

(No Model.)

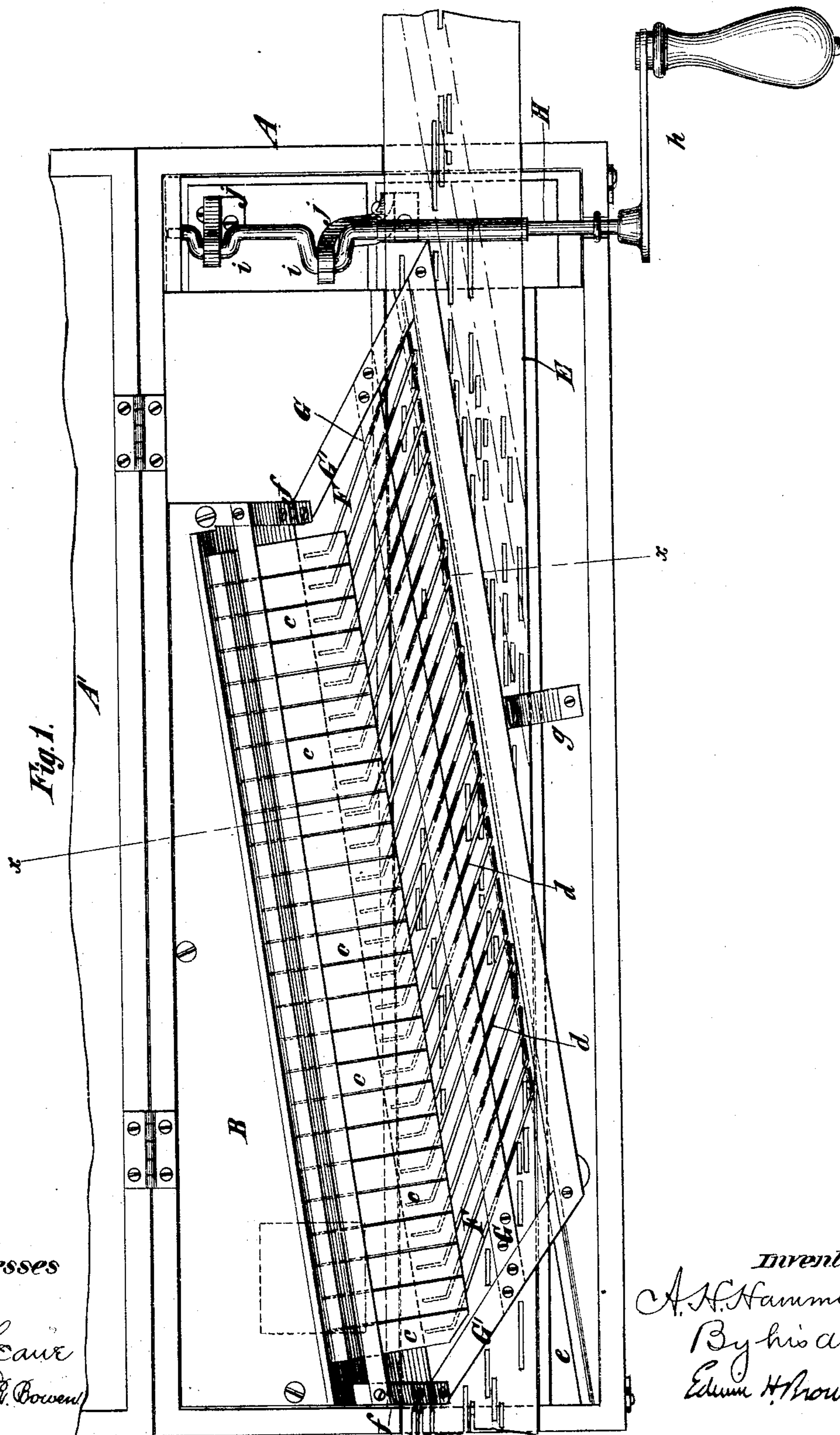
2 Sheets—Sheet 1.

A. H. HAMMOND.

MECHANICAL MUSICAL INSTRUMENT.

No. 277,129.

Patented May 8, 1883.



