

J. M. THOMSON & J. CORDLEY.  
Musical Blackboards.

No. 138,714.

Patented May 6, 1873.

Fig. 1.

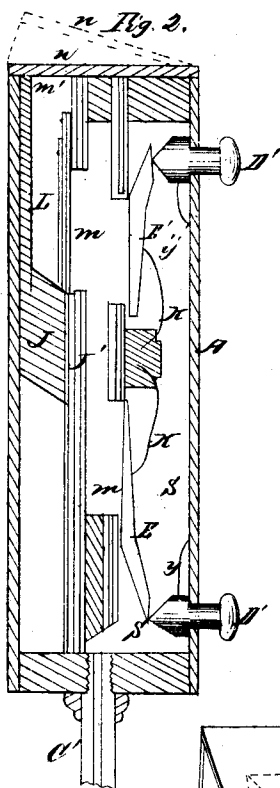
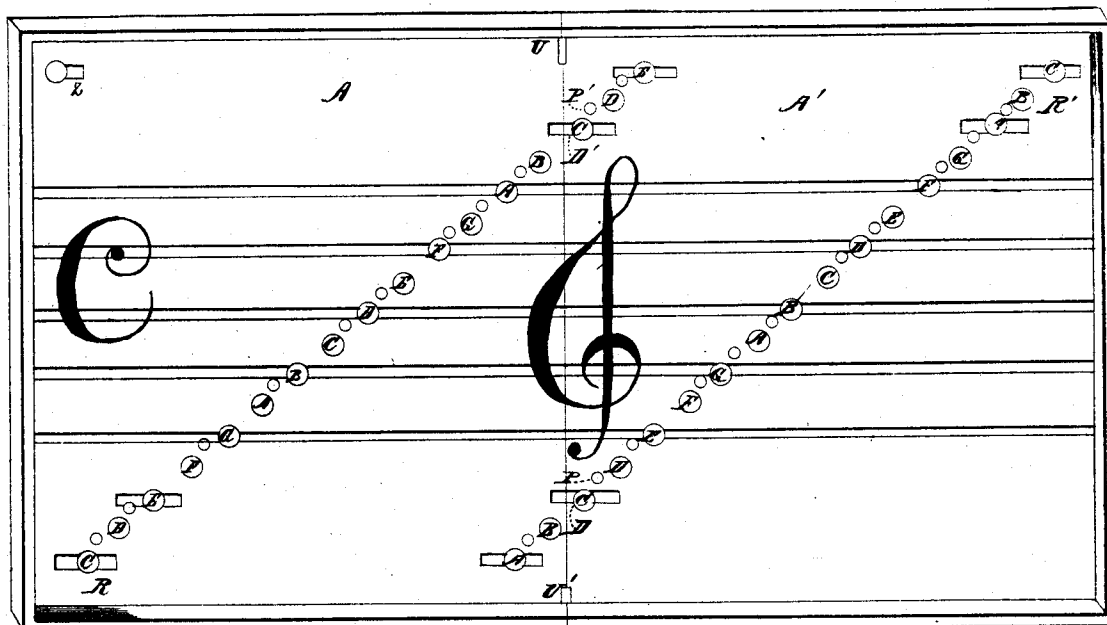


Fig. 5. Fig. 6.

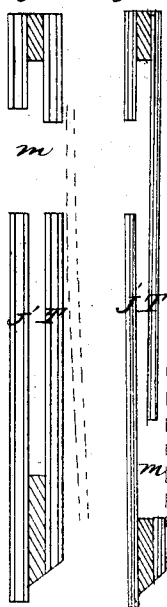


Fig. 4.

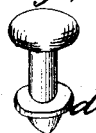
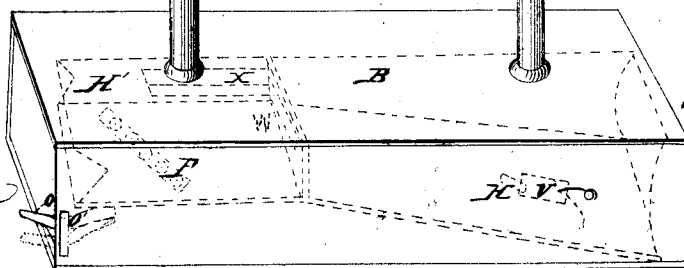
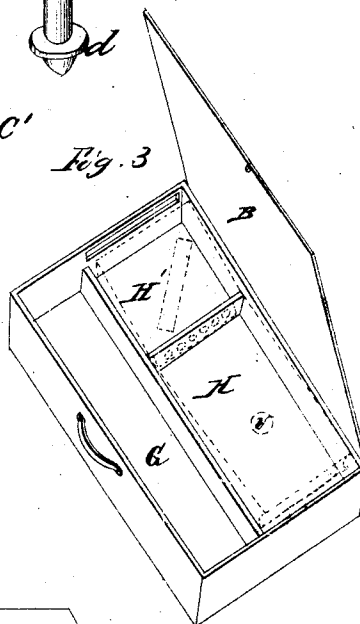


Fig. 3.



*Inventors*  
J. M. Thomson  
J. Cordley

*Inventors*  
J. M. Thomson  
J. Cordley

# UNITED STATES PATENT OFFICE.

JAMES M. THOMSON AND JAMES CORDLEY, OF ADRIAN, MICHIGAN.

