

(No Model.)

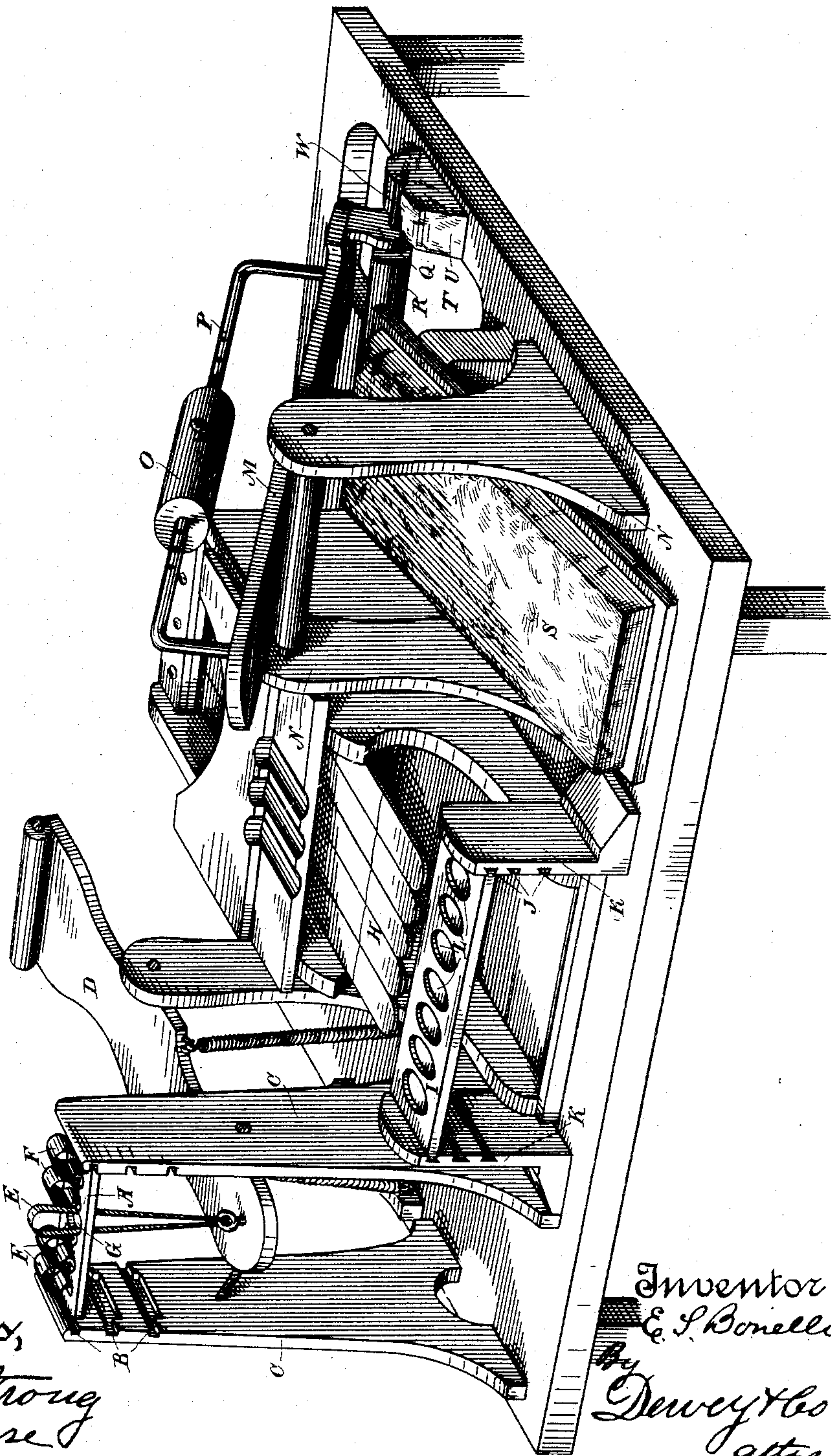
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E. S. BONELLI.
EXERCISING DEVICE FOR MUSICIANS.

