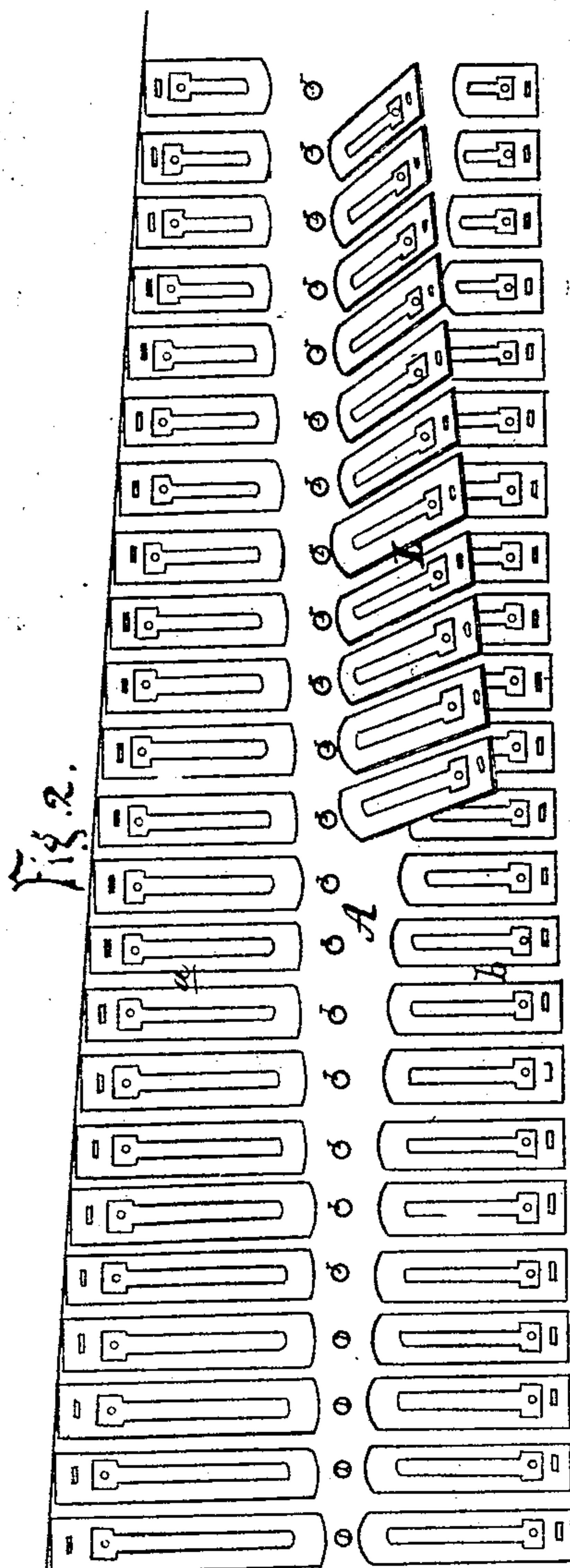


Riley Burdett. Reed Organ.

