E. P. NEEDHAM.

AUTOMATIC WIND INSTRUMENT.

No. 191,460. Patented May 29, 1877.

Fig. 1.

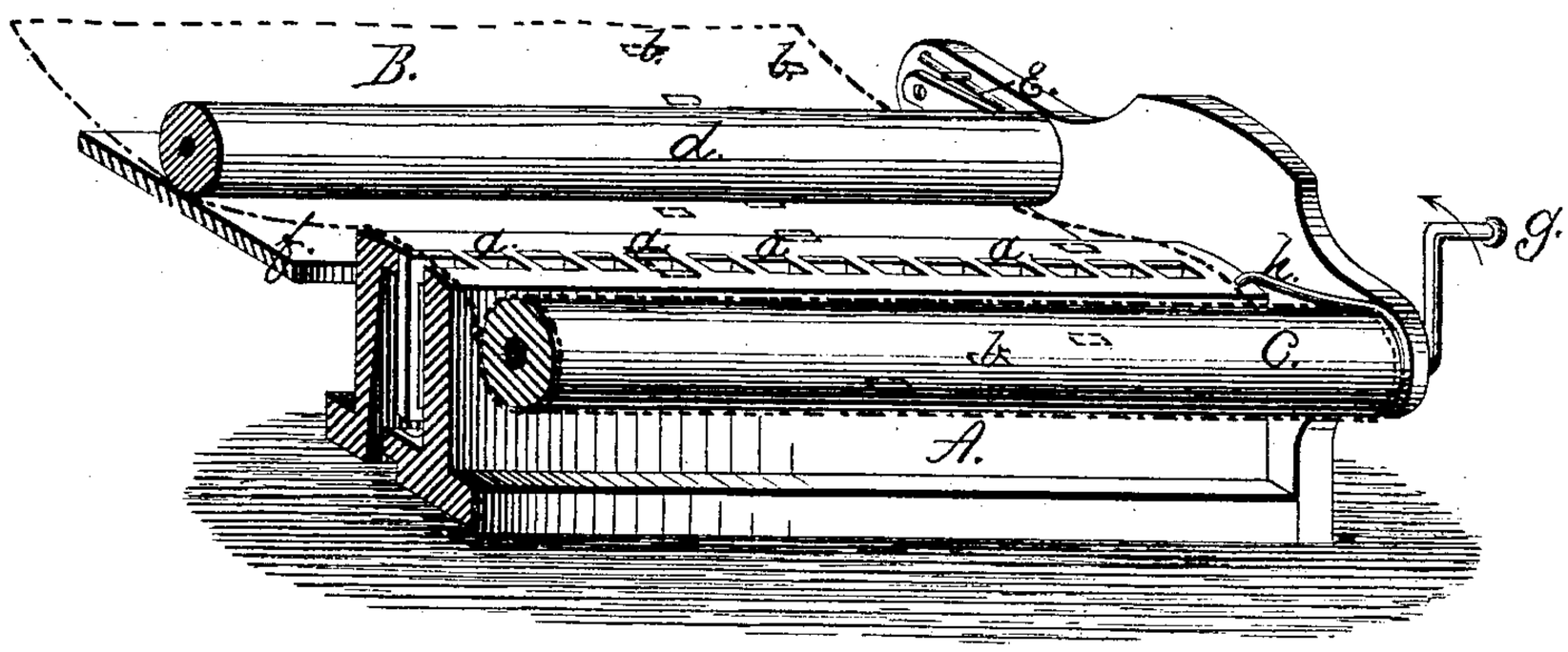
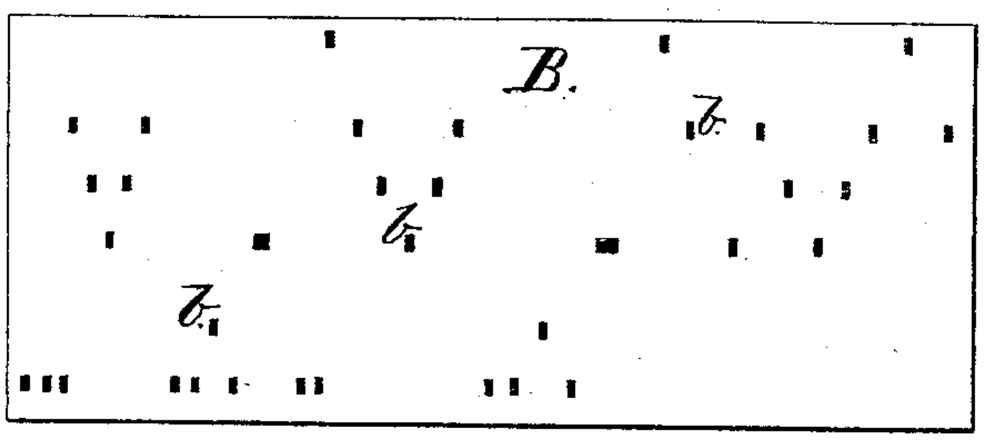


