No. 821,533. PATENTED MAY 22, 1906.

C. PEKAT.

MOUNTING FOR KEYS OF MUSICAL INSTRUMENTS.

APPLICATION FILED DEC. 31, 1904

Fig. 1.

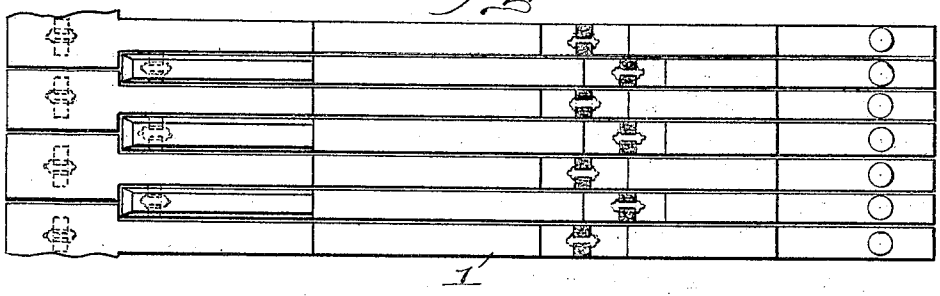



Fig. 3.

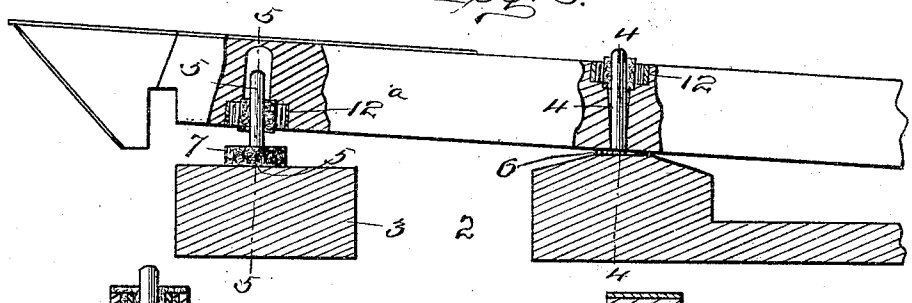



Fig. 4.

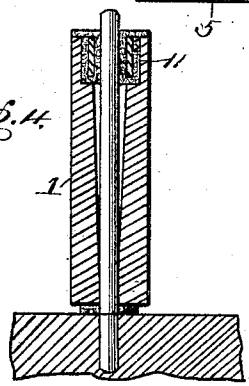



Fig. 2.

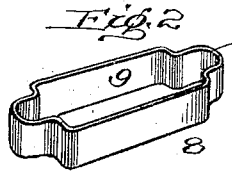



Fig. 5.

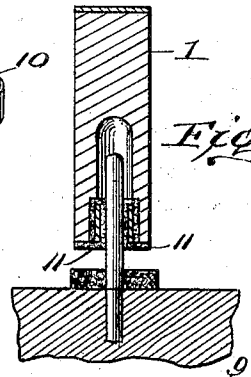



Fig. 6.

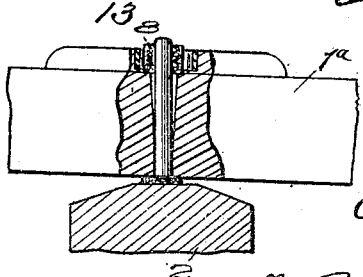



Fig. 8.

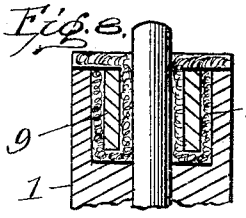
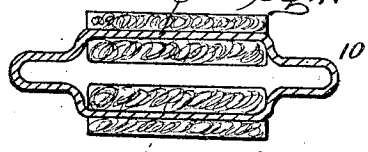



Fig. 7.




Witnesses

J. M. Fowler Jr.

Edwin C. Vroman.

Inventor

Charles Pekat,

By Mason, Fenwick & Lawrence

Attorneys.

