J. H. GIBSON & F. FULLER.

UPRIGHT PIANO ACTIONS.

No. 180,865. Patented Aug. 8, 1876.

FIG. 1.

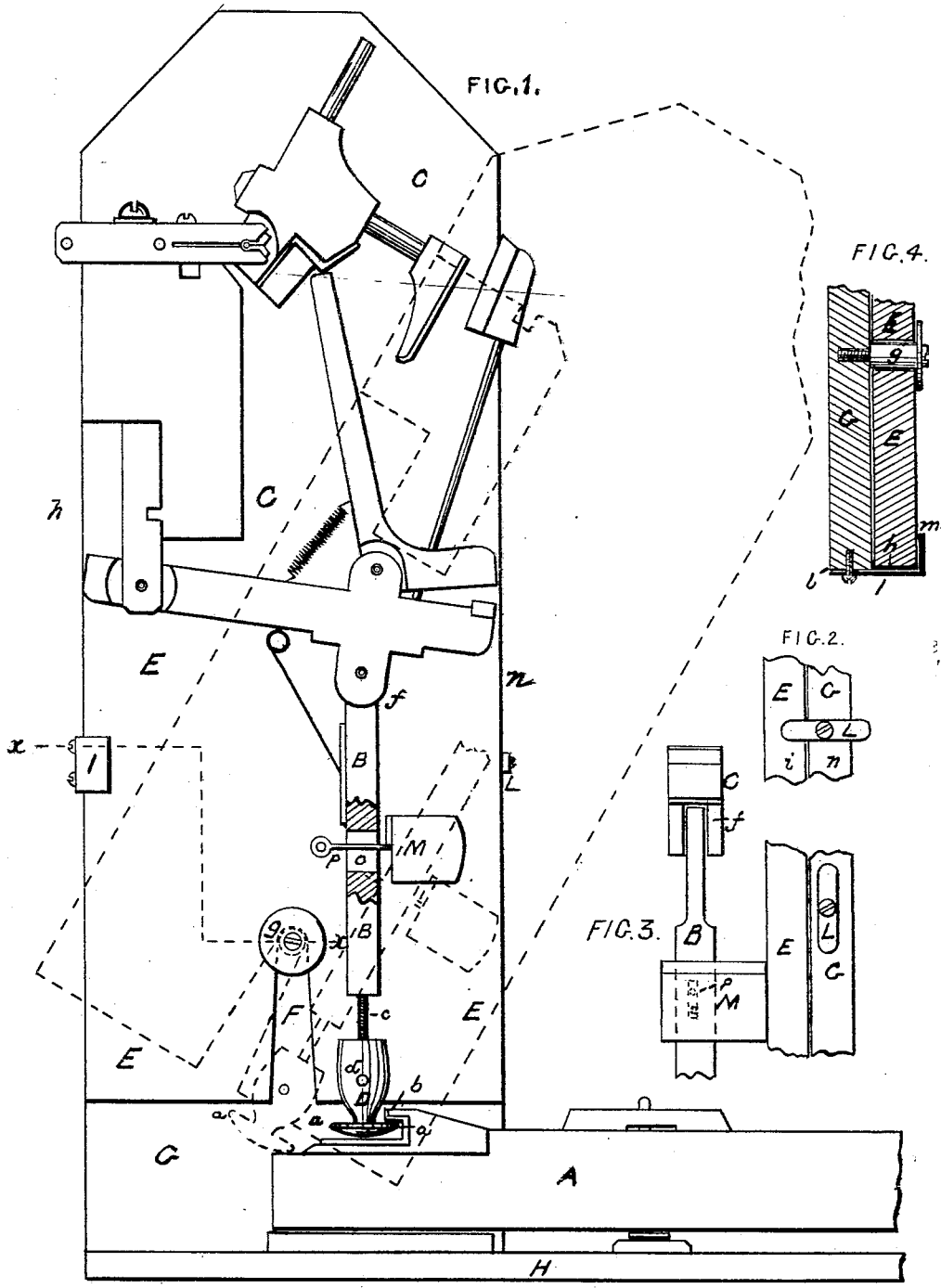

FIG. 4.

FIG. 2.

FIG. 3.

WITNESSES.

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JOSEPH H. GIBSON AND FRANCIS FULLER, OF BOSTON, MASSACHUSETTS, ASSIGNORS TO HENRY F. MILLER, OF SAME PLACE.

IMPROVEMENT IN UPRIGHT-PIANO ACTIONS.

Specification forming part of Letters Patent No. **180,865**, dated August 8, 1876; application filed June 2, 1876.

ll whom it may concern:

e it known that we, JOSEPH H. GIBSON and FRANCIS FULLER, both of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvem in Upright-Piano Actions, of which the foll ing is a specification:

This invention relates, and is applicable more especially, to actions for upright pianofortes.

