L. K. FULLER.

Key-Board for Organs.

No. 160,515. Patented March 9, 1875.

Fig. 1.

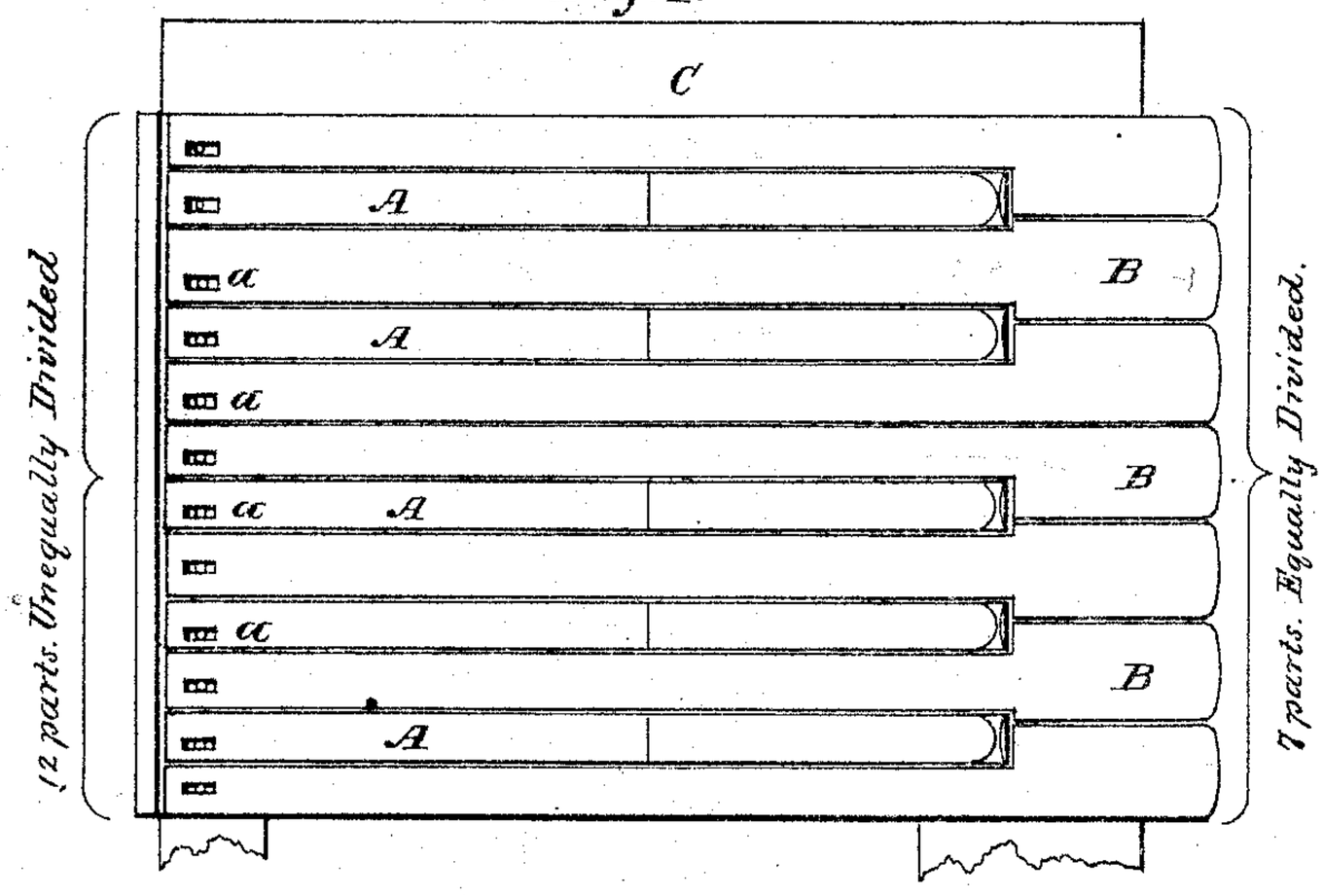


Fig. 2.

