Jan. 7, 1941. F. MAGNANTE 2,228,141

KEYBOARD CONSTRUCTION FOR ACCORDIONS

Filed May 5, 1939

Fig. 1.

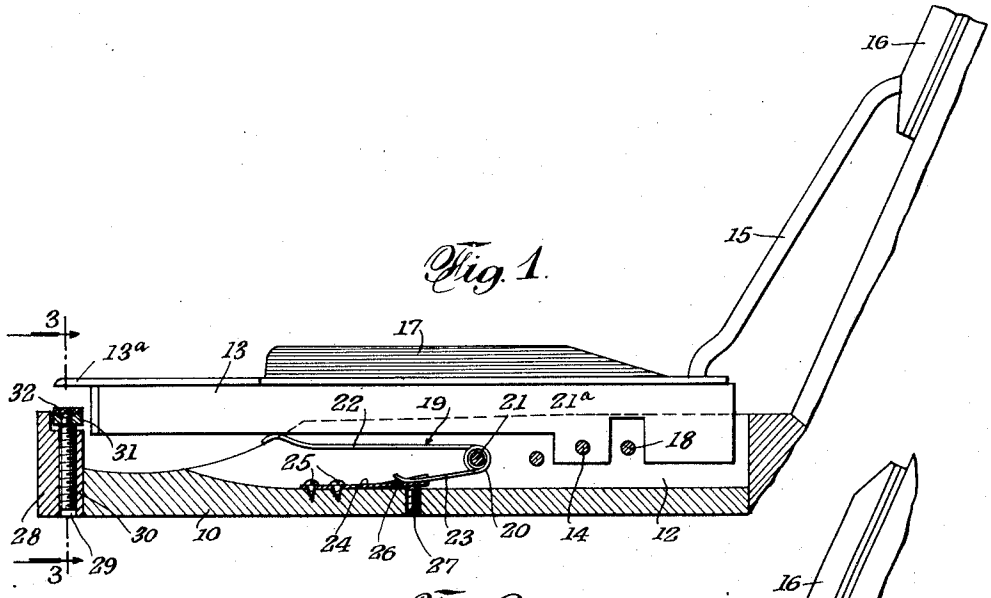


Fig. 2.

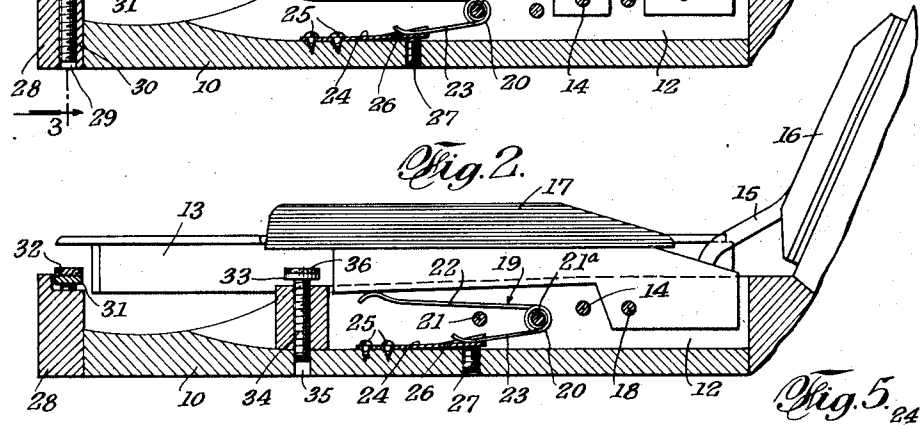


Fig. 3.

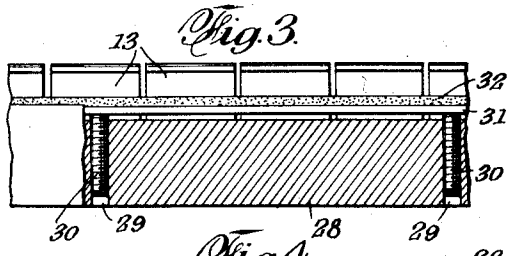


Fig. 4.