# UNITED STATES PATENT OFFICE.

CHARLES PEKAT, OF CHICAGO, ILLINOIS.

## MOUNTING FOR KEYS OF MUSICAL INSTRUMENTS.

No. 821,533. Specification of Letters Patent. Patented May 22, 1906.

Application filed December 31, 1904. Serial No. 239,221.

*To all whom it may concern:*

Be it known that I, CHARLES PEKAT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mountings for Keys of Musical Instruments; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in musical instruments, and more particularly to the structure of a key therefor.

One of the numerous objects of the invention is the provision of peculiarly-constructed means for reinforcing portions of a key which is employed in the construction of a musical instrument, preferably a piano or an organ.

Another object of the invention is the improvement of the construction of a mortise-casing and a lining therefor.

A further object of the invention is the provision of a peculiarly-constructed flexible lining for a casing which surrounds the key-fulcrum pins, as well as the guide or movement pins, of the musical instrument.

A still further object of the invention is the improvement of the construction of a sleeve or casing for the mortise of the keys of a musical instrument.

With these and other objects in view the invention consists of certain novel constructions, combinations, and arrangement of parts, as will be hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the claims hereto appended.

In the drawings, Figure 1 is a fragmentary plan view of a keyboard composed of keys which are constructed in accordance with the present invention. Fig. 2 is a perspective view of my improved sleeve or mortise-casing. Fig. 3 is a view in side elevation of a key constructed in accordance with the present invention, shown partially in section. Fig. 4 is a sectional view taken on line 4 4, Fig. 3. Fig. 5 is a sectional view taken on line 5 5, Fig. 3. Fig. 6 is a fragmentary view of another embodiment of the present invention, shown partially in section. Fig. 7 is a longitudinal sectional view of the casing shown in Fig. 2 and the bushing or lining carried thereby. Fig. 8 is an enlarged plan view of the upper part of Fig. 4.

In carrying out the present invention, which relates more particularly to a mounting for pianoforte-keys and like musical instruments, the purpose of the invention is to provide a structure of this character that will prevent the free movement of the keys from being affected by atmospheric changes. It is a known fact that when the atmosphere is charged with excessive moisture, as in damp weather, the keys of a piano or organ or like instrument have a tendency to stick, and the free action is thus prevented, often causing great annoyance and temporarily disabling the instrument. Keys of the ordinary construction will absorb moisture, and the walls inclosing the pins will consequently swell and exert a side pressure on the pins and cause said pins to stick and interfere with the movement of the keys, sometimes to the extent of causing the same to stick or cramp. With my invention the possibility of the keys cramping or binding upon the pins will be entirely obviated.

Referring to the drawings by reference-numerals, 1 designates a piano-key, 2 the central rail of the supporting-frame, and 3 the front rail. The central rail of the supporting-frame is provided with guide or key-fulcrum pins 4, upon which are pivotally mounted the keys 1. The front rail 3 is provided with guide or movement pins 5. Upon the guide or fulcrum pins 4 are positioned removable cushion-seats 6. Removably positioned upon the guide or movement pins 5 are comparatively thick cushion-seats 7.

During the construction of a piano or organ key of the ordinary type it is formed with a central elongated aperture, and near one end there is formed a mortise or recess. In accordance with the present invention the keys must be formed with a peculiarly-constructed mortise, the same being formed for receiving the sleeve or mortise-casing depicted in Fig. 2. It is easy to apply my invention to any ordinary piano or organ key which is provided with a recess for receiving the movement-pin, as well as an aperture for accommodating the key-fulcrum pin. The aperture of an ordinary key which is not provided with reinforcing means can be easily cut out for accommodating the sleeve or mortise-casing 8 and its flexible lining. The sleeve or

mortise-casing 8 comprises a frame 9, which is preferably rectangular in shape.