## IMPROVEMENT IN MUSICAL BLACKBOARDS.

Specification forming part of Letters Patent No. **138,714**, dated May 6, 1873; application filed November, 25, 1870.

*To all whom it may concern:*

Be it known that we, JAMES M. THOMSON and JAMES CORDLEY, both of the city of Adrian, in the county of Lenawee, in the State of Michigan, have invented a new and useful Improvement in Blackboards, of which the following is a full and exact description, reference being had to the accompanying drawing and to letters of reference marked thereon.

Figure 1 is a perspective view of the modulating blackboard, which forms the subject of this invention. Fig. 2 is a vertical section of the same, cutting the trunks *O'* and keys *D* and *D'*. Fig. 3 is a perspective of the pedestal inverted. Fig. 4 is one of a set of keys, which keys are so constructed and marked as to represent the notes used upon the blackboard. Figs. 5 and 6 are sectional views of the sounding-boards.

The nature of our invention relates to an improvement in blackboards; and it consists chiefly in the novel construction of a reed instrument in combination with the music-teacher's blackboard. Its object is to enlarge the capacity of said blackboards, by combining therewith one or more sets of reeds, of four or more octaves, in connection with an exhaust-bellows, thereby enabling the teacher to produce the sound of any note represented upon the blackboard. Also, by means of a hinged joint in the center of said blackboard, we fold the same, and together with the wind-trunks, pack them into the pedestal, whereby we make the modulating blackboard portable.

The blackboard has upon its front side one staff, which staff is divided into two clefs, the first being the bass or F-clef, the second the treble or G-clef; also, the notes with their relative sharps forming the bass and treble chromatic scales of two and one-third octaves each, which notes are marked with the letters indicated by the two clefs, and also constitute the keys. We also contemplate using the pressure-reeds and pressure-bellows, in place of the suction-reeds and exhaust-bellows, to which this specification relates. We also contemplate making the modulating blackboard without the hinged joint and of various sizes; and we also contemplate making the bellows

with the partition located horizontally between the two bellows using the same valve, for the purposes set forth.

That others may fully understand our invention, we shall now particularly describe the construction and operation of a modulating blackboard, combining the different parts of the same, as above enumerated.

*A* and *A'* represent the two sections of the blackboard, showing the staff, and bass and treble clefs, together with the notes forming the bass and treble chromatic scales. *D* and *D'* represent the two middle *C*'s. *P P'* represent the sharps. *B* represents the pedestal. *O* and *O'* represent the wind-trunks, which trunks form the standard. *O* represents the pedal, which pedal is so constructed as to be operated in two positions, as represented by *O* and *O'*. *H* represents the regulating-bellows. *H'* represents the exhaust or feed bellows. *X* represents a wind-trunk, which trunk leads the wind from trunk *C* to bellows *H*. *Z* represents a thumb-stop, which stop, when pressed to the right, causes the valve *n* to open, allowing the wind to enter the opening *m'*, when, by pressing the pedal *O* downward, the bellows *H'* is expanded, causing the valve *W* to open, when the wind will be exhausted from bellows *H*; and, by means of a spring located in bellows *H'*, which spring is not represented, we raise, at the same time, the pedal and bellows *H'*, causing the valve *W* to close and the valve *F* to open, causing the wind to escape; the wind from bellows *H* now being exhausted, and the bellows being pressed downward by means of a spring located upon the inside of said bellows, (which spring is not represented,) making a pressure downward through the trunks *C* and *O'* from the wind-chest *s*. Pressing the keys *D* or *D'* causes the valve *E* or *E'* to open, and the wind to pass through the reed *L* and throat *M*, causing the reed to sound. *v* is a flat valve located upon the inside of bellows *H*, and is so constructed as to open when the bellows become exhausted, preventing undue pressure upon the reeds.

In Fig. 4 is shown the shoulder *d*, located upon the inside of the board, which shoulder is covered with leather, the key being held in position by means of a spring, whereby we make the board *A* and *A'* air tight.

In Figs. 5 and 6, T represents the additional sounding-board, which forms a part of this invention, showing the different positions of the throat M, whereby we are enabled to locate the valves in convenient positions to be operated by the keys. U and U' represent the hinged joint, whereby we are enabled to fold the blackboard, and, together with the trunks C and C', pack them into the pedestal B, making the modulating blackboard portable. Upon the back-board of this blackboard, which back-board is not represented, we contemplate locating the ordinary blackboard marked with two staves.

Having now described our invention, its principles and application, what we claim as new is—

1. A musical blackboard provided on its face with keys arranged upon a staff or staves, to represent musical notes, and connected with valves to control corresponding musical reeds

or their equivalent, the whole supported by one or more hollow standards constituting wind-trunks, upon a pedestal containing the bellows by which air is supplied or exhausted to sound the reeds, all substantially as described, for the purposes set forth.

2. The additional sounding-board T, throat M, valves E E', and reeds L, all arranged substantially as and for the purposes set forth.

3. The musical blackboard A A' hinged or jointed together, as at U U', in combination with the detachable hollow standards C C, and the pedestal B, adapted to contain the board A A', when folded substantially as described.

JAMES M. THOMSON.

JAMES CORDLEY.

Attest:

W. J. CORDLEY,  
JAMES THOMSON.