

J. GALLEAZZI.
 TRANSPOSING MECHANISM FOR ACCORDIONS AND THE LIKE.
 APPLICATION FILED SEPT. 13, 1911.

1,058,423.

Patented Apr. 8, 1913.

2 SHEETS—SHEET 1.

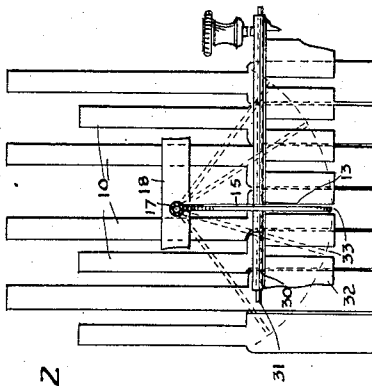


FIG. 2

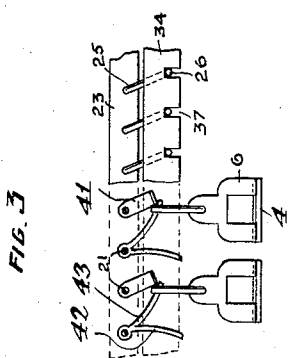


FIG. 3

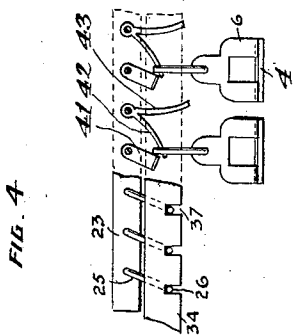


FIG. 4

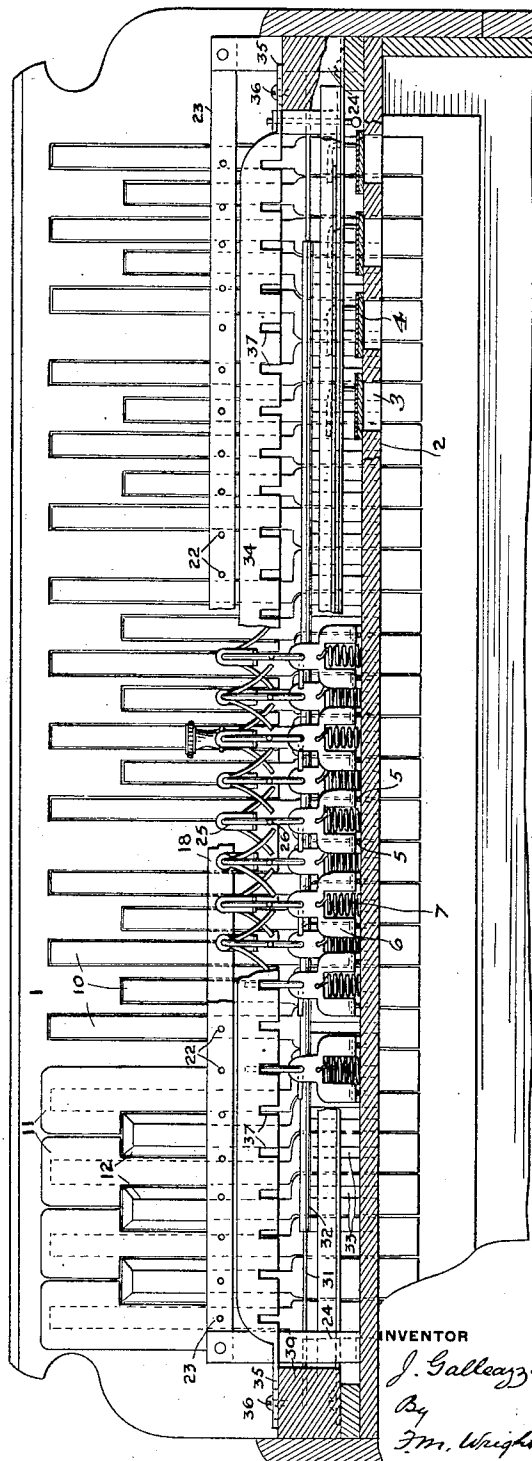


FIG. 1

WITNESSES

N. B. Keating
 Leon Poillon

INVENTOR

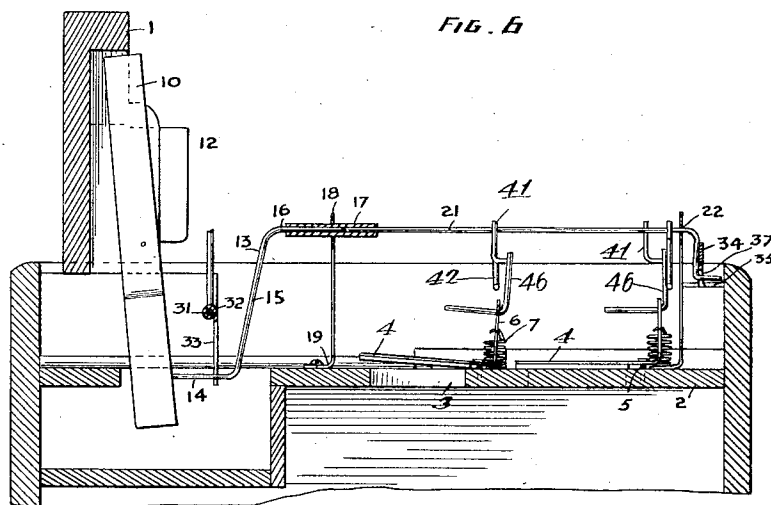
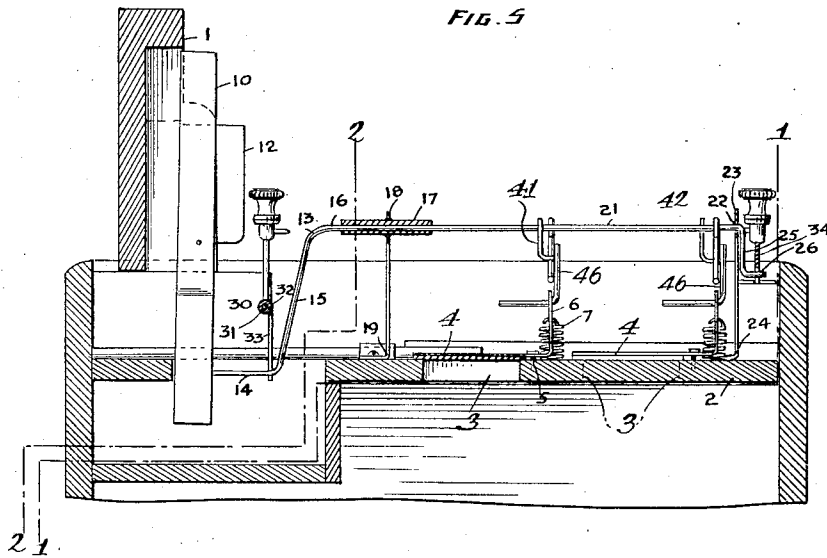
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2 SHEETS—SHEET 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOSEPH GALLEAZZI, OF SAN FRANCISCO, CALIFORNIA.

TRANSPOSING MECHANISM FOR ACCORDIONS AND THE LIKE.

1,058,423.

Specification of Letters Patent.

Patented Apr. 8, 1913.

Application filed September 13, 1911. Serial No. 649,114.

To all whom it may concern:

Be it known that I, JOSEPH GALLEAZZI, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Transposing Mechanism for Accordions and the Like, of which the following is a specification.

The object of the present invention is to provide in a musical instrument improved means for transposing the key in which the instrument is played.

I have herein shown the invention as applied to an accordion, but it is to be understood that with suitable changes it may also be applied to other musical instruments.

The instrument shown has reeds and valves to furnish the ordinary chromatic scale for some three octaves, and a key-board like that of a piano; the connections between the keys and valves are adjustable, so that any valve may be controlled at will by either one of two adjacent keys, thus allowing of transposition by a semi-tone.

In the accompanying drawing, Figure 1 is a vertical section of an accordion constructed in accordance with my invention, taken on the line 1—1 of Fig. 5, certain parts being omitted; Fig. 2 is a similar view of a part thereof, but on the line 2—2 of Fig. 5; Fig. 3 is a view similar to Fig. 2 taken on a plane to the front of that in Fig. 1, showing the parts on one side of their normal positions; Fig. 4 is a similar view showing the parts on the other side thereof; Fig. 5 is a cross section perpendicular to the sounding board; Fig. 6 is a view showing the parts in a different position.