The frame 9 of the mortise-casing 8 is provided with vertical bulged portions 10, which are semicylindrical in shape and are formed upon diametrically opposite portions of the frame 9, preferably at the ends. By the employment of the mortise-casing 8, which is provided with vertical bulged ends, the durability of the key is greatly increased, as it will be obvious that the thickness of the key which surrounds the casing is greatly increased at the end portion of the sleeve or mortise-casing, for the reason that the reduced oppositely-extending portions of the casing are of considerably less thickness than the central portion of the sleeve or casing. By constructing a casing which is not of the same width throughout its length the durability of the key is materially increased, thereby obviating any possibility of destroying the sides of the key which surrounds the sleeve or casing in the case of lateral movement being imparted to the key when it is in its normal position upon an instrument, as illustrated in Fig. 3.

With each of the sleeve or mortise casings 8 I also employ a flexible or soft lining, preferably of felt or like material, said lining being peculiarly arranged upon the sleeve or mortise-casing and secured to the key. The lining for each sleeve or mortise-casing comprises two strips 11 11, which are preferably of the same length and are assembled with the sleeve or mortise-casing and secured to the key in a similar manner. After the central mortise 12 has been formed so that it will accommodate the sleeve or mortise-casing 8, as well as the similar mortise portion $12^a$, it will be necessary to place adhesive material in the mortise portions 12 and $12^a$ of the key before the sleeve or casing 8 and its lining is positioned therein, if it is desired to prevent any possible liability of the casing and its lining from working out of the mortises after they have been positioned therein. Each of the strips 11, which constitute the lining for the sleeve or casing, is similarly positioned upon said sleeve or casing, and for this reason I will only describe the positioning of one strip. The strip 11 is passed downward between the parallel walls of the frame 9 of the sleeve or casing 8, and the extending end of the strip is turned up against the outer surface of one of the sides of the frame, as clearly shown in Fig. 4. It will be seen upon referring to this figure that the portion of the strip which lies in parallel position with the side of the casing has its end extending to the same horizontal plane in which the upper edge of the sleeve or casing lies. The opposite end of the strip overlaps the edges of the sleeve or casing 8 and the opposite end of said strip, the overlapping end lying at right angles to the side of the sleeve or casing and against the key, thereby partially covering an outer portion of said key when the sleeve or mortise-casing and its lining are in their normal position within the key. After the strips 11 have been positioned parallel to the sleeve or casing 9, as illustrated in Figs. 4 and 5, and before the sleeve or casing is inserted in its recess or mortise, adhesive material should be placed upon the outside of the strips, which will normally engage the walls of the mortise when the sleeve and lining are positioned within the same. The sleeve or casing 8 is pressed into its mortise, and by means of the same fitting snugly therein it would be sustained within the key if adhesive material was not employed at all, although I preferably use such material for increasing the efficiency of the structure. After the sleeve or mortise-casing and its lining or cushioning means have been positioned within their respective recesses or mortises of the key the projecting ends of the strips 11 are positioned upon the outer edge of the sleeve or casing and one end of the strips, as well as a portion of the key.

While in Figs. 3, 4, and 5 the sleeve or mortise-casing and its lining, which constitutes a cushion, is shown in different positions upon the key, it will be obvious that the same construction is employed, as well as the mode of assembling such construction with said key without deviating from the invention, and for this reason I have not specifically designated the mode of inserting the sleeve or casing 8 and its lining in the different portions of each key, one sleeve being employed for surrounding the movement-pin and the other for the key-fulcrum pin.

Referring to Fig. 6, it will be seen that I have provided a key $1^a$ with a removable strip of material 13, which constitutes a cap, said strip 15 being provided with a sleeve or mortise-casing 8 and lining, as in the other embodiment of the invention. If caps 13 were employed in the construction of the keys, the same construction as is employed upon the central portion of the key would also be utilized upon the end of the same. A key which is provided with a cap is not formed with a mortise for accommodating the sleeve or casing 8; but instead the cap is provided with an apertured portion which is similar in construction to the sleeve or casing. The sleeve or casing 8 and its lining, which constitutes cushioning means for the pin, is positioned within the cap in the same manner as when the sleeve or casing 8 is positioned within the body portion of the key.

