No. 646,998. Patented Apr. 10, 1900.

E. G. JOUBERT.

EXERCISING KEYBOARD.

(Application filed June 3, 1899.)

(No Model.)

Fig. 1.

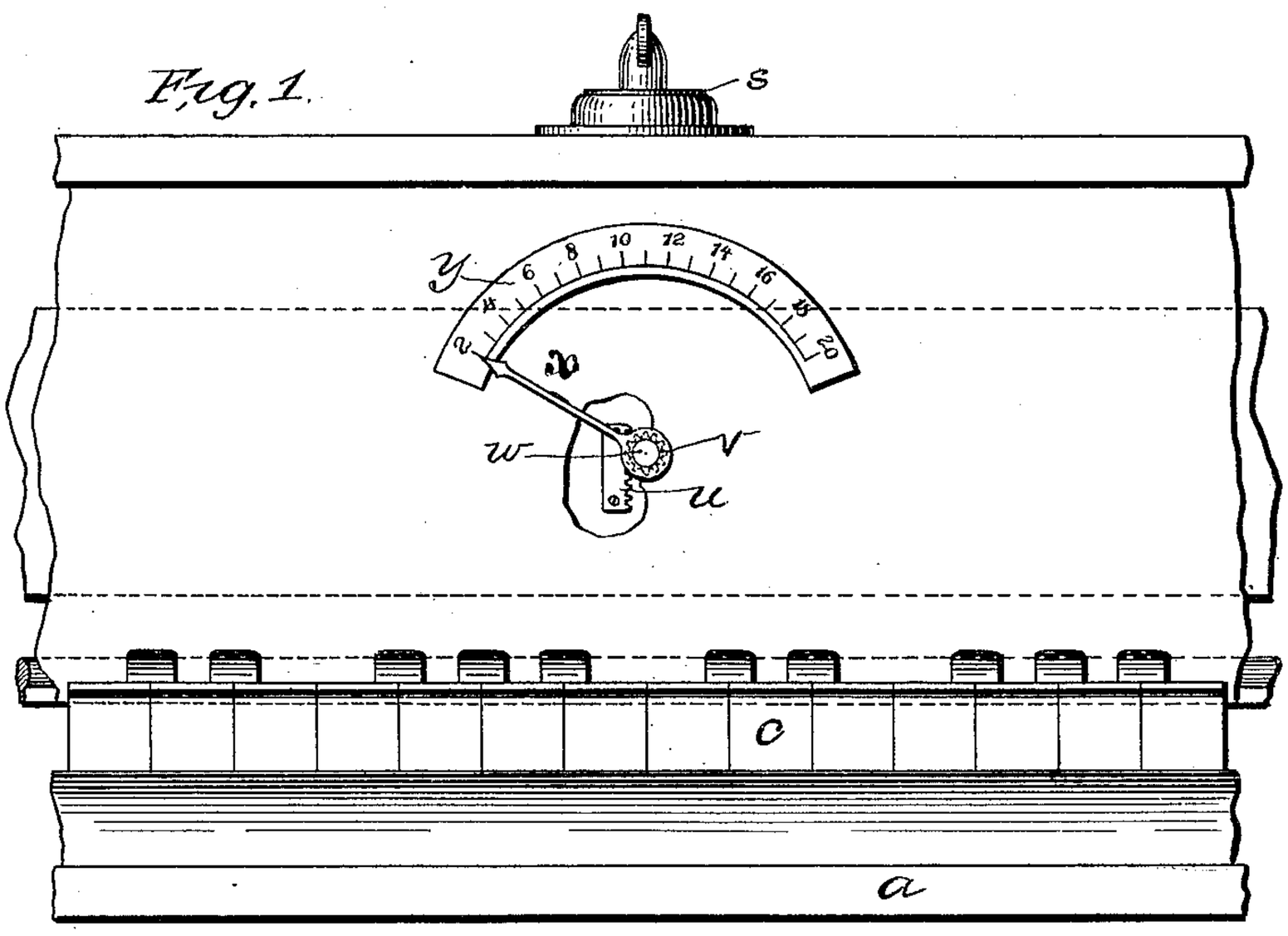
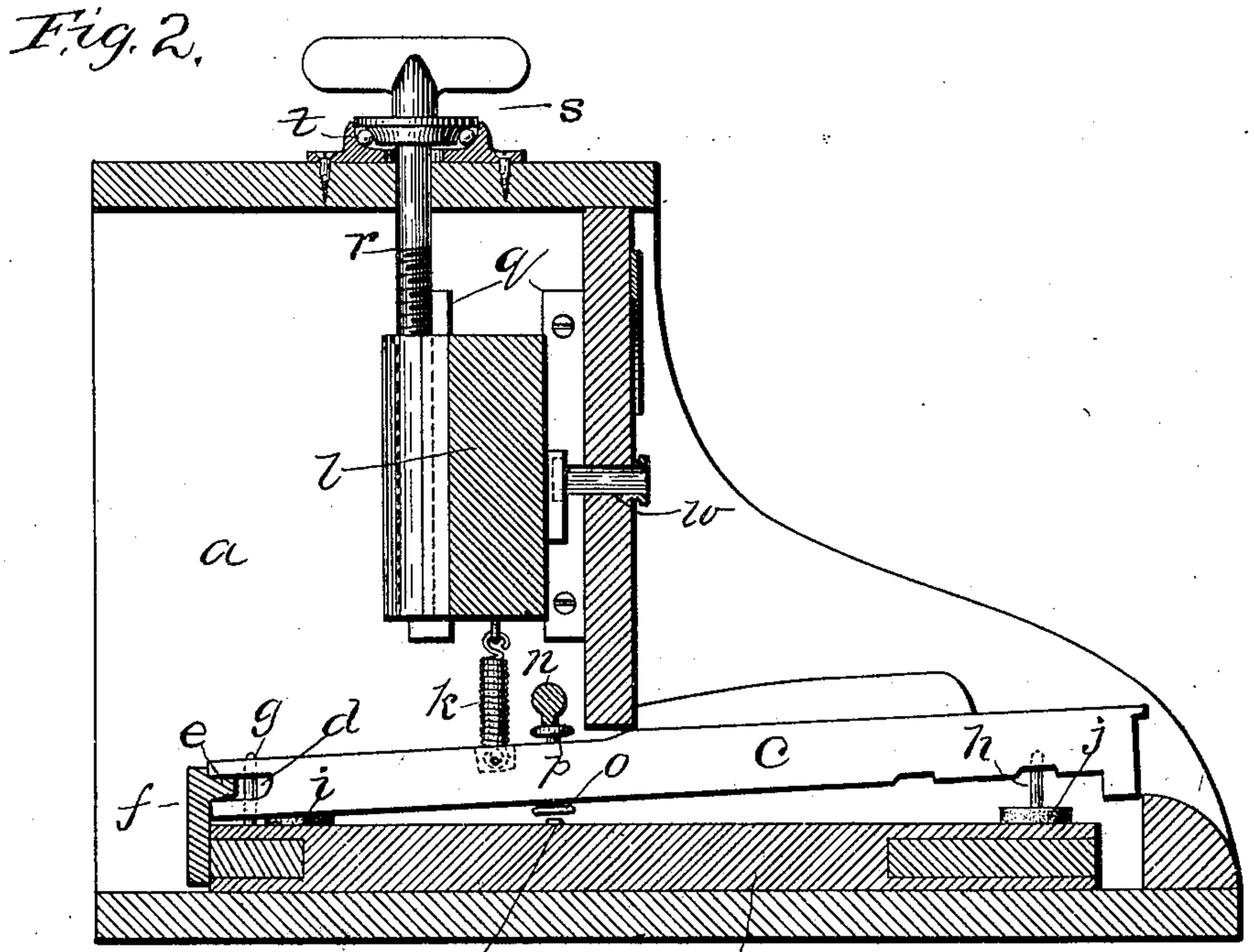


