

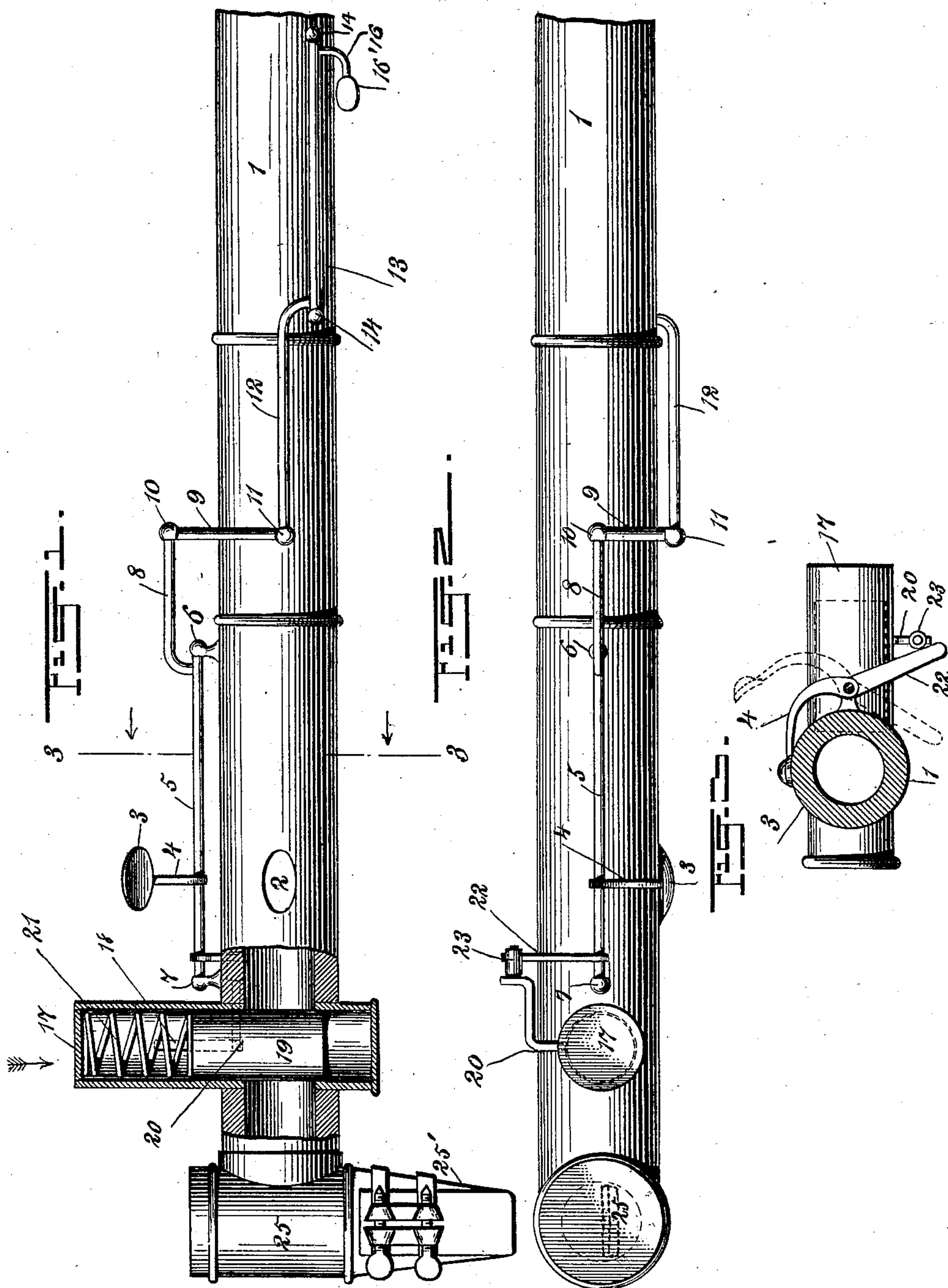
**No. 698,322.**

**Patented Apr. 22, 1902.**

**E. P. ROGERS.**  
**BOEHM FLUTE.**

(Application filed Sept. 20, 1901.)

(No Model.)



**WITNESSES:**

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# UNITED STATES PATENT OFFICE.

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## BOEHM FLUTE.

SPECIFICATION forming part of Letters Patent No. 698,322, dated April 22, 1902.

Application filed September 20, 1901. Serial No. 75,681. (No model.)

