

(No Model.)

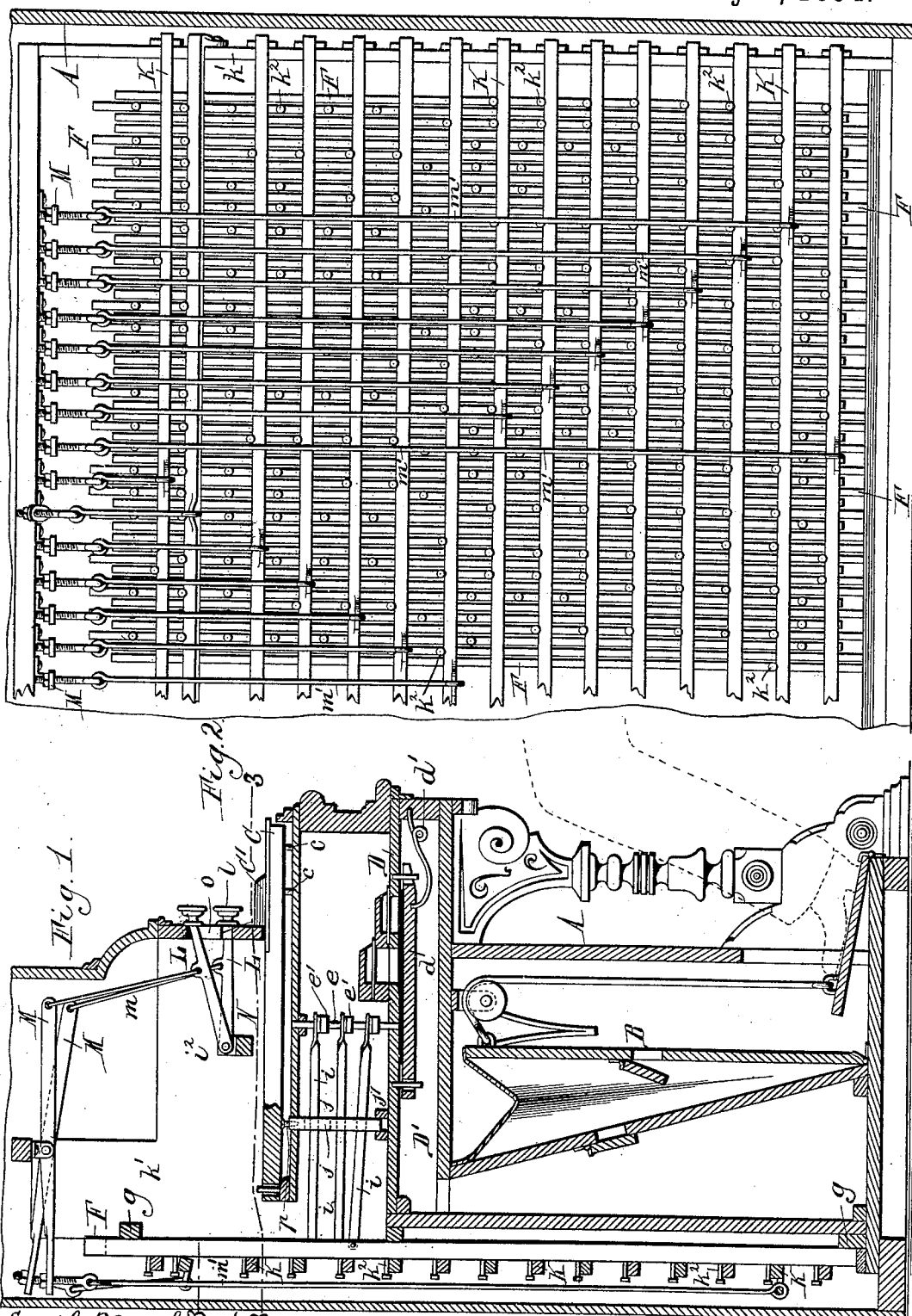
3 Sheets—Sheet 1.

M. PHILIPPS.

TRANSPOSING KEYBOARD FOR MUSICAL INSTRUMENTS.

No. 519,071.

Patented May 1, 1894.



Emil Neuhart
Chas. F. Burkhardt

Witnesses.

Martin Philipps Inventor.
By William Bonner Attorneys.

(No Model.)