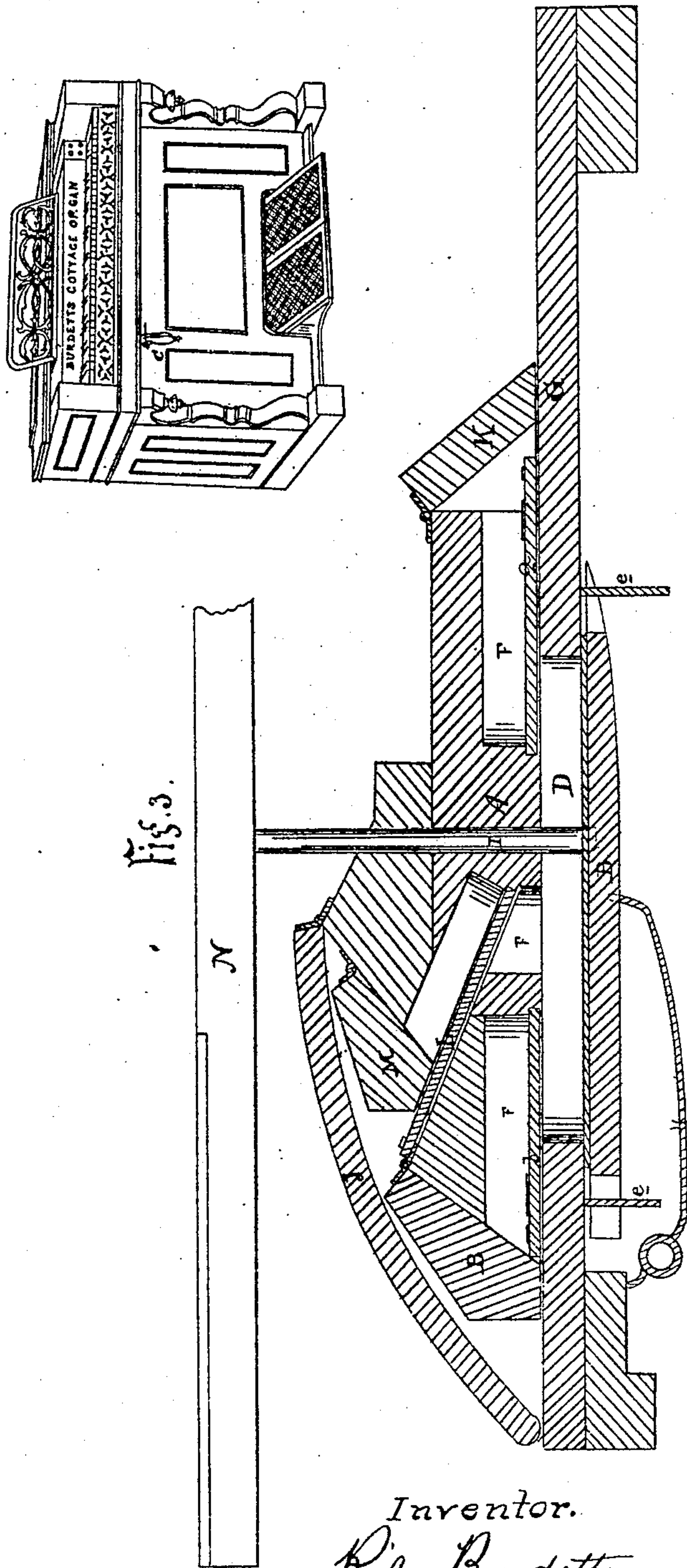
No 87241.

Patented Feb 23 1869.



Witnesses.

Chas. H. Coole
Jas. T. Parker.



Inventor.

Riley Burdett
by his atty R. D. Smith

UNITED STATES PATENT OFFICE.

RILEY BURDETT, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN REED-ORGANS.

Specification forming part of Letters Patent No. 87,241, dated February 23, 1869; antedated August 24, 1868.

To all whom it may concern:

Be it known that I, RILEY BURDETT, of Chicago, in the county of Cook, and State of Illinois, have invented a new and useful Improvement in Reed-Organs; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of one of my reed celeste-organs. Fig. 2 is a diagram-plan, showing the relative arrangement of the reeds. Fig. 3 is a vertical transverse section of my reed-board, &c.

This invention consists, first, in the arrangement of the reed-board; second, in the method of tuning, by which a peculiar quality of tone is produced, and by which the power of the instrument is greatly increased without an increased resistance in the action, and without an increase of power being necessary to operate the bellows.

The advantages gained by my peculiar arrangement are a greatly-increased power and variety of tone. This is effected by the use of an additional set of reeds, commencing at tenor F, or thereabout, and running upward through the scale of the instrument, and tuning the same in the peculiar manner herein-after described. No other reed musical instrument containing the same number of reeds, so far as I know, has ever possessed so great a variety, or pleasing quality, of tone; while simplicity of construction, compactness of form, and ease of operation, are other excellences of this arrangement not found in others.

I will now describe particularly the construction of that part of my instrument which forms the subject of this patent.

