

(No Model.)

2 Sheets—Sheet 1.

J. F. CLIFFORD & E. CORBETT.

HARMONIC ATTACHMENT FOR KEY BOARDS.

No. 274,464.

Patented Mar. 27, 1883.

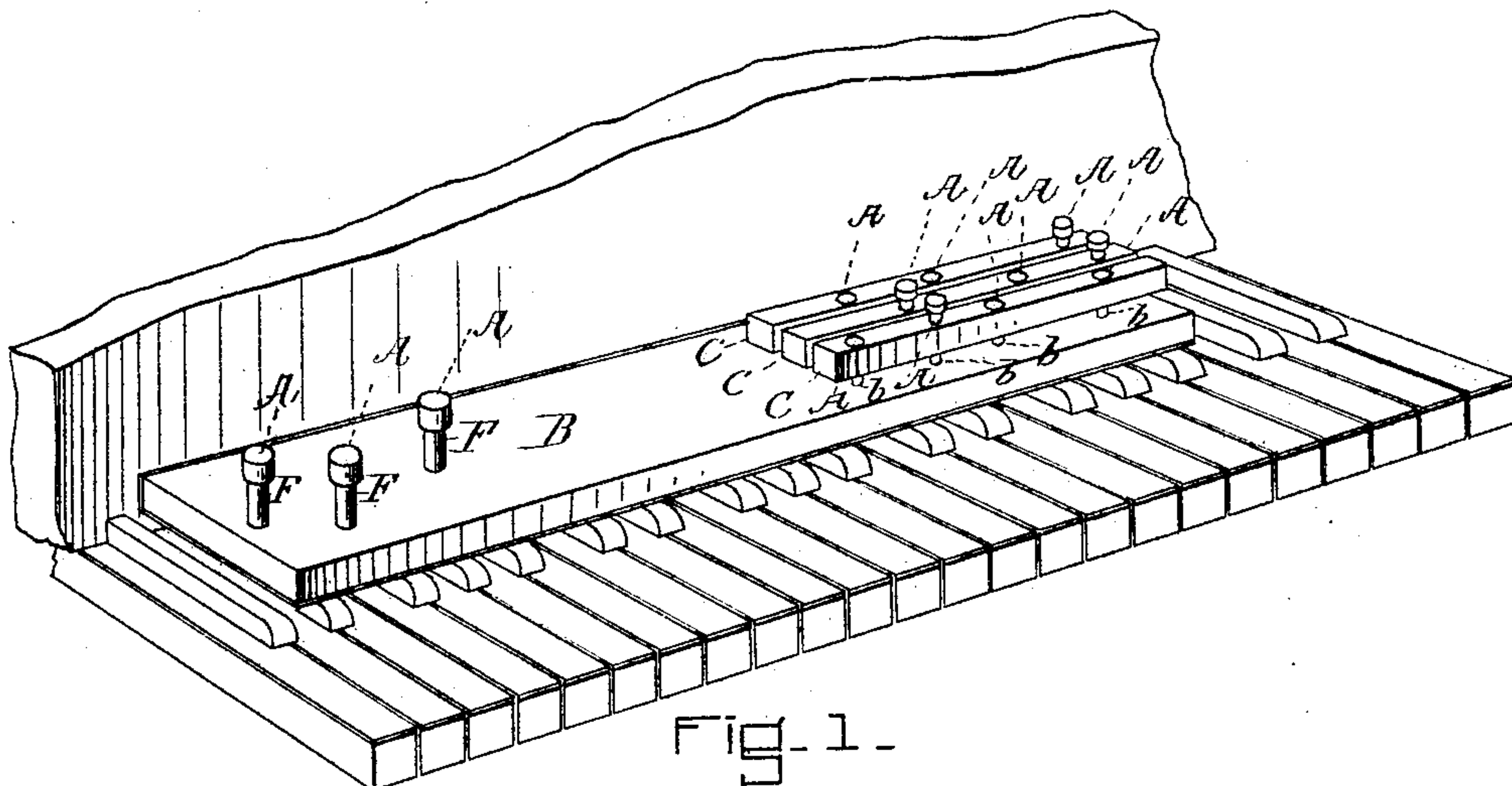


Fig. 1.

