will be observed to pass directly through the bearing support provided either by the bearing clamp **27** of the bearing element **25** or the bearing clamp **31** of the bearing element **26**. Said spring bearing clamps are formed to snap on to their respective balance rail rods **23**, **24** so as to be readily removed therefrom. However, it is preferable to provide them with a felt washer, as indicated at **37** in Fig. 2. The wide bearing support provided by the spaced spring bearing clamps retains the keys in their proper alignment in the keyboard while permitting the adjusting of any misalignment through a slight bending of the clamps on the hinge bearing element.

The invention claimed is:

1. A piano key mounting including a key bed support for a plurality of piano keys, each of said keys including an extension thereof terminating in a point of lift, a transversely extending balance rail supported on said key bed support, and a hinge bearing element for each of said keys hingedly supported on said balance rail having one point of bearing directly under the key supported thereby and a lateral offset point of bearing to one side of said key and beyond the bearing support of the adjacent key.

2. A piano key mounting including a key bed support for a plurality of keys, each of said keys including an extension thereof terminating in a point of lift, a transversely extending balance rail mounted on said key bed support, and a hinge bearing element for each of said keys of a width greater than the overall width of a pair of adjacent keys, whereby each key is provided with a wide stabilizing bearing support.

3. A piano key mounting including a key bed support for a plurality of keys, each of said keys including an extension thereof terminating in a point of lift, a transversely extending balance rail therefor supported on said key bed support, and a hinge bearing element provided with a spring bearing clamp for interlocking engagement with said balance rail for hingedly supporting a key thereon, said spring bearing clamp extending laterally from the supported key toward and in alignment with the next adjacent key to thereby provide a wide stabilizing bearing support for said supported key.

4. A piano key mounting including a key bed support for a plurality of keys, each of said keys including an extension thereof terminating in a point of lift, a transversely extending balance rail supported on said key bed, and a hinge bearing for each of said keys having a pair of spaced bearing supports thereon in bearing engagement with said rail, one of said bearing supports being offset laterally from said key.

5. A piano key mounting including a key bed support for a plurality of keys, each of said keys including an extension thereof terminating in a point of lift, a transversely extending balance rail supported on said key bed support, and a hinge bearing for each of said keys having spaced offset bearing supports, the bearing support for one of said keys extending between and overlapping the bearing support of the next adjacent key.

6. A piano key mounting including a key bed support for a plurality of keys, each of said keys including an extension thereof terminating in a point of lift, a transversely extending balance rail supported on said key bed support, and a pair of spaced hinge members on each key hingedly mounted on said rail to provide a bearing support for each key of greater width than said key, the hinge members of adjacent keys being in overlapping relation.

7. A piano key mounting including a key bed support for a plurality of piano keys, each of said keys including an extension thereof terminating in a point of lift, a transversely extending balance rail supported on said key bed support, and an elongated hinge bearing element for each of said keys comprising a bearing support, means for mounting the key on one end thereof and an extended stabilizing bearing support laterally of said key on the opposite end thereof.

8. A piano key mounting including a key bed support for a plurality of natural and sharp keys, each of said keys including an extension thereof terminating in a point of lift, a pair of transversely extending balance rails mounted on said key bed support, and a hinge bearing element for each of said keys having spaced bearing supports thereon for bearing engagement with one of said balance rails, said hinge bearing element including means for mounting a key on one end thereof, the opposite end of said element providing a bearing support for said key directly between its point of pressure and its point of lift.

9. A piano key mounting including a key bed support for a plurality of natural and sharp keys, each of said keys including an extension thereof terminating in a point of lift, a pair of transversely extending balance rails mounted on said key bed support, and a hinge bearing element for each of said keys comprising an upwardly extending pin on one end thereof for securing said element to its supported key and a pair of spaced spring clamps at opposite ends thereof formed to clamp over one of said balance rails for providing hinge bearings thereon for said element, one of said clamps being offset from the supported key to provide a stabilizing bearing therefor.

10. A piano key mounting including a key bed support for a plurality of natural and sharp keys, each of said keys including an angularly disposed extension thereof terminating in a point

of lift, a pair of transversely extending balance rails mounted on said key bed support, and a hinge bearing element for each of said keys comprising an upwardly extending pin on one end thereof for securing said element to its supported key and a pair of spaced spring clamps at opposite ends thereof formed to clamp over one of said balance rails for providing hinge bearings thereon for said element, one of said clamps being offset from the supported key to provide a stabilizing bearing therefor in line with said

point of lift and the point of pressure on the key.

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