(No Model.) M. J. MATTHEWS, dec'd., 2 Sheets—Sheet 1.

J. MATTHEWS & J. MORGAN, Executors.

Mechanical Musical Instrument.

No. 238,413. Patented March 1, 1881.

Fig. 1.

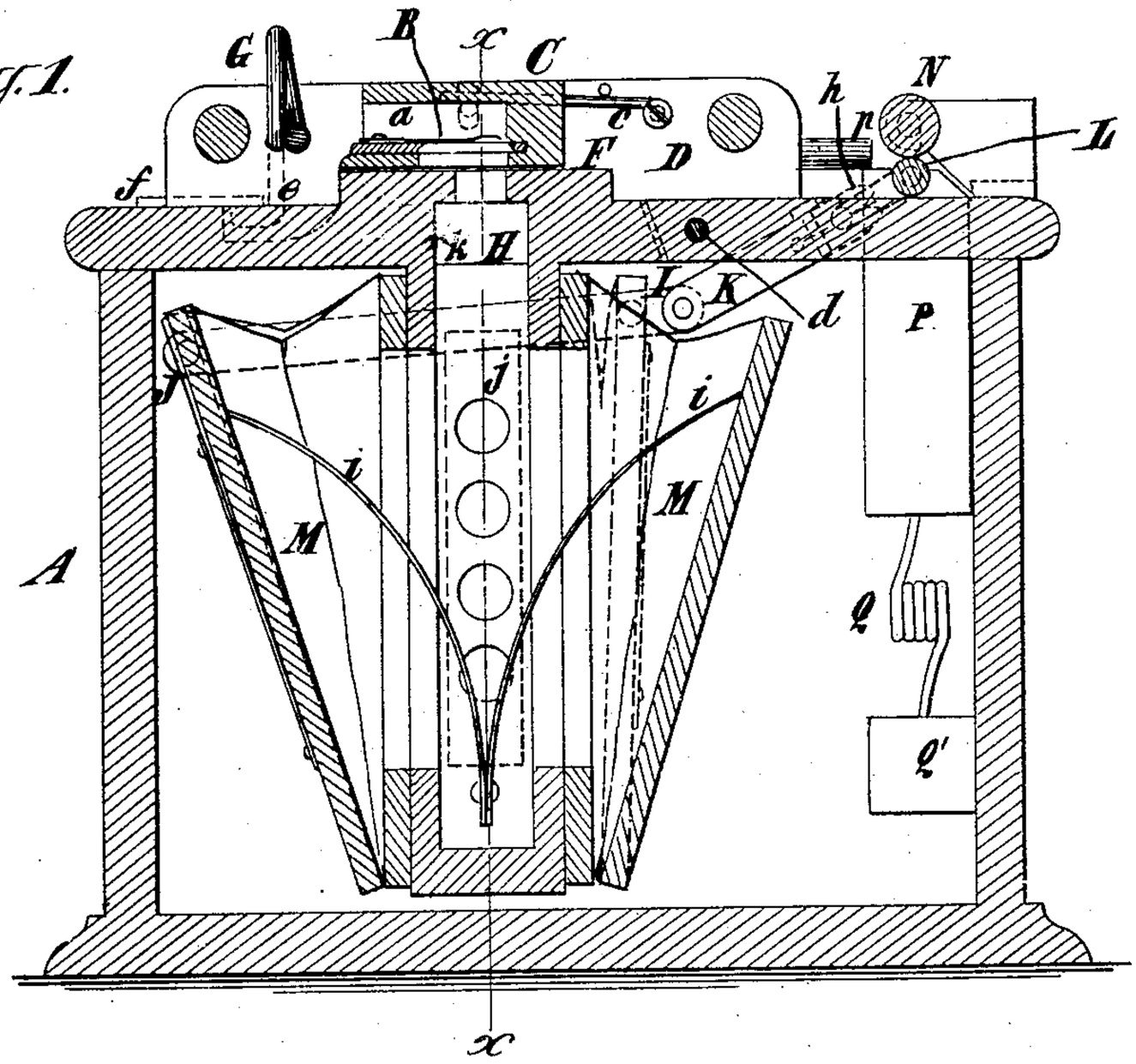
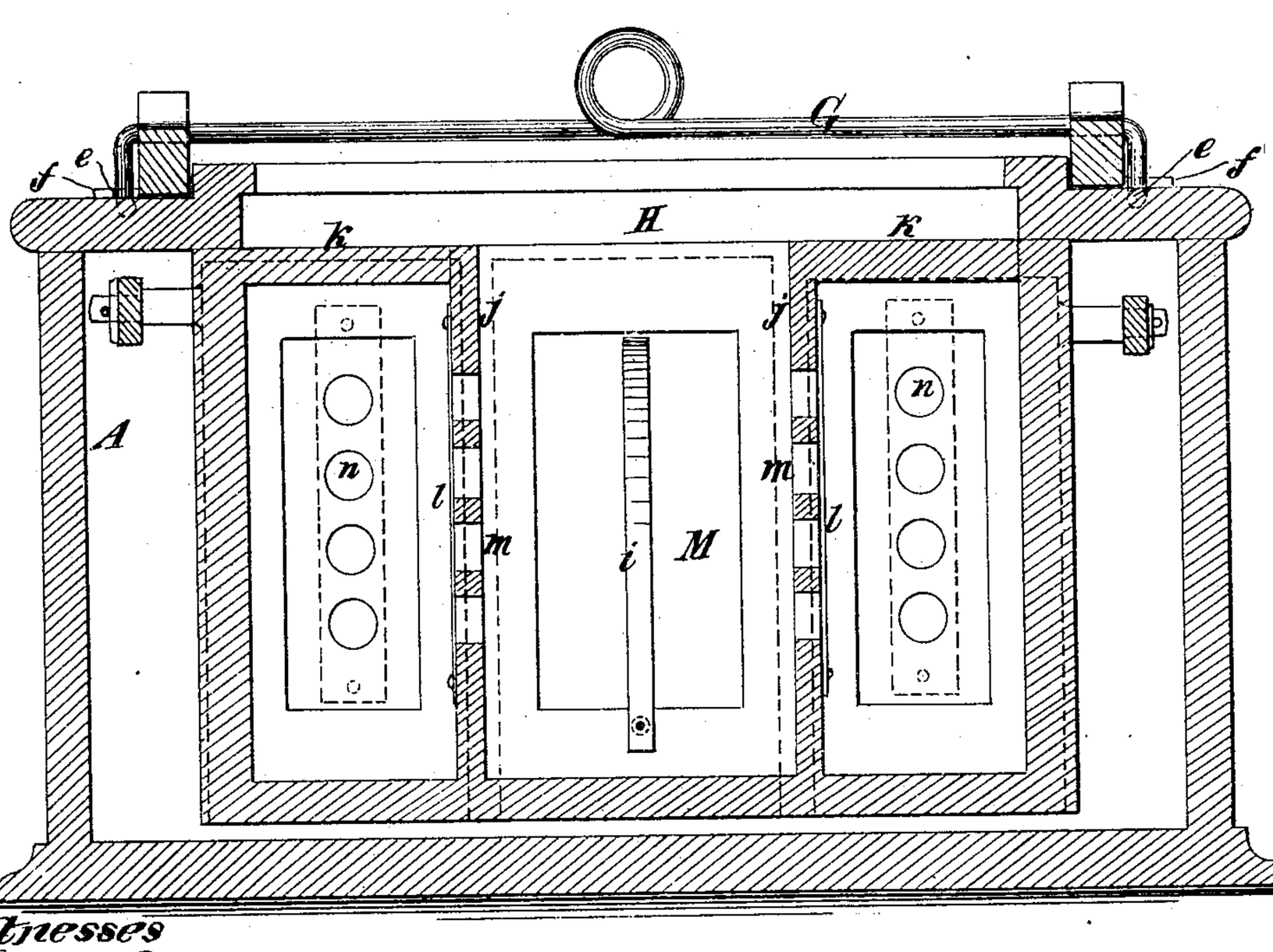


