(No Model.)

J. L. MAHER.

WIND INSTRUMENT.

No. 504,396. Patented Sept. 5, 1893.

Fig. 1.

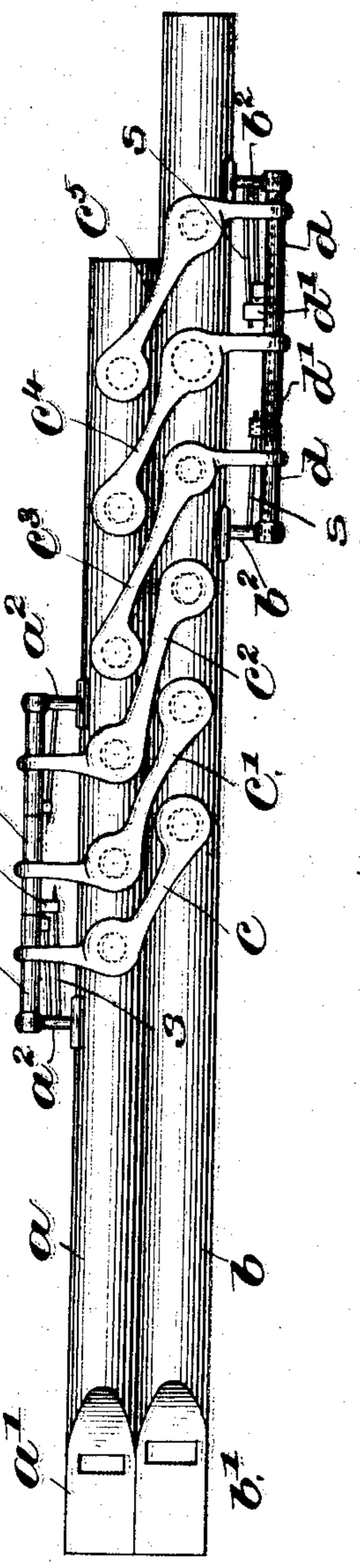
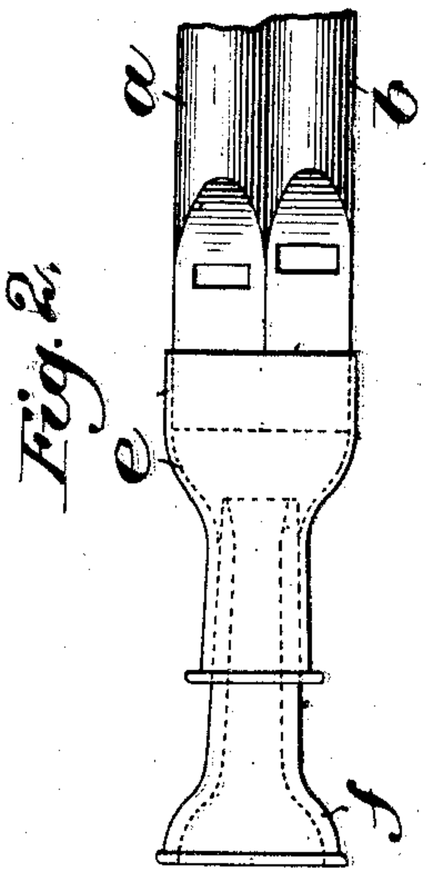


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN L. MAHER, OF LYNN, MASSACHUSETTS.

WIND-INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 504,396, dated September 5, 1893.

Application filed December 24, 1892. Serial No. 456,248. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. MAHER, of Lynn, county of Essex, State of Massachusetts, have invented an Improvement in Wind-Instruments, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object the production of a novel wind instrument for musicians, by which the effect to the ear is that of two different instruments in different keys, but in harmony with each other, such a result being obtained in a single instrument.

In accordance therewith, my invention consists, in a musical instrument of the class described, of two flutes secured together and each provided with the usual openings, combined with a series of key levers each adapted to simultaneously control an opening in both flutes, substantially as will be described.

Other features of my invention will be hereinafter described and particularly pointed out in the claims.

Figure 1, is a top or plan view of an instrument embodying my invention; and Fig. 2, is a modification to be referred to.

I have herein shown two flutes, *a* and *b*, provided with usual mouth-pieces *a'* and *b'*, respectively, and with openings therein as usual, indicated by dotted lines, Fig. 1. The two flutes are rigidly held together in any suitable way, and if of metal they may be soldered together. I have secured standards or posts a^2 and b^2 to the flutes, which support a rod or bearing between them, shown in dotted lines between the standards b^2, upon which rods are pivoted the key levers *c*, *c'*, c^2, c^3, c^4 and c^5, by the sleeve-like hubs *d*, one for each key lever, and each rod supports three of the key levers, as clearly shown in Fig. 1. A suitable projection, as *d'*, on the hub is acted upon by a spring *s* to keep the key levers normally raised to uncover the openings in the flutes, each lever having upon its under side two stops or pads, adapted to simultaneously open or close one opening in each flute, as shown in the drawings. In this instance of my invention I have shown the flute *a* in the key of E, and the flute *b* in the key of C, so that the interval between the two keys is a third, and beginning at the right-hand of Fig. 1, the tones in flute *b* are D, E, F, G, A and B and produced by the successive openings, and similarly in the flute *a* the tones are F natural, G, natural, A, B, C natural, and D natural.

When the instrument is played, three key levers being operated by each hand of the player, the melody will be produced on the C flute, and the third above by the E flute. One flute is modulated to accord with the other, and preferably the flute in the lower key is in the natural key, the flute in the higher key being modulated to accord therewith, but the reverse may be used if desired. By the construction thus described the effect produced upon the ear is that of two different instruments played in perfect time and harmony, as in a duet, so that by my invention I am enabled to produce the same result in a single instrument.

The flutes may be constructed of wood or metal, as desired.

This invention is not limited to the use of flutes in the keys of C and E, but the keys of A and C can be used, the interval being the same, or any two keys may be used by modulating the flute in one key until it is in accord with the other. Each of the two tones, however, controlled by a single key lever, must be separated by the same interval as exists between any other two tones simultaneously controlled.

The instrument may be used with a single mouth-piece, as at *e*, Fig. 2, which is adapted to be held between the lips of the player, and if desired a cornet mouth-piece, as *f*, may be inserted in the tubular portion of *e*, and in that instance the lips are pressed against the flaring or bell-shaped end of *f*.

I claim—

1. In a musical instrument of the class described, two flutes secured together and each provided with the usual openings, combined with a series of key levers each adapted to simultaneously control an opening in both flutes, substantially as described.

2. In a wind instrument, two flutes secured together and provided with the usual openings, combined with a series of key levers

supported by each flute, each lever having stops thereon adapted to control an opening in both flutes, substantially as described.

3. In a musical instrument of the class described, two flutes secured together and having their scales in different keys, combined with a series of key levers each adapted to control an opening in each flute, whereby two different tones are simultaneously produced, substantially as described.

4. In a musical instrument of the class described, two flutes secured together and having the usual openings therein, the scales of the flutes being in different keys and modulated to accord with each other, combined with a series of key levers each adapted to control an opening in both flutes, whereby two different tones are simultaneously produced, the interval between each two tones being the same, substantially as described.

5. In a wind instrument of the class described having the usual openings therein, a key lever adapted to simultaneously control a plurality of openings, and thereby produce different tones simultaneously, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN L. MAHER.

Witnesses:
JOHN C. EDWARDS,
FREDERICK L. EMERY.