Fig. 2.



WITNESSES.

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IMPROVEMENT IN AUTOMATIC WIND-INSTRUMENTS.

Specification forming part of Letters Patent No. **191,460**, dated May 29, 1877; application filed February 5, 1877.

To all whom it may concern:

Be it known that I, ELIAS P. NEEDHAM, of the city, county, and State of New York, have invented certain new and useful Improvements in Wind-Instruments; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 is a perspective view of my improvement in wind-instruments, a portion being shown as broken off in order to more clearly show the other parts. Fig. 2 represents a piece or sheet of paper or other material, so arranged as to form the valve for any desired number of reeds or other sound-producing instruments, and perforated so as to allow at certain points, and for certain spaces of relative time, the wind to pass through the same and produce the desired pitch and duration of tone.

This invention relates to improvements in reed or other organs operated by wind, and provided with long sheets or rolls of paper or other material, having holes to represent exactly the notes of different pieces of music, (which paper is made to serve as a valve to cover air-passages which lead to or from the reeds or other means of producing the sounds,) and by the movement of the sheet over the surface of the air-ducts the desired sounds are produced; and the invention consists in the construction and arrangement which will be more fully hereinafter described and claimed.

In the drawings, A represents a set of reeds tuned to correspond with a regularly-graduated scale of notes. B represents a sheet of paper or other suitable material, provided with perforations to correspond with the note desired to be sounded, and the duration of the same.

The sheet B forms the valve to all the reeds, and the apertures *b b*, when over the reed-cell, will allow the wind to pass through the reed or vibrating-chamber, and thus sound the note and act as a valve on all the notes of the instrument, except those to be sounded, to produce any desired tune, all as usual and well known.

In the drawings, *c* is a roller on which the prepared sheets may be or are wound. *d* is a hinged roller pressed down on the sheet by the spring E. *f* is a platform or table. G is a crank, by means of which the roller is turned, and which may be so arranged as to work a set of bellows. *a a* represent apertures or wind-passages; *b b*, apertures in the sheet, corresponding to the note to be sounded, the duration of the same, and the location of the notes in the instrument.

Two rollers, *c*, and two rollers, *d*, may be used, and the sheet may be passed between them, and such rollers may be covered with some elastic material, or held together by means of springs or any other method.

h represents a guide by which the sheet is maintained in the proper position, as it is important that the perforations shall be accurately guided to the location of the proper sound-producing instrument.

I am aware that it is not new to use perforated paper sheets or plates to act as valves for musical instruments operated by wind, as such have been heretofore used; but

What I claim is—

The combination, in a reed-organ, of the perforated roll or sheet of paper, acting as a valve to the reeds, with the hinged roller or rollers *d* and springs E, substantially as and for the purpose described.

E. P. NEEDHAM.

Witnesses:

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