Fig. 2.



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Fred't Haynes

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by his Attorneys
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(No Model.) 2 Sheets—Sheet 2.

M. J. MATTHEWS, dec'd.,

J. MATTHEWS & J. MORGAN, Executors.

Mechanical Musical Instrument.

No. 238,413. **Patented March 1, 1881.**

Fig. 3.

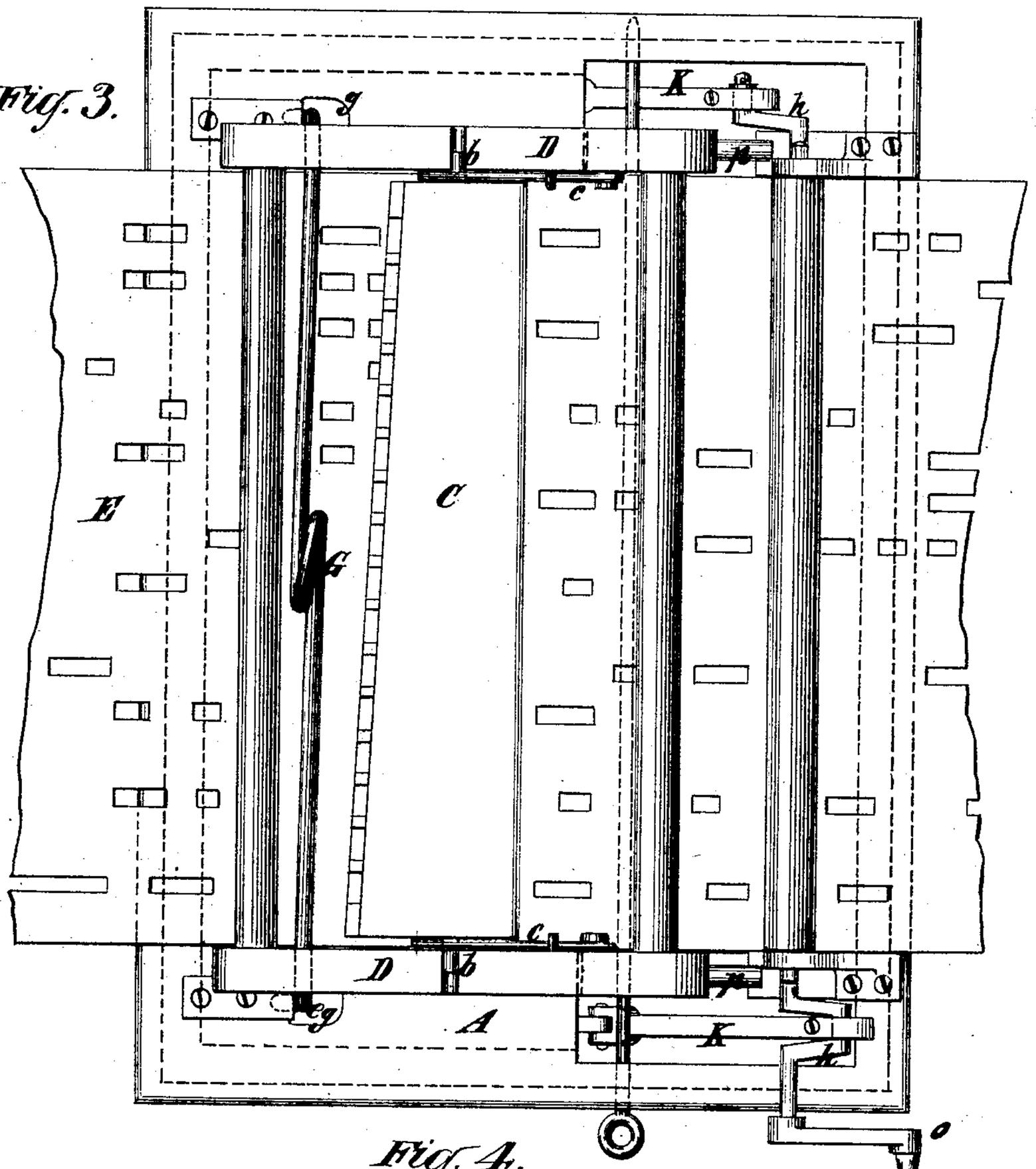
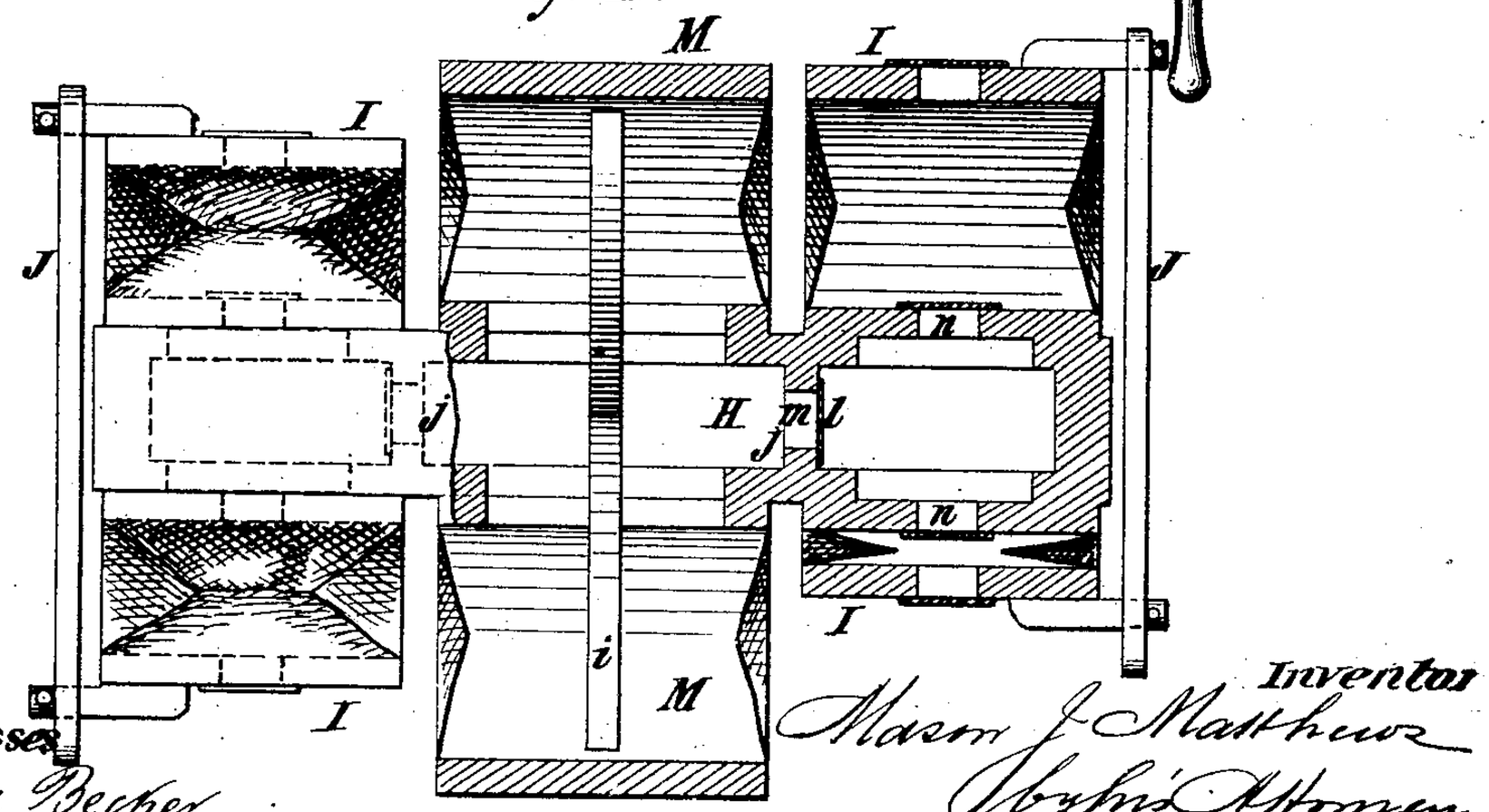


