L. A. GOSS.

TRANSPOSING ATTACHMENT FOR PIANOFORTES.

APPLICATION FILED JUNE 8, 1911.

1,107,783.

Patented Aug. 18, 1914.

2 SHEETS—SHEET 1.

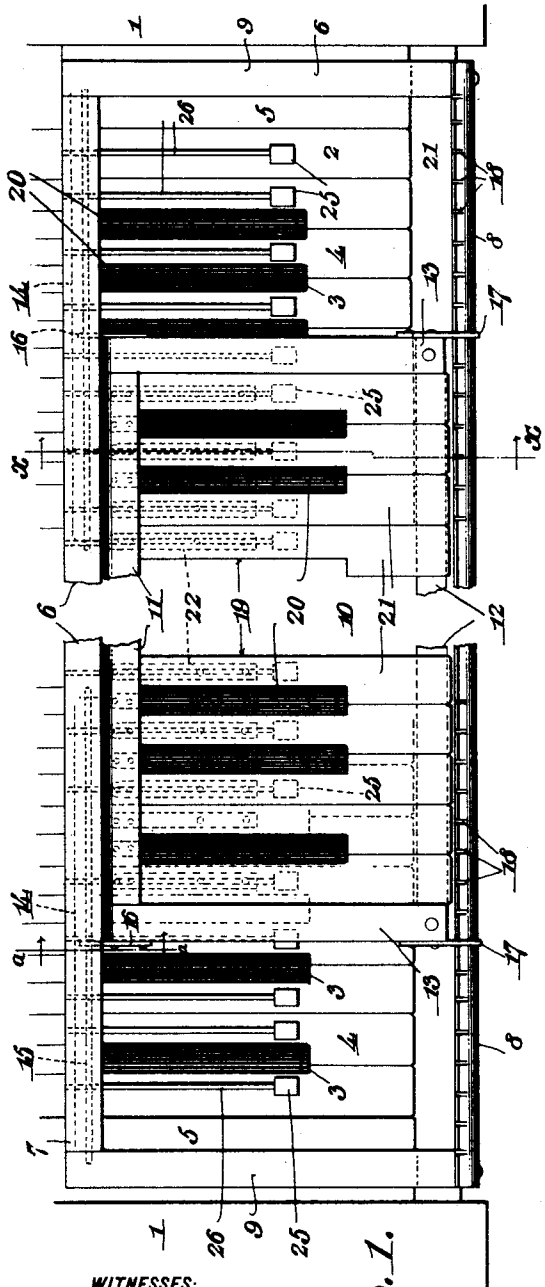


Fig. 1.

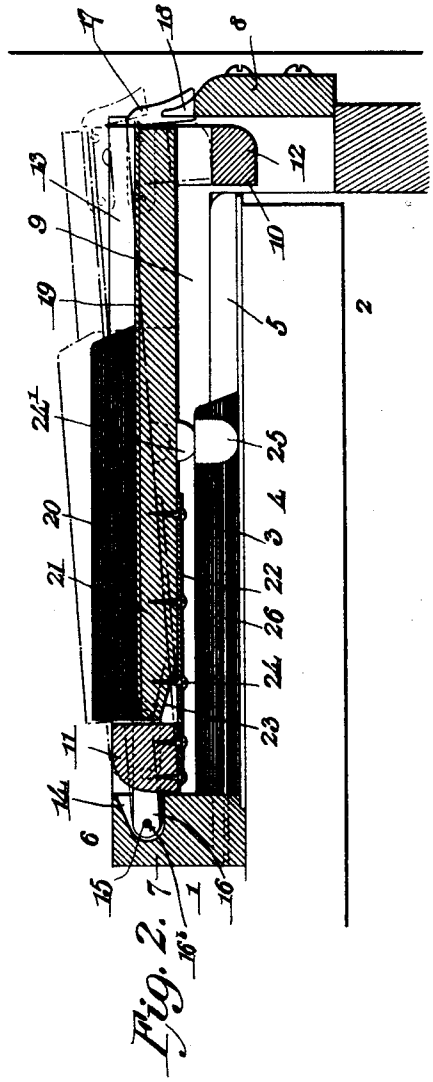


Fig. 2.