It will be obvious that the lining for the sleeve or casing 8 extends transversely of said casing and entirely encircles the sides thereof. Furthermore, the strips 11 are folded so as to place portions thereof in parallel position, one end of each of the strips extending beyond and overlapping the other end. The

extreme edge of the overlapping ends of the strips lie in the same vertical plane as the sides of the key.

The portion of the strips 11 which is interposed between the sleeve or casing 8 and the walls of the mortise will permit of the swelling of the key to a certain degree without affecting the shape of the sleeve or casing 8, as it will be apparent that the flexible material of which the strips are formed may be compressed slightly by the swelling of the key without in any way injuring the construction of the sleeve or casing and its lining. Furthermore, the lined inner walls of the sleeve or casing 8 provides a cushioned surface which is normally engaged by the pins 4 and 5.

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

1. The combination with a key provided with a casing-receiving mortise, of a casing positioned within the mortise, said casing comprising a substantially rectangular frame provided with reduced portions extending from the ends of said frame.

2. The combination with a key provided with a casing-receiving mortise, of a casing positioned within the mortise, said casing comprising a rectangular frame provided with reduced semicylindrical portions extending from the ends of said frame.

3. The combination with a key provided with a casing-receiving mortise, of a casing positioned within the mortise, said casing comprising a body portion, and bulged portions of less width than and extending from the ends of the casing.

4. The combination with a key having a mortise formed therein, of a casing positioned within the mortise portion of said key, a lining surrounding the sides and overlapping the outer edges of said casing and secured to the edge of the key.

5. The combination with a key having a mortise, of a casing positioned within the mortise portion of said key, flexible strips extending transversely of the sides of said casing and entirely surrounding said sides, each strip provided with portions overlapping the edge of one of the sides of the casing and one end of the strip and secured to the key.

6. The combination, with a key provided with a mortise, of metallic reinforcing means positioned within said mortise portion of the key, strips constituting a cushion surrounding the sides of said reinforcing means, one end of each of said strips resting against the edge of one side of the reinforcing means and the opposite end of the strip and a portion of the key.

7. The combination with a key having a mortise, of a casing positioned within said mortise, said casing comprising a frame having reduced semicylindrical portions extending from the ends of the same, and a flexible lining assembled with said casing.

8. The combination with a key having a mortise, of a casing positioned within said mortised portion, and flexible strips extending transversely of the sides of said casing and entirely surrounding said sides.

9. The combination with a key having a recessed portion, of a casing positioned within said recessed portion, a flexible lining for said casing, comprising strips, each of said strips entirely surrounding one of the sides of said casing and having one end projecting beyond one edge of said casing and overlapping the edge of the casing and the opposite end of said strip and secured against the outside of the key.

10. The combination with a key having a mortise, of a casing positioned within said mortise, a flexible strip interposed between the outer surface of one of the sides of said casing and the contiguous wall of the mortise portion of the key, said strip being positioned parallel with the side of the casing and within the same, and extending beyond the outer edge of the casing.

11. The combination, with a key having a mortise, of a casing positioned within said mortise, a lining constituting a cushion assembled with said casing, said lining comprising strips, each strip positioned upon the inner and outer surface of one side of the casing and extended beyond the outer edge of the casing and secured to the key.

12. The combination with a key provided with a casing-receiving mortise, of a casing positioned within said mortise, said casing comprising a body portion provided with parallel sides, a bulged portion integral with said casing, the bulged portion of less width than and extending from one of the walls of the body portion of the casing, and a lining for said casing.

13. The combination with a key, of a casing carried by said key, said casing comprising a body, said body provided with a vertical, bulged portion, said bulged portion being of less width than said body and extending from one of the ends of said body.

14. The combination with a key, of a casing carried by said key, said casing comprising a body provided with a vertical, bulged portion extending from one of the walls of said body, said bulged portion being of less width than said body and of the same length as the height of said body.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES PEKAT.

Witnesses:

GEORGE E. WISSLER,

CHARLES C. SPENCER.