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PIANO TOUCH INSTRUCTOR APPARATUS

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2 Sheets-Sheet 1

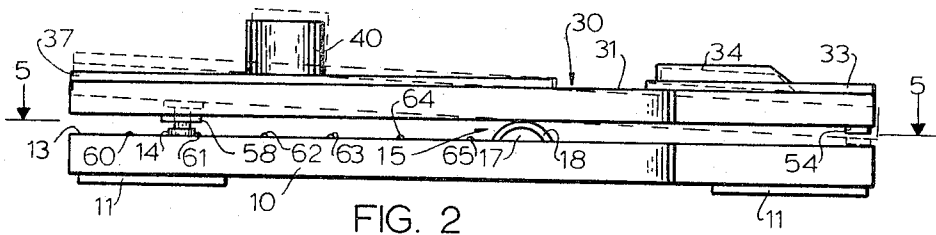


FIG. 2

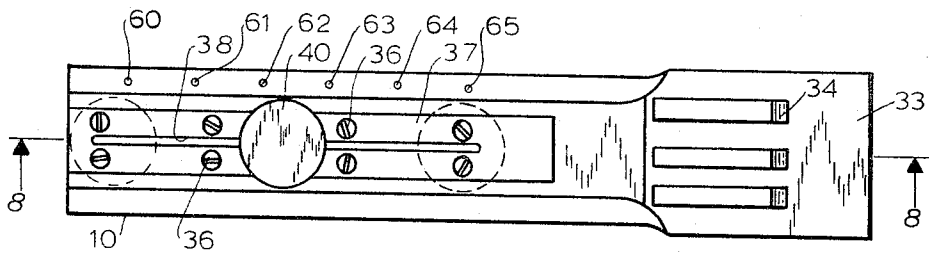


FIG. 3

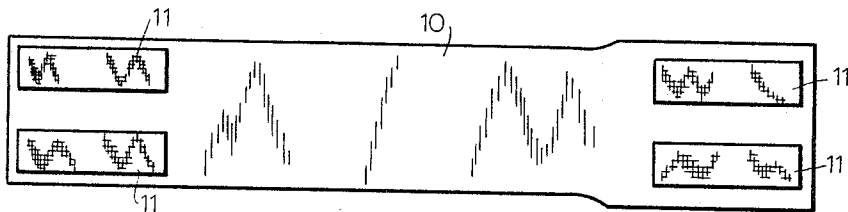


FIG. 4

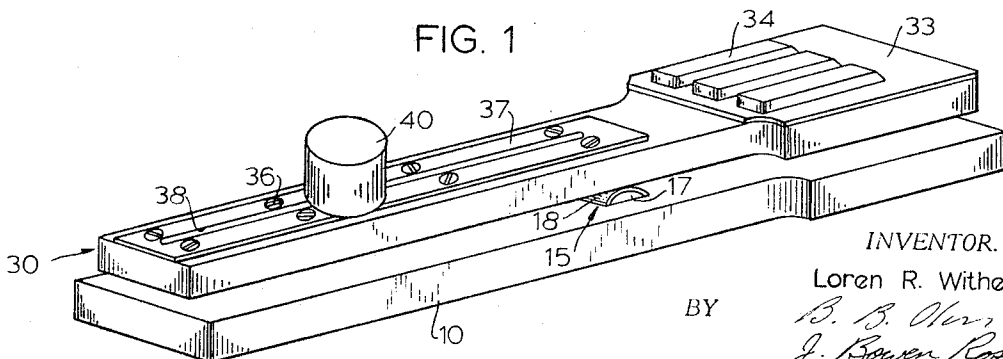


FIG. 1

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PIANO TOUCH INSTRUCTOR APPARATUS

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6 Claims. (Cl. 84-467)

This invention relates to a piano training apparatus and, more particularly, to an apparatus which aids a piano student in obtaining certain basic muscular coordinations necessary for playing that instrument.

One of the many techniques a beginning pianist must learn is that of legato playing, which is the smooth and complete connection of successive piano tones without breaks or interruptions between the same. In legato playing, the pianist having struck one key must hold that key on its bed until the next key is struck and reaches its bed whereupon the first key may be released. Such a technique is often referred to by leading authorities as a "transfer of weight" and is difficult for a novice to learn for it requires a certain degree of muscular coordination to maintain the first key on its bed and without it "surfacing" until the next key is struck and reaches its bed.