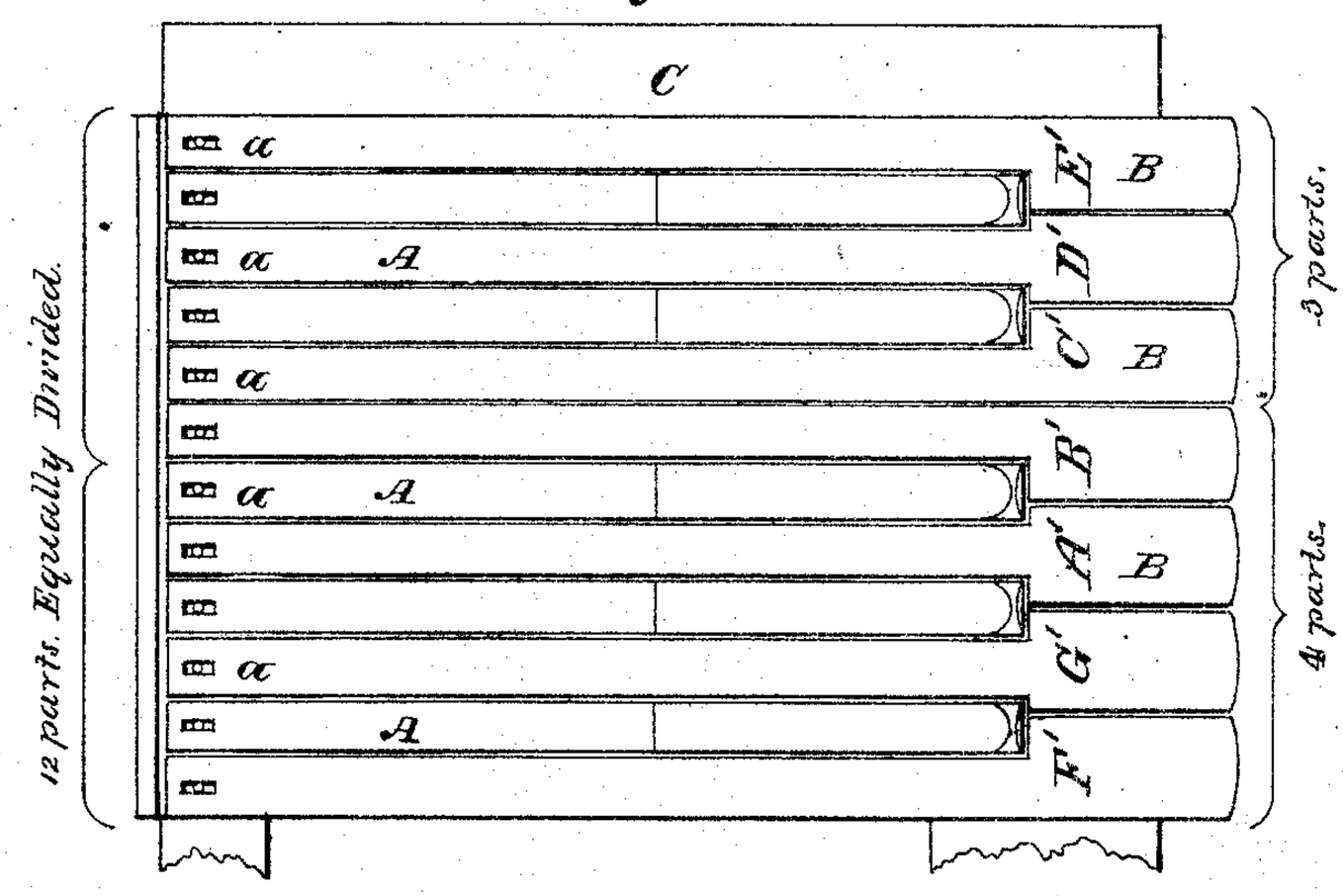


Fig. 3.

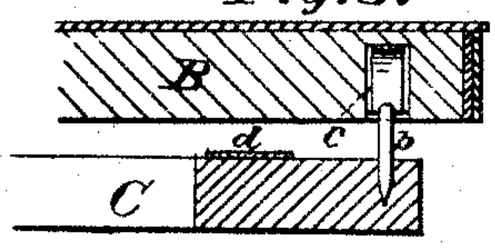


Fig. 4.

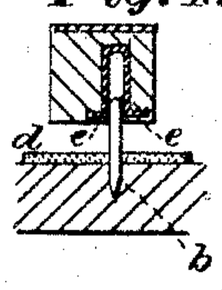


Fig. 5.

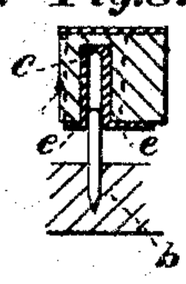
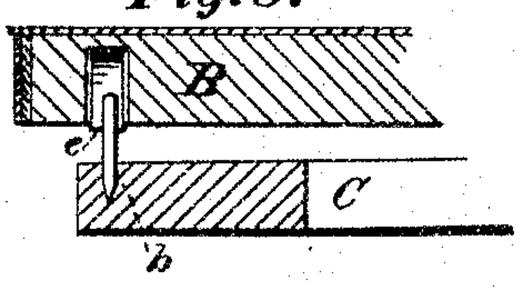


Fig. 6.



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UNITED STATES PATENT OFFICE.