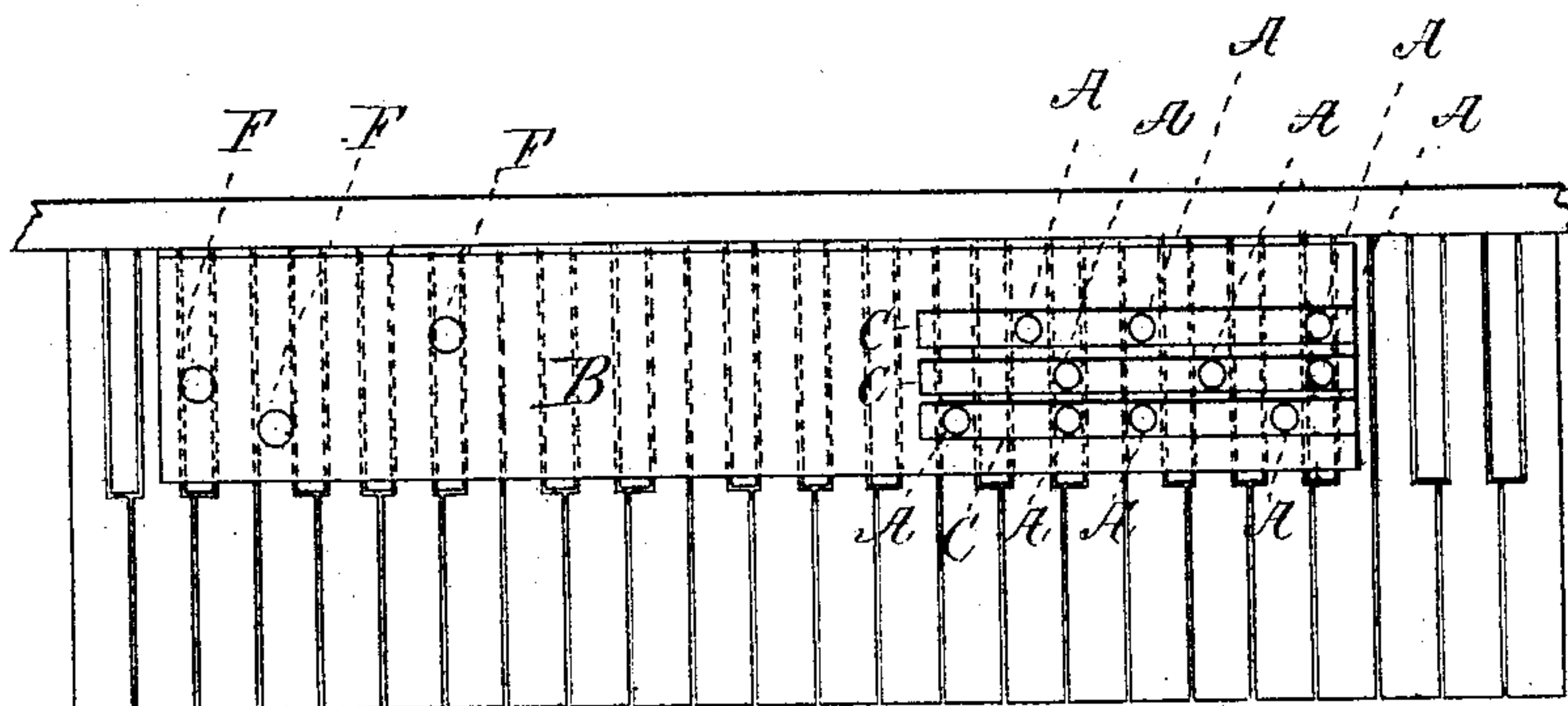


Fig. 2.