*To all whom it may concern:*

Be it known that I, EDGAR PARKHURST ROGERS, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented an Improvement upon Boehm Flutes, of which the following is a full, clear, and exact description.

My invention relates to flutes of the style known among musicians as "Boehm" flutes.

The object of my improvement is to increase the number of notes which can be played upon the flute without injuring the purity and richness of the notes.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a longitudinal elevation, partly broken away and in section, of a flute embodying my invention. Fig. 2 is an elevation taken at right angles to the view shown in Fig. 1, and Fig. 3 is a section on the line 3 3 of Fig. 1 looking in the direction of the arrows.

The body or cylinder 1 of the flute is provided with a blow-hole 2 in the usual manner. A pad 3 is mounted upon a radially-movable arm 4, secured rigidly upon a rocking shaft 5, which is journaled in bearings 6 and 7 and is provided with a rigid arm 8. A link 9 is connected by a joint 10 with the arm 8 and is also flexibly secured to the branching arm 12 of the rocking shaft 13 by means of a joint 11. The rocking shaft 13 is journaled in bearings 14 and is provided with a radially-movable arm 16, which terminates in a finger-piece 16', whereby said rocking shaft may be actuated. By pressing the finger-piece 16' the shaft 13 is rocked, the arm 12 is moved radially, the toggle 9 is pulled longitudinally, the arm 8 moves radially, and the rocking shaft 5 rocks and places the pad 3 over the blow-hole 2.

A sleeve 17 is mounted upon the flute, as shown in Figs. 1 and 2. This sleeve 17 is provided with a slot 18 and with a movable cylinder 19, pressed upon by a spring 21, the cylinder being provided with an outwardly-projecting arm 20 rigid therewith and provided with a roller 23, which is actuated by an arm 22 on the rocking shaft 5, so that when the finger-piece 16' is depressed, thus caus-

ing the pad 3 to close the blow-hole 2, the cylinder 19 is caused to compress the spring and is moved in a direction to open the main passage of the flute, as shown in Fig. 3. It will be observed, therefore, that the blow-hole is closed and that the central passage of the flute is opened both at the same instant and by the same means. A reed-head 25 is flexibly mounted upon the end of the flute and is of approximately the same timbre as the flute, but normally corresponds to a note which is exactly one octave lower than the lowest note of the flute. It is this reed-head, taken in connection with the closing of the blow-hole and the opening of the central passage, that increases the range of the flute. When the reed-head is actuated by the breath after the manner of a clarinet-head, the note normally being just one octave lower than the lowest note of the flute, as before stated, leaves an apparent interval of eight notes. When, however, any of the notes of the lowest octave of the flute are played by the aid of the reed-head, all of the sounds of the lowest octave of the flute can be repeated, but each note is just one octave lower. In other words, the reed-head has substantially the effect of making the flute an octave longer, the extra octave being made by playing the lowest octave of the flute while blowing into the reed-head.

The primary idea underlying my invention is the discovery made by me to the effect that if a reed-head the normal note of which is one octave lower than the lowest note of the flute be attached to the flute, as above described, and an effort then be made to play the lowest octave upon the flute the result will be an octave still lower, virtually lengthening the musical range of the flute by one octave.

It will be observed that I have produced a neat simple device which is easily handled by any musician, either amateur or professional.

Supposing that the musician is blowing in the blow-hole 2 and reaching the lowest note upon the flute wishes to go still lower, he merely depresses the finger-piece 16', quickly removes his mouth from the blow-hole of the flute to the blow-hole 25' of the reed-head, and then makes the notes he desires to make upon the keys representing the lowest octave



of the flute, the effect being, as above stated, the same as if the flute had been lengthened by an additional octave.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. As an article of manufacture, a flute provided with a blow-hole and with a normally closed end, a reed-head secured upon said flute, and means controllable at will for opening said end and closing said blow-hole.

2. As an article of manufacture, a flute provided with a normally closed cylindrical end and a normally open blow-hole, a reed-head secured upon said flute, and means controllable at will for simultaneously closing said blow-hole and opening said cylindrical end.

3. As an article of manufacture, a flute pro-

vided with a reed-head, and means controllable at will for opening and closing pneumatic communication between said head and said flute.

4. As an article of manufacture, a flute provided with an open end and with a blow-hole, a reed-head detachably secured upon said flute, and means controllable at will for simultaneously opening said blow-hole and closing said open end.

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

EDGAR PARKHURST ROGERS.

Witnesses:

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EVERARD B. MARSHALL.