No. 410,748.

Patented Sept. 10, 1889.

Fig. 1.



Witnesses,
Geo. H. Strong
J. H. House

Inventor,
E. S. Bonelli
By
Dewey & Co.
Attys

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

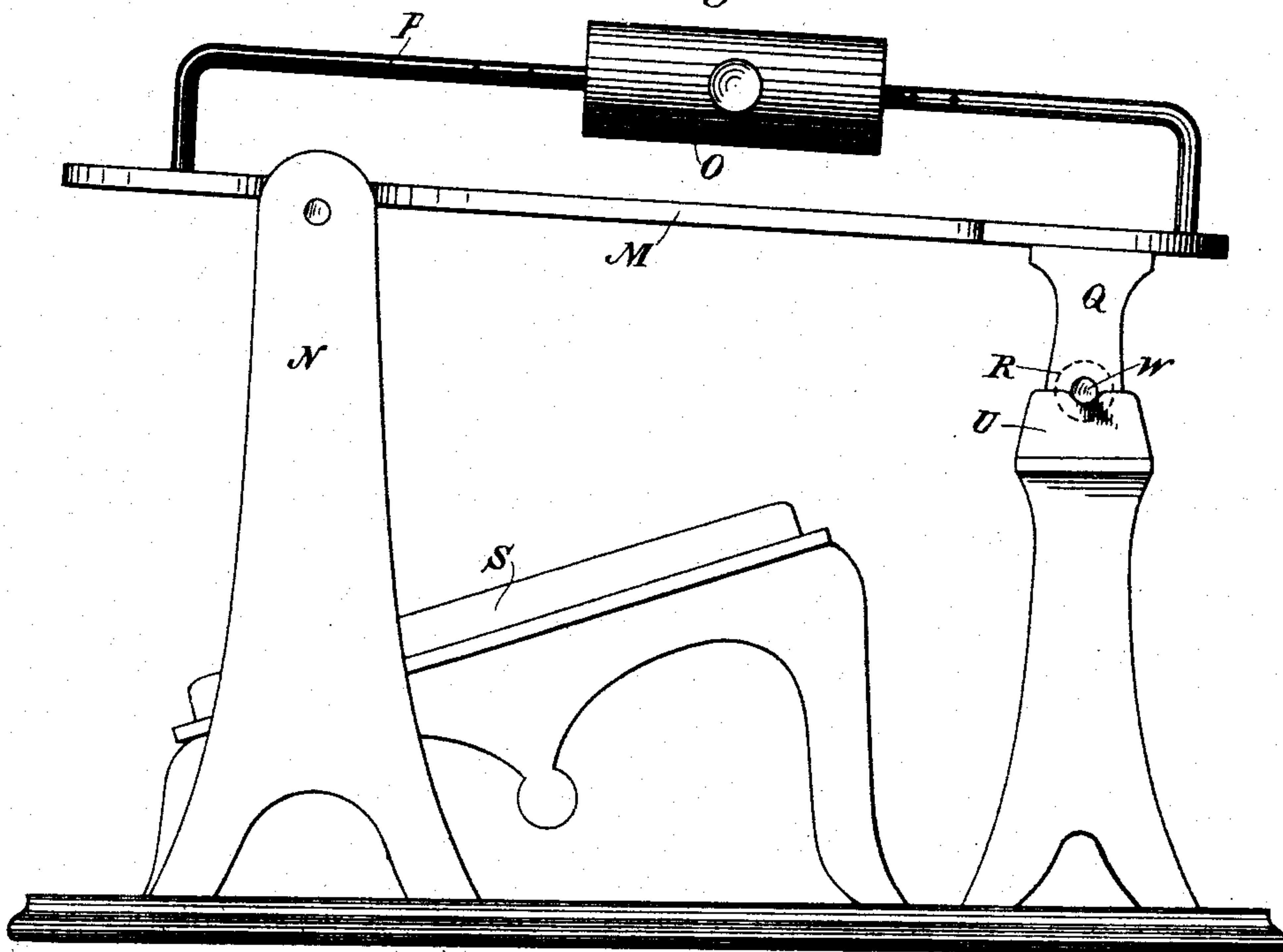
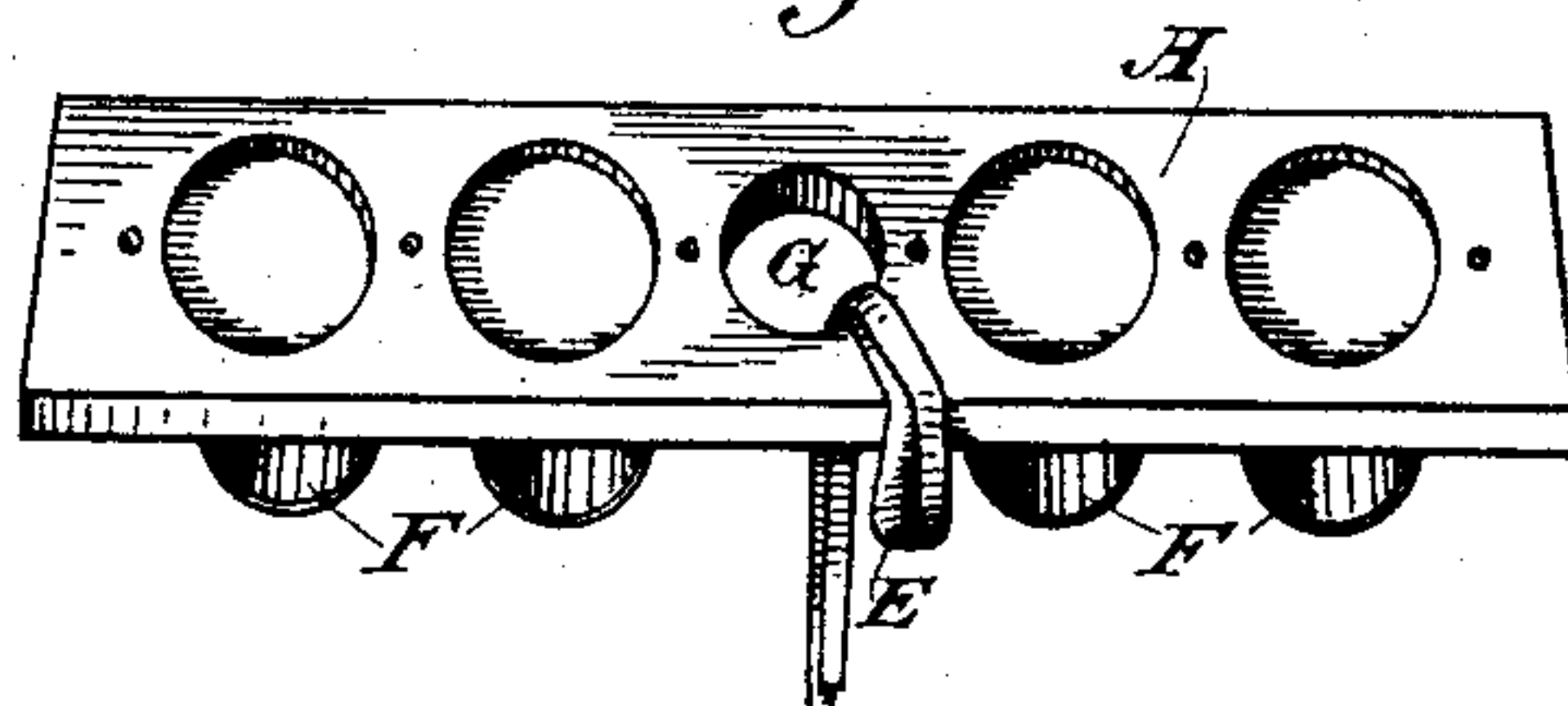


Fig. 3.