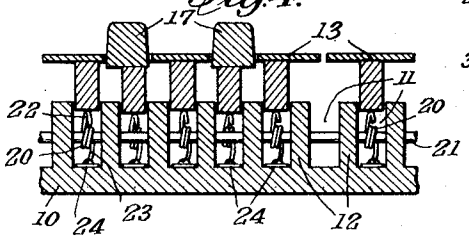
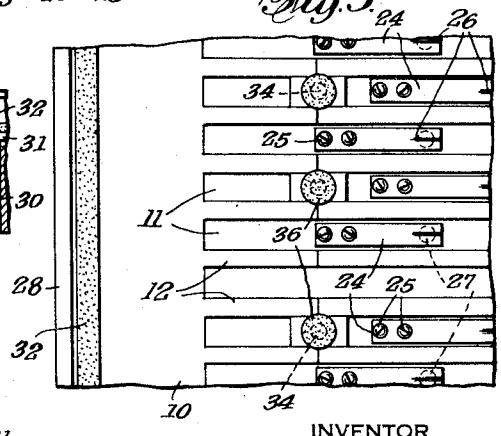


Fig. 5.



INVENTOR
FRANCESCO MAGNANTE

BY Percy Freeman
ATTORNEY

Patented Jan. 7, 1941 2,228,141

UNITED STATES PATENT OFFICE

2,228,141

KEYBOARD CONSTRUCTION FOR ACCORDIONS

Francesco Magnante, Milford, N. J.

Application May 5, 1939, Serial No. 271,917

5 Claims. (Cl. 84—376)

This invention relates to improvements in keyboards and more particularly to means for regulating the tension and movement of the keys of accordions.

The action of the keys of an accordion, after some use, tends to change, becoming less springy and materially effecting the technique of the artist. This change in the action of the keys is also affected by weather changes. Heretofore, it has been quite inconvenient to regulate this tension, it being necessary to practically disassemble the keyboard in order to make the required adjustments which, up to the present time, have been of the trial and error method entailing kinking of the action springs either by hand or with the aid of pliers. Heretofore, in order to make these adjustments, it has been necessary to send the instrument to the manufacturer or to some service establishment. It is obvious, then, that the adjustments could not be made at the time desired, by the artist himself.

Recognizing the above faulty construction of accordion keyboards, the present invention contemplates the provision of regulating means for the action springs of the keys, said means being readily available so that uniform regulation of the tension of said springs may be had quickly and with a minimum of effort. In this manner the artist may quickly and at the time desired, adjust and regulate the key pressure to meet his tastes and desires. He is able to vary this pressure from less than 4 ounces to more than 6, giving him quite a large range in either direction from the normal 4 ounces at which accordion keys are usually set. Inasmuch as the physical condition of the artist changes from time to time, his technique would be deleteriously affected unless as contemplated herein he were able to quickly make the aforementioned adjustments.

The movement of the keys are closely related to the tension thereof and the invention, therefore, further contemplates means for regulating said movement or stroke to meet the desires of the user as to volume or loudness of sound and tone, since the length of the stroke of the key controls the extent to which the valves are opened to determine the volume of the blast of air from the bellows of the instrument.

The invention is further characterized by the simplicity of its construction and by the general convenient arrangement of the parts.

In the accompanying drawing a keyboard construction for accordions, as at present conceived, has been illustrated. The following specification based on said drawing will more clearly set forth the above and other objects, features and advantages of the invention.

In the drawing:

Fig. 1 is a transverse sectional view of an accordion keyboard showing a white key construction.

Fig. 2 is a similar view showing the black key construction.

Fig. 3 is a fragmentary sectional view as taken along the line 3—3 of Fig. 1.

Fig. 4 is a similar fragmentary view taken through a medial portion of the keyboard.

Fig. 5 is a fragmentary plan view of the keyboard with the keys removed.

In that preferred embodiment of the invention which is illustrated, the keyboard 10 is formed with a series of key seats 11 defined by the walls 12. Certain of these key seats serve to accommodate the white keys 13 which are pivoted upon a rod or pin 14 passing through apertures in the walls 12. In the usual manner, each of the keys 13 is connected as by means of an arm 15 to a valve cover 16 operating against the orifices communicating with a reed chamber. The key construction above outlined is typical as is also the construction of the black keys 17. The latter, however, are pivoted upon a second pivot rod 18 carried by the walls 12 in a manner similar to the rod 14.

Each of the white keys 13 is provided with means for maintaining its valve cover against the openings in the reed chamber and providing a resilient counteracting force against the manual pressure by the player on said keys. In the present instance, this means comprises a spring 19 formed with an eye 20 strung about a rod 21 also carried by the walls 12 of the keyboard. In its present form the spring 19 comprises an arm 22 having contact at its free end with the underside of the key 13 and with an arm 23 engaged against a plate 24 fixedly held to the keyboard at one end of said plate as by means of the screws 25. In order to position the arm 23 of the spring 19 against inadvertent displacement, the free end of the plate 24 is formed with a V-shaped groove 26 in alignment with said arm 23.