3 Sheets—Sheet 2.

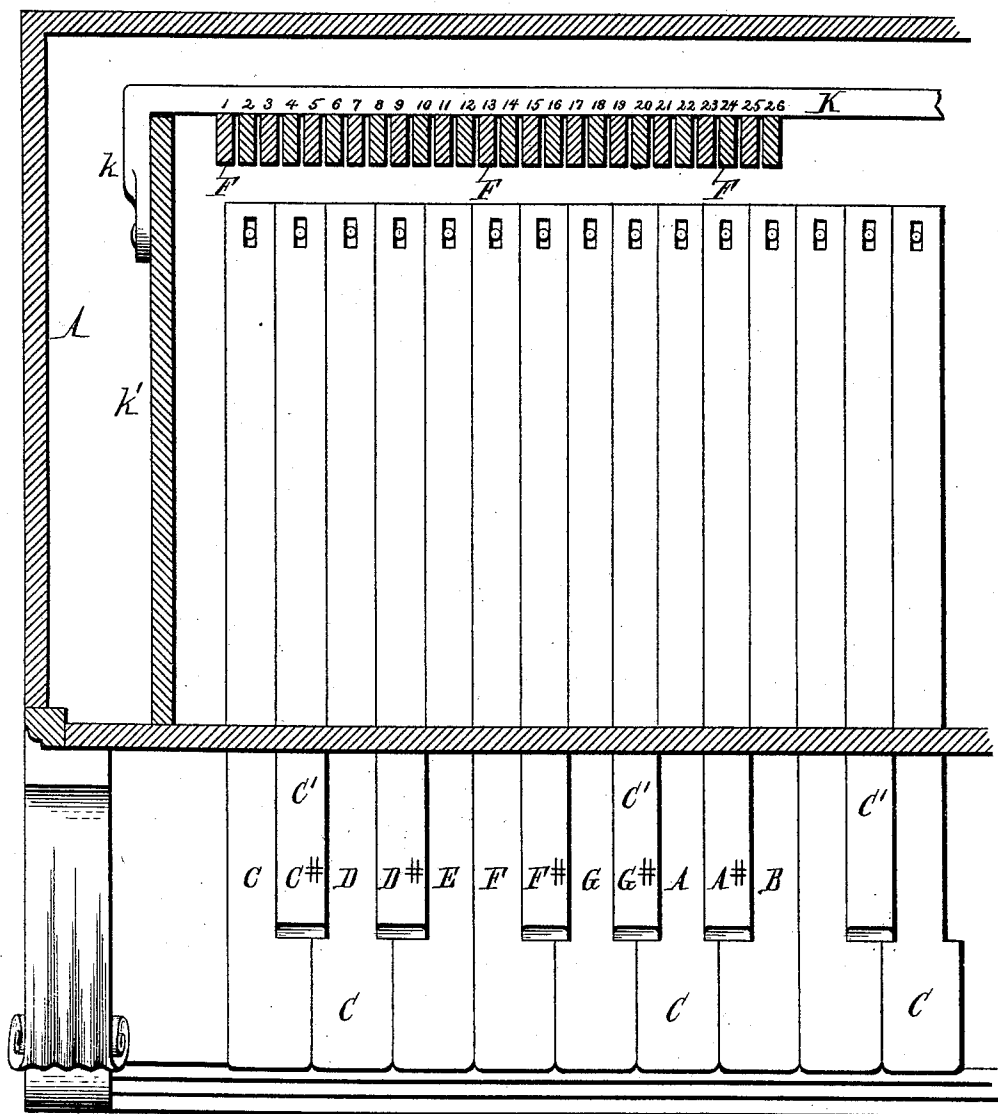
M. PHILIPPS.

TRANSPOSING KEYBOARD FOR MUSICAL INSTRUMENTS.

No. 519,071.

Patented May 1, 1894.

Fig. 3.



Witnesses:

Emil Neuhart.

Chas. F. Burkhardt.

Martin Philipps Inventor.

By Wilhelm Rönner.

Attorneys.

M. PHILIPPS.
TRANSPOSING KEYBOARD FOR MUSICAL INSTRUMENTS.
No. 519,071. Patented May 1, 1894.

Fig. 4.

