W. C. FIETZ.

Cornet.

No. 215,598. Patented May 20, 1879.

Fig. 1.

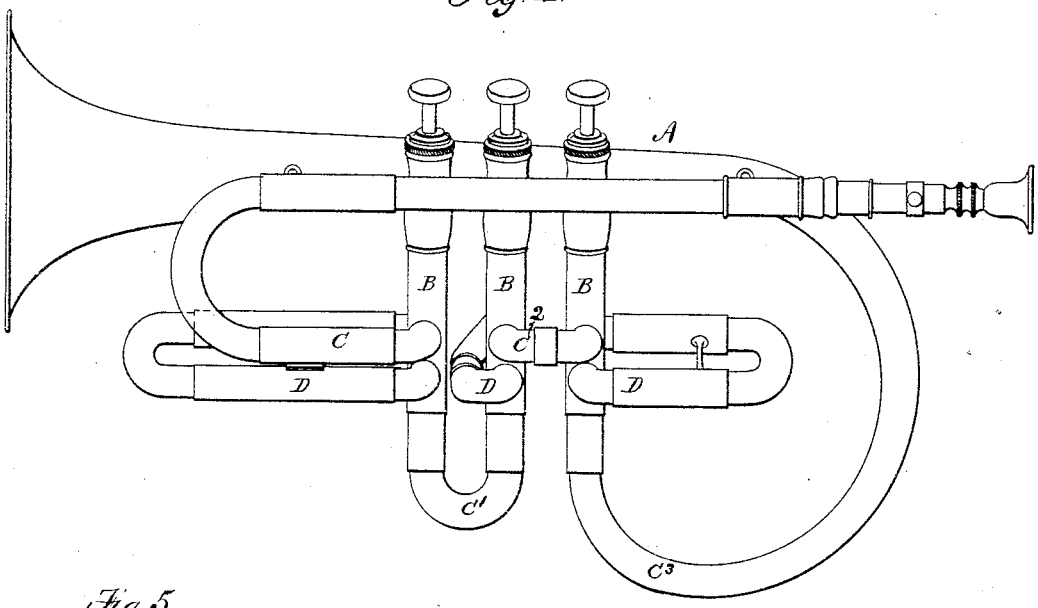


Fig. 5.

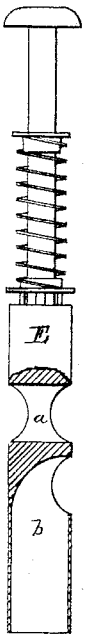


Fig. 4

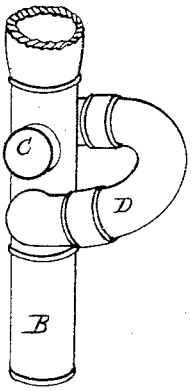


Fig. 3.

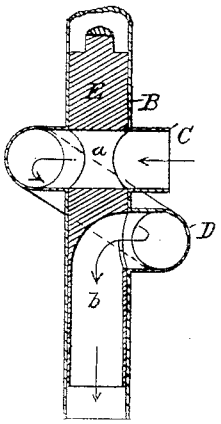
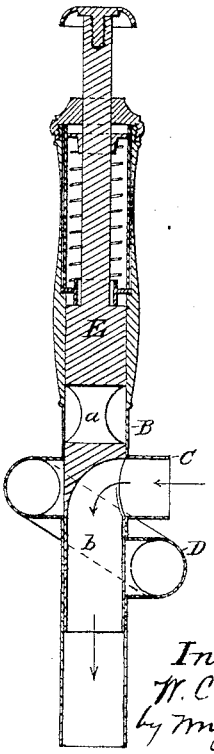


Fig. 2.



Witnesses.

Geo. W. Pierce

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UNITED STATES PATENT OFFICE.

WILHELM C. FIETZ, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN CORNETS.

Specification forming part of Letters Patent No. **215,598**, dated May 20, 1879; application filed January 29, 1879.

To all whom it may concern:

Be it known that I, WILHELM C. FIETZ, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Wind-Instruments, of which the following is a specification.

This invention relates to that class of wind-instruments employing pistons for varying the length of tubing through which the wind passes. A familiar type of this class is the cornet-a-piston; and my invention has especial reference to this instrument, though it is adapted to any of the class named.

The object of my invention is to provide certain improvements in the arrangement of tubes, whereby the length of movement of the piston is reduced to the minimum and the air is prevented from being wasted, and pure and even tones are produced.

To these ends my invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side view of a cornet embodying my invention. Figs. 2 and 3 represent sections, showing the piston in different positions. Fig. 4 represents a perspective view of a portion of the tubing detached from the rest of the instrument.

Similar letters of reference indicate like parts in all the figures.

In the drawings, A represents a cornet, and B B B the tubes or casings containing the pistons. C C^1 C^2 C^3 represent the portions of tubing through which the air passes when the pistons are in their normal position.

D D D represent the branch or extension tubes through which the air is caused to pass by the displacement of the pistons from their normal position.

The tube C enters the first casing B, the tube C^1 connects the first and second casings B, and the tube C^2 connects the second and third casings B, as shown. The tubes C C^2 enter the casings B laterally, and the upper ends of the tubes D enter the casings B at points directly opposite the tubes C C^2. Said tubes D extend around, and their lower ends enter, the casings B immediately under and in line with the tubes C C^2.

E represents one of the pistons, which is similar in construction to all the others, and is composed of a tube or body adapted to fit snugly and slide freely in its tube B, and is provided with two air-passages, *a b*.

The passage *a* is straight and cylindrical, and extends directly across the piston, and connects the tube C or C^2 with the upper end of one of the tubes D when the piston is displaced, as shown in Fig. 3.

The passage *b* commences in the side of the piston close to one end of the passage *a*, and is curved downwardly and extends longitudinally of the piston to the lower end of the latter, and connects two of the direct air-tubes together when the piston is in its normal position, as shown in Fig. 2, the piston meanwhile shutting off the tube D from the direct air-tube.

The passages *a b* are entirely separated from each other within the piston. The construction of the piston, however, is not a part of my invention, the same construction being common in twin-valve instruments, as shown in English Patent No. 558 of 1855.

The close proximity of the tubes C C^2 to the tubes D D D enables the piston to perform its described functions by a very short movement; hence less friction attends the operation of the piston, and it can be made shorter than those heretofore in use.

By the described arrangement of the tubes C, C^2, and D in connection with the construction of the valves, I am enabled to avoid waste or loss of wind, and consequently produce pure and even tones.

I claim—

In a cornet or kindred instrument, a valve-casing, B, having a piston or valve constructed as described, in combination with a direct air-tube, C and C^2, and an extension-tube, D, the upper end of the extension-tube entering the casing directly opposite the direct air-tube, and the lower end of the extension-tube entering the casing directly under and in close proximity to the direct air-tube, substantially as and for the purpose specified.

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

WILHELM C. FIETZ.

Witnesses:

JULIUS ELSON,

C. F. BROWN.