

(No Model.)

J. BROTHERHOOD.

EXERCISING DEVICE FOR MUSICIANS.

No. 327,918.

Patented Oct. 6, 1885.

Fig. 1.

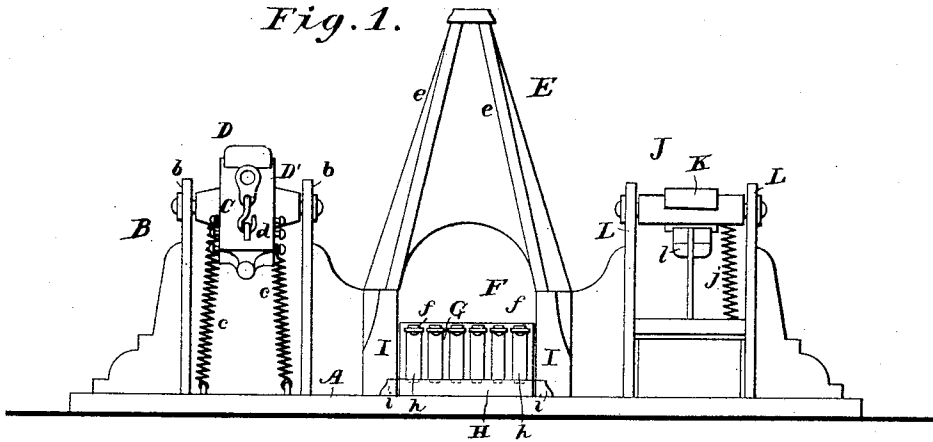


Fig. 2.

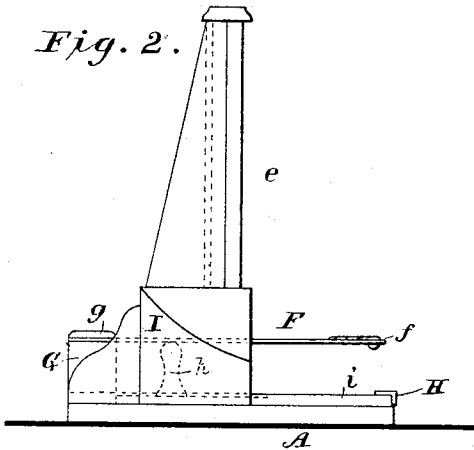


Fig. 4.

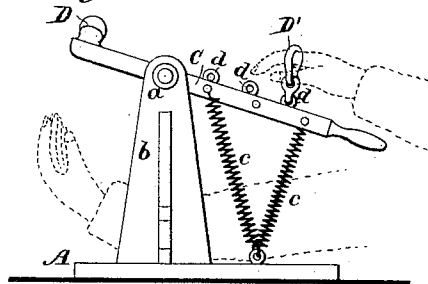


Fig. 3.

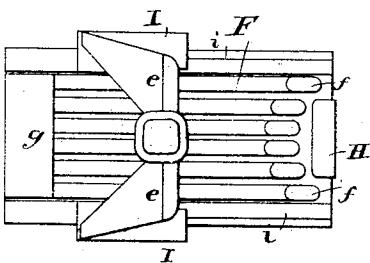


Fig. 5.

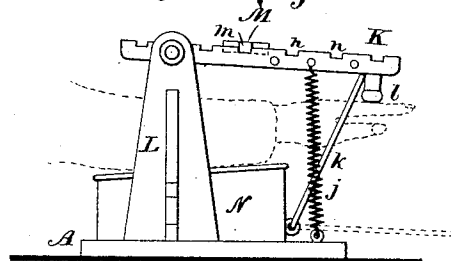


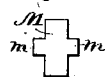
Fig. 6.



WITNESSES

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Fig. 7.



By his Attorneys

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UNITED STATES PATENT OFFICE.

JAMES BROTHERHOOD, OF STRATFORD, ONTARIO, CANADA.

EXERCISING DEVICE FOR MUSICIANS.

SPECIFICATION forming part of Letters Patent No. 327,918, dated October 6, 1885.