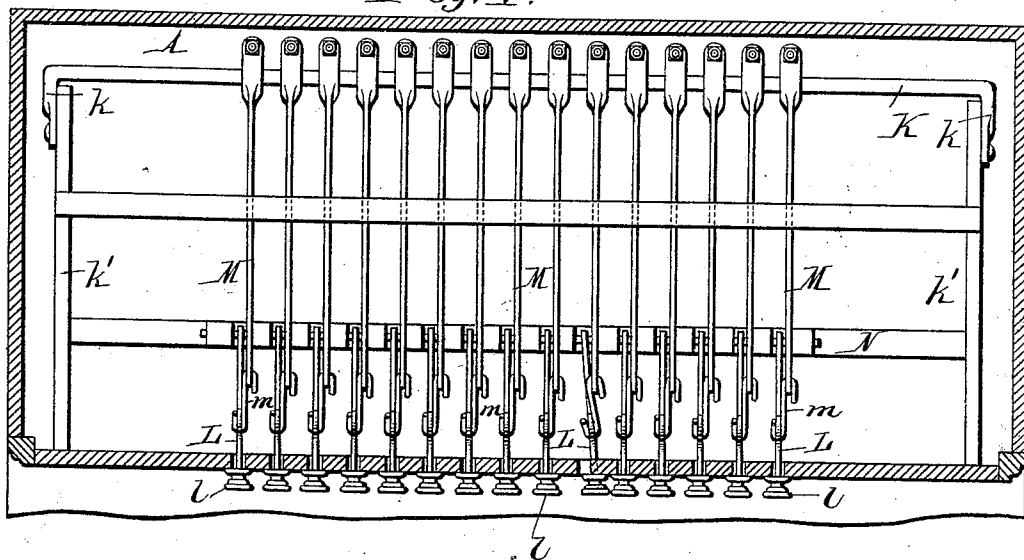


Fig. 6.

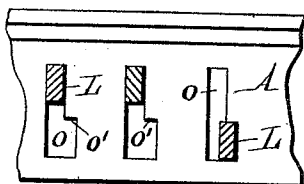
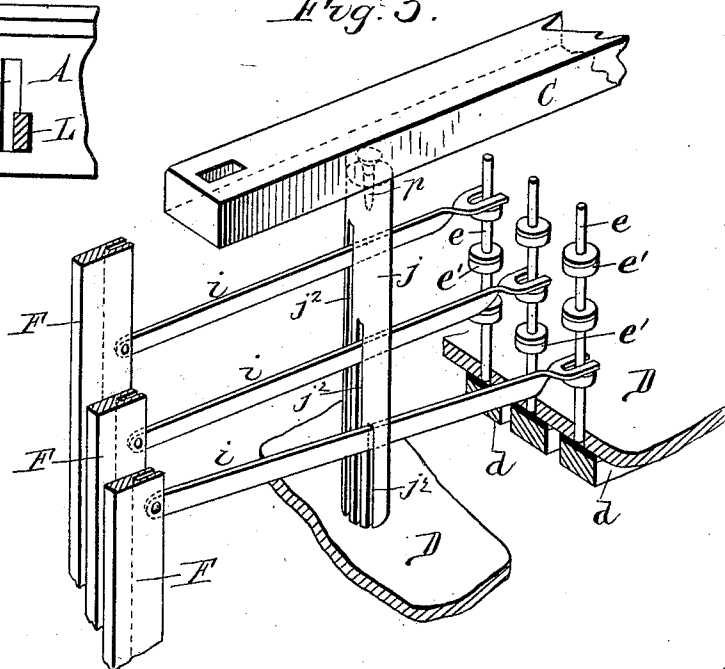


Fig. 5.



Witnesses:

Emil Meikart
Chas. F. Burkhardt.

Martin Philipps Inventor.
By Wilhelm H. Forster
Attorneys.

UNITED STATES PATENT OFFICE.

MARTIN PHILIPPS, OF WILLIAMSVILLE, NEW YORK.

TRANSPOSING-KEYBOARD FOR MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 519,071, dated May 1, 1894.

Application filed July 31, 1893. Serial No. 481,963. (No model.)

To all whom it may concern:

Be it known that I, MARTIN PHILIPPS, a citizen of the United States, residing at Williams-
ville, in the county of Erie and State of
New York, have invented new and useful Im-
provements in Transposing-Keyboards for
Musical Instruments, of which the following
is a specification.

This invention relates to key boards for
musical instruments which are provided with
transposing mechanism whereby music writ-
ten in any of the various keys may be played
upon the white keys alone, like the scale of
C on any ordinary organ or piano. Trans-
posing key-boards of this character are de-
scribed and shown in Letters Patent of the
United States No. 354,733, dated December
21, 1886, and No. 466,907, dated January 12,
1892, both granted to me.