It is common practice for the beginning pianist to either hit or slap at the keys without sufficient effort towards the key bed to prevent a rebound of that key thus resulting in an incomplete legato. A complete connection of tones resulting in a true legato is difficult to obtain as the effort upon one key bed must be continued for the duration of the legato. To teach the beginner to play with relaxed but sufficiently controlled fingers, wrists and arms is very tedious and time-consuming; therefore, it would be an advancement in the art to provide an instrument which aids the student in gaining the necessary coordination of the several joints comprising the pianist's playing mechanism.

Therefore, an object of this invention is to provide an instrument for teaching the pianist certain basic coordinations between his fingers, wrists and arms which will enable him to control legato passages.

Another object of this invention is to provide an instrument for the beginning pianist upon which the desirable trait of wrist flexibility and purposeful control may be learned and practiced.

A further object of this invention is to provide an instrument with elements resembling the keys of a piano and its function upon which the beginning pianist may practice to build playing strength and coordination.

A still further object of this invention is to provide an instrument with a plurality of piano-key-like elements which have been joined to form a single working surface the pressure of which to force the same against its key bed may be adjustable thus simulating the continuous effort required for executing the given musical passage.

Other objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

FIGURE 1 is a perspective view of the instrument showing the adjustable weight mounted on the track and the keyboard positioned to receive the fingers of the pianist;

FIGURE 2 is a side elevation of the invention showing the fulcrum which is mounted on the bed board receiving the totter board and in skeletons, the totter board being depressed against the front end of the bed board;

FIGURE 3 is a top view of the instrument as shown in FIGURE 2 and in skeletons, showing a sample of the other locations at which the weight may be placed;

FIGURE 4 is a bottom view of the bed board;

FIGURE 5 is a sectional view taken along line 5-5

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of FIGURE 2 showing the bed board, fulcrum and aligning pin;

FIGURE 6 is a left-hand elevation view of the instrument as shown in FIGURE 2;

FIGURE 7 is a right-hand elevation of the instrument as shown in FIGURE 2; and

FIGURE 8 is a sectional view taken along line 8-8 of FIGURE 3 showing the bearing means for mounting the adjustable weight on the track.

One embodiment of the present invention contemplates mounting an elongated totter board on a bed board so that the rear end thereof is substantially adjacent the rear end of the bed board while the forward end thereof is slightly raised from that adjacent end of the bed board to simulate the depth of a standard piano key. The raised end of the totter board is adapted to be forced downwardly and into contact with the juxtaposed end of the bed board. The totter board is provided with an elongated slot which travels a portion of the length thereof and which slidably receives a weight whereby the force required to push the raised end of the totter board downwardly against the bed board may be varied. The raised or forward end of the totter board is provided with piano key simulations which are adapted to receive the fingers of a pianist and upon the pressing of the simulations downwardly, the forward end of the totter board strikes the forward end of the bed board. The fingers for holding the totter board adjacent the bed board may then be exchanged. By maintaining the forward end of totter board on the bed board and exchanging fingers, the feel of transferring the weight or effort of the arm from one finger tip to another may be done in a continuous legato manner. By continuing the exchange of fingers on the totter board while maintaining the forward end thereof adjacent the bed board, the pianist may then practice the relaxation of muscles supporting the arms so as to allow the arm weight to pass through the finger tips into the playing surface to eliminate unnecessary fixation of the playing mechanism and increase the readiness for anticipated moves. By moving the adjustable weight farther or nearer to the piano key simulations, the pianist may practice the sensation of releasing into the totter board more or less effort which would be analogous to producing greater or lesser tones in the piano as desired in the music being performed. Thus, the key bed effort required in playing certain passages of music may be simulated by the teacher for the student. In summary, the pianist may be taught by the apparatus of this invention how to produce and connect tones without undue fixation of the playing mechanism and without undue relaxation of the same.

The invention is illustrated in connection with the accompanying drawings in which the figures are illustrative of the preferred embodiment of the invention.