It is evident from this construction that pressure on the key 13 will be resisted by the spring 19 with a force which will vary with the resiliency of said spring. It is also evident that it is quite difficult to provide each of the springs 19 of each of the keys 13 with the same tension even upon initial assembly. For this reason, it is quite desirable to provide means for regulating the tension of said springs so uniformity of resistance

thereof may be had. As shown in Fig. 1, for this purpose, there is provided a regulating screw 27 accessible from the bottom or back of the keyboard and arranged to engage the free end of the plate 24 to move said free end of the plate and thus the arm 23 of the spring 19. Setting the regulating screw 27 in will increase the tension on the spring 19 and slacking it off on said screw will reduce the tension. Thus it is possible in a few moments to accurately regulate the tension of the action of all of the keys 13.

As shown in Fig. 2, a similar construction is carried out for the black keys 17 and the parts above described have been given similar reference numbers, the only difference being that the spring 19, in this second instance, is strung on a rod 21*a* parallel to and spaced from the rod 21. Although the second rod 21*a* is preferably used, it may be arranged to string all of the springs 19 upon one rod.

The degree of rotation of each of the keys 13 may also be regulated. For this purpose, as shown in Figs. 1 and 3, the front bar 28 of the keyboard may serve to carry, as by means of the screw seats 29, a plurality of set screws 30, in longitudinal arrangement. The upper ends of these said screws may be reduced for connection with a bar 31 common to said screws and apertured for the mentioned reduced portions so that rotation of said screws may be had. It can be seen from the above, that rotation of the screws 30 in their seats 29 will cause movement of the bar 31 either toward or from the lips 13*a* of the keys 13. The stroke of these keys may thus be readily and easily regulated. In the usual manner a felt buffer lining 32 upon the top of the bar 31 may be applied to obviate undue shock as the keys strike thereon.

While the foregoing key stroke regulating means is common for all of the white keys, it is apparent that each of the keys 13 may be provided with individual stroke regulating means. As an example of such a construction, resort may be had to the stroke regulating means of the black keys 17 shown in Figs. 2 and 5, wherein each key is associated with a stop plate 33 carried upon a set screw 34 in the screw seat 35. Here also a felt buffer 36 on the plate 33 may be applied.

It will be noted from the foregoing that all of the regulator and adjusting means employed in this invention for varying the tension of the action and the degree of stroke of the keys, are readily and easily accessible from the back of the keyboard and such regulation may be accomplished with a minimum of effort. The trial and error method previously employed has been obviated and an efficient and desirable construction provided. Inasmuch as many immaterial changes may be made, it is not desired to limit the scope of the invention as hereinafter claimed, upon the instant specific disclosure.

What I claim as new and desire to secure by Letters Patent, is:

1. Accordion key tensioning means comprising a hairpin spring member having its bight fixedly located relative to a key with one leg in contact with the key, and screw means adjustably associated with the other leg of the spring for regulating the tension of said spring.

2. Accordion key tensioning means comprising a hairpin spring member having one leg in contact with the key, and means for regulating the tension of said spring comprising a flexible plate having contact with the other leg of the spring and screw means for variably flexing said plate.

3. In combination, an accordion base-board, a key mounted on said base-board for yieldingly controlled pivotal movement, and means for regulating the tension on said key comprising a hairpin spring member having one end in contact with said key, a flexible plate carried by said base-board and having contact with the other end of said spring, and means threadedly connected with the base-board for variably flexing said plate.

4. In an accordion key-board construction, a base-board, a plurality of keys pivotally mounted on said base-board, a flexible plate secured to the base-board under each key, means for tensioning each key individually, said means comprising a hairpin spring having one leg in contact with its respective key, and the other leg in contact with its respective flexible plate, means for regulating the tension of each key, said tension-regulating means comprising screw means carried by the base-board for variably flexing said plate.

5. In an accordion key-board construction, a base-board, a plurality of keys pivotally mounted on the inner side of said base-board, means for tensioning each key individually, said means comprising a hair pin spring having its bight located on a fixed center and having one leg in contact with its respective key, and means for regulating the tension of each key, said tension-regulating means comprising screw means carried by the base-board and accessible from the outer side thereof for variably flexing the other leg of said spring.

FRANCESCO MAGNANTE.