My present invention has for its object to
simplify the transposing mechanism and to
improve its construction so as to insure the
full and prompt opening of the valves which
control the reeds, or other sound producing
parts of the instrument.

In the accompanying drawings consisting
of three sheets: Figure 1 is a transverse sec-
tional elevation of a reed organ containing
my improved transposing mechanism. Fig.
2 is a fragmentary internal rear view of the
organ, showing the transposing and shifting
bars. Fig. 3 is a fragmentary horizontal sec-
tion in line 3—3, Fig. 1, on an enlarged scale.
Fig. 4 is a top plan view of the levers for op-
erating the transposing bars. Fig. 5 is a per-
spective view of one of the keys and its trans-
posing devices, showing the position of the
parts when a transposing bar is elevated and
the key is in its normal position. Fig. 6 is a
fragmentary front view of the casing of the
instrument, showing the means for holding
the hand levers of the transposing bars in
their depressed position.

Like letters and numerals of reference refer
to like parts in the several figures.

A represents the frame or casing of the or-
gan and B the bellows which is operated by
the pedals in the ordinary manner.

C represents the white keys and C' the
black keys which are arranged in the cus-
tomary way and fulcrumed at their ends, be-
ing held in place by the usual upright pins c.

D is the reed board, of common construc-
tion, arranged below the keys; D' the wind
chest, and *d* the downwardly-swinging valves
applied to the apertures or passages below
the reeds and controlling the passage of air
to the latter. These valves are held in their
closed position by springs *d'*, and each valve
is provided with an upright rod or sticker *e*
which passes through an opening in the top
board of the wind chest and is guided with
its upper portion in an opening in the base of
the key board, as shown in Fig. 1. The keys
are connected with these stickers by transpos-
ing devices, whereby each key may be caused
to sound either its natural tone, its flat or
its sharp, thus enabling any desired scale or
key, whether containing sharps or flats, to be
played on the white keys alone, similar to the
scale of C on an ordinary instrument. This
transposing mechanism is constructed as fol-
lows: F represents a series of upright lifting
or shifting bars arranged side by side in rear
of the keys and resting with their front edges
against stationary longitudinal bars, *g*, *g*, lo-
cated near the upper and lower ends thereof.
These shifting bars are free to slide up and
down. Under each key is arranged an up-
right rod or standard *j* which co-operates
with three different actuating levers *i* that
control the valves of those reeds which sound
the natural tone, the flat and the sharp of the
corresponding key. The standards *j* are free
to slide vertically, and are guided at their
lower ends in sockets formed in a horizontal
strip or bar *j'* secured to the top board of the
wind chest and with their upper portions in
openings formed in the stationary bottom of
the key board, as shown in Fig. 1, the upper
portions of the standards passing through
such openings and terminating in proximity
to the under sides of the keys. Each of these
standards is provided with three upright slots
j'' through which pass the three actuating le-
vers corresponding thereto. The three actu-
ating levers belonging to each key are piv-
oted at their rear ends to three different shift-
ing bars, so that upon raising such bars the
fulcrums of the actuating levers are shifted
accordingly and the levers are raised in the
slots of the standard. The front ends of the
actuating levers bear upon collars or projec-
tions *e'* arranged on the stickers of the cor-

responding reed valves, each sticker being provided with three of such collars, and the front ends of the levers being provided with forks which embrace the stickers, as shown in Fig. 5. The standards are of such a height that when they are in their normal or lowermost position, in which they rest upon the bottom of their lower sockets, the keys, when depressed, do not reach their upper ends, and hence do not sound any of the reeds. The slots of each standard are made of such a length that when the fulcrums of the actuating levers are in their normal or depressed position, they do not reach the upper ends of their slots, but stand a short distance below the same, so that they are unaffected by the vertical movement of the standards; while when the fulcrums of any of the actuating levers are raised, as shown by the position of the lowermost lever in Figs. 1 and 5, such elevated levers strike the upper ends of the corresponding slots and raise the standards into contact with, or within reach of, the underside of the keys above the same, as shown in the same figures, so that upon depressing such keys, the reeds controlled by the elevated levers are sounded. When an actuating lever is thus raised and the corresponding key is struck, the lever is depressed by the standard, and the lever in turn depresses the sticker rod with which it is connected, thereby opening the valve operated by said sticker and sounding the corresponding reed. It will now be clear that by raising those actuating levers which control the reeds or other sound-producing parts belonging to a given scale, those tones only that constitute such scale will be produced upon depressing the keys.