Referring to the drawings, 1 indicates the key board of an accordion, having a sounding board 2 formed with openings 3, and individual valves 4, each valve being pivotally mounted, as shown at 5, upon the sounding board 2, so as to close said opening, and having an upwardly extending forked portion 6, in the fork of which is a stretched coiled spring 7, attached to the upper portion of said member 6 and to the sounding board, which spring presses said valve on to its seat around the corresponding opening.

Pivoted upon the key board are key levers 10 having white and black keys 11, 12, the inner ends of which key levers, when actuated, are adapted to move longitudinally the ends of slide rods 13 (Fig. 5),

which slide rods extend, first, substantially at right angles to said levers, as shown at 14, then outwardly and nearly parallel with said levers, as shown at 15, and then parallel with their former direction, as shown at 16, the latter portions of the slide rods being contained in tubular guideways 17 supported in a cross bar 18 which cross bar is supported at its ends, as shown at 19, upon the sounding board. By the actuation of said key levers the ends 16 of the slide rods are caused to slide in said guideways. Sliding in the other ends of said guideways are actuator rods 21, ends of which are engaged by the ends 16, while the other ends of said rods slide through apertures 22 in a longitudinal bar 23 supported at its ends, as shown at 24, upon the ends of the sounding board, the ends of said actuator rods, extending through said apertures 22, being bent inwardly, almost at right angles, as shown at 25, and then again in the former direction as shown at 26.

Having its ends slidable in bearings 30, secured to the case of the accordion, is a bar 31, upon which is secured a plate or comb 32 formed in its lower edge with deep grooves 33. In each groove 33 is contained the portion 14 of one of the slide rods 13. In like manner, a plate or comb 34 is provided adjacent to the ends 26 of the actuator rods 21, which comb is slotted at its ends 35, which slotted ends are movable past screws 36 screwed into the casing of the instrument. The lower edge of said comb 34 is formed with grooves 37, each of which is engaged by a corresponding terminal portion 26 of an actuator rod 21.

The valve openings in the sounding board are, of course, immediately beneath the valves, which are arranged in two rows, in staggered relation to each other, the valve corresponding to any note in either row being opposite to the space intervening between the valves corresponding to the notes respectively a semi-tone above and a semi-tone below it. To each actuator rod are secured three actuators, 41, 42, 43, of which, in the normal position of the rod, one, 41, extends directly downward, either from a point adjacent to the bent end of the rod or from a mediate point of the rod, and the other two, 42, 43, extend downward obliquely in opposite directions, either from a mediate point of the rod or a point adjacent to the bent end thereof. This arrangement

alternates in successive rods, that is, on one rod the downwardly extending actuator 41 is near the terminal portion of the rod and the two obliquely extending actuators 42, 43, are at the mediate portion of the rod, and on each rod at either side of the first-named rod the arrangement is reversed, that is, the downwardly extending actuator 41 is at the mediate portion of the rod and the oblique actuators are adjacent to the end thereof. The object of this arrangement is to prevent the actuators interfering with each other when being moved in the manner hereinafter described. Secured to and extending upwardly from the portion 6 of each valve is an arm 46.

The middle or downwardly extending actuator 41 of each rod, when in its normal position, is adjacent, and operatively related, to the upwardly extending arm 46 of the corresponding valve, and the obliquely extending actuators 42, 43 of the rod are adjacent, but not operatively related, to the upwardly extending arms 46 of the valves corresponding to the notes a semi-tone above and below that of the first-named valve. Consequently, if a key lever be actuated, the result is that the slide rod 13 is pushed inward, so that an end thereof, impinging upon an end of the corresponding actuator rod 21, moves said rod longitudinally and causes the middle actuator 41 thereof only to actuate a valve so as to effect the production of the corresponding note. If, however the comb 34 be moved longitudinally in one direction or the other, all the middle actuators 41 of said rods are moved to one side or, out of operative relation to, the arms 6 from the corresponding valves, and one each of the other actuators 42, 43, of said rods, dependently upon the direction in which said comb is moved, are brought opposite to, or into operative relation with, the valves for the notes a semi-tone above or below, that is, the musical key is raised or lowered a semi-tone. But if the comb 32 be moved longitudinally, then all the slide rods 13 are turned through an interval the magnitude of which depends upon the extent of movement of the frame. Although the portions 16 of said slide rods are still slidable in the tubular guideways 17, as before, so as to engage the actuator rods 21, as before, the portions of said slide rods adjacent to keys are, however, moved opposite or adjacent to other keys than before, so that whereas, before, for instance, when the key C was depressed, the result was that the valve corresponding to C was opened and the note C was sounded, now, when the key C is depressed, the valve corresponding to the note D, for instance, is raised and the note D is sounded. On account of the much greater length of the bent portion 15 of this slide rod 13 than the bent portion 25 of the actu-