Fig. 4.



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UNITED STATES PATENT OFFICE.

JANE MATTHEWS AND JAMES MORGAN, EXECUTORS OF MASON J. MATTHEWS, DECEASED, OF NEW YORK, ASSIGNOR OF TWO-THIRDS TO JOHN NICHOL, OF SAME PLACE, AND JAMES MORGAN, OF BROOKLYN, N. Y., ONE-THIRD TO EACH.

MECHANICAL MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 238,413, dated March 1, 1881.

Application filed August 4, 1880. (No model.)

To all whom it may concern:

Be it known that I, MASON J. MATTHEWS, of the city, county, and State of New York, have invented certain new and useful Improvements in Mechanical Musical Instruments, of which the following is a specification.

My invention consists in the combination, in a mechanical musical instrument, of a wind-chest divided by vertical partitions into three portions, receivers upon opposite sides of the middle portion of the wind-chest, pairs of bellows upon opposite sides of the two side or outer portions of said wind-chest, valves through which air is exhausted from the middle portion into the side or outer portions of said wind-chest, and valves through which said side or outer portions of said wind-chest are exhausted of air by said bellows.

It also consists in the combination, in a mechanical musical instrument, of a feed-roller for imparting motion to a traveling music-sheet supported in bearings impelled upward, and a hinged top frame provided with means for depressing said roller to remove it from contact with the music-sheet when said frame is opened or swung upward.

In the accompanying drawings, Figure 1 is a central longitudinal section of a mechanical musical instrument embodying my invention. Fig. 2 is a transverse section thereof. Fig. 3 is a plan or top view of the same; and Fig. 4 is a longitudinal section of a portion of the same.