Application filed June 25, 1884. Serial No. 136,026. (No model.) Patented in England March 19, 1885, No. 3,556; in Belgium March 19, 1885, No. 68,229; in France March 19, 1885, No. 167,735; in Germany March 20, 1885; in Austria June 16, 1885, No. 11,302, and in Canada September 2, 1885, No. 22,347.

To all whom it may concern:

Be it known that I, JAMES BROTHERHOOD, of Stratford, Ontario, Canada, have invented certain new and useful Improvements in Apparatus for Exercising the Fingers, Hand, and Wrist, of which the following is a specification.

The invention has been patented in Great Britain March 19, 1885, No. 3,556; in Belgium March 19, 1885, No. 68,229; in France March 19, 1885, No. 167,735; in Austria June 16, 1885, No. 11,302; in Canada September 2, 1885, No. 22,347, and in Germany March 20, 1885.

The object of my invention is to provide apparatus for most thoroughly developing strength and pliability in various muscles and ligaments of the forearm, fingers, hand, and wrist, especially those which are brought into use in performing upon the piano-forte and many other musical instruments, and in operating type-writing machines and other key-actuated mechanism.

The object sought is attained by alternately manipulating the respective parts of the apparatus shown in the accompanying drawings, in which—

Figure 1 is a front view of the entire apparatus. Fig. 2 is a side elevation of the central portions of the apparatus, and Fig. 3 a plan view thereof. Fig. 4 is a side elevation of that portion of the apparatus seen at the left-hand side of Fig. 1. Fig. 5 is a side elevation of that portion of the apparatus seen at the right-hand side of Fig. 1. Fig. 6 is a sectional view, and Fig. 7 a plan view, showing details of that part of the apparatus represented by Fig. 5.

A proper bed or base, A, which may be placed upon a stand, table, or other appropriate support, has the different parts of the apparatus suitably mounted upon it, so that they may be used in turn as desired, without interfering the one with another.

The part B is constructed with uprights *b*, pivotally supporting a lever, C, upon which coiled springs *c c* (or one such spring) act with a tendency to draw down its longer or handle end. The springs are adjustably connected

with the opposite sides of the lever in suitable way, as by means of pins, as clearly shown. By attaching the upper ends of the springs to the lever nearer to or farther from its handle, the lever may be acted upon with more or less force, according to the strain which it is desired to bring to bear upon the muscles of the hand, &c., of the operator. A pad, D, of leather, rubber, or similar material is secured to the upper side of one end (the shorter end) of the lever, and a finger-engaging ring or loop, D', of leather or its equivalent—such as metal lined with leather or rubber—is adjustably secured to the upper surface of the lever between its pivot *a* and handle. As shown, the finger-loop is provided with a hook for engagement with any desired one of a series of eyes, *d*, on the lever. According to the adjustment of the finger-loop, more or less force is required to operate the lever in manner presently to be made obvious.

To exercise the fingers in one way by the lever C, they are in turn inserted in the finger-loop (see dotted lines, Fig. 4) and vibrated up and down by flexing them at the knuckle-joints. By the upward play of the finger the lever is moved against the force of its springs, and the springs move the lever downward as relieved of strain by the finger. Another way of exercising by the use of this lever is, as partially represented by dotted lines, Fig. 4, by resting the arm beneath the lever, with the palm of the hand upward and the fingers bent to reach above and play upon the pad D when it is properly depressed by elevating the handle end of the lever. The different fingers are brought into action, as desired, upon the pad to work the lever against the force of the springs *c c*.

The part E is provided with inclined ribs *e e*, converging toward their upper ends, and formed of leather, rubber, or equivalent material, or faced with such material. This part of the apparatus is designed to stretch the ligaments between the knuckles, and so give a certain pliability to the fingers. It is used by placing the inner surfaces of the ends of adjacent fingers against the outer surfaces of the opposite ribs, and then forcing the hand

toward the ribs, thereby causing these fingers to spread apart at the knuckles, and stretching the ligaments referred to. By inclining the ribs, as shown, they are suited to any sized hands, and to the different fingers of the hands, as is obvious.