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ELDON G. JOUBERT, OF HYDE PARK, MASSACHUSETTS.

EXERCISING-KEYBOARD.

SPECIFICATION forming part of Letters Patent No. 646,998, dated April 10, 1900.

Application filed June 3, 1899. Serial No. 719,279. (No model.)

To all whom it may concern:

Be it known that I, ELDON G. JOUBERT, of Hyde Park, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Exercising-Keyboards, of which the following is a description sufficiently full, clear, and exact to enable those skilled in the art to which it appertains or with which it is most nearly connected to make and use the same.

This invention has relation to means simulating the keyboard of an organ, piano, and similar musical instruments for exercise or practice without producing musical tones.

It is the purpose of the improvements to produce an exercising-keyboard which while simulating the "touch" and other qualities of a real musical instrument of the kind mentioned will be exceedingly simple and economical of construction.

It is also the purpose of the invention to provide means for the ready adjustment of the tension on the keys and to provide an indicator which shall show just what the tension is, so that the user of the device can adjust it with exactness to suit any particular purpose.

To these ends the invention consists in certain novel features of construction and combinations of parts, a preferred form of embodiment of which is illustrated in the accompanying drawings and specifically described hereinafter and the essential elements of which are recited in the appended claim.

Reference is to be had to the annexed drawings, and to the letters marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 is a front view of so much of an exercising-keyboard as it is necessary to show in order to explain my improvements. Fig. 2 is a front to rear vertical sectional view of the same.

In the drawings, *a* designates the main casing or frame.

b is the base-board, and *c* designates the keys.

The keys are bifurcated, as at *d*, at their rear ends, and a tongue *e* on the inner face of a board *f*, secured to the rear edge of the base-board, extends into the said bifurcations, by which means the keys are given a substantial pivotal connection with the said board.

Pins *g* and *h* extend up from the base-board, front and rear, into the keys to steady and guide the latter in their movements, and pads or cushions *i j* are arranged front and rear under the keys to deaden or prevent any sound that might occur by the contact of the keys with the base-board at these points when the keys are depressed.

k designates helical springs, one being connected at its lower end with each key and attached at its upper end to the lower edge of an adjustable tension-bar *l*, the said spring operating normally to hold the key in raised position, as shown in Fig. 2.

A sounding-pin *m* is arranged at a suitable point below each key, and a sounding rod or bar *n* is in like manner arranged above the keys, and the latter are provided in their lower and upper sides, respectively, with screws or pins *o p*, the heads of which are adapted to come into contact with their opposing sounding means, as will be readily understood.

The tension-bar *l* extends the length of the keyboard and is free to be adjusted up and down, it being guided in its movements vertically by strips *q*, opposite its ends, or by other suitable means. As a means for adjusting the tension-bar I have shown a thumb-screw *r*, extending through the casing or frame and tapped into the tension-bar, the shank of the said screw being provided with a collar *s*, having a "ball-bearing" *t* on the top of the casing, so as to permit of readily and easily turning it to adjust the bar up and down and put more or less tension on the springs *k*.

To indicate the degree of tension under which the springs are placed, I provide the front face of the tension-bar with a short rack-bar *u*, which engages a pinion *v* on an arbor *w*, which extends through the face-board of the casing and is provided on its outer end with a hand *x*, which points to a graduated segmental scale *y* on front of the face-board. The said scale is graduated in ounces, the normal tension on the spring being, say, two ounces. The hand *x* points to that number and is adapted to be turned by greater tension on the springs up to any higher num-

bers, according to the adjustment of the tension-bar.

By the improvements described a very simple and efficient exercising-keyboard is provided, one having the touch and mode of operation of a keyboard of a regular instrument and one in which a sound will be given to indicate the complete depression of a key and its rise to its fullest height.

The means for indicating the degree of tension on the springs I esteem of material importance in the invention, since it is desirable to vary the tension for varying circumstances and for the user to know exactly what the tension is at all times.

Again, the employment of helical springs for keeping the keys normally raised is regarded by me as important, since it secures substantially natural and unvarying operation.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, it is declared that what is claimed is—

An exercising-keyboard embodying in its construction depressible keys; a tension-bar; springs connecting the keys with the tension-bar; means for adjusting the tension-bar; and indicating means to exhibit the degree of adjustment by the tension-bar, said means comprising a rack on the bar, an arbor having a pinion in mesh with the rack, an index-hand on the arbor, and a scale, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 20th day of May, A. D. 1899.

ELDON G. JOUBERT.

Witnesses:

ARTHUR W. CROSSLEY,

ANNIE J. DAILEY.