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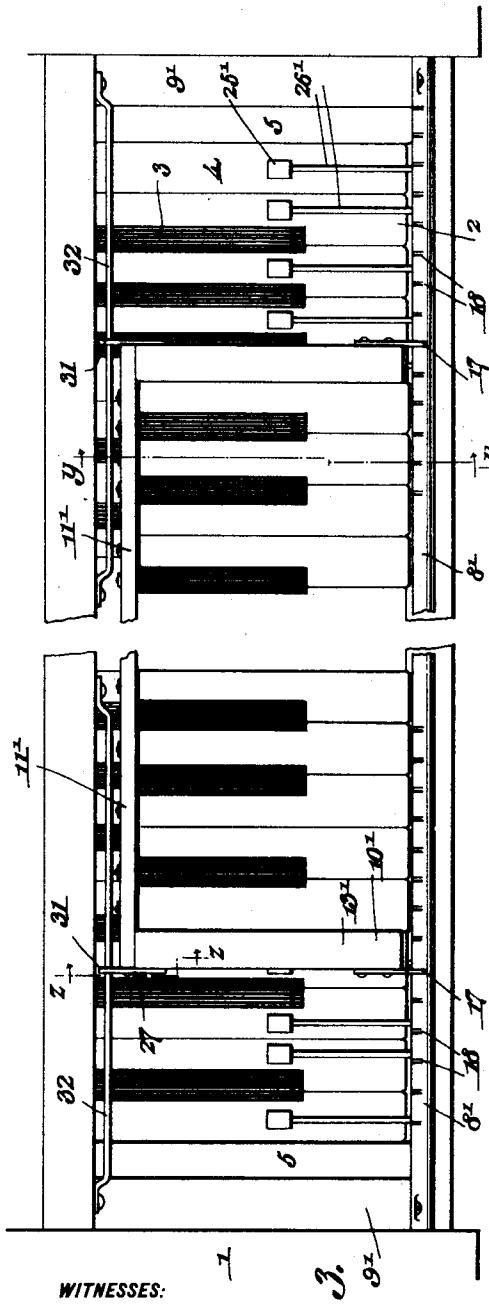


Fig. 3.

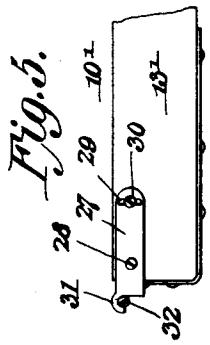


Fig. 5.

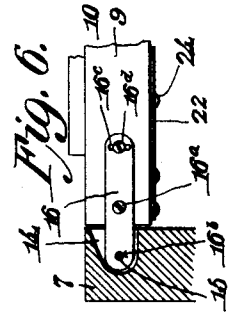


Fig. 6.

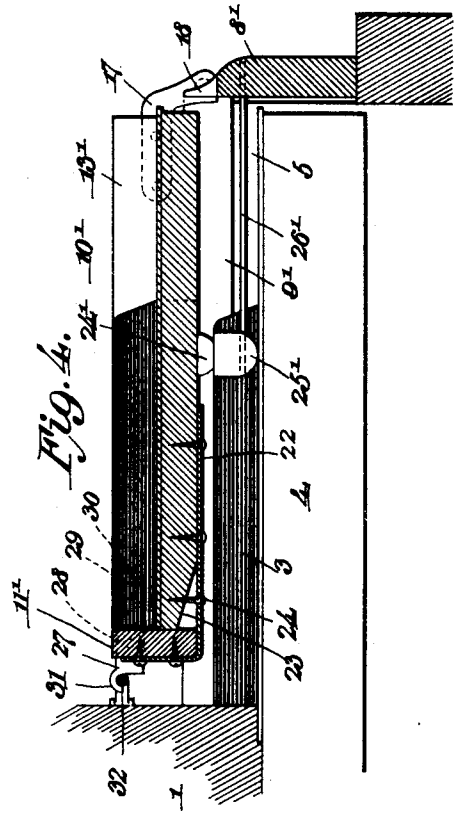


Fig. 4.

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UNITED STATES PATENT OFFICE.

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TRANSPOSING ATTACHMENT FOR PIANOFORTES.

1,107,783. Specification of Letters Patent. Patented Aug. 18, 1914.

Application filed June 8, 1911. Serial No. 631,928.

To all whom it may concern:

Be it known that I, LOUIS ALLAN GOSS, a subject of His Majesty the King of England, residing at 20 Brookside, Cambridge, in the county of Cambridge, Kingdom of England, have invented a certain new and useful Improved Transposing Attachment for Pianofortes, of which the following is a specification.