ator rod 21, and consequently the greater arc through which the end of the slide rod adjacent to the keys can travel, a much greater range of transposition is afforded by the movement of the slide rod 13 than of the actuator rod 21. By forming the bent portion 15 of the slide rod 13 of sufficient length, transposition can be obtained through any desired interval.

I claim:—

1. The combination of a sounding board having openings, valves for closing said openings, having upward extensions, bearings stationarily secured over said sounding board, actuator rods slidable in said bearings, arms secured to said actuator rods and located to engage said extensions upon a sliding movement of said rods, key levers, and slide rods slidable in said bearings and located to be moved by means of said key levers when operated and to impinge against said actuator rods.

2. The combination of a sounding board having openings, valves for closing said openings, having upward extensions, bearings stationarily secured over said sounding board, actuator rods slidable in said bearings, a plurality of arms secured to each actuator rod and extending therefrom at different angles and located to engage said extensions upon a sliding movement of said rods, key levers, slide rods slidable in said bearings and located to be moved by means of said key levers when operated and to impinge against said actuator rods to actuate the same, and means for turning said actuator rods about their longitudinal axes.

3. The combination of a sounding board having openings, valves for closing said openings, having upward extensions, bearings stationarily secured over said sounding board, actuator rods slidable in said bearings, arms secured to said actuator rods and located to engage said extensions upon said sliding movement of said rods, key levers, slide rods slidable in said bearings and located to be moved by means of said key levers when operated and to impinge against said actuator rods, and means for rocking said slide rods in said bearings.

4. The combination of a sounding board having rows of openings, corresponding rows of valves for closing said openings having upward extensions, actuator rods extending over said sounding board transversely to said rows, bearings in which said actuator rods can slide and turn, means slidable in said bearings for moving said actuator rods, key levers operatively related to said means to cause the same to slide in said bearings and move the actuator rods, arms extending from said actuator rods, and means for turning said actuator rods about their longitudinal axes.

5. The combination of a sounding board

having rows of openings, corresponding rows of valves for closing said openings having upward extensions, actuator rods extending over said sounding board transversely to said rows, bearings in which said actuator rods can slide and turn, means slidable in said bearings for moving said actuator rods, key levers operatively related to said means to cause the same to slide in said bearings and move the actuator rods, arms extending from said actuator rods, and means for turning said slide rods in said bearings.

6. The combination of a sounding board having rows of openings, corresponding rows of valves for closing said openings having upward extensions, actuator rods extending over said sounding board transversely to said rows, bearings in which said actuator rods can slide and turn, means slidable in said bearings for moving said actuator rods, key levers operatively related to said means to cause the same to slide in said bearings and move the actuator rods, arms extending from said actuator rods, and a

longitudinally movable plate engaging parts of all of said actuator rods remote from their bearings.

7. The combination of a sounding board having rows of openings, corresponding rows of valves for closing said openings having upward extensions, actuator rods extending over said sounding board transversely to said rows, bearings in which said actuator rods can slide and turn, means, slidable in said bearings for moving said rods, key levers operatively related to said means to cause the same to slide therein and move the actuator rods, arms extending from said actuator rods, and located to engage said valve upon the motion of said actuator rods; and means for simultaneously turning all of said slide rods in their bearings.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOSEPH GALLEAZZI.

Witnesses:

FRANCIS M. WRIGHT,
D. B. RICHARDS.