Witnesses

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James R. Bowen

Inventor

A. H. Hammond
By his atty
Edmund H. Brown.

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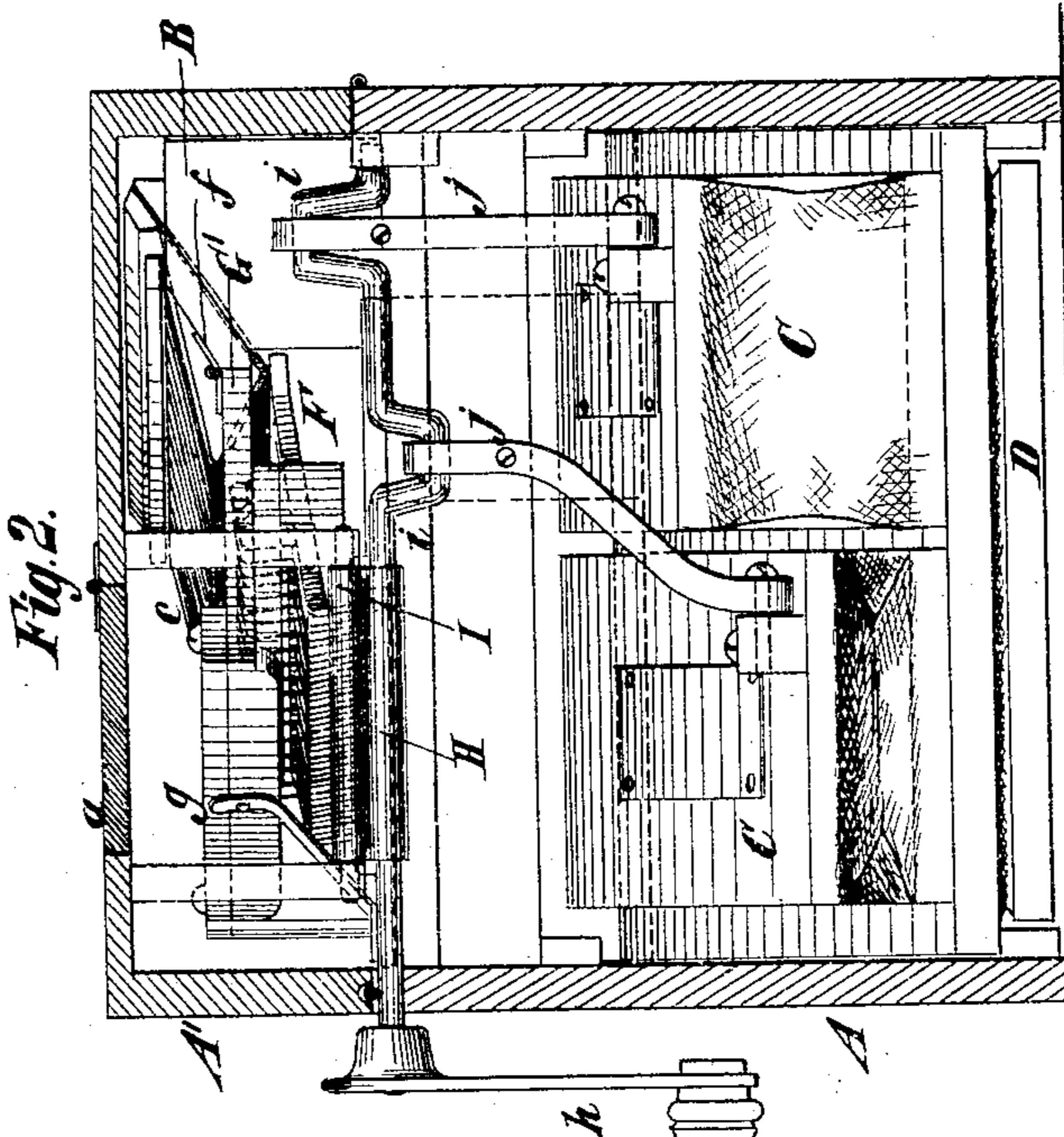
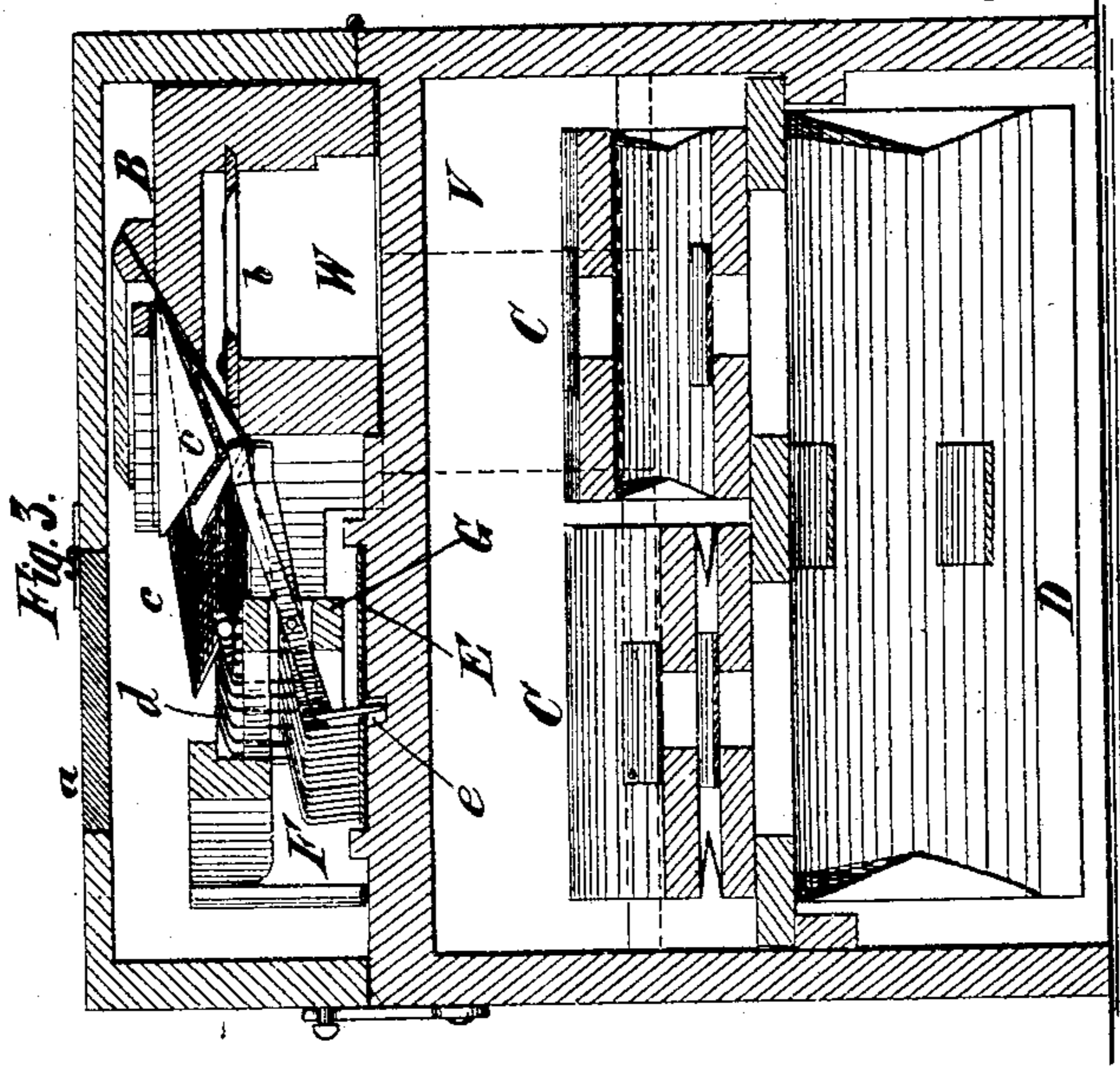
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UNITED STATES PATENT OFFICE.