WITNESSES

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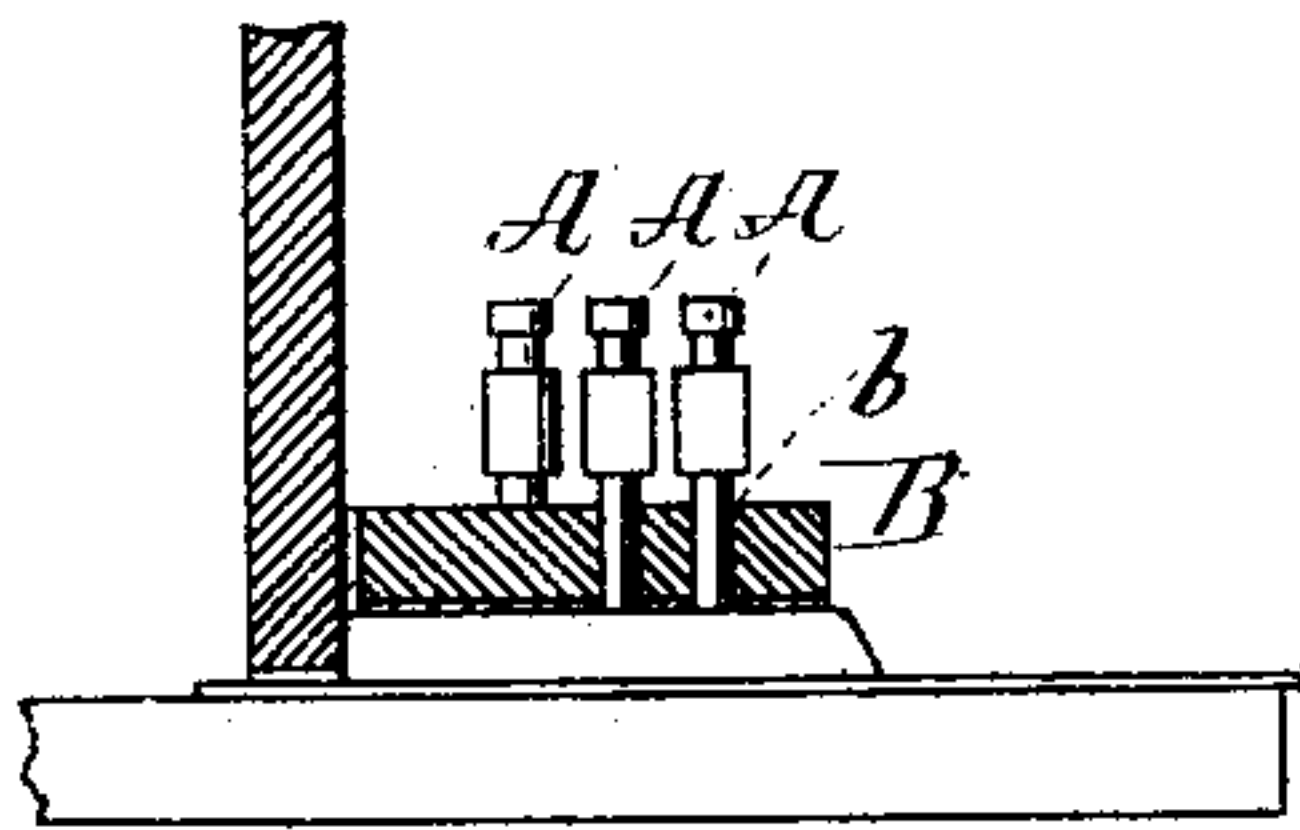


Fig. 3.

