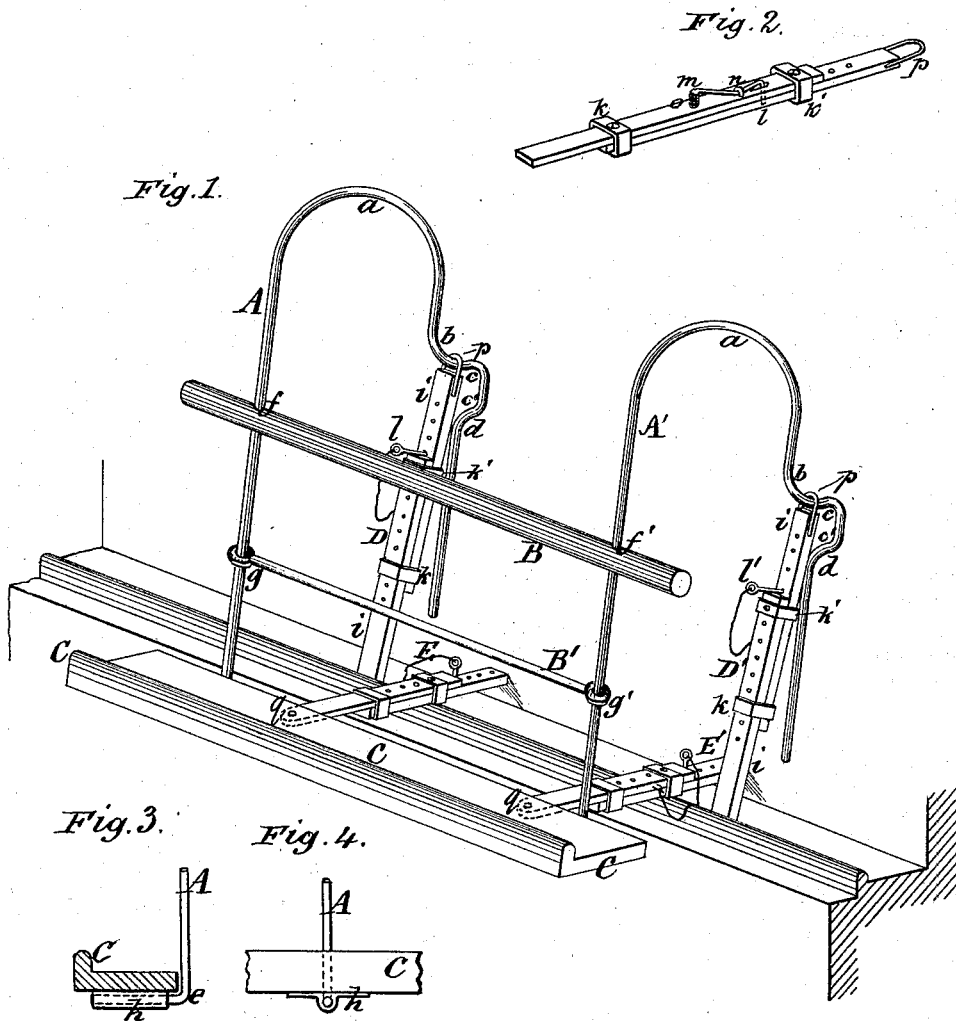


E. A. NORTON.
 Rack-Attachment for Pianos, Organs, &c.
 No. 198,038. Patented Dec. 11, 1877



Witnesses:
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UNITED STATES PATENT OFFICE.

ELENORA A. NORTON, OF NEW BEDFORD, MASSACHUSETTS.

IMPROVEMENT IN RACK ATTACHMENTS FOR PIANOS, ORGANS, &c.

Specification forming part of Letters Patent No. **198,038**, dated December 11, 1877; application filed October 23, 1877.

To all whom it may concern:

Be it known that I, ELENORA A. NORTON, of New Bedford, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Rack Attachments for Pianos, Organs, Melodeons, and other Key-Board Instruments, of which the following is a specification:

In pianos, organs, melodeons, and other key-board instruments, the music-supporting racks are generally attached to some fixed point of the case or casing of the instruments. They are attached so that they may be folded and removed out of sight when not in use, and when the case is closed; but when in use they generally occupy a certain fixed relation to the key-board, and, consequently, to the performer. This has been found to be a source of inconvenience, and not unfrequently of difficulties, as will be hereinafter more fully shown.

