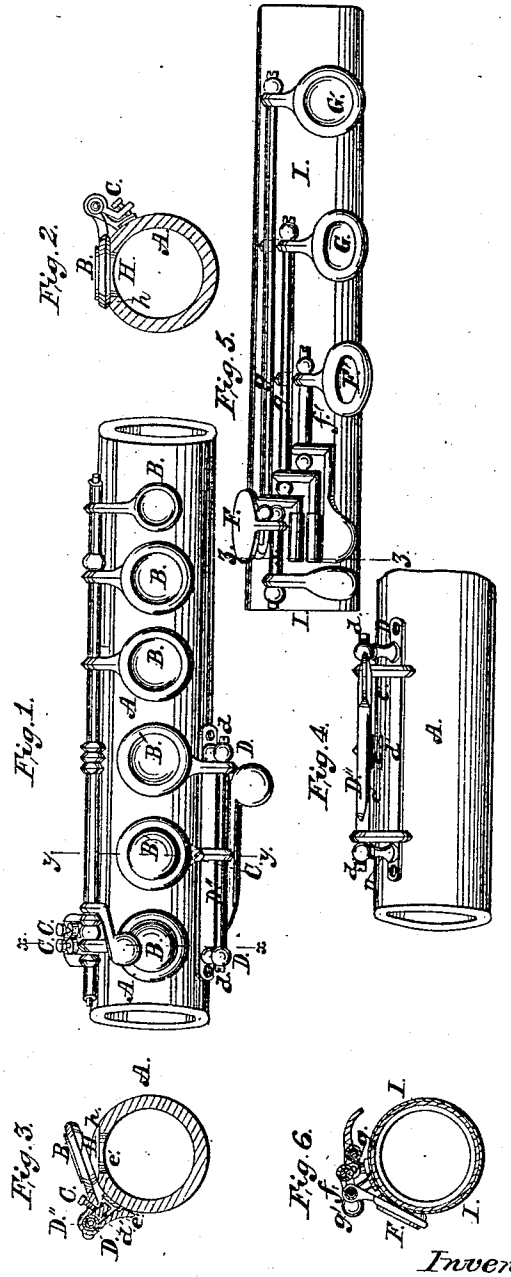
United States Patent

T. Berteling,

Flute,

No. 76,389. Patented Apr. 7, 1868.



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THEODORE BERTELING, OF NEW YORK, N. Y.

Letters Patent No. 76,389, *dated April* 7, 1868.

IMPROVEMENT IN FLUTES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, THEODORE BERTELING, of the city, county, and State of New York, have invented a new and useful Improvement in Flutes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a partial plan or top view of a flute with my several improvements applied thereto.

Figure 2 represents a cross-section in the line *x x* of fig. 1.

Figure 3 represents a similar section in the line *y y* of fig. 1.

Figure 4 represents a partial side view of one of my improvements.

Figure 5 represents a plan view of one of my improvements.

Figure 6 a section of the same, in the line *z z* of fig. 5.

Similar letters of reference indicate corresponding parts.

This invention relates to the supplying of the keys of flutes or similar musical instruments with adjustable regulating-screws, for the purpose of regulating the throw or lift of the keys.

Where a note is required to be repeatedly played, the cushions on the lower surfaces of the keys are apt to become flattened, and the instrument is thereby caused to fail to sound according to the wish of the operator. This difficulty is overcome in the present invention, whereby the throw of the keys or lift may be quickly adjusted at the pleasure of the performer.

My invention also relates to the arrangement of the keys on independent shafts, in such a manner as to allow the finger readily to slide from one key to another.

My invention also relates to a novel arrangement of the key-springs. The ends of the springs are placed in a groove in the sides of a lug on the posts of the shaft of the keys.

My invention also relates to an improvement in the form of the seats of the key-vents or openings, by which the cushions of the keys are provided with better seats.

A, in the accompanying drawings, represents the second section of an ordinary "Boehm" flute, having the required number of keys, B, pivoted to shafts B′. To the upper or lower surface of the projecting arms of said keys are placed adjustable regulating-screws C C, by which the throw of the keys may be easily regulated. D D are two uprights, in which rests the shaft D′, over which is placed a hollow shaft, D″. The shaft D′ is held between the uprights by means of needle-pointed screws, *d d*. To the lower surface of hollow shaft D″ is affixed a projecting lug, *d′*, having grooves *e e* cut therein, to receive the springs *e′ e′*, said springs being connected with and operating keys B′ B′ of the flute. This peculiar construction and arrangement of the springs renders the removal and change of the springs convenient, and affords greater spring-force in the same compass than the ordinary arrangement of the springs. I represents the third section of a flute, having keys F F′ and G G′, each resting on independent shafts *f f′*, *g g′*, arranged in such a manner as to allow the finger of the operator to slide from key to key with ease, and thus cause the notes to be more perfectly and easily sounded. H H are the vents or openings of the flute, the surfaces *h h* of the material of which the flute is composed being made flat for a short distance around the openings, so as to give the cushions of the keys a firm seat, and thus cause the notes to be more perfectly shut off. In ordinary flutes the openings are surrounded by sharp edges, which cut the cushions of the keys.

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

The adjustable set-screws C, in connection with the keys B of a flute, operating in the manner and for the purpose substantially as described.

The above specification of my invention signed by me, this sixteenth day of January, 1868.

THEODORE BERTELING.

Witnesses:

GUSTAVE DIETERICH,

THEO. TUSCHE.