LEVI K. FULLER, OF BRATTLEBOROUGH, VERMONT, ASSIGNOR TO J. ESTEY & CO., OF SAME PLACE.

IMPROVEMENT IN KEY-BOARDS FOR ORGANS.

Specification forming part of Letters Patent No. **160,515**, dated March 9, 1875; application filed January 27, 1875.

To all whom it may concern:

Be it known that I, LEVI K. FULLER, of Brattleborough, in the county of Windham and State of Vermont, assignor to the firm of J. ESTEY & CO., of same place, have invented certain Improvements in Key-Boards for Organs and similar musical instruments, of which the following is a specification:

To enable my invention to be more fully understood, I will briefly describe the method of constructing keys and key-boards according to the principles now in use.

In the present state of the art the keys of organs and similar musical instruments are made by marking off the entire set—for example, five octaves of sixty-one keys—on a board of the proper length, breadth, and thickness, numbering each key consecutively from the end of the key-board, and then cutting them out. Keys made in this way are not interchangeable in different instruments, nor in adjacent octaves of the same instrument. No effort is made to accomplish this end, and consequently each key fits in its destined place, and in no other. In spacing the keys the front ends are made of the same width, or very nearly so, while the rear ends vary in width with much irregularity. The consequence of this is that the pivot and guide pins cannot be spaced regularly, or some of the pins would inevitably pass between the keys, or in the extreme edge of the same.

As the old style of key-board is constructed almost entirely by hand, it is obvious that any method of making keys singly, wholly by machinery, and interchangeable, will be conducive to economy.

My invention relates, in part, to the method of spacing and arranging the keys in the manual of an organ or similar instrument in such a manner that they may be interchangeable, letter for letter, in the same or in different instruments, at will. It also relates to an improvement in bushing at the guide-pins, which will be fully described farther on.

In the drawings, Figure 1 is a plan, showing the old style of spacing and arranging the keys. Fig. 2 is a plan, showing my improved key-board. Figs. 3 and Fig. 4 are, respectively, longitudinal and transverse sectional views, illustrating the old style of bushing. Figs. 5 and 6 are, respectively, transverse and longitudinal sectional views, showing my improvements thereon.

Fig. 2 illustrates my method of spacing the keys, which I will now describe.

The rear ends A A of the keys are precisely equal in width, and the pivot-pins *a a* are equally spaced, and pass through the center of the keys. The guide-pins *b b* are also equally spaced, and engage the keys, as in Figs. 5 and 6. At the front ends B B the keys are spaced as follows: The five keys from C′ to E′, inclusive, are divided into three equal parts, the sharps or black keys not coming to the front. The remaining seven keys, from F′ to B′, inclusive, are divided into four equal parts. By this method of spacing, the first-named five keys occupy a little less space on the front of the board than any five of the others; but the difference is not noticeable to the player.

In constructing the keys for my improved manual only five different kinds are required, for, before the key is mounted with ivory, F′ may be substituted for B′, G′ for A′, and C′ for E′, by simply turning them over, D′ being the only key without a counterpart, the black keys being all alike.

After mounting, the white keys are only interchangeable letter for letter.

I propose to cut the keys from five different blanks or kinds of blanks, prepared as shown in another application I have filed preparatory to obtaining Letters Patent therefor.

To make my improvement in bushing more clear I have shown, in Figs. 3 and 4, the old method, and will now briefly describe it.

A strip of felt, *c*, is inserted in the guide-pin hole, as shown, and the ends *e e* of the same let into the wood of the key flush therewith. Another strip, *d*, of similar material, is glued to the key-frame C, for the keys to strike upon in playing. The object is to avoid the noise that would be occasioned by the rattling of the keys on the pins and key-frame.

My improvement consists in inserting the felt into the pin-hole, as above described, and gluing the ends to the under side of the key, so

as to project therefrom, and be interposed between the key and the frame, thus avoiding entirely the use of the strip *d* on the frame.

By this construction a saving of labor and material is effected.

Having thus described my invention, what I claim is—

1. In a key-board or manual for organs, the keys made of equal width at the rear ends A A, and the white keys spaced at the front ends B B, in two groups of unequal width, as described and shown, and having all the pivot and guide pins equally spaced, substantially as set forth.

2. A key-board or manual for organs containing five kinds of keys, namely, the white keys A′ B′ C′ D′ and the black key, the keys A′, B′, and C′ being duplicates of the keys G′, F′, and E′, respectively, and all interchangeable, letter for letter, substantially as specified.

3. The improved method of bushing the guide-pins *b b*, consisting in having the ends *e e* of the felt *c* glued to the under side of the keys, so as to project therefrom and from the cushion between the keys and the key-frame, substantially in the manner shown, and for the purposes herein described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

LEVI K. FULLER.

Witnesses:

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