

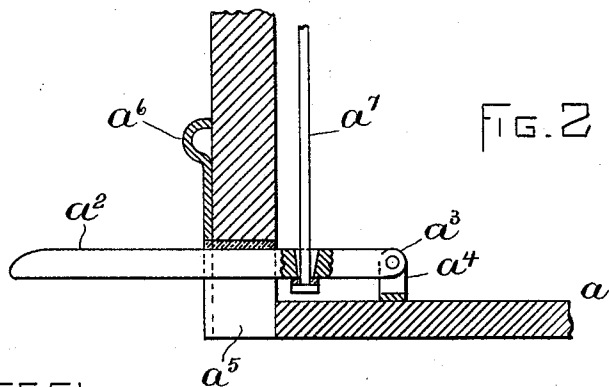
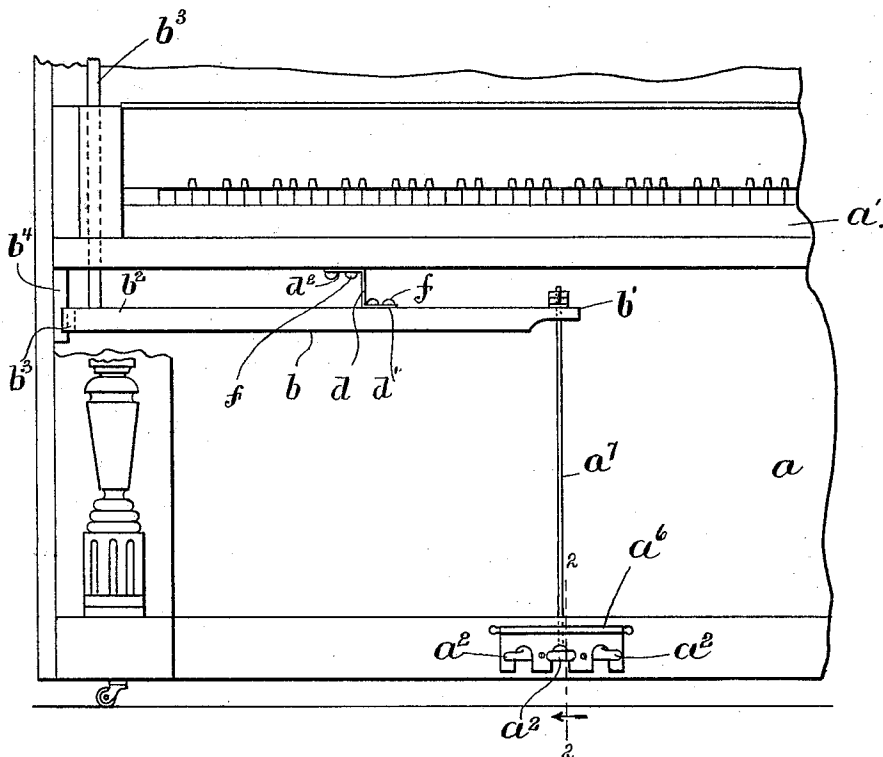
(No Model.)

A. F. NORRIS.
PIANO PEDAL ACTION.

No. 544,110.

Patented Aug. 6, 1895.

FIG. 1.



WITNESSES:

H. A. Hall.
A. D. Harrison.

INVENTOR:

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UNITED STATES PATENT OFFICE.

ALBERT F. NORRIS, OF BOSTON, MASSACHUSETTS.

PIANO-PEDAL ACTION.

SPECIFICATION forming part of Letters Patent No. 544,110, dated August 6, 1895.

Application filed April 30, 1895, Serial No. 547,685. (No model.)

To all whom it may concern:

Be it known that I, ALBERT F. NORRIS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Piano-Pedal Actions, of which the following is a specification.

This invention relates to a new and useful improvement in pedal-actions; and it consists in the novel features of construction and relative arrangement of parts hereinafter fully described in the specification, clearly illustrated in the drawings, and particularly pointed out in the claim.

Reference is to be had to the accompanying sheets of drawings, forming a part of this specification, in which like characters indicate like parts wherever they occur.

In the drawings, Figure 1 represents a front elevation of a portion of a piano, showing my invention applied thereto. Fig. 2 is a vertical section of the line 2 2 of Fig. 1, looking in the direction of the arrow.

My invention has in view the reducing of the cost of construction of pedal-actions, and at the same time preventing the squeak.

a represents a piano-frame, which may be of the ordinary construction, only so much being shown as is necessary to illustrate my invention therewith.

a' represents the keyboard.

a^2 represents the pedals, which are pivoted at one end, as at a^3 , to a stud a^4 . The free ends of these pedals project through the slots a^5 in the piano-case in a convenient position to be operated by the foot. An ornamental plate a^6 , of any desired configuration, is arranged about the free ends of the pedals and the slots. Rods a^7 connect these pedals to the end b' of bars b . The other end b^2 of this bar is connected to a rod b^3 that operates in any desired way a hammer-rail, a muffler, or any attachment of the piano, as is common. The end b^2 of this bar is slotted, as at b^3 , and arranged to engage a guide-strip b^4 on its upward and downward movement, in order to keep the end of the bar in place. The bar b is pivotally supported midway of its ends by means of a Γ -shaped spring d . The ends of this spring are bent at right angles to the main body of the spring, forming feet d' d^2 , arranged on opposite sides of the body portion of the spring, as shown. The foot d' is connected to the bar b by means of screws f , while the foot d^2 is connected by screws f to some con-

venient portion of the piano-frame. By this construction it will be seen that the bar is pivotally supported between its ends. The means employed for supporting the bar not only constitute a pivot, but also means for returning the bar to its normal position after being operated.

Attention is called to the shape of the spring d and to its manner of attachment to the bar b and the framework of the piano. By this construction and arrangement I am enabled to get a pivotal action without any appreciable lateral swinging of the bar, as would be the case were a coil spring used or were the bar b connected to the framework by a straight piece of spring metal. The angular bends of the spring being on the opposite side of the body portion and the foot being rigidly secured to independent objects—to wit, the framework and the bar b —the parts of the spring resist any lengthwise motion of the bar.

While I prefer the shape shown, yet this shape may be variously modified without departing from the spirit and scope of my invention, which includes a spring for connecting the bar with the framework of the piano, said spring being so constructed and arranged as to allow for a pivotal motion of said bar, but to resist any lengthwise motion of said bar.

Having thus explained the nature of my invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I claim, and desire to secure by Letters Patent, is—

In a piano pedal action in combination a movable pedal, a bar b , a Γ shaped spring having feet d' d^2 , arranged on different sides of the body portion of said spring, one of said feet being connected with said bar, and the other of said feet being connected to the framework of the piano, and suitable connections between said pedal and one end of said bar, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 25th day of April, A. D. 1895.

ALBERT F. NORRIS.

Witnesses:

H. L. ROBBINS,
A. D. HARRISON.