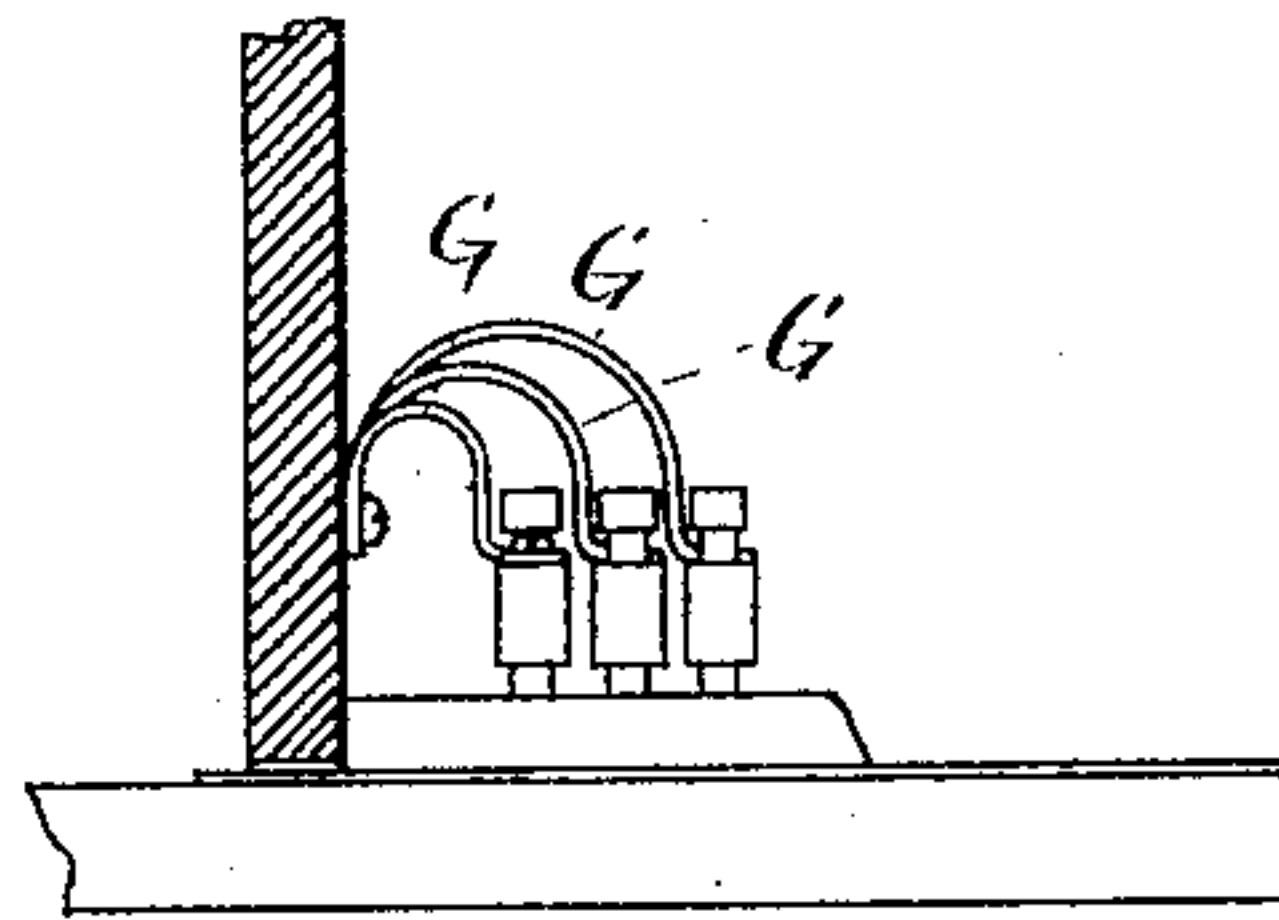


Fig. 4.

