

N. R. MARSHMAN & M. J. MATTHEWS.  
 Mechanical Musical Instrument.

No. 209,492.

Patented Oct. 29, 1878.

Fig. 1.

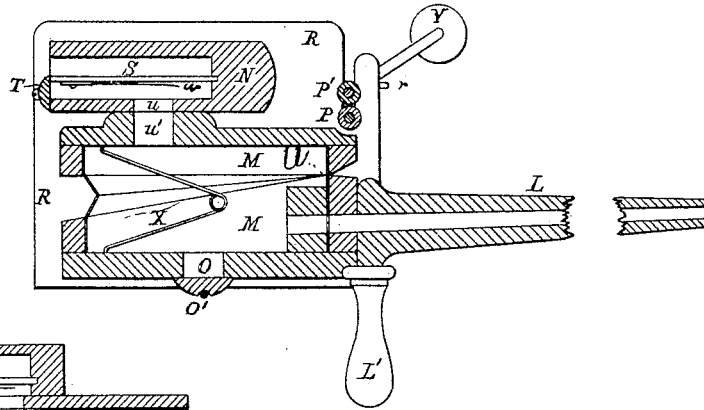


Fig. 3.

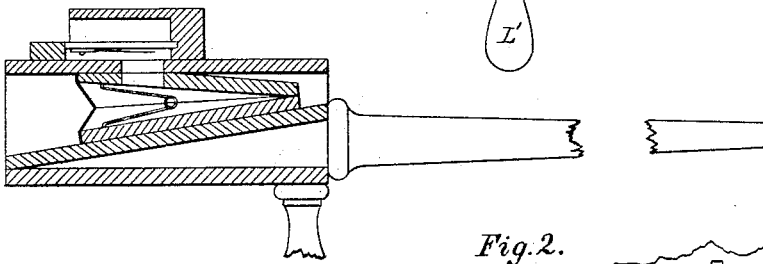
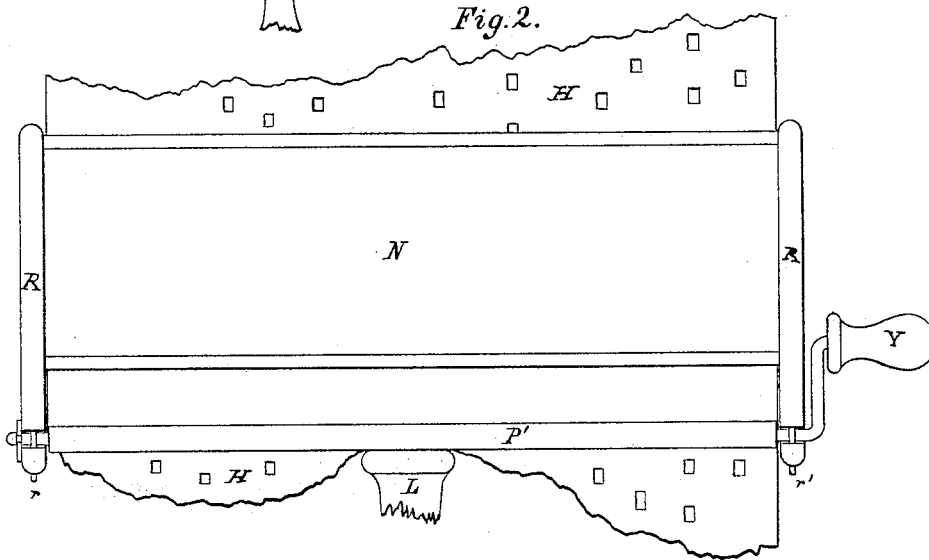


Fig. 2.



WITNESSES:

*Maria Harris  
 Josie Harris.*

INVENTORS:

*Newman R. Marshman  
 Mason Matthews*

# UNITED STATES PATENT OFFICE.

NEWMAN R. MARSHMAN, OF NEW YORK, N. Y., AND MASON J. MATTHEWS,  
OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN MECHANICAL MUSICAL INSTRUMENTS.

Specification forming part of Letters Patent No. **209,492**, dated October 29, 1878; application filed  
May 22, 1878.

*To all whom it may concern:*

Be it known that we, NEWMAN R. MARSHMAN, of New York city, State of New York, and MASON J. MATTHEWS, of Boston, Massachusetts, have invented a new and useful Improvement in Mechanical Musical Instruments, which invention is fully set forth in the following specification.

Our invention relates to a mechanical musical instrument or toy in which is employed a perforated sheet of paper as a slide-valve to control the admission of air to the reeds.