This invention relates to apparatus for use in connection with pianos and other similar key instruments, the purpose of which is to provide a device of such construction that music may be played on the instrument in a higher or lower key than that in which the copy played is printed or written.

My invention is of the type in which transposition is effected by shifting a supplemental keyboard relatively to the keyboard of the instrument on which it is placed. Various forms of such apparatus have heretofore been proposed. It is necessary that some interposed system of leveling-up devices be arranged between the supplementary keyboard on which the performer plays and the keyboard of an instrument itself, in order that the supplemental keyboard may be capable of lateral movement through one or more semi-tones according to the transposition required. This has been effected in some cases by introducing a complete intermediate set of keys, of which those which rest on the white keys are made of greater height than those that rest on the black ones so that an uniform level is obtained on which the operative supplemental keyboard rests. It has also been proposed to employ a set of leveling-up keys for use with the white keys only, bringing their level up to that of the black keys. In that case some of the keys of the supplementary keyboard rest directly upon the black keys of the instrument, and others upon the leveling-up keys.

It is the primary object of my invention to provide a simplified device by which the desired results are satisfactorily accomplished, and also to provide a device of this character which may be readily applied to any piano of the ordinary well known construction, and which may be easily adjusted to, and securely held in the several different keys of the instrument.

A further object of my invention is to provide a transposing apparatus employing a supplemental keyboard constructed and applied to a piano in such manner that the touch or technique of the performer will not be affected to any material extent by the employment of such agency.

Other objects will appear hereinafter.

In the drawings forming a part of this specification: Figure 1 is a fragmentary plan view of a piano keyboard showing my invention applied. Fig. 2 is a transverse section taken substantially upon the line *x*—*x* of Fig. 1. Fig. 3 is a view similar to Fig. 1 illustrating a modified form of my invention. Fig. 4 is a transverse section taken upon the line *y*—*y* of Fig. 3. Fig. 5 is a view taken approximately upon the line *z*—*z* of Fig. 3 and in which is illustrated means by which the supplemental keyboard may be adjusted relative to the piano, and, Fig. 6 is a view similar to Fig. 5 taken upon the line *a*—*a* of Fig. 1.

Referring now more particularly to the drawing, 1 represents generally the body portion of a piano provided with a standard keyboard 2, composed of the black and white keys 3 and 4 respectively, which keyboard is positioned between the end blocks 5 of the piano. The piano keyboard and other parts of the piano proper, forming no part of my invention and being illustrated merely for the purpose of showing the manner in which my invention is used, are of the ordinary well known construction.

The preferred form of my improved transposing apparatus comprises an auxiliary or second keyboard mounted above the standard keyboard and arranged to overlie the same and, for the purpose of making the said auxiliary keyboard adaptable to the ordinary piano, I provide a frame 6, rectangular in shape and of a length to fit between the end blocks of a standard piano. This frame 6 consists of narrow back and front members 7 and 8, which are connected at their ends by the side members 9. The back member 7 is designed to lie close to the piano front at the inner ends of the keys, and behind the black keys of the standard keyboard, while the front member 8 is spaced forwardly therefrom a distance suitable to extend beyond the forward edge of the standard keys and to rest upon the lock bar of the piano. The end members 9 as already stated, extend beyond the standard keyboard and are supported by the end blocks of the piano. It will be obvious that this frame

when positioned upon the piano will be securely held in such position by virtue of the engagement of the back members 7 behind the black keys of the standard keyboard.

The supplemental or auxiliary keyboard is designed to be adjustably mounted within the frame 6, and to this end I provide an inner frame 10, within which the supplemental keyboard is positioned. This inner frame consists of back and front members 11 and 12, being spaced apart by the end members 13 sufficiently to fit within the frame 6. This inner frame, being adapted to move longitudinally of the keyboard, is therefore necessarily shorter than the frame 6. The inner or forward face of the frame members 7 is provided with a pair of longitudinally disposed grooves or recesses 14, one arranged adjacent each end, and within each of which is located a horizontal bearing bar 15. At each end of the inner frame 10, and secured to extend rearwardly from the bottom thereof is a hinge member 16, which hinge members are designed to project into the recesses 14 upon the frame 6, to slidably and hingedly engage the bearing bars 15. The hinge members 16, as clearly shown in Fig. 6, are formed preferably of strap metal, and are pivoted upon the auxiliary frame at 16^a, the outer or projecting portion being provided with an aperture 16^b for engagement with the bearing bar 15, while the other extremity is provided with an arcuate slot 16^c through which projects a set screw 16^d for purposes of adjustment. The forward or free ends of the inner frame are provided with locking members 17, which extend beyond the inner frame and downwardly to engage spaced notches 18 in the upper surface of the forward end 8 of the frame 10. By this arrangement of the inner frame relative to the main frame 6, it will be obvious that the inner frame, after being raised upon its hinges 16 a height sufficient to disengage the locking members 17 from the notches 18, is capable of being moved in either direction longitudinally of the main frame, being limited in such movement by the length of the bearing bars 15.