K represents a series of horizontal transposing bars arranged on the rear side of the shifting bars, one above the other, whereby the series of shifting bars representing the same scale are simultaneously elevated, so as to raise the corresponding actuating levers. Each transposing bar is provided at its ends with forwardly extending arms k which are pivoted to stationary upright walls k' , arranged near opposite ends of the casing, and which permit the transposing bars to swing vertically. As many of these transposing bars are employed as there are scales, and the shifting bars corresponding to each transposing bar are each provided, immediately above the latter, with a pin or projection k^2 against which the transposing bar bears and whereby the series of shifting bars is simultaneously elevated upon raising the corresponding transposing bar. These transposing bars are independently operated by hand levers L, terminating above the key board, through the medium of intermediate levers M and connecting rods m m' . The hand levers L are pivoted at their rear ends to a stationary longitudinal bar N, and pass with their front ends through upright slots o formed in the front wall of the casing and having lateral shoulders o' , under which the

hand levers may be engaged for locking them in position when depressed, as shown in Fig. 6. The projecting ends of the hand levers are provided with knobs l which bear the signatures of the scales or keys represented by them. The front connecting rods m connect these hand levers with the front arms of the intermediate levers M and the connecting rods m' connect the rear ends of said levers with the corresponding transposing bars K. Upon depressing any one of the hand levers L, the corresponding transposing bar K is caused to raise the shifting bars belonging to the scale represented by the depressed hand lever, thereby elevating the proper actuating levers and their standards, so that upon depressing any of the keys the tones constituting such scale are sounded. The key board may thus be transposed for any desired key or scale, and the tones of such key may be produced by the use of the white keys alone.

Upon unlocking and releasing a depressed hand lever, the elevated transposing bar and the shifting bar and connecting parts are returned by gravity to their former position.

In order to enable accidental notes to be played upon the instrument if desired, the black keys are preferably so connected with the reed valves, that when the key board is set for a given scale containing sharps, the black keys upon my improved instrument immediately above those white keys which have been changed to tones produced by black keys of an ordinary instrument in such scale, are transposed a semi-tone below such white keys, that is, to the natural tone of the same; and so that when the key board is set for a given scale containing flats, the black keys upon my instrument immediately below the white keys which have been changed to tones produced by black keys upon an ordinary instrument in such scale, are transposed a semi-tone above such white keys, that is, to the natural tone of the same. For this purpose, the connections are made as follows, only a single octave, beginning with the key C natural being given, as the connections of the remaining octaves are the same. For convenience of reference, the shifting bars are numbered consecutively, beginning with 1, and the keys are described as connected with the reed valves through the shifting bars, reference to the intermediate actuating levers and the slotted standards being omitted for the sake of brevity. Key C is connected through shifting bar 1 with reed valve C. Key C is connected through shifting bar 2 with reed valve C $\sharp$. Key C is connected through shifting bar 26 with reed valve B. Key C $\sharp$ is connected through shifting bar 2 with reed valve C. Key C $\sharp$ is connected through shifting bar 3 with reed valve C $\sharp$. Key C $\sharp$ is connected through shifting bar 4 with reed valve D. Key D is connected through shifting bar 4 with reed valve C $\sharp$. Key D is connected through shifting bar 5 with reed valve D. Key D is connected through shifting bar 6 with