ANDREW H. HAMMOND, OF WORCESTER, MASSACHUSETTS.

MECHANICAL MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 277,129, dated May 8, 1883.

Application filed August 10, 1882. (No model.)

To all whom it may concern:

Be it known that I, ANDREW H. HAMMOND, of Worcester, in the county of Worcester and State of Massachusetts, have invented a certain new and useful Improvement in Mechanical Musical Instruments, of which the following is a specification.

My improvement relates to those mechanical musical instruments wherein the operation of the sound-producing devices is controlled by a traveling music sheet, card, or tablet.

The object of my improvement is to provide for the use in such instruments of narrower music sheets, cards, or tablets than those which have heretofore generally been employed. It is very desirable to accomplish this, for, aside from the saving of material effected, the music sheet, card, or tablet is rendered superior, because it is less liable to contract, expand, or warp, so as to interfere with its properly registering at all times with the devices on which it acts.

The improvement consists in the combination, in a mechanical musical instrument, of sound-producing devices, a rest, seat, or channel for a traveling music sheet, card, or tablet, and a number of jacks, fingers, or levers serving to effect the operation of the sound-producing devices, and arranged obliquely to the direction in which the traveling music sheet, card, or tablet travels over the rest, with their ends on which the music sheet, card, or tablet operates arranged in a row which is also oblique to the referred-to direction, whereby the ends of the jacks, fingers, or levers which extend over the said rest are brought so close together in the direction of the width of the said rest that the music sheet, card, or tablet may be very materially narrowed.

