

L. Gilbert,
Piano Action.

N^o 2,167.

Patented July 10, 1841.

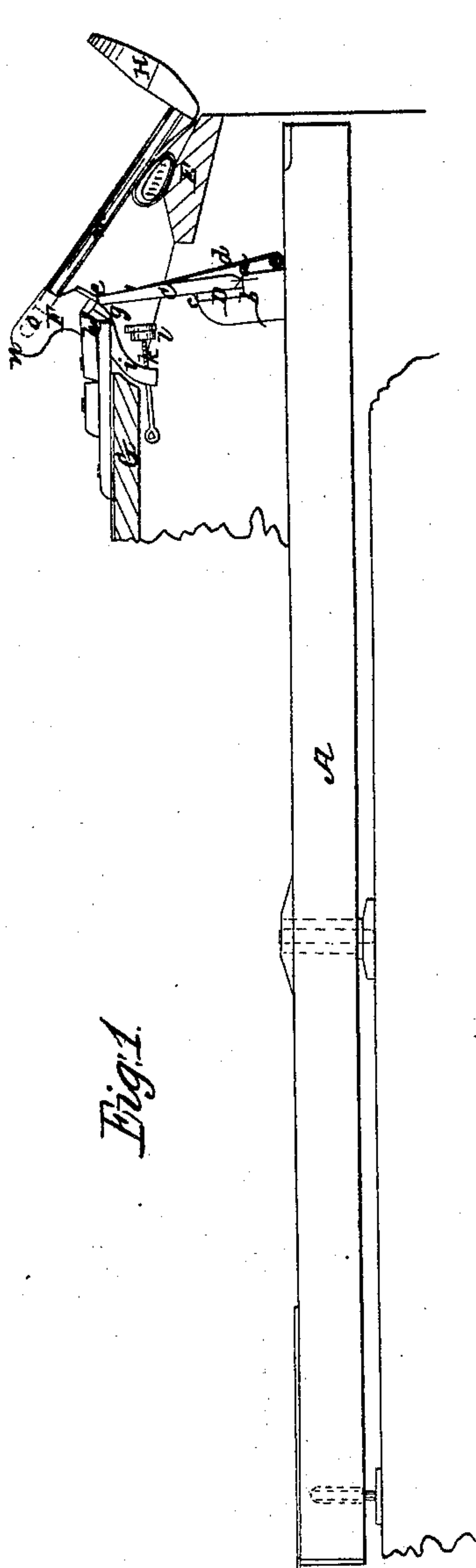


Fig. 1.

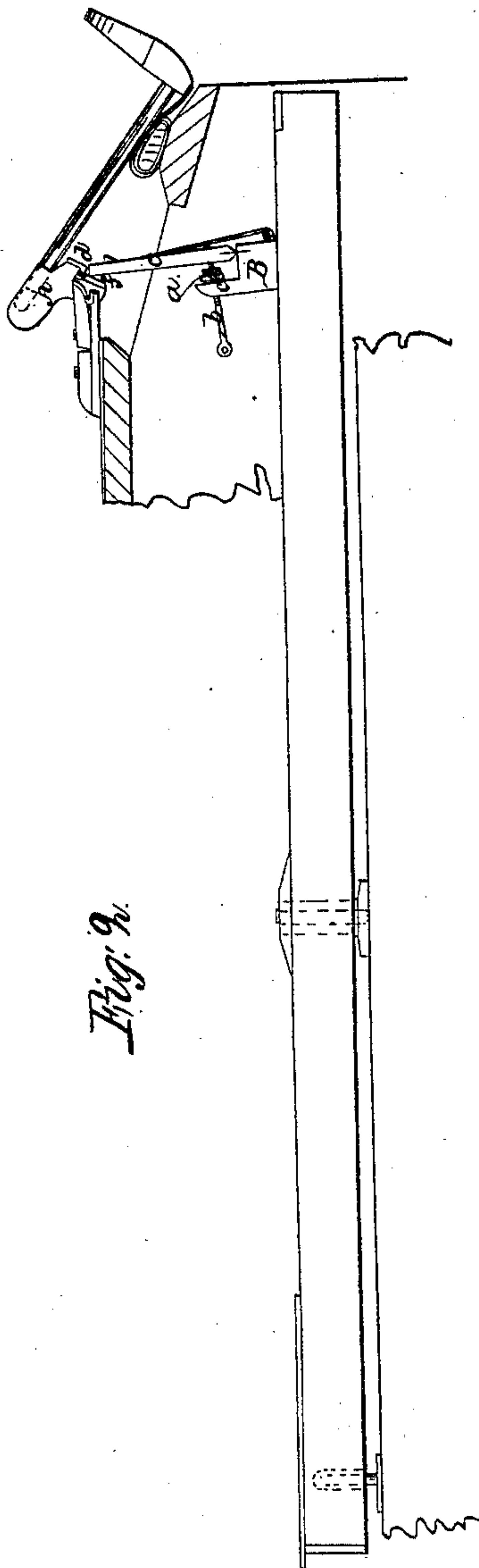


Fig. 9.

UNITED STATES PATENT OFFICE.

LEMUEL GILBERT, OF BOSTON, MASSACHUSETTS.

PIANOFORTE.

Specification of Letters Patent No. 2,167, dated July 10, 1841.

To all whom it may concern:

Be it known that I, LEMUEL GILBERT, of Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Pianofortes, and that the following is a full and exact description of the same, reference being had to the accompanying drawings, which, taken in connection herewith, from my specification, setting forth the principles of my inventions by which they may be distinguished from others of a like character and such parts or combinations thereof as I claim and for which I solicit an exclusive property to be secured to me for fourteen years by Letters Patent.