It consists in the combination of a sheet of paper or other flexible material, perforated at suitable intervals to produce a tune or chord, with a series of reeds or other sound-generators and an air-chamber or wind-chest, provided with a mouth-piece adapted to be blown into by the mouth and from the lungs of the performer.

It further consists in a flexible wind-chest, constructed, arranged, and adapted to be held against the perforated valve-sheet by spring-power and by the force of wind blown into it.

The object of this feature of our invention is to secure the necessary conditions consistent with a satisfactorily-working instrument.

The following specification, of which the accompanying drawings form a part, clearly sets forth the nature and manner of construction of our invention.

Figure 1 represents a section as across or through the center of the instrument. Fig. 2 is a plan view, showing our instrument with the music-sheet mounted thereon. Fig. 3 represents in section a modification of Figs. 1 and 2.

As some of the parts to be described are duplicates of each other, we use the singular and plural number interchangeably.

L is the blow-pipe. M is the wind-chest. N is the tube-board containing the reeds. H is the valve music-paper. A series of reed-holes or tubes, S, are bored into one of the sides of the tube-board N. The reed *w*, represented as having the vibrator or tongue on its lower side, is inserted in grooves made in or about the middle of the tube S. The tube S is thus divided into two compartments. The lower compartment is closed at the mouth by

the strip T. An air-passage, *u*, is made through the floor of each tube S.

The wind-chest M is constructed in two parts. A strip of rubber cloth is glued and tacked all around the inside of these parts, and thus the equivalent of a puppet-bellows is formed, having a hinge at U. A series of holes, *w'*, corresponding to the series of holes *u*, are made through the top board of the wind-chest M. The lower portion of the wind-chest M is fastened between the cheek-pieces R. The upper portion of the wind-chest M is left free to move between the cheek-pieces R. The tube-board N is mounted in such a manner as to admit of easy removal, so that another of different quality of tone and pitch may be put in its place. The valve music-paper H is mounted under the tube-board N and reeds *w*, and over and upon the upper surface of the wind-chest M. The rubber-covered rollers P P' work in slots made in the cheek-pieces R. The roller P' is held down by the pins *r r'*. The music-paper H is inserted between the tube-board N and the upper board of the wind-chest M and between the feed-rollers P P'. The upper or free portion of the wind-chest M is pressed against the valve music-paper H by the spring X, and also by the pressure of air blown into it to operate the reeds, and thus the necessary air-tight conditions are secured. The inside of the wind-chest M and holes *u w'* and tubes S are lined with a thick coating of shellac, to prevent the moisture penetrating the wood. Any water that may collect in the wind-chest may be poured out through the hole O, covered by the slide-valve O'. The mouth-piece L is inserted in the lower portion of the wind-chest M. The handle L' is for convenience of holding by the performer.

When the handle Y is turned the valve music-paper H is drawn along and under the tube-board or reed-chest N and between the holes *u w'*, and closes and opens them according to the music to be produced. The air blown into the wind-chest passes through the perforations in the valve music-paper H, through the reeds *w*, and over the strip T to the outside air.

In all cases hitherto where a paper valve has been employed the perforations have been

of varying lengths, corresponding to the lengths of the notes of the music to be produced. In our invention, for the purpose of performing slow airs, we make the perforations all of or about one uniform length. By this means we save length of paper and afford the performer facility for prolonging the notes and producing expression at will.

We do not confine ourselves to the precise details hereinbefore described. The instrument might be constructed on the plan represented in Fig. 3. The parts made of wood might be made of metal, vulcanized rubber, or other material. A pressure-bellows might be employed, and the mouth-piece L be dispensed with. We purpose making instruments on this plan. The mechanism suggested in the modifications named is simple and well known, and without any further description could be easily constructed by any skilled mechanic.

We claim as our invention and desire to secure by Letters Patent—

1. In a musical instrument provided with a mouth-piece adapted to be blown into by the mouth and from the lungs of the performer, a

sheet of paper or other flexible material, perforated at suitable intervals to produce a tune, substantially as herein described.

2. A musical instrument in which is employed a perforated valve-sheet, a flexible wind-chest constructed and arranged and otherwise adapted to be elastically held against the said valve-sheet by tension-spring and by the force of air blown into it.

3. In a reed musical instrument provided with a mouth-piece adapted to be blown into by the mouth and from the lungs of the performer, the flexible music-sheet H, provided with perforations, all of or about one uniform length, substantially as and for the purpose set forth.

4. The tube-board N, wind-chest M, mouth-piece L, and feed-rollers P P', in combination with the valve music-paper H, substantially as set forth.

NEWMAN R. MARSHMAN.  
MASON J. MATTHEWS.

Witnesses:

R. P. MARSHMAN,  
MOSES HARRIS.