

E. Badlam,
Piano Attachment,

N^o 4,241.

Patented Oct. 25, 1845.

Fig. 1.

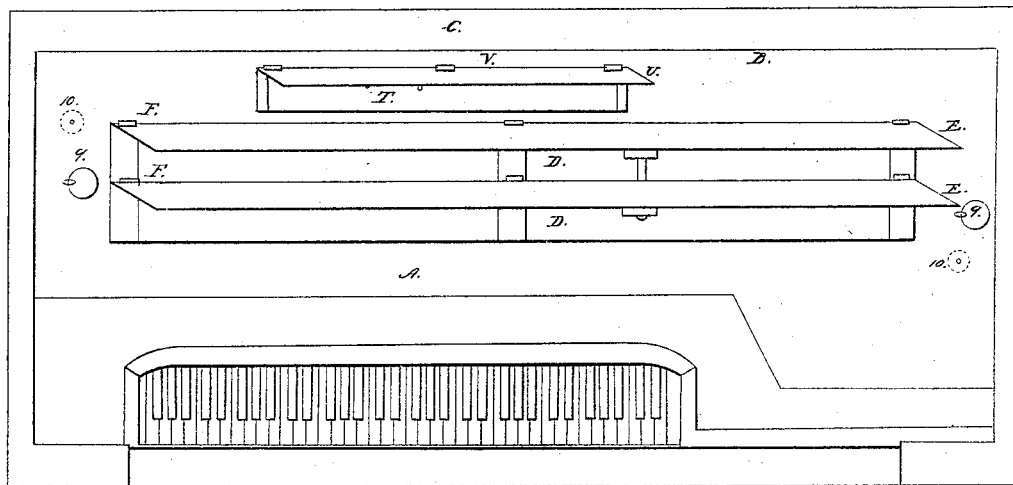


Fig. 3.

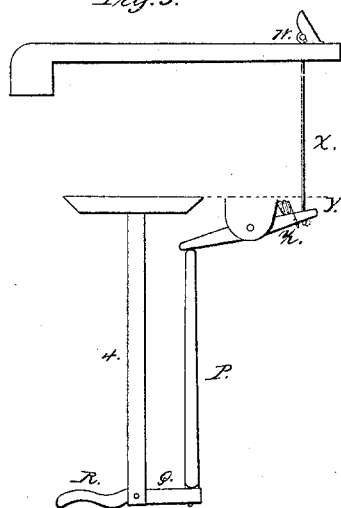
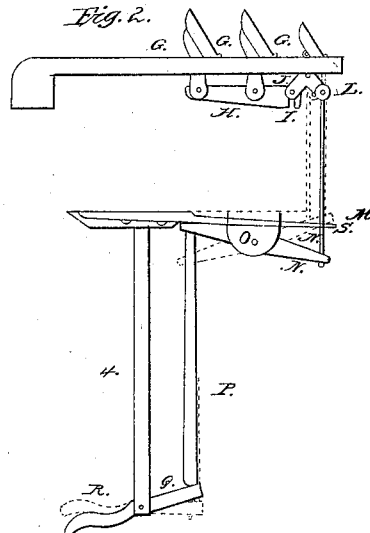


Fig. 2.



UNITED STATES PATENT OFFICE.

EDWARD BADLAM, OF POTSDAM, NEW YORK.

IMPROVEMENT IN PIANO-FORTES.

Specification forming part of Letters Patent No. 4,241, dated October 25, 1845.

To all whom it may concern:

Be it known that I, EDWARD BADLAM, of Potsdam, in the county of St. Lawrence and State of New York, have applied the Swell to the Piano-Forte, and I claim the mode herein set forth of combining the crescendo and diminuendo with the piano-fortes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same.