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

A designates the case of the instrument, which may be of rectangular or other suitable form. B designates the sound-producing devices, here shown as consisting of reeds arranged in cells or chambers *a* in a chest, C. This reed-chest is arranged in a top frame, D, consisting preferably of guide-rails for a traveling music-sheet, E, and stretchers connecting said guide-rails. The reed-chest has on its ends pins *b*, which fit in recesses in the guide-rails of the top frame, and is pressed downwardly on a rest, F, by means of a spring or springs, *c*. The traveling music-sheet E passes between the reed-chest C and the rest F, and controls the passage of air from between the reed cells and ducts or passages in the rest. The top frame, D, is pivoted to the case A, near one end, by a pin or pins, *d*, so that it may be swung up off the top of the case when desirable. It is secured in position by means of hooks *e*, on an oscillating bar, G, supported in the top frame, D, engaging with catches or plates *f*, projecting over recesses *g* in the case A, capable of receiving the said hooks.

H is a wind-chest, (shown as arranged in an upright position in the case A,) below and in communication with the air ducts or passages to the rest F. Upon the sides of this wind-chest are mounted pairs of bellows I, (shown as suction-bellows,) one bellows of each pair being on one side, and the other bellows of the pair being on the opposite side, of the wind-chest. The movable boards or sections of the bellows are connected by a link or rod, J, extending across the ends of the wind-chest, so that they will be caused to work in unison; one making its return-stroke while the other makes its active stroke, and vice versa, the two producing a continuous action on the wind-chest.

A link, K, connecting the movable board of one of the bellows with a crank, *h*, on a shaft, L, serves to effect the operation of the bellows. I have shown two pairs of these connected bellows I, and preferably arrange the cranks *h* of the shaft or roller L in such relation to each other as to always cause one bellows of a pair to be in full operation while the bellows of the other pair are respectively terminating and beginning their operations. Between the pairs of bellows I are receivers M, mounted on opposite sides of the wind-chest, and held open, when not otherwise actuated, by an intermediate grasshopper-spring, *i*. The wind-chest has vertical positions *j*, separating it transversely (see particularly Fig. 4) into three parts, one of the outer or side portions being opposite and between each pair of bellows I, and the third or middle portion being opposite and between the receivers M.

Horizontal partitions *k* extend from the partitions *j* lengthwise of the wind-chest, and close to the top thereof, leaving a space along the top of the same in communication with the air-ducts in the rest F and with the central part of the wind-chest. Valves *l*, arranged on the sides of the partitions *j* nearest to the bellows I, and opening into the part of the wind-chest which is between the bellows, control the passage of air through openings *m* in the partitions *j*, and valves arranged on the sides of the wind-chest adjacent to and opposite the bellows control the passage of air through openings *n* in the wind-chest.

N designates a feed-roller, arranged over the shaft or roller L, and serving with it to impart motion to the traveling music-sheet. The two are preferably so arranged that their meeting-edges are approximately on a level with the top of the rest F. The upper roller, N, is preferably supported in stationary bearings; but the lower roller, L, is supported in adjustable bearings in a block, P, which is free to slide up and down, and is impelled upward, when not otherwise actuated, by a spring or springs, Q, having a fixed support, Q′. The lower roller, L, is thus impelled toward the upper with sufficient force to cause the traveling music-sheet to be griped firmly between them.

On the top frame, D, is a pin or toe, *p*, which, when the top frame is swung upward, impinges on the block P and depresses it, thus lowering the feed-roller L so as to cause it to release the traveling music-sheet and permit the insertion of another.

A hand-crank, O, applied to the shaft or feed-roller L, serves to impart motion to it, and thus the said shaft or roller constitutes the driving-shaft of the instrument.

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

1. The combination, in a mechanical musical instrument, of a wind-chest divided by vertical partitions into three portions, receivers upon opposite sides of the middle portion of the wind-chest, pairs of bellows upon opposite sides of the two side or outer portions of the wind-chest, valves through which air is exhausted from the middle portion into the side or outer portions of the wind-chest, and valves through which said side or outer portions of the wind-chest are exhausted of air by the bellows, substantially as specified.

2. The combination, in a mechanical musical instrument, of the wind-chest H, with its partitions *j k* and valves, the bellows I, and the receivers M, and the rest F.

3. The combination, in a mechanical musical instrument, of a feed-roller for imparting motion to a traveling music-sheet, supported in bearings impelled upward, a hinged top frame, and a toe or toes on the frame arranged to act, when the frame is swung upward, to depress the said bearings to remove the roller from the music-sheet.

MASON J. MATTHEWS.

Witnesses:
CHARLES H. HALDEN,
M. A. MADDOX.