The improvement also consists in the combination, in a mechanical musical instrument, of a rest, seat, or channel for a traveling music sheet, card, or tablet, a number of sound-producing devices arranged obliquely to the direction in which the music sheet, card, or tablet travels over the said rest, seat, or channel, and a number of jacks, fingers, or levers for effecting the operation of the sound-producing devices, also arranged obliquely to the said rest, seat, or channel.

The improvement also consists in the com-

bination, in a mechanical musical instrument, of a rest, seat, or channel for a traveling music sheet, card, or tablet, a number of reeds arranged in reed-cells and at an angle to the direction in which the music sheet, card, or tablet travels over the said rest, seat, or channel, and a number of jacks, fingers, or levers for operating valves governing the passage of air through the reed-cells, and also arranged obliquely to the said rest, seat, or channel.

The improvement also consists in the combination, in a mechanical musical instrument, of a rest, seat, or channel for a traveling music sheet, card, or tablet, and a number of reeds arranged in reed-cells, having the line of their openings oblique to the direction in which the music sheet, card, or tablet travels over the rest, seat, or channel.

The improvement also consists in the combination, in a mechanical musical instrument, of sound-producing devices, a traveling music sheet, card, or tablet having the openings or other devices which are designed to effect the operation of sound-producing devices in any desired chord or combination simultaneously arranged in rows which extend obliquely to its length, a rest, seat, or channel for said music sheet, card, or tablet, and a number of jacks, fingers, or levers serving to effect the operation of sound-producing devices, and arranged obliquely to the direction in which the music sheet, card, or tablet travels over the rest, with their ends on which the music sheet, card, or tablet acts arranged in a row which is also oblique to the referred-to direction.

In the accompanying drawings, Figure 1 is a plan of a mechanical musical instrument embodying my improvement, and having the top removed. Fig. 2 is an end view thereof, a portion of the case being removed to expose the interior; and Fig. 3 is a section of the upper part of the same, taken obliquely to the length and parallel with the reed-cells and the jacks, fingers, or levers, as indicated by the dotted line *xx* in Fig. 1.

Similar letters of reference designate corresponding parts in all the figures.

A designates the case of the instrument. It may be made of wood or any other suitable material, and of any appropriate design. As shown, it comprises a cover, A', which is hinged

to one side and fastened by a catch at the other side. The cover will preferably have a shutter, *a*, which may be opened more or less for producing a swell, or to afford a view of the interior of the instrument without opening the cover.

B designates a reed-board, made of a taper form, and arranged lengthwise of the instrument. It is mounted on a wind-chest, W. Reeds *b* are arranged in cells in this reed-board in the usual manner. These reed-cells communicate with the wind-chest W, and at the outer end they are furnished with valves *c*, whereby the passage of the air through them is governed. In this instance suction-bellows C are employed to induce air through the reed-cells, and the valves *c* govern the ingress of air to the cells. Preferably an equalizer or receiver, D, will be employed, in conjunction with the bellows C, to maintain as uniform a pressure as is possible. A port in the block V establishes communication between the wind-chest and the equalizer. The larger or bass reeds are arranged in cells located at the wider end of the reed-board, and the others, in accordance with their sizes, are successively arranged in cells nearer to the narrow end.

E designates a rest, seat, or channel for a traveling music sheet, card, or tablet, extending lengthwise of the instrument.

F designates a number of jacks, fingers, or levers which are preferably made of brass or other metal, so that they can be as narrow as possible, and yet sufficiently strong. They are pivoted between their ends to a bar, G. At the inner end they extend under the valves *c* of the reed-cells and at the outer end they extend over the rest E. Springs *d* act upon them so as to impel their outer ends down into a groove, *e*, extending obliquely to the length of the rest, and cause their inner ends to open the valves *c*. The bar G has affixed to its ends arms G', which are connected by hinges *f* to fixed supports; hence the said bar and the jacks, fingers, or levers F may be raised and swung up away from the rest when desirable for introducing the music card or tablet, or otherwise. A spring-catch, *g*, serves to secure the bar down in its normal position.