Near-sightedness, so common now among the young, studious, and cultivated people, renders it necessary for performers or students of music, when performing on key-board instruments, to lean over to read the music upon the rack, which attitude not only interferes with proper manual execution, but is also ungraceful, and, it is believed, injurious to health.

These difficulties and inconveniences are still greater and more apparent with near-sighted persons, who, in conjunction with their own performance upon the instrument, or when accompanied by another person upon it, use their voices or execute vocal or instrumental music from the same piece of music on the rack, as the position they are obliged to assume in order to read the music interferes with the free action of the chest or vocal organs, and thus singing and playing on instruments, such as flutes, &c., becomes very often a source of disease, rather than a healthful exercise.

Observation upon others and personal experience has led to the invention which is the subject-matter of this patent.

It has first occurred to me to so construct the rack of pianos as to render the same adjustable according to visual force of executants of music; but the limited space within which such racks are generally inclosed in the case of the instrument forbids the application of devices for the extension and adjustment

of racks which constitute part of the instrument itself. I therefore conceived the idea of a movable rack attachment or auxiliary rack, which may be employed in connection with racks already in use, and which can be made and supplied to the public at a low cost, which also may be folded up, or the parts of which may be separated, so as to be easily transported or conveniently put away when not in use, and, finally, so as to admit of ready adjustment. I have also endeavored to make my rack attachment exceedingly light and portable, by making special provision for the support of heavy books of music, if such are desired to be used.

To this effect my invention consists in, first, a new article of manufacture, being an auxiliary rack or attachment to existing racks of pianos, organs, melodeons, and other key-board instruments, constructed and arranged for use substantially as hereinafter described; second, the curved wire brackets, one end of each being shaped to engage with the ordinary rack of a key-board instrument, while the other is bent to hold the music-supporting shelf in its proper relation to the rack; third, the combination, with said wire brackets, of one or more transverse bars, upon which bar or bars the said wire brackets may be rotated, so as to admit of their folding into the same plane with said cross-bars; fourth, the combination, with the wire brackets, of a music-supporting shelf provided with sleeves for the reception of the shelf-supporting ends of said wire brackets; fifth, the combination, with the wire brackets, the cross-bars, and the shelf, of adjustable braces adapted to support and steady the wire brackets, as hereinafter described; sixth, the combination, with the wire brackets, the cross-bars, and the shelf, of adjustable braces hinged to said shelf, and supporting and steadying the rack, as hereinafter described; seventh, the peculiar construction of the adjustable brace, the same consisting of two bars, the one sliding upon the other, in combination with the spring locking-pin.

Having thus fully stated the nature of my said invention, I shall now proceed to describe the manner in which the same is or may be carried into effect.

Referring to the drawing, Figure 1 is a per-

spective view of a rack attachment constructed in accordance with my said invention. It is shown applied to the case of a piano known as "square," of which, however, only that part is represented which is necessary to show the application and use of the braces before referred to. Fig. 2 is a perspective view of a modified brace. Figs. 3 and 4 are detail views.

In said figures, A A' represent the parts which I call the "wire brackets." They consist of a wire of a certain length, which is curved in its middle, or thereabout, (at *a*,) upon a semi-cylindrical form, the diameter of which may vary according to the sweep or projection which is desired to be given to the rack.

The two branches of the wire are bent, respectively, as follows: One branch, which I shall call the "rear branch," is bent outward at *b*, then downward at *c*, inward at *c'*, and then downward again at *d*, so that the remaining part of it shall be parallel, or nearly so, with the other branch, as clearly shown in the drawing.

The other branch, which I shall call the "front branch," has its extremity bent at right angles at *e*, as shown in Figs. 3 and 4, which are, respectively, a cross-section and front elevation of the lower end of the wire, it being invisible in Fig. 1. Upon these two wire brackets are mounted cross-bars B B', both of which may be made of wood or metal, or one of wood and the other of metal, as shown in the drawing. If made of wood the bar is perforated near its extremities at *f* and *f'*, through which bars the wire is passed. It may be held upon the wires by means of studs or projections on the wire, or by other mechanical means, which will allow of the easy rotation of the wire upon the cross-bars. If of metal, the cross-bar B' may be made of wire, the ends of which are turned into eyes embracing the wire bracket.

