G. O. v. ROEDERN.
Piano-Forte Action.

No. 215,977. Patented May 27, 1879.

Fig: 1.

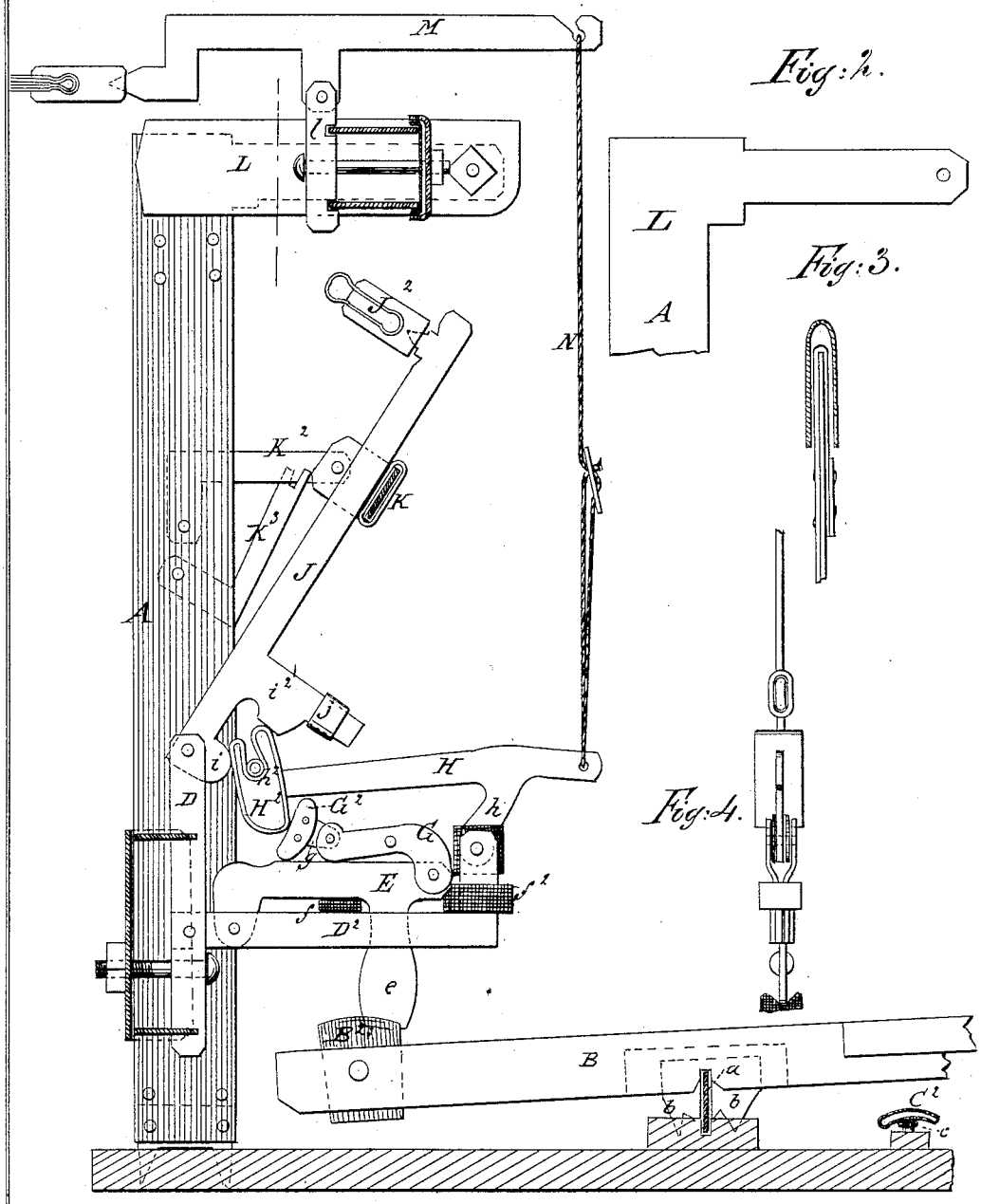
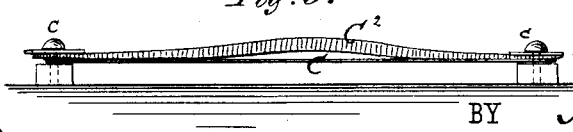


Fig: 2.

Fig: 3.

Fig: 4.

Fig: 5.



WITNESSES:

Chas. Nida.
C. Sedgwick

INVENTOR:

G. O. v. Roedern

BY Munn & Co

ATTORNEYS.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE O. V. ROEDERN, OF INDIANOLA, TEXAS.

IMPROVEMENT IN PIANO-FORTE ACTIONS.

Specification forming part of Letters Patent No. **215,977**, dated May 27, 1879; application filed December 27, 1878.

To all whom it may concern:

Be it known that I, GEORGE O. V. ROEDERN, of Indianola, in the county of Calhoun and State of Texas, have invented a new and useful Improvement in Piano-Forte Actions, of which the following is a specification.

My invention relates to certain improvements on those described in my Patent No. 213,940, April 1, 1879.

The present invention consists in certain novel details of construction, arrangement, and combination of the key-lever and its fulcrum and rest, a receiving-lever, a transmitting-eccentric, a secondary hammer, a principal hammer and its rest, and a damper-action and its connections, whereby greater simplicity and efficiency are obtained.

The principal working and supporting parts are made of sheet metal, as in my former invention above referred to.