It will be observed that the reed-cells, as also the jacks, fingers, or levers F, are arranged obliquely to the length of the rest, seat, or channel E. Owing to this arrangement, the jacks, fingers, or levers may be located at sufficient distances apart to correspond with the reed-cells, and yet their outer ends, which extend over the rest, seat, or channel, will be so close together in the direction of the width of the rest that a very narrow music sheet, card, or tablet may be used to control their action. The levers, fingers, or jacks are arranged with their ends on which the music sheet, card, or tablet acts in a row which is oblique to the length of the rest, seat, or channel. The music-sheet which I preferably employ is made of paper, and perforated, as shown. Whenever

its perforations arrive opposite the outer ends of the jacks, fingers, or levers the latter pass downward through the same into the groove *e* of the rest, seat, or channel, and the inner ends open the valves *c*. Although the outer ends of the jacks, fingers, or levers are so close together in the direction of the width of the rest, seat, or channel, they are not arranged side by side, but in a line or row extending obliquely to the length of the rest, seat, or channel. The perforations of the music-sheet are of course arranged in rows extending at corresponding angles to the rest, seat, or channel, in order that the proper operation of the reeds shall be secured.

The music-sheet is fed along by a shaft or roller, H, extending across the rest, seat, or channel E, and a roller, I, mounted in bearings attached to the cover A' and serving to hold the music-sheet against the shaft with a yielding pressure. The shaft may be covered with india-rubber in order to prevent it from slipping on the music-sheet, and it is provided with a hand-crank, *h*, whereby it may be driven. As shown, two bellows, C, are employed, one being arranged immediately below the rest, seat, or channel, and the other at the side of the former. The movable boards of these bellows are operated alternately by means of cranks *i* on the shaft H, and links or rods *j*, extending between them and the cranks. The crank *i*, which operates the bellows which are located under the rest, is arranged off at one side of the rest, and the link or rod *j*, which connects these bellows to said crank, is offset, bent, or made to extend laterally from these bellows to the crank. Owing to this arrangement, the crank and pitman are prevented from obtruding themselves in the line of feed of the music-sheet.

If preferable, I may weight or make the jacks, levers, or fingers heavier at the outer ends, in lieu of using springs for impelling them downward. In lieu of a perforated music-sheet, I may employ a music card or tablet having projections for actuating the jacks, fingers, or levers; but in such case the valves *c* will either have to be adapted to operate in the reverse direction or the jacks, fingers, or levers will need to be made to operate on them differently, so that they will then be opened when the outer ends of the levers are raised instead of when said ends are depressed. I may provide the outer ends of the jacks, fingers, or levers with pins or nose-pieces made separate from them, and secured to them for impinging on the music sheet, card, or tablet.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a mechanical musical instrument, the combination of sound-producing devices, a rest, seat, or channel for a traveling music sheet, card, or tablet, and a number of jacks, fingers, or levers serving to effect the operation of the sound-producing devices, arranged obliquely to the direction in which the music sheet, card, or

tablet travels over the rest, with their ends on which the music sheet, card, or tablet operates arranged in a row which is also oblique to the referred-to direction, substantially as specified.

5 2. In a mechanical musical instrument, the combination of a rest, seat, or channel for a traveling music sheet, card, or tablet, a number of sound-producing devices arranged obliquely to the direction in which the music
10 sheet, card, or tablet travels over the said rest, seat, or channel, and a number of jacks, fingers, or levers for effecting the operation of the sound-producing devices, also arranged obliquely to the said rest, seat, or channel, substantially as specified.

15 3. In a mechanical musical instrument, the combination of a rest, seat, or channel for a traveling music sheet, card, or tablet, a number of reeds arranged in reed-cells at an angle to
20 the direction in which the music sheet, card, or tablet travels over the said rest, seat, or channel, and a number of jacks, fingers, or levers for operating valves governing the passage of air through the reed-cells, and arranged
25 obliquely to the said rest, seat, or channel, substantially as specified.

4. In a mechanical musical instrument, the combination of a rest, seat, or channel for a trav-

eling music sheet, card, or tablet, and a number of reeds arranged in reed-cells having the
30 line of their openings oblique to the direction in which the music sheet, card, or tablet travels over the rest, seat, or channel, substantially as specified.

5. In a mechanical musical instrument, the
35 combination of sound-producing devices, a traveling music sheet, card, or tablet having the openings or other devices which are designed to effect the operation of sound-producing devices in any desired chords or combinations
40 simultaneously arranged in rows which extend obliquely to its length, a rest, seat, or channel for the said music sheet, card, or tablet, and a number of jacks, fingers, or levers serving to effect
45 the operation of said sound-producing devices, and arranged obliquely to the direction in which the music sheet, card, or tablet travels over the rest, with their ends on which the music sheet, card, or tablet operates arranged in a
50 row which is also oblique to the referred-to direction, substantially as specified.

A. H. HAMMOND.

Witnesses:

ISAAC D. GOUDLING,
LEWIS C. CLARK.