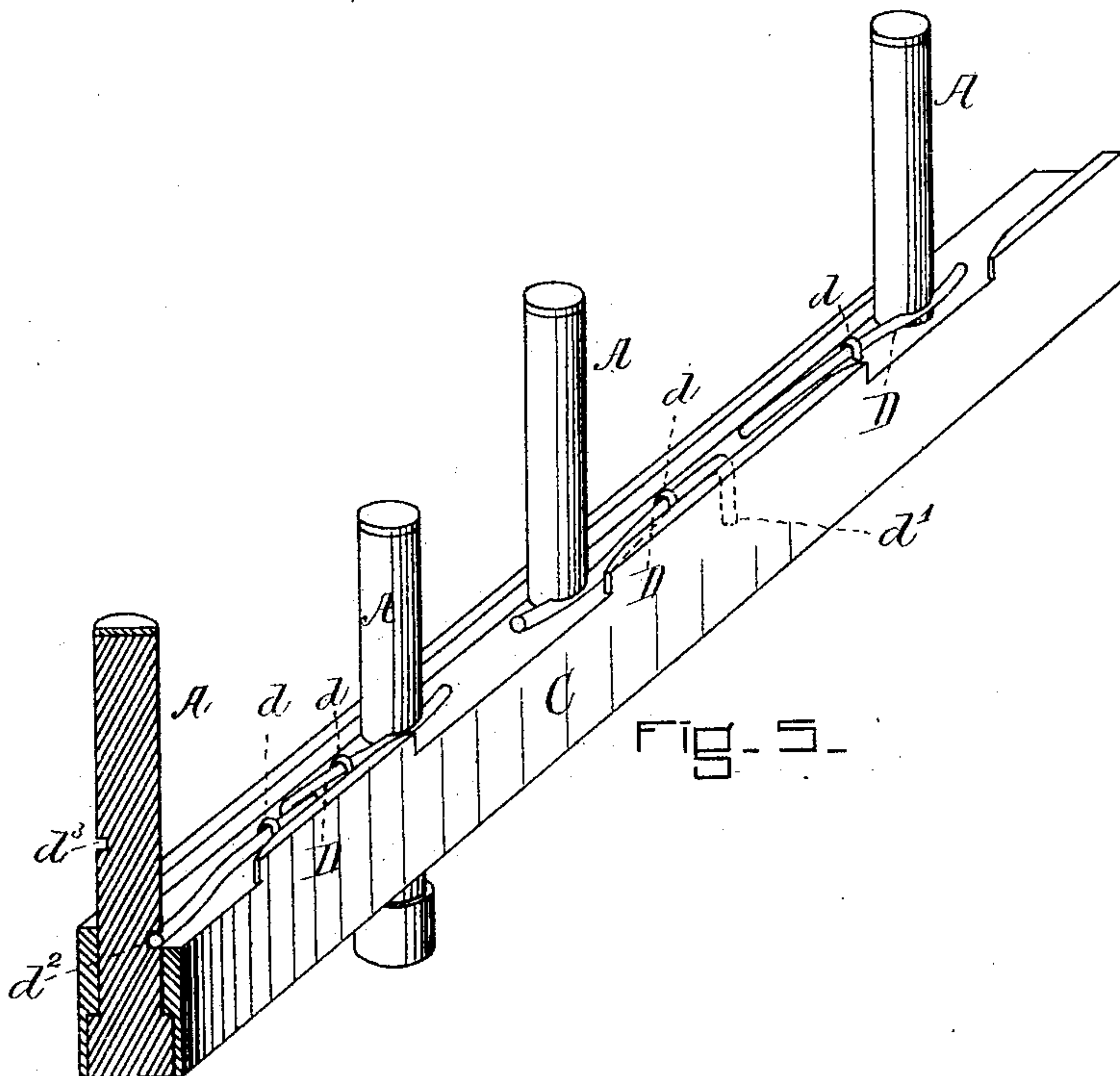


Fig. 5.

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UNITED STATES PATENT OFFICE.

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HARMONIC ATTACHMENT FOR KEY-BOARDS.

SPECIFICATION forming part of Letters Patent No. 274,464, dated March 27, 1883.

Application filed August 16, 1882. (No model.)

To all whom it may concern:

Be it known that we, JOHN F. CLIFFORD, of Milford, in the county of Worcester, and EDWARD CORBETT, of Boston, in the county of Suffolk, both in the State of Massachusetts, both citizens of the United States, have invented a certain new and useful Attachment to Pianos, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature, in which—

Figure 1 is a perspective of a series of keys with our improvement attached or in position thereon. Fig. 2 is a plan view thereof. Fig. 3 is a cross-section. Fig. 4 is an end elevation of a modification. Fig. 5 is a view of a portion of the device reversed to illustrate the construction.

It is desirable, both for purposes of amusement and instruction, to provide means whereby various chords may be struck or accompaniments played without requiring that the separate keys of the piano or other like musical instruments be struck by the fingers; and our invention consists in an attachment adapted to be used with a piano, organ, or other musical instrument having keys of like form; and it consists in an arrangement whereby the chords or notes to be struck are predetermined, and a device or series of devices properly supported for striking such chords or notes simultaneously or in succession without striking by the fingers the separate keys. We are aware that devices for this purpose have been heretofore employed. Such have usually been operated by the foot, after the manner of pedals. Our present invention, however, is essentially different in form and mode of operation, the mechanism being placed in direct contact with the key-board of the instrument. Various means can be employed for these purposes, and we have shown in Figs. 1, 2, and 3 one form and in Fig. 4 another. The strikers or pins are arranged to strike chords or separate notes, and the methods of adjustment to change the strikers for the varying chords or notes are hereinafter described.

