

(No Model.)

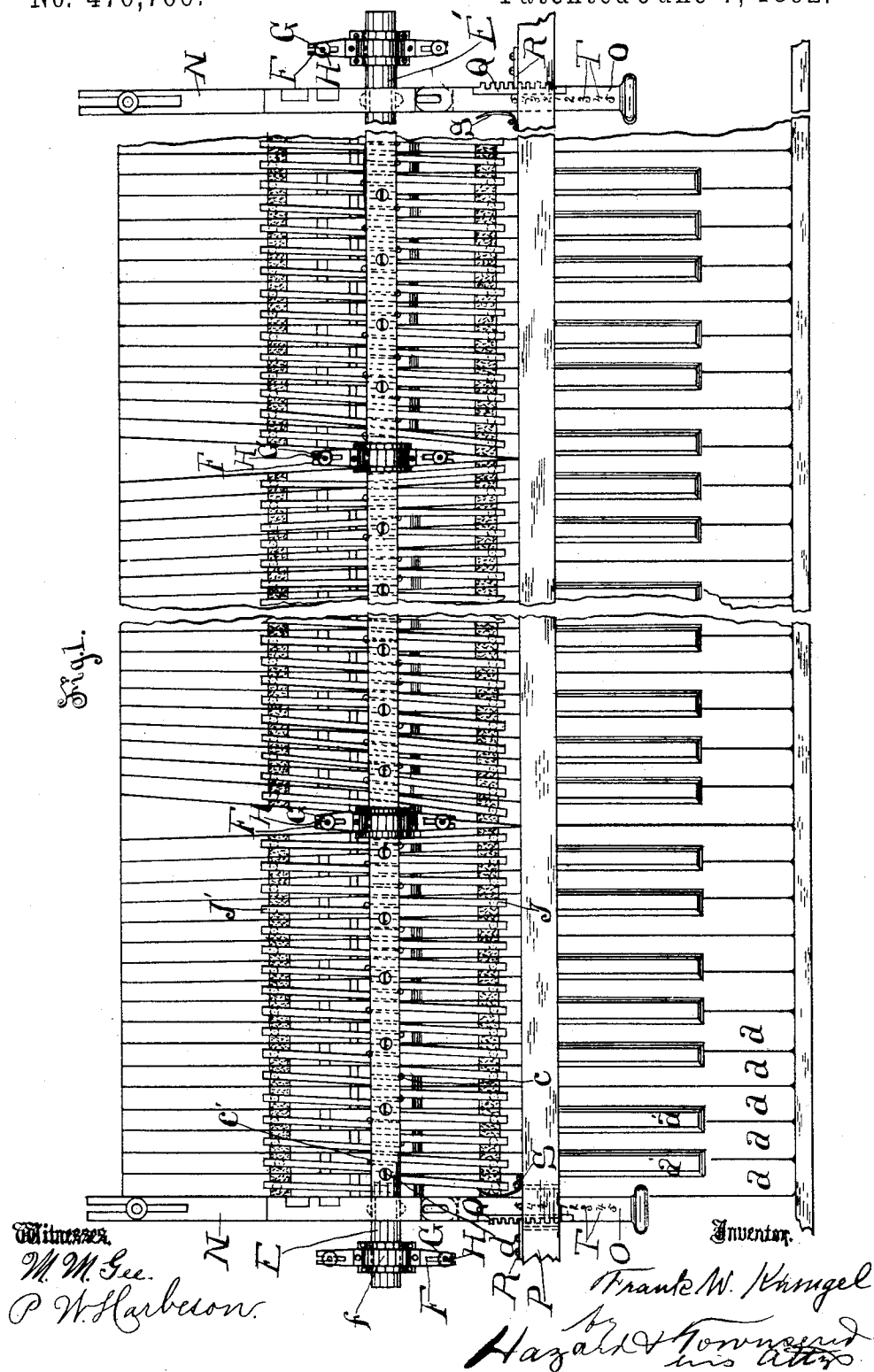
2 Sheets—Sheet 1.

F. W. KRINGEL.

TOUCH REGULATING DEVICE FOR PIANOS.

No. 476,766.

Patented June 7, 1892.



UNITED STATES PATENT OFFICE.

FRANK W. KRINGEL, OF LOS ANGELES, CALIFORNIA.

TOUCH-REGULATING DEVICE FOR PIANOS.

SPECIFICATION forming part of Letters Patent No. 476,766, dated June 7, 1892.

Application filed September 2, 1891. Serial No. 404,563. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. KRINGEL, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Improvement in Touch-Regulating Devices for Piano-Fortes, of which the following is a specification.

The object of my invention is to provide means whereby the touch of pianos can be accurately regulated at will to be of any degree of lightness or heaviness desired.

My invention relates more specifically to the construction and combination of parts, whereby I am enabled to secure greater range of touch than heretofore obtained in devices of this class.