Witnesses,
Geo. H. Strong
J. H. Morse

Inventor,
E. S. Bonelli
By Duvey & Co.
attor

UNITED STATES PATENT OFFICE.

EUGENE S. BONELLI, OF SAN FRANCISCO, CALIFORNIA.

EXERCISING DEVICE FOR MUSICIANS.

SPECIFICATION forming part of Letters Patent No. 410,748, dated September 10, 1889.

Application filed December 19, 1888. Serial No. 294,114. (No model.)

To all whom it may concern:

Be it known that I, EUGENE S. BONELLI, of the city and county of San Francisco, State of California, have invented an Improvement in Exercising Devices for Musicians; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to certain improvements in devices for exercising and strengthening the muscles of the fingers and wrists of piano-players and musicians; and it consists in certain details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of my device. Fig. 2 is a side elevation. Fig. 3 is a detail of the table A.

For the purpose of training the muscles which are brought into action in piano-forte playing, an apparatus has been devised by the use of which the various muscles of the hand and wrist are strengthened systematically for the purpose of improving the technique in piano-playing. My invention is designed to improve this apparatus by providing certain rests for those fingers which are not being used, and adjustments by which the amount of power or pressure brought upon each muscle may be delicately graduated.

The first portion of my invention consists of a support or table A, the edges of which are adjusted in slots B, made in the sides of the vertical standards C. These standards are fixed upon the common base of the instrument and extend upward to a point above the spring or weighted lever D, as shown. This lever has a loop or strip E extending upwardly from it, and into this loop the fingers of each hand are successively introduced, the back of the finger upward. The finger is then moved up and down, so as to greatly increase the muscular strength by reason of the resistance of the spring or weight, which acts to pull the end of the lever D downward. Hitherto the spring or weight actuated lever D and the loop E have had no means for regulating or adjusting the pressure, the pupil being obliged to introduce the fingers successively into the loop and then raise them without any means of regulating the pressure or supporting the other fingers. In my in-

vention the standards C are extended upward upon each side above the level of the lever D and have transverse slots or channels B made in their inner faces, into which the supporting-table A is introduced. Upon the top of the table A are a series of stationary loops F, of sufficient size to allow the fingers to be introduced into them, said loops being permanently fixed upon each side of the central hole or opening G, through which the loop E is passed, so as to be in position above the table A and in line with the fixed loops F.

When either of the fingers is to be exercised with this device, having first determined the tension which is desirable, the table A is placed in either of the slots B, and the loop E is adjusted, by a buckle or otherwise, to a length which will give the proper tension, and the fingers adjacent to the one to be exercised are introduced into the stationary loops F, which are nearest the vertically-movable loop E. The finger to be exercised is introduced into this loop, and will then be raised and lowered, the tension of the loop E and the spring-lever D producing the proper exercise of the muscles of the fingers, thereby strengthening the extensor muscles, the other fingers being meantime held in position. Upon the opposite side of the table A are a series of slight depressions upon each side of the hole through which the loop E passes. When the fingers are to be exercised in a bent position, as in playing the piano, the table A is reversed in the slots so as to bring the depressions upward. The loop E is then passed through the hole, as before, and the ends of the fingers not in use rest in the depressions, the loop E passing over the second joint of the finger to be exercised. This exercise also serves to increase the ability to raise the finger above the level of the others, which is a very desirable thing in piano-playing, the other fingers being retained in their position by means of the fixed loops F.