An elongated, substantially rectangular bed board 10 is provided with cushions 11 which are securely positioned at the respective corners thereof and are adapted to engage a flat surface. It is contemplated that bed board 10 is to be made from finished wood; however, it may also be made from other aesthetically pleasing materials such as finished plastic. A guide post 12 is perpendicularly mounted in and extends upwardly from one end of bed board 10 and has an annular rubber cushioning element 14 surrounding the same which is adhered to the upper surface 13 of bed board 10. Approximately equidistant between the ends of bed board 10 and on upper surface 13, a fulcrum 15 is mounted thereon which includes an arcuated pivot member 17, a cushion 18 and a screw 20. Screw 20 has a flat head portion 22, a smooth shaft portion 23 and a threaded portion 24. Screw 20 is perpendicularly arranged so that its threaded portion 24 extends through member 17 and into bed board 10 and smooth

shaft member 23 has one end thereof resting adjacent member 17 so that as screw 20 is turned, member 17 is held against bed board 10.

The apparatus of this invention is further provided with a totter board 30 which is substantially of the same geometric shape and of the same material as bed board 10 and includes a top surface 31 and a bottom surface 32. Top surface 31 has mounted at one end thereof a covering 33 which is to correspond to a group of white keys on a piano keyboard. Covering 33 has mounted thereon a plurality of parallel and spaced-apart, elongated members 34 which are positioned to simulate a group of black keys on a regular piano keyboard. At the other end of top surface 31 of totter board 30, an elongated recession 35 is provided therein. Recession 35 is partially covered by means of a rectangular track 37 which includes an elongated slot 38 extending substantially the length thereof. Track 37 is secured to totter board 30 by means of screws 36. A weight 40 which is adapted to be movable along the path as defined by slot 38 includes a threaded shaft 41 which is threadably mounted in the lower surface of weight 40 and extends downwardly therefrom, upper and lower nylon frictionless washers 43 and 44 which are adapted to reside on the upper and lower surfaces of track 37, an annular washer 45, and a spring washer 46. Threaded shaft 41 has lower nylon frictionless washer 44, annular washer 45 and spring washer 46 mounted thereon adjacent its outer end and upper nylon frictionless washer 43 mounted adjacent its entrance into weight 40 so that upon the tightening of threaded shaft 41 in weight 40, upper and lower nylon frictionless washers 43 and 44 engage track 37 with sufficient pressure so that once weight 40 has been moved to a desired location, nylon washers 43 and 44 press against track 37 and hold weight 40 in that desired location.

Upper surface 31 of totter board 30 is provided with an opening 50 which is aligned with the axis of screw 20. Opening 50 extends perpendicularly through totter board 30 and consists of small bore 51 and large bore 52. Small bore 51 receives smooth shaft portion 23 of screw 20 while larger bore 52 receives flat head portion 22 of threaded bolt 20 so that totter board 30 may be held in place against fulcrum 15 by means of screw 20. Small bore 51 is slightly larger in diameter than the diameter of smooth shaft portion 23 of threaded bolt 20 so that totter board 30 may pivot on fulcrum 15 unobstructedly.

Bottom surface 32 of totter board 30 is provided with cushions 54 and 55 which are adjacent the forward end thereof so that upon the downward pivoting of totter board 30, cushions 54 and 55 strike the upper surface of bed board 10. Bottom surface 32 of totter board 30 is provided with an inlet 56 which extends a distance into the same and which is adapted to receive the upper portions of shaft 12 so as to align totter board 30 relative to bed board 10. A guide 58 is mounted on bottom surface 32 of totter board 30 and circumscribes opening 56 so that upon that end of totter board 30 pivoting downwardly to strike bed board 10, guide 58 strikes cushion 14 to muffle the impact between totter board 30 and bed board 10.

In operation, the pianist determines the amount of force which is desired to press totter board 30 downwardly against bed board 10 by moving weight 40 along the path as defined by groove 38. As the pianist presses downwardly for example on simulated keys 33 or 34, totter board 30 pivots on fulcrum 15 and about screw 20 whereby cushions 54 and 55 strike the corresponding surface of bed board 10. Simultaneously the opposite end of totter board 30 is guided in its upward travel by shaft 12 which is slidably mounted in opening 56 so that the proper vertical alignment between totter board 30 and bed board 10 is maintained. Thus, the pianist is adapted to coordinate his entire playing mechanism so as to produce proper legato tones by transferring force from one finger tip to

another finger tip without letting keys 33 and 34 rise from their respective beds.