In the accompanying drawings, Figure 1 is a side elevation of an action embodying my present invention. Fig. 2 is a side view of a portion of the adjustable damper-frame. Fig. 3 is a detail sectional view of a portion of the damper-frame. Fig. 4 is a rear edge view of a portion of the action. Fig. 5 is a detail view of the stop-motion string of key-lever.

Similar letters of reference indicate corresponding parts.

A represents the supporting-frame of the action. B represents the key-lever, which is made of doubled and felted sheet metal, and provided at its inner end with a cushion, B^2. It has its fulcrum on the edge of a strip of metal, *a*, placed edgewise in a groove in a bar resting on the base-board.

The oscillation of the key-lever is limited by two projections or feet, *b b*, which engage with the bar and prevent the lever from rising or falling too much in either direction.

Under the front end of the key-lever is the stop-motion string, consisting of a wire, C, stretched from two posts, pins, or screws, *c c*, and provided with a cushion, C^2, of cloth or felt.

D D^2 represent a double standard for the action. It consists of an upright bar, D, attached to the supporting-frame A, and a vertically-slotted arm, D^2, extending horizontally therefrom.

In the slotted arm D^2 is pivoted, near one end, the receiving-lever E, which is provided with an arm or extension, *e*, projecting downward, and having its lower end rounded and resting on the cushion B^2 of the key-lever.

On the upper edge of the slotted arm D^2 are two cushions, *f* f^2, one in front and the other in rear of the downward projection or arm *e*. Said cushions are provided with tongues or ribs fitting in said slotted arm and adapted to slide therein.

To the front end of the receiving-lever is pivoted what I call the "transmitting-eccentric," which consists of a lever, G, and a cam, G^2. The lever G is of a form somewhat resembling the letter **S**, and is pivoted by its front end to the lever E. The cam G^2 is of oblong or approximately-elliptical form, and is provided with an arm, *g*, extending transversely from its front edge and pivoted to the rear end of the receiving-lever E. The upper and lower ends of the cam G^2 are notched. The lower notch engages with the upper edge of the receiving-lever, and the upper notch engages with the secondary hammer. By this means the motion is transmitted from the receiving-lever to the hammers.

The secondary hammer consists of a shank, H, and a head, H^2. The shank is provided with an arm, *h*, extending downward and pivoted to the front end of the standard-arm D^2. The hammer-head H^2 may be of the usual or any suitable construction, and is provided with a weight, h^2, to insure its prompt recoil.

The hammer proper consists of a shank, J, and a head, J^2. The shank J is pivoted at its lower end to the upper end of the standard-bar D, and it has a rounded heel, *i*, extending at right angles to its length. Just above the heel *i* is an arm, i^2, which serves as a bearing for the secondary hammer-head, and also serves to carry an adjustable weight, *j*, for insuring the prompt recoil of the hammer, which weight may be adjusted farther on or off the arm, as desired. The hammer-head J^2 may be of any suitable construction.

The hammer proper or principal hammer is supported in its normal position by an adjustable hammer-rest, consisting of a cushioned bar, K, having its ends bent at right angles to its length, and pivoted to two arms, K^2 K^2,

which are pivoted to the supporting-frame A. The arms K^2 are held in a horizontal position by two props, K^3 K^3, also pivoted to the frame A.

The damper-action is carried by a frame, L, composed of strips of doubled and felted sheet metal, connected by a cross-brace, to which is attached a standard, *l*. The damper-lever M has its fulcrum on the standard *l*, and its front end is connected by a cord or band, N, provided with a slide, *n*, for adjusting it, with the front end of the shank of the secondary hammer.

The operation is as follows: The motion imparted to the key-lever B is communicated to the receiving-lever E, and is transmitted by the eccentric G G^2 to the secondary hammer, which in turn conveys it to the principal hammer. As the secondary hammer rises, its shank, through the connecting cord or band N, withdraws the damper from the string just as it is struck by the hammer-head. When pressure is removed from the key-lever the parts resume their normal condition from gravity. The principal hammer is assisted in its recoil by the bearing of the secondary hammer-head H^2 against the heel *i* of the shank J.

The recoil of the receiving-lever E may be limited by adjusting the cushions ff^2 on the arms D^2.

The damper-frame L is pivoted to the supporting-frame A, so that the frame may be oscillated in order to withdraw all the dampers simultaneously.

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

1. The key-lever B, provided with the projections or feet *b b*, in combination with the metallic strip *a*, the grooved bar, and the baseboard, as shown and described, for the purposes specified.

2. The combination, with the key-lever B, of the stop-motion string, consisting of the wire C, cushion C^2, and pins or screws *c c*, substantially as and for the purpose shown and described.

3. The double standard D D^2, in combination with the receiving-lever and the secondary hammer, substantially as shown and described.

4. The combination of the receiving-lever E, the transmitting-eccentric G G^2, and the secondary hammer H H^2, substantially as herein described.

5. The sliding adjustable cushions ff^2, in combination with the slotted arm D^2 and receiving-lever E, as shown and described, for the purpose specified.

6. The combination of the secondary hammer with the principal hammer, having heel *i* and arm i^2, as herein shown and described.

7. The hammer having shank H, pivoted arm *h*, and weighted head H^2, in combination with the damper-lever M, connected by a band, N, with said hammer, attached to supporting-frame by a single pivot on the downward projection, the damper being taken from the string by an upward oscillation, as described.

GEO. O. V. ROEDERN.

Witnesses:
D. McNEILL TURNER,
E. L. MILLER.