The accompanying drawings illustrate my invention.

Figure 1 is a plan view of a piano-keyboard provided with my improved touch-regulating device, portions being broken away to contract the view. Fig. 2 is an end elevation of the keyboard, showing the key-bottom, the name-board, and the key-spring rod in section. In this view the device is shown adjusted to leave the touch in its ordinary condition. A part of the action is also shown in this view. Fig. 3 is a view similar to Fig. 2 showing the device adjusted to decrease the weight of the touch. Fig. 4 is a plan showing a fragmentary view of the keyboard provided with my improvement and the stop mechanism by which it is operated. Fig. 5 is an enlarged view of the spring-rod and its adjustable supports. Fig. 6 is a top view of the lever operating bar or slide of the stop device.

It is essential to the satisfactory operation of a device of this class that it be delicately and accurately adjustable, and my invention is specially arranged to accomplish this result.

An important feature of my invention is a journaled key-spring rod provided with a series of adjustable key-controlling spring mediums arranged to extend laterally from the rod to be pressed upon their respective keys or removed therefrom by the partial rotation of the rod, such rod being arranged practically at the pivoted point of the key and provided on each side with a series of laterally-projecting spring mediums arranged to be pressed upon or removed from their respect-

ive keys upon each side of the pivoted point of the keys.

This device enables me to regulate any piano to its lightest possible touch as well as to its heaviest touch.

In the drawings, A indicates the key-bottom; B, the key-frame. *a a'* indicate the white and black keys, which are fulcrumed at *b b'*, respectively. *c c'* are the center pins. These several parts are the same as those in ordinary use, and it is to be understood that the key is balanced in the ordinary manner and is connected with the action D by the usual means.

E E' are the key-spring rods extending, respectively, from the ends of the keyboard to the middle thereof. These rods are respectively formed of two half-round rod members *e e'*, secured together by screws *d* or other suitable means. The rod is journaled at intervals in brackets F, which are secured by set-screw taps G *g* to screw-posts H, fixed in the key-bottom A. The flat faces of the half-round members *e e'* of the key-spring rod are lined with felt, cloth, or other suitable material I to form a perfect clamp for the springs J J'. The brackets F are provided with the journal-plates *f*, secured thereto, and the journals are lined with felt, cloth, or other suitable material to prevent noise.

K K are thrust-collars clamped upon the rods E upon each side of the brackets F to prevent axial movement of the rods.

The spring mediums J J' are preferably of flat spring material. Sections of watch-main-springs are very suitable for the purpose. Such springs are preferably curved at their point of contact with the key, and felt or other suitable cushions L are arranged on the keys to receive them. The brackets F may be raised or lowered to raise the springs farther from or bring them closer to the keys.

M represents the rod-rotating arm or lever which connects the rotating arm E with the slide N. It is forked at the top and clasps the rod E, which is flattened to receive it.

m m' are screws which secure the arm M and rod E together.

The slide N may be of any suitable construction. I provide it with the hinged handle O, which is arranged to swing horizontally and passes through an opening in the name-

board P. Suitable means, such as the racks Q, catch R, and spring S, are provided to retain the handle and slide in the position desired. The pressure of the touch-regulating
 5 springs upon the keys is regulated by moving the slide in and out to move the lever M to partially rotate the rod E. The handle O is provided with a series of figures T, arranged to indicate the position of the slide.
 10 The spring S normally presses the handle to one side to hold the rack in engagement with the catch R; but when it is desired to move the slide, the handle is moved sidewise against the spring S until the rack is disengaged, thus leaving the slide free to be moved
 15 in or out. The movement of the slide causes the partial rotation of the rod and causes the springs J or the springs J', as the case may be, to press upon the keys to either increase
 20 or decrease the weight of the touch. By inspection of the gage-figures T the artist is enabled to instantly adjust the touch to the exact degree of heaviness or lightness desired, or to leave the touch normal, as shown in
 25 Fig. 4. While adjusting the device the springs are set in position, and the screws *d* are tightened to clamp them firmly. The springs are bent, as may be required, and are

adjusted by trial until their pressure is uniform upon their several keys. 30

Now, having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A piano-touch regulating device, comprising a journaled key-spring rod arranged
 35 practically at the pivoted point of the keys and provided upon each side with a series of laterally-projecting spring mediums arranged to be pressed upon or removed from their respective keys upon each side of the pivoted
 40 point of the keys.

2. The combination of the rod formed of the two rod members, the series of laterally-projecting spring mediums arranged to respectively engage the keys, means for clamping
 45 the rod members together, the journaled brackets in which the rod is journaled, and means for partially rotating the rod.

3. The combination of the journaled rod provided with the laterally-projecting springs,
 50 the journal-brackets F, the screw-posts H, and the set-screw taps G *g*.

F. W. KRINGEL.

Witnesses:

JAMES R. TOWNSEND,
 F. M. TOWNSEND.