The case, bellows, pedals, &c., may be, in general construction and arrangement, like those in common use, and therefore no special description is required. The foundation of the reed-board is also constructed in the usual manner, but the reed-board proper, in itself, differs from the ordinary reed-board in the following particulars, viz: The main board, A, contains two sets of reeds, running through the entire scale, the back set of which is marked *a*, and is tuned as a unison or diapason, while the front or octave set, marked *b*, is tuned an octave above the diapason. In the arrangement of these reeds, it will be seen

that the lowest and longest reeds in the diapason and the octave set are placed with their vibrating ends as near together as they can be, with room only for the tracker-pin, which communicates the motion of the key to the valve beneath the reeds. But as the reeds continually shorten as they advance upward in the scale, there is necessarily a vacant space left between the diapason set *a* and the octave set *b*, which constantly enlarges itself, and has heretofore been regarded as useless. Within this space, commencing on tenor F, and running upward through the scale, I have introduced a third set of reeds, L, which forms the distinguishing feature of this instrument. These are placed in the reed-board, over the octave set *b*, and run obliquely to the foundation-board G, as shown in Fig. 3, the vibrating ends resting on the same base as the other sets of reeds *a* and *b*. These reeds are of the same size as the corresponding ones in the diapason *a*, and are tuned either a trifle above or below the diapason, but only sufficiently so to produce a slightly waving and undulating quality or effect without producing any discord. A few trials will enable any tuner of reed-instruments to tune these reeds so as to realize the best effect. This method of tuning will, when this set of reeds, which I have named the "harmonic celeste," is drawn, and used in connection with the diapason, produce a most wonderfully pleasing and captivating effect, while the power and beauty of both sets of reeds are greatly augmented and enriched, in a manner which cannot be realized without being heard. Fig. 2 shows a top view of the reed-board proper, wherein the location of the reeds is shown with reference to the divergence of the reeds, or the diapason set *a* and the octave set *b*, and also the space afforded for the introduction of the third set, L. Fig. 3 exhibits a transverse section of my reed and foundation board, showing the arrangement of my reeds and the valve-connection. In this figure, A is the reed-board, G is the foundation-board, D is the valve-opening, E is the valve, and F F are the throats, over which the reeds are located and placed. The valve E is retained in its proper place by the pins *e e* and spring H, and is operated by the tracker-pin I, which rests upon its upper surface, and passes upward, through the reed-

board, to the under surface of the key N. The swell-boards J and K, and stop-dampers B and M, are raised, whenever desired, by the knee-stop G, Fig. 1, or by a hand draw-stop, or by some other convenient device.

Another important advantage arising from the introduction of the harmonic celeste, is that a greater power and variety are attained than can be by the use of any of the octave coupling-arrangements now in use. These, while they augment the power, by drawing down octaves to the keys actually played, are objectionable, inasmuch as they offer more than double the resistance to the key, and are thus often exceedingly undesirable. In my instrument no such objection can ever arise, as the pressure upon the keys is always the same, whether one or all the sets of reeds are used. This is of prime importance to the performer, as the required exertion becomes involuntary, and not a matter of calculation, and thus the mind is not distracted from the proper feeling and expression of the music performed.

Having described my invention, and its utility, what I claim as new, and desire to se-

cure by Letters Patent of the United States, is—

1. The arrangement, in a reed musical instrument, of the reed-board A, having the diapason set *a*, and its octave set *b*, and the additional set L, extending from about at tenor F upward through the scale, substantially as and to the effect set forth.

2. The reed-board A and foundation-board G, constructed with the contracted valve-openings D F F, and the reeds arranged in relation thereto, all in the manner described.

3. The diapason *a*, and its octave or principal *b*, arranged over the same valve-opening, as described, so that the octave unison may be produced, when desired, without the use of coupler, and without any additional pressure upon the keys.

4. In connection with the reed-board A, having the sets *a*, *b*, and L, as described, the independent dampers B and M, as set forth.

RILEY BURDETT.

Witnesses:

H. C. MOREY,

B. F. DAVENPORT.