Similar studs or projections may be soldered or otherwise fastened at *g*, to secure the cross-bar in place.

The music-supporting shelf C is of usual construction, but is provided at its under side with brass sleeves *h*, forming the knuckles of a hinge, of which the outer end of the front branch of the wire bracket constitutes the pin.

D D' are supporting-braces, consisting of two wooden bars, *i i'*, of even dimensions except as to length, which are held together by metal straps *k k'*, but so as to admit of the two bars sliding upon each other without becoming detached. The wooden bars are, moreover, perforated, and a pin, *l*, is used to fix the relative position of the two bars.

The pin may be inserted for that purpose above the one into the other, as shown in the drawings in Fig. 1; or the pin may traverse corresponding holes in both bars, as shown in Fig. 2, which represents a brace in all particulars like that shown in Fig. 1, with the exception of the pin, which is there shown permanently

secured to one of the bars, instead of being detachable or simply held by a chain or cord.

In the modification shown in Fig. 2, the pin is a piece of bent wire, *m*, pivoted at *n*, bent at one of its ends to form a locking-pin, the opposite end being provided with a spring, *o*, to keep the pin locked.

The upper end of the brace is provided with a loop, *p*, whereby the rear branch of the wire bracket is engaged.

E E' are similar braces, but they are hinged to the under side of the shelf at *q*.

The operation of the attachment thus constructed will require but passing reference, as the same is already apparent from inspection of the drawings.

The attachment, put together as represented, is supported by the permanent rack of the keyboard instrument by engaging the shank of the rear branch of the wire attachment, so that the curves at *b c d* engage the bars and spaces or excisions and scroll-work of the rack, and hold the front branch in a position parallel therewith.

To properly support and steady the auxiliary rack the braces D D' are properly adjusted to their required length by the insertion of the pin *l* in the proper hole. These braces rest at one of their ends upon the casing of the instrument, while their other ends bear upon the respective wire brackets.

When heavy books of music are used, and for other purposes, the braces E E' are thrown out from under the shelf to abut against the vertical portion of the casing, and the lengths of these are adjusted by means of locking-pins, to steady or even to throw forward and increase the inclination of the rack.

When thus put up it will be seen that the near-sighted performer, whether singing or playing, can so approach the music-notes to his or her eyes as to obviate the necessity of unnatural and injurious attitudes or positions being taken and preserved during the execution of the music.

In conclusion, I would observe that for shipping or transportation purposes, or for convenience in laying aside the attachment when not in use, it may be taken to pieces and folded up in a very small compass. To this end the shelf is removed from the hinged pins, the braces E E' are folded under the shelf, the braces D D' are taken off the rear branch of the wire brackets, the latter are then rotated to lie flat against each other upon the cross-bars, and the several pieces are then placed one upon the other, so that they may occupy no greater bulk than the thickness of the material upon a width and height equal to that of the rack itself.

Having thus described my said invention, and the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is—

1. A new article of manufacture, being an auxiliary rack or attachment to existing racks of pianos, organs, melodeons, and other key-

board instruments, and adapted to be adjusted with relation to the eyes of the performer, substantially as herein described.

2. The curved wire brackets, one arm of which is shaped to engage with the ordinary rack of a key-board instrument, while the other is bent to hold the music-supporting shelf in its proper relation to the rack, substantially as shown and described.

3. The combination, with said wire brackets, constructed to be detached from the music-supporting shelf, of one or more transverse bars, upon which bar or bars the said wire brackets may be rotated, so as to admit of their folding into the same plane, or nearly so, with said cross-bars, substantially as shown and described.

4. The combination, with the wire brackets, of a detachable music-supporting shelf, provided with knuckles or sleeves for the recep-

tion of a hinge-pin on the shelf-supporting ends of said wire brackets, substantially as shown and described.

5. The combination, with the wire brackets, the cross-bars, and the shelf, of adjustable braces adapted to support and steady the wire bracket, as herein shown and described.

6. The combination, with the wire brackets, the cross-bars, and the shelf, of adjustable braces hinged to said shelf, and supporting and steadying the rack, as herein shown and described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ELENORA A. NORTON.

Witnesses:

A. POLLOK,
EWELL A. DICK.