The invention particularly relates to the upright lever or lifter which connects each key with its action, and through which the key operates or works the action; and the invention consists in an interlock between the keys and said levers, of a construction hereinafter described, whereby the several actions are tied to the several keys, and still are susceptible of being readily and simultaneously disengaged from all the keys for their removal from the key-frame, and, if the key-frame be in the piano-case, from said case, the several actions for the several keys of the piano being, of course, carried by, and arranged upon, a common frame, as ordinarily; also, in a construction of said lever, hereinafter described, for lengthening and shortening it, even when it is in connection with the key and action, whereby the action can be adjusted or regulated without necessarily disconnecting it from the key; also, in the combination, with the said levers or operating-rods for the keys on their respective actions, of a stationary rail, which is interposed between the keys and actions, and has the said levers connected to it in such manner that they can operate as desired when the keys are played upon, and at all times, whether the action be in or out of the key-frame or the piano-case, be kept and held in proper position for work, and for making connections with their respective keys when the frame carrying the several actions of the piano is replaced and put in position on the key-frame.

In the accompanying plate of drawings, Figure 1 is a side elevation of a single piano-action constructed and arranged according to our improvements; Figs. 2, 3, and 4, detail views, to be hereinafter referred to, Fig. 4 being a section on the line *x x*, Fig. 1.

In the drawings, A represents a piano-forte key arranged upon a key board or frame, as ordinarily; B, an upright rod at inner end of key A. This rod is the lifter or lever through which the key operates or works the action proper, (shown at C.) The construction, arrangement, and operation of the action C, and connection of the lifter or operating rod B with the action, and the operation of such connection, are the same as ordinarily, and therefore need no more particular description. D, a rounded head to lower end of rod B, and by this head the rod rests on the key. The rod-head D has a flange, *a*, which, at its front side, sets under a lip, *b*, interlocking the key and rod.

The key-lip *b*, in its overlap of the flange *a* of rod B above described, pulls the rod down, as the inner end of the key falls back after each blow, and thus the rod is always in proper position and connection with the key for work when the key is played upon, the importance of which is obvious more especially in repeats and other quick movements of the action.

The rounded head D is screwed upon a screw-threaded pin, *c*, fixed in the lower end of the rod B, and in said head D there is a series of holes, *d*, for the reception of a suitable instrument, such as a wire, so as to turn the head D on the screw-pin *c*, which, obviously, lengthens or shortens the rod B, as the case may be, and thereby changes the height of the upper end *f* of the rod B above the key, and adjusts and regulates the action.

The several actions C at each end are carried at each end by an upright, E, and in the lower edge of each upright E there is a vertical notch, F, which has its upper end or wall at rest on the shank of a headed or collared pin, *g*, fastened in an upright, G, of each end of the key-board H.

The action-uprights E are against the inner face of the key-board uprights G, and at their back edge *h* there is a strap, I, which is fastened to the back edge *l* of the key-board uprights G, and sets over, as at *m*, the inner face of the action-uprights E. L, a button, hung to front edge *n* of key-board upright G, and in position to be turned across the front edge *i* of the action-uprights E.

Under the construction and arrangement of uprights G above described, with the action-uprights E at rest on the pins *g*, and within the straps I of the key-board uprights G, and the buttons L set across the front edge of the action-uprights E, the action is then in position for use, all as shown in Fig. 1.

To remove the action, set back the buttons L, and tip the action forward until the flanges *a* of the rounded heads D of each rod B clear the lips *b* of the keys, as shown in heavy dotted lines in Fig. 1, when, obviously, the action is free to be removed by simply lifting it out.

The lifter or operating rod has a slot, *o*, along and for a part of its length, and by this slot it works over a headed screw-pin, *p*, fastened in proper position to the inner face of a stationary rail, M.

The rail M is suitably located to allow the forward movement of the rod B when it lifts, and it makes a rest or stop to the drop of the rod B when such rod is swung out of its interlock with the key A, thereby holding it in proper position when detached from the key, as shown by dotted lines in Fig. 1, for it to come directly into position under the key-lip when the action is replaced.

By the pin (*p*) and slot (*o*) connection of the rod with the rail M above described, the rod is held from a side or lateral movement, both when the rod is working, and is detached from the key, and at the same time the rod is left free to rise and fall, as is necessary when the action is played upon.

The rail M and the connection with it of the rod B, as above described, obviously, is important, as it holds and prevents the several rods B, making up the action of a piano-forte, from becoming entangled or misplaced when the action is removed.

It is not intended to limit the invention herein described to any one kind of piano-forte actions.

Having now described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination of the flange *a* on the operating-rod B of a piano-action, and of the lip *b* on a piano-key, constructed and arranged to operate substantially as herein described, for the purpose specified.

2. The head D, secured by screw-pin *c* to the operating-rod B of a piano-action, herein described, whereby said head can be turned to adjust and regulate the action, substantially as described.

3. The stationary rail M, in combination with the lifter or operating rod B, the two being arranged together substantially as and for the purposes described.

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