The part F consists of a series of yielding or spring-levers or key-like arms, *f*, each secured at one end to the cross-piece *g* of a suitable base, G, and terminating at its opposite or free end adjacent to and above the level of a padded support or rest, H, for the wrist or base of the hand. Intermediate their ends the levers *f* rest upon adjustable posts *h*. There is an adjustable post for each lever. These posts are lugged or tenoned at their bases to engage with and slide back and forth in guide-grooves, as will readily be understood. (See dotted lines, Fig. 2.) Obviously the position in which a lever-supporting post is adjusted determines the degree of force required to depress the lever.

In using the part F the hand is rested upon the pad H and the levers manipulated by the fingers, as will readily be understood. This part F slides in and out between the brackets I I and guide-rails *i i*, and may be removed from the base A for the purpose of adjusting the posts, as desired.

The part J of the apparatus is in some respects similar to the first-described part B, there being provided a lever, K, pivoted near one end to posts L L, and acted upon, with a tendency to draw down its opposite or longer end, by an adjustable spring, (or springs,) *j*. A knob or lug, *l*, faced or padded with leather or equivalent material, projects downward from the longer end of the lever. A jointed prop, *k*, serves to hold up this end of the lever when it is not in use. Instead of the spring *j*, or in connection with it, if preferred, an adjustable weight, M, may be employed to regulate the degree of force required to move up the longer end of the lever. This weight is of cross-shape, its side arms, *m m*, fitting in notches *n n* at the opposite edges of the upper surface of the lever, while the body or main portion of the weight rests in a longitudinal channel in the top surface of the lever. By lifting the weight it may be adjusted back and forth endwise of the lever.

The manner of using the part J will be understood from inspection of Fig. 5, in which, by dotted lines, is shown the arm of the operator resting upon the support N beneath the lever, with the back of the hand uppermost, so that the fingers may be worked in turn, as desired, or all the fingers worked simultaneously, or the fingers kept stiffened and the hand moved bodily up and down against the

pad *l*, this latter movement giving pliability to the wrist. In this way the lever is alternately lifted and allowed to descend.

It will be seen that by alternate and proper use of the different parts of the apparatus the various muscles of the hand and wrist, and ligaments connected therewith, may be thoroughly exercised with obvious advantage.

I claim as of my own invention—

1. The part B, provided with the lever C, pivoted to the uprights *b b*, acted upon at one end by the adjustable springs, and having the pad D projecting upwardly from its opposite end, substantially as and for the purpose described.

2. The combination of the spring-actuated pivotally-supported lever C and the finger-loop adjustably secured thereto, substantially as and for the purpose described.

3. The part E, provided with the converging ribs formed of or faced with leather or specified equivalent material, substantially as and for the purpose described.

4. The part F, provided with the series of spring-levers resting upon the adjustable posts, substantially as and for the purpose described.

5. The combination of the spring-levers, the base G, with which they are connected at one end, the rest H, and the base A, with which the base G is adjustably connected, substantially as and for the purpose described.

6. The part J, provided with the pivotally-supported lever K, acted upon at one end by the spring or springs, or in the equivalent way described, (by the adjustable weight,) and having the downwardly-projecting pad at its opposite end, substantially as and for the purpose described.

7. The combination of the lever K, the posts to which it is pivoted, the spring or specified equivalent thereof, the pad *l* on the under side of the lever, and the arm-support beneath the lever, substantially as and for the purpose described.

8. The combination of the part B, consisting, primarily, of the uprights, the pivoted lever, and adjusting spring, the part E, consisting of the converging ribs, the part F, consisting of the pivoted finger-levers, and means, as set forth, for adjusting them, and the part J, consisting of the pivoted lever, the spring or weight, and the downwardly-projecting pad, all arranged upon a common base, A, as set forth.

In testimony whereof I have hereunto subscribed my name.

JAMES BROTHERHOOD.

Witnesses:

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DANIEL JOSEPH O'CONNOR.