In reference to FIGURE 3, the top surface of bed board 10 is provided with small indicators 60, 61, 62, 63, 64 and 65 which are calibrated when weight 40 is adjacent that selected indicator to require a force of 3 ounces, 6 ounces, 9 ounces, 12 ounces, 15 ounces and 18 ounces, respectively, on key simulations 33 in order to pivot that end of totter board 30 into contact with the corresponding end of bed board 10. In a standard piano, a force of 3 ounces is required to press a selected key against its key bed and to produce a tone, a force of 4 ounces is required. Thus, it can be seen that by selectively moving weight 40 along track 37, the force of pressing key simulations 33 downwardly with one or several fingers against bed board 10 is equal to the force required on a standard piano to press downwardly the same number of keys simultaneously.

While the preferred embodiment of this invention has been disclosed, it is to be understood that changes and variations may be made without departing from the scope and spirit of the invention as defined by the appended claims.

Having described the invention, what is claimed is:

1. In a piano touch instructor for aiding a piano student in obtaining certain desirable and basic muscular coordinations, an apparatus comprising:

- (a) an elongated bed board having upper and lower parallel surfaces and rear and forward ends;
- (b) a fulcrum securely mounted on said upper surface substantially equidistant between said rear and forward ends of said bed board;
- (c) an elongated totter board being substantially equal in length to said bed board and having rear and forward ends in juxtaposition with said respective rear and forward ends of said bed board, said totter board having top and bottom parallel surfaces, said bottom surface resting on and being pivotally connected to said fulcrum, said top surface being provided with piano key simulating means adjacent said forward end and a longitudinally arranged track means extending forwardly from said rear end toward said simulating means, said piano key means being adapted to receive an external force, said forward end of said totter board being normally positioned above said forward end of said bed board and said rear end of said totter board normally being in contact with said rear end of said bed board whereby upon said force being exerted on said piano key means, said forward end of said totter board strikes said forward end of said bed board and said rear end of said totter board is raised out of contact with said rear end of said bed board;
- (d) a weight slidably mounted on said top surface of said totter board along said track means, said weight having an extension for engaging said track means and for securing said weight to said totter board whereby said weight may be moved along across said top surface the length of said track means; and
- (e) means extending upwardly from said upper surface of said bed board and being slidably received by said totter board for establishing a vertical plane of travel during the pivoting of said totter board on said fulcrum.

2. The apparatus of claim 1 wherein said totter board is provided with an opening extending inwardly from its bottom surface, and wherein said upwardly extending means mounted on said bed board is a stake, said stake being perpendicularly arranged with respect to said upper surface and the upper portions thereof being adapted to be slidably received by said opening in said bottom surface of said totter board.

3. The apparatus of claim 2 wherein said top surface of said totter board is provided with a longitudinally extended groove at said rear end thereof and extending forwardly toward said piano key simulations and said longi-

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itudinally arranged track means is comprised of said groove and an elongated plate mounted on said top surface and covering said groove, said plate having an elongated slot extending substantially the length thereof and in communication with said groove.

4. The apparatus of claim 3 wherein said weight is comprised of a solid mass of matter having a smooth bottom surface and having an opening in said bottom surface, a retractable shaft extending downwardly from said bottom surface and partially residing in said opening and clamping means cooperating with said shaft for slidably grasping said elongated plate in the areas adjacent said groove whereby said weight mass may be moved on said plate along said groove to any selected position and held in that position by said clamping means.

5. The apparatus of claim 4 wherein said groove has associated along the length thereof indicator means for determining the force required to press said forward end of said totter board against said forward end of said bed board when said weight is at selected positions along said groove.

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6. The apparatus of claim 4 wherein said totter board is provided with an opening extending vertically through the same in communication with said fulcrum and said fulcrum includes pivot member residing on said upper surface of said bed board and a screw perpendicularly mounted on said upper surface of said bed board and extending through said pivot member to securely press said pivot member against said bed board, said stake having an upper portion being received by said opening extending through said totter board and about which said totter board pivots.

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