My improvements are confined to what is usually denominated the action of the instrument, and will be understood by an inspection of Figure 1, which is a side view of the operating parts as applied to each key and hammer of the piano forte.

A, represents the key lever which is of ordinary construction and B is the jack applied on the top of the same. C is the fly or hammer lever, hinged at the foot to the jack and resting against a long strip or piece of cloth or wash leather D, glued or otherwise properly attached to the jack, which for this purpose is so formed, that when the hammer is down resting upon the cushion on the rail E, the side of the fly, or in other words that portion thereof abutting against the wash leather D, will be in close contact with the whole surface of wash leather upon which it bears; and for this purpose a slightly obtuse or right angular notch *a b c* is cut out of the rear of the jack as seen in the drawing. The foot of the fly is hinged, upon the lower part *a b* of the notch, as near the point *a* as possible, so as to leave a suitable space, between the front side of the fly and the side *b c* of the notch, for the interposition of the strip D of wash leather as before described. The fly C is pressed, toward the wash leather D, by the wire spring *d*, the lower end of which is inserted in the rear side of the jack just beneath the foot of the fly, while the top presses upon the rear side of the fly at about the middle thereof. By this arrangement of the parts, the noise which usually occurs, by a regulating button impinging on its return, upon the jack, is prevented; the fly operating with great stillness.

The center block F of the hammer is formed somewhat different from others, inasmuch as the part of it, into which the stem *m* of the hammer H is fixed, runs a considerable distance above and also extends front of the center of motion *h*, as will be observed by inspection of the drawing. It also has a curved arm, *i*, projecting below the center of motion through which a regulating screw *k* passes, (the screw operating therein), and has a button *l* on its rear end, suitably faced with wash leather or cloth. The screw *k* is slightly inclined from a horizontal line, so that its stem or front, to which the thumb and finger are applied in order to turn the same, may pass under the center rail G and can be easily accessible to the hand when a person stands in front of the pianoforte.

The hammer is operated by the top of the fly C, resting and acting in a notch *e f g*, formed in the block F just in rear of the center of motion *h*. That part *n* of the center block, extending front of the center of motion, is to be loaded with lead or other heavy substance, by boring the hole into which the stem *m* is fixed, nearly through the same, and inserting the plug or cylinder of lead *o*, (seen by dotted lines), therein previous to connecting the stem to the center block. The object of the lead is to counteract the weight of the hammer, and thus under a light touch of the performer on the key sufficient to throw it up with considerable force and momentum in order to emit a full and clear sound from the string. From the above it will be seen, when the hammer is thrown up, that just before it reaches the string, the regulating button or escapement *l* will come in contact with the front side of the fly and throw the top of the fly out of, or clear from the notch *e f g*, so as to permit the hammer to descend after the blow is given by the same to the string. The fly returning upon a very long strip D of leather, does the same without any of the rattling noise so often perceptible in other actions.

In Fig. 2, another arrangement of the action is exhibited and in this drawing as well as in that heretofore described, it will be perceived that the position and operation of the jack is the reverse of the ordinary mechanical devices of this nature in use, and

by this construction of the jack and center block, together with the adaptation of one to the other, a very simple, beautiful, durable, cheap and effective action is produced.

5 The jack B, Fig. 2, has a regulating button, one end of whose stem *b* is screwed into or through the fly, while the other is passed through a suitable opening *c*, formed through the front or upper part of the jack, 10 the same being represented in the drawing by dotted lines. The button *a* being covered with cloth or wash leather, the front side thereof rests against the rear of the top of the jack, as seen in the figure. The center 15 block A is herein formed, in all respects, like that before described, with the exception that it has no projecting arm or regulating button, and that the angle *d e f*, of the notch of the same, is an angle more or 20 less acute, in order that when the hammer is thrown up by the action of the fly C, the lower part *f*, of the side of the notch, is brought in contact with the front side of the top of the fly, and materially assists 25 to throw it out of the notch, thereby permitting the hammer to return upon its rest after striking the string. The jack in Fig. 2, may be substituted in the place of that 30 represented in Fig. 1, and thus, by its combination with the center block therein exhibited, may produce an action in which the position of the fly, with respect to the upper part *e f* of the notch *e f g*, may be varied to such degree, as to cause the same to 35 operate on the hammer with a very delicate action. Reversing the construction and position of the jack, as before mentioned and combining it with a hammer, whose center block is loaded and otherwise formed as described, very much simplifies the action and 40 renders it more sensible to the touch and powerful in the stroke upon the strings.

Having thus set forth my improvements I shall claim—

1. Constructing the center block of the hammer with an arm, projecting below its center of motion, and having a regulating button adapted thereto; the same being arranged in all respects substantially in the manner and for the purposes herein above 45 described. 50

2. I also claim the jack as herein first explained (without a regulating button, so that the fly may abut upon or against a long strip of cloth or wash leather, applied to the rear of the top of the same, thereby, in a high degree, preventing noise in the action of the same), in combination with a hammer, having its center block constructed with the arm and regulating button, and in 55 other respects, as above set forth and represented in Fig. 1. 60

3. I also claim, a jack having a regulating button, and arranged as described, and represented in Fig. 2, in combination with a hammer, whose center block is constructed substantially as exhibited in Fig. 1 or Fig. 2, and as hereinbefore explained and set 65 forth.

4. In the above described piano forte 70 action, I also claim the loading of the center block of the hammer as above set forth, so that it may operate in the manner and for the purpose herein before specified.

In testimony that the foregoing is a true 75 description of my said invention and improvement I have hereto set my signature this seventeenth day of April in the year eighteen hundred and forty one.

LEMUEL GILBERT.

Witnesses:

R. H. EDDY,

EZRA LINCOLN, Jr.