First make a board that is three-eighths of an inch thick, or thereabout, and fit in the piano-forte over the strings, so that it will cover the strings and all that is connected with the strings as tight as can be made, fitting tight to the back edge of the brace A, Figure 1, and extending to the inside of the back B, Fig. 1, and the board to be as near the top of the edge of the piano-case C, Fig. 1, as practicable. Then I cut a space out of the board four feet ten inches long and eight inches wide at D D, Fig. 1, and then I get out two pieces of equal size three-eighths of an inch thick each, and four feet ten inches long, each piece, and four inches wide, each called "shutters;" and these I place in the space cut out of the board at D D, Fig. 1, and hang the shutters with butts or other hinges F F, Fig. 1, and I cloth the edges of the shutters and under side of the same, and then I attach a hinge on each shutter on the under side some two feet from the end of the shutter E E, Fig. 1, and the hinges to be fastened on across the shutters G G, Fig. 2, and then I make a piece that connects the two hinges on the shutters together at H, Fig. 2, and at one end of the piece H, Fig. 2, I make a gain I, Fig. 2, and in that I make a pivot that is connected in a right angle J, Fig. 2, and the right angle J, Fig. 2, moves on a pivot K, Fig. 2, and another pivot placed in the right angle J, Fig. 2, at L, and a wire is attached at L, Fig. 2, and goes through the piano-case and comes out at the bottom of the case at M, Fig. 2, and attaches to the end of the lever N N, Fig. 2, representing the motion of the pedal, and the lever in the middle I have hung with a pivot O, Fig. 2, and at the other end of the lever I attach the pedal-rod P, Fig. 2, and the pedal-rod P, Fig. 2, connects with the pedal-foot Q, Fig. 2, and placing the foot on the pedal-foot Q, Fig. 2, at R, Fig. 2, raises the shutters E E, Fig. 1, and under the lever N N, Fig. 2, I have placed a spring S, Fig. 2, so

as to close the shutters E E, Fig. 1, when the foot is taken from the pedal Q, Fig. 2, and thus the motion of the shutters E E, Fig. 1, can be raised or shut, slow or quick, at the pleasure of the player, by the use of the pedal. Thus by raising the shutters gradually produces the crescendo, and by opening and shutting the shutters E E, Fig. 1, quick after striking the keys of the piano produces the pressure-tone, and by having the shutters E E, Fig. 1, open and striking the keys of the piano produces the explosive tone. Then in the board at T, Fig. 1, I cut out a space twenty-six inches long and two and one-half inches wide, and then I fit in a piece called "shutter U," Fig. 1, that will fill up the space cut out, and I cloth the edges and under side and make it as tight as can be and play easy, and I hang the shutter with hinges at V, Fig. 1, and toward the middle of the shutter U, Fig. 1, I attach a pivot W, Fig. 3, that receives a wire X, Fig. 3, and the wire X, Fig. 3, passing through the piano-case and coming out at the bottom of the piano and attaches to the end of a lever Y, Fig. 3, and the lever hung at the middle with a pivot, as at O, Fig. 2, and the other end of the lever attached to the pedal-rod, as at P, Fig. 2, and the pedal P, attached with the pedal-foot Q, Fig. 2, shuts the shutter U, Fig. 1, by placing the foot upon the pedal-foot at R, Fig. 3, and as at S, Fig. 2, I have attached a spring at Z, Fig. 3, that raises the shutter U, Fig. 1, and thus the shutter U, Fig. 1, can be raised or shut by use of the pedal.

The shutter U, Fig. 1, when raised, and the shutters E E, Fig. 1, shut, produce a metzo tone, and when the shutter U, Fig. 1, is shut, together with the shutters E E, Fig. 1, it produces a very soft harp-pedal tone, and that the tone can be varied from the soft harp-pedal tone to the metzo tone, and from the metzo tone to the full tone and power of the instrument by the use of the pedals, and this done without altering the touch of the keys materially.

Figures 9 9 on Fig. 1 represent the handles to take out the board, and figures 10 10 on Fig. 1 represent the screws that fasten in the board.

Fig. 1 represents the top view of the piano and board. Figs. 2 and 3 represent the end view of the board that is top of the strings and the edge of the pedals. Figs. 4 4, are the

pedal-rods, levers, &c., under the piano. The middle pedal-foot raises the dampers from the wires.

Furthermore, I claim as my invention—

1. The adaptation of the above-described shutters in said board that prevents the sound from escaping only at the pleasure of the player on the piano-forte.

2. The above-described arrangement of the shutters as connected with the pedal to give the motion of the shutters by the use of the pedal.

3. The combining the swell with the piano-forte by means of a covering over the strings and having shutters in said covering, as

above described, so as to confine the sound and with the use of the pedal, as above described, the shutters in said board are made to open and shut gradual or quick at the pleasure of the player, and can produce the crescendo and diminuendo tone or swell in the piano-forte, as above described, and by opening and shutting the shutters quick the player can produce the explosive and pressure tones by the above-described mode by the use of the pedal.

EDWARD BADLAM.

Witnesses:

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