reed valve D $\sharp$. Key D $\sharp$ is connected through shifting bar 6 with reed valve D. Key D $\sharp$ is connected through shifting bar 7 with reed valve D $\sharp$. Key D $\sharp$ is connected through shifting bar 8 with reed valve E. Key E is connected through shifting bar 8 with reed valve D $\sharp$. Key E is connected through shifting bar 9 with reed valve E. Key E is connected through shifting bar 10 with reed valve F. Key F is connected through shifting bar 11 with reed valve E. Key F is connected through shifting bar 12 with reed valve F. Key F is connected through shifting bar 13 with reed valve F $\sharp$. Key F $\sharp$ is connected through shifting bar 13 with reed valve F. Key F $\sharp$ is connected through shifting bar 14 with reed valve F $\sharp$. Key F $\sharp$ is connected through shifting bar 15 with reed valve G. Key G is connected through shifting bar 15 with reed valve F $\sharp$. Key G is connected through shifting bar 16 with reed valve G. Key G is connected through shifting bar 17 with reed valve G $\sharp$. Key G $\sharp$ is connected through shifting bar 17 with reed valve G. Key G $\sharp$ is connected through shifting bar 18 with reed valve G $\sharp$. Key G $\sharp$ is connected through shifting bar 19 with reed valve A. Key A is connected through shifting bar 19 with reed valve G $\sharp$. Key A is connected through shifting bar 20 with reed valve A. Key A is connected through shifting bar 21 with reed valve A $\sharp$. Key A $\sharp$ is connected through shifting bar 21 with reed valve A. Key A $\sharp$ is connected through shifting bar 22 with reed valve A $\sharp$. Key A $\sharp$ is connected through shifting bar 23 with reed valve B. Key B is connected through shifting bar 23 with reed valve A $\sharp$. Key B is connected through shifting bar 24 with reed valve B. Key B is connected through shifting bar 25 with reed valve C. To allow the three levers co-operating with the same standard to clear one another, they are pivoted to their respective shifting bars at different elevations, and the slots in the standard are made of correspondingly different lengths, as shown.

The standards are preferably constructed of wood and their slots extend upward from the lower ends thereof, so that the slots may be readily passed over the actuating levers.

In order to permit the standards to be accurately adjusted with reference to the keys, an upright adjusting screw *p*, is arranged at the upper end of each standard, the head of which bears against the under side of the corresponding key when the standard is raised.

I claim as my invention—

1. In a transposing key board, the combination with the sound producing parts and the keys, each adapted to be connected with either of the sound producing parts corresponding to its natural tone, its sharp or its flat, of actuating levers controlling said sound producing parts and operated from said keys and shifting bars supporting said levers, whereby the fulcrums of the latter may be raised or lowered, substantially as set forth.

2. The combination with the keys and the sound-producing parts, of actuating levers controlling said sound-producing parts and operated from said keys, shifting bars connected with said levers, whereby the fulcrums thereof are raised or lowered, and transposing bars whereby the shifting bars belonging to the same scale are operated, substantially as set forth.

3. The combination with the keys and the sound-producing parts, of shifting bars, actuating levers connected with said shifting bars and controlling the sound-producing parts, and rods or standards operated by said actuating levers and adapted to engage with the keys, substantially as set forth.

4. The combination with the keys and the sound-producing parts, of shifting bars, slotted rods or standards arranged underneath the keys, and actuating levers connected with said shifting bars, arranged in the slots of the standards and controlling the sound producing parts, substantially as set forth.

5. The combination with the keys and the sound-producing parts, of stickers or operating rods controlling the sound-producing parts and having collars or projections, shifting bars, and actuating levers fulcrumed on said shifting bars, operated from said keys and bearing against the collars or projections of said stickers, substantially as set forth.

6. The combination with the keys and the sound producing parts, of the rods or stickers controlling the same and having projections, vertically movable standards arranged underneath the keys and having upright slots, vertically movable shifting bars, and actuating levers fulcrumed at their rear portions on said shifting bars and passing through the slots of the standards and bearing with their front ends against the projections of said stickers, substantially as set forth.

7. The combination with the keys and the sound-producing parts, of a series of vertically movable shifting bars, intermediate actuating devices connected with said shifting bars, operated by the keys and controlling the sound producing parts, and vertically movable transposing bars, each engaging with the shifting bars corresponding to the scale represented by the transposing bar, substantially as set forth.

8. The combination with the keys and the sound-producing parts, of a series of vertically movable shifting bars having pins or projections, intermediate actuating devices connected with said shifting bars, operated by the keys and controlling the sound producing parts, and vertically movable transposing bars, engaging against the pins or projections of the shifting bars, substantially as set forth.

9. The combination with the keys and the sound producing parts, of a series of shifting bars, intermediate actuating devices connected with said shifting bars, operated from the keys and controlling the sound-producing

parts, movable transposing bars, each engaging with the shifting bars corresponding to the scale represented by the transposing bar, hand levers arranged adjacent to the key
5 board, and intermediate levers connecting said hand levers with the transposing bars, substantially as set forth.

Witness my hand this 21st day of July,
1893.

MARTIN PHILIPPS.

Witnesses:

JNO. J. BONNER,
CARL F. GEYER.