The second or auxiliary keyboard 19, consisting of a plurality of black and white keys 20 and 21 respectively, is arranged within the inner frame 10 to overlie the standard keyboard 2, and is spaced slightly thereabove. Each of the keys of the secondary keyboard is designed to be operated in the same manner as the standard keys, and to this end is connected upon its under surface to the back bar 11 of the inner frame by a flat spring 22. The rear end of each key, upon the under side, is chamfered at 23, so that the screw 24, connecting the spring 22 below the said chamfered portion, will permit of vertical adjustment of the supplemental or transposing keys. Each key has screwed upon the under surface, at a point substantially midway of the ends, a downwardly-projecting movement-transmitting member 24′, for imparting movement to the underlying key of the standard keyboard, and projects below the key a distance even with the upper edge of the black key 3 of the standard keyboard.

As the white keys of the standard keyboard 2 are in a plane lower than that of the black keys, the members 24′ will not suffice to directly contact these keys; and for the purpose of imparting motion or stroke to the white keys also, I provide for each of said keys at a point directly below the members 24′ of the overlying keyboard, a leveling block or pad 25. Each of these members is preferably composed of some non-abrasive substance such as rubber, felt or the like, but may be also constructed of wood or such other material as may be desired, provided with a resilient noiseless covering. Each of the leveling pads are secured upon one end of a spring member 26, the opposite end of which is firmly attached to the bar 7 of the main frame 6. Thus each of the white keys of the standard keyboard is provided with means whereby movement is imparted thereto by depression of the overlying keys, and upon release of the said overlying keys, the leveling pads or blocks will assume normal position through the resiliency of the spring member 26. It will be obvious from this arrangement that, when desirous of changing the key of the instrument, the supplementary or transposing keyboard may be readily moved within the main or stationary frame to a higher or lower pitch as desired, and that playing may be resumed upon the transposing keyboard in the key most familiar to the performer, while in reality the whole tone has been changed.

The modified form of my invention, illustrated fully in Figs. 3, 4 and 5 of the drawings, while embodying substantially the same arrangement as the form above described, shows the transposing apparatus applied to the instrument in somewhat different manner. In this form of my invention I dispense entirely with the back member 7 of the main frame, the modified frame comprising a front member 8′, being provided at each extremity with inwardly projecting side members 9′. Upon reference to the drawings it will be seen that this front member 8′ is adapted to be supported by the lock bar of the piano in the same manner as the preferred form, and this frame is of sufficient width to permit the side members 9′ to rest upon the end blocks 5 of the piano, and to fit snugly within the end members. As the back member of the main frame in this form of my invention is dispensed with, I attach the leveling blocks or pads 25′ to

the front bar 8′ of the frame by means of the spring members 26′. The inner or transposing frame 10′ in this form of my device is three-sided, having a back bar or member 11′, and end members 13′ extending forwardly from the extremities thereof. Secured to the inner or back end of the end member 13′ and extending rearwardly therefrom, are members 27, for attaching the transposing frame to the piano. These members, which are similar to the members 16 above described, are pivotally secured to the frame at 28, being provided at their inner ends with an arcuate slot 29 through which extends an adjusting screw 30. The opposite ends of said members are each formed with a hook portion 31, adapted to engage over slide bars 32 attached to and extending longitudinally of the front of the piano to allow for the transposition of the supplemental keyboard. By this arrangement the auxiliary keyboard may be moved in either direction up and down the standard keyboard, and the transposing keyboard may be readily disengaged from the instrument.