In the drawings, A represents the pins or strikers. They are mounted in the board B, which has holes *b* suitably arranged therein

for their reception, and in which the strikers play. The strikers may be connected at their upper ends by means of the connecting-bar C, and in order that they may be used for operating the black keys they are made vertically adjustable therein. Any suitable means may be employed for this purpose, and we show the springs D, each of which is fastened to the bar by the staple *d* and bent end *d'*, which enters a hole in the bar, or in any other suitable way, and the side of the spring is adapted to engage with the notches *d*² *d*³ in the striker or pin. These notches and the pins also fasten the pins or strikers to the bar. When the pins are in their lowest position the springs enter the higher of the two notches, and the adjustment is for the white keys of the piano; but by moving the strikers upwardly in their bars until the springs engage the lower notches provision is made for striking the black keys. If desired, the strikers or pins may be provided with heads, to prevent their being pushed or moved downwardly through the bar. The bar may have, if desired, at about the center of its length, a cap or projection, made of metal or other suitable material, and projecting upwardly from its surface and securely fastened thereto. The under surface of the bar should be lined with felt, and also the ends of the pins or strikers, in order that the keys, on their upward movement, may not, in striking the board, produce sound, and in order that the pins or strikers may not injure the keys.

In operation the board is placed upon the piano in proper position to bring the pins or strikers above the notes to be struck, and by moving the connecting-bars downward as many notes are struck as there are pins or strikers attached thereto in position to operate. These bars may be arranged one behind the other, as shown in the drawings, to strike a number of chords. Single strikers or pins may be used, as shown at F, Figs. 1 and 2. The upward movement of the keys ordinarily will return the pins or strikers to their usual position. If, however, the action should be weak, springs interposed between the bars and upper surface of the bearing, or otherwise arranged, may be used additionally in lifting the strikers.

In lieu of employing a perforated board, as

represented, we may attach the bars directly to the spring-supports G, as shown in Fig. 4, in which case the springs would extend outwardly from the surface of a board or other support adapted to rest against the back of the key-board, with its edge upon the keys.

Of course the application of this invention may be varied by simply adjusting the strikers or pins upon their supports to the keys which are to be struck, and arranging the perforations or holes in the supporting-board to correspond, or their supporting-springs, so that they shall be properly placed in relation to such keys.

The supporting-board and pins may be made of wood, or of any other suitable material.

The bars and pins may be numbered, if desired, and suitable directions provided, which shall refer to them by number, and which may be used for governing their adjustment to play various chords or accompaniments, and all that will be necessary for the player to do will be to strike the previously-arranged bars and strikers according to the sequence of the figures, as shown by the instructions. Of course it is understood that these strikers and bars are placed, before playing, in position to play either a given number of chords or a given accompaniment, and are not removed during such playing.

In lieu of the means above described of adjusting the height of the pins in relation to their support, we may provide the pins with screw-threads, so that they may be screwed up

or down in the supports; or we may use any other suitable mechanism.

Having thus fully described our invention, we claim and desire to secure by Letters Patent of the United States—

1. In an attachment to a key-board instrument, the adjustable pins or strikers A, adapted to have a vertical movement, and supported in position in perforations in the board B, in combination with the bars C, provided with strikers in connection therewith, substantially as and for the purposes described.

2. In an attachment for a piano or other similar instrument, the combination of the pins or strikers A, connected by a suitable cross-bar, and means for supporting them above and near the keys, and for permitting a vertical movement thereof, said supporting mechanism resting upon the key-board, all substantially as and for the purposes set forth.

3. A harmonic attachment for the key-board of a musical instrument, having the key-board B, in combination with the notched pins or strikers A, and the springs D, and cross-bars C, all substantially as and for the purposes described.

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