The second portion of my invention relates to the exercise of the striking-muscles of the fingers, and for this portion of the exercise the elastic keys H are employed. Heretofore the fingers have been exercised singly upon these keys, but, as before described, with no means for supporting the other fingers. I

have shown in this case a supplemental board or table I, the ends of which are adjusted in slots J in the vertical standards K, which are fixed to the common base and rise to such a point that the transverse table I may be adjusted at any desired height with relation to the elastic keys H. In the upper surface of this table are made depressions L, into which the fingers which are not to be exercised are placed and are supported without motion, while the finger to be exercised is moved up and down, the flexor muscles in this case being acted upon and strengthened by the spring-key H.

The third portion of my invention consists in providing a means for relieving the hand from the pressure of the weighted lever M, which is employed for increasing the strength of the wrist-muscles. This lever is fulcrumed in the standards N, and has an adjustable weight O, which moves upon a bar P, and is adjusted with relation to the fulcrum-pins in the standards N, so as to increase or decrease the pressure at the outer end. In the lugs Q is fixed the journal-shaft of the roller R, this roller resting upon the back or tips of the fingers, as the case may be and according to which muscles it is desired to exercise with it.

S is an inclined cushion or table upon which the arm is laid so as to steady it, while the motion of the hand beneath the roller R is simply a wrist movement and for the purpose of strengthening and developing these muscles.

In my invention I have made a hole or opening T in the base, which allows the hand to move downward, and by means of the supports U the weighted roller R is arrested by reason of the journal-shafts W, which project out each side of the lugs Q, and which strike upon the supports or cushions U when the roller has been depressed to a certain extent. The hand then moves downward freely into the opening, being relieved at each movement temporarily from the weight of the roller R, and being allowed to complete its downward movement freely without the action of the weight. When the hand is again raised so as to come in contact with the roller R, it again raises the weighted lever M, and the movement is repeated as long as is desired.

In the manufacture of new machines it may be desirable to raise the support or cushion S to a greater height above the table or base, and the support U is correspondingly raised, so as to arrest the movement of the roller R at a considerable height above the base, and this allows the fingers of the hand to move downward without coming in contact with the table at each movement.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the spring-actu-

ated pivoted lever D and the finger-loop connected therewith, of the transverse table having the central opening through which the loop passes, and the supplemental loops F, fixed to the upper surface of said table, substantially as herein described.

2. The spring-actuated pivoted lever D, having the loop connected therewith and extending upwardly therefrom, in combination with the centrally-perforated table through which the loop passes, the supplemental finger-loops fixed to the upper surface of the table upon each side of the loop which is connected with the lever, and the vertical standard extending upward upon each side of the lever and having the transverse slots wherein the table may be adjusted to different heights with relation to the lever and its loops, substantially as herein described.

3. The combination, with the spring-actuated pivoted lever D and the finger-loops connected therewith, of a transverse table having an opening through which the loop from the lever passes, and slots, depressions, or rests for the ends of the fingers not engaged with the loop, substantially as herein described.

4. The elastic or spring levers H, in combination with the horizontal table I, with the finger-supporting depressions L, said table being arranged with relation to the levers H, substantially as and for the purpose herein described.

5. The horizontal support or table I, having the depressions L for the fingers, and the vertical standards K, with the transverse slots J, within which the table I may be adjusted, in combination with the spring-levers H, the ends of which are adapted to receive one or more of the fingers while the others are supported upon the table, substantially as herein described.

6. The fulcrum-lever M, with the adjustable weight O, and the roller R, journaled beneath the movable end of the lever, and the arm-support S beneath the fulcrum portion of the lever, in combination with the support U, by which the downward movement of the lever and roller is arrested, substantially as herein described.

7. The weighted fulcrum M, the roller R, journaled beneath its movable end, and the arm-rest S beneath the fulcrum end, in combination with the base or support having the cut-out or open spaces T in front of the arm-rest, and the stops or supports U, whereby the downward movement of the lever and roller is arrested, substantially as herein described.

In witness whereof I have hereunto set my hand.

EUGENE S. BONELLI.

Witnesses:

CHARLES W. ROGERS,
GARRETT DUNN.