In attaching the device to pianos of various designs or makes, it may be necessary, owing to differences in the height of the keys or end blocks of the piano to raise or lower the rear edge of the auxiliary keyboard to compensate for such differences and to level the keys; and it will be obvious that such minor adjustments may be readily and accurately made through the adjustability of the members 16 and 27, as clearly illustrated in Figs. 5 and 6.

It will be obvious from the foregoing description taken in connection with the drawings that a device so constructed and simplified may be easily and quickly attached and detached to and from an instrument, the advantage of which feature is readily understood. It is also obvious that the arrangement of securing the transposing keys to the inner frame by means of the springs, also the same method of connecting the leveling pads or blocks to the main frame, allows the said transposing keys and leveling blocks to assume normal or inoperative positions automatically upon release of the transposing keys, and therefore does not subject the standard keys and the piano mechanism connected therewith to any additional weight or pressure in assuming normal position. The purpose of this arrangement is to preserve the normal touch of the piano and keys, the mechanism responding at once to the touch of the performer and returning to normal position immediately upon release, without impairing or affecting the natural movement of the elements.

While I have illustrated in the drawings and described in the specification briefly the preferred embodiment of my device, I wish it to be understood that I need not necessarily restrict myself to such particular form but that minor changes in the construction and arrangement of the parts may be made as will fall fairly within the scope of my claims.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a transposing device for pianos, a horizontal support, a frame, an auxiliary keyboard on said frame, hinge members pivotally connected to said frame and slidably mounted upon said support whereby said frame may be adjusted relative to said support, and means for securing said frame in adjusted position, substantially as described.

2. In a transposing device for pianos, a horizontal support, a frame, an auxiliary keyboard on said frame, hinge members pivoted at their medial portions to said frame, means provided at one end of said members for slidably engaging said support, the opposite end of each of said members being provided with an arcuate slot, and screws secured to said frame and projecting through said slots whereby said frame may be held in its adjusted positions, substantially as described.

3. In a device of the class described, a main frame adapted to rest upon the case of a piano adjacent the key board thereof, a plurality of springs fixed to extend from said frame longitudinally of and above the white keys of said key board, each of said springs being provided with a pad adapted to rest upon said white keys and having its upper face in the same plane with the upper faces of the black keys of the piano key board; in combination with an auxiliary frame, means for adjustably supporting said auxiliary frame within said main frame, an auxiliary key board on said auxiliary frame comprising a plurality of depressible keys, spring members connecting said depressible keys with said auxiliary frame, the keys of said auxiliary key board coöperating with the black keys of the piano key board and with said pads, and coöperating means on said frames for locking said auxiliary frame in adjusted positions, substantially as described.

4. In combination with a piano key board having keys of different heights, a main frame adapted to rest upon the case of a piano, a spring-mounted leveling pad arranged above each of the lowermost keys of said piano keyboard with its lower face resting upon its respective key and its upper face being in the same plane with the upper faces of the higher keys; an auxiliary frame, means for adjustably supporting said auxiliary frame within said main frame, an auxiliary keyboard on said auxiliary frame comprising a plurality of depressible keys,

spring members connecting said depressible keys with said auxiliary frame, the keys of said auxiliary keyboard coöperating with the higher keys of said piano keyboard and said leveling pads, and coöperating means upon said frames for locking said auxiliary frame and keyboard in adjusted positions, substantially as described.

5. In a transposing device, a horizontal support adapted to be positioned above the keyboard of a piano, a frame, an auxiliary keyboard upon said frame, hinge members secured at one end to said frame and in sliding engagement at their opposite ends with said support, and coöperating means upon said hinge members and said frame whereby the latter may be adjusted vertically, substantially as described.

6. A transposing device comprising a frame detachably secured over the keyboard of a piano, a second frame mounted within said frame to be longitudinally adjustable therein, a plurality of depressible keys in said second frame and means for establishing connection between said depressible keys and the keys of the piano, and means for adjusting said second frame vertically within said first mentioned frame, substantially as described.

7. A transposing device comprising a frame detachably secured over the key-board of a piano, a second frame provided with depressible keys adapted to be slidably arranged within said first mentioned frame, means upon said main frame for establishing connection between said depressible keys and the keys of the piano, hinge members connecting said second frame with said first mentioned frame, and means upon said second frame for adjusting said hinge members, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses this 26th day of May 1911.

LOUIS ALLAN GOSS.

Witnesses:
J. S. WITHERS,
T. BEAKEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."