

Z. A. MEREDITH.
CORNET.

APPLICATION FILED JAN. 19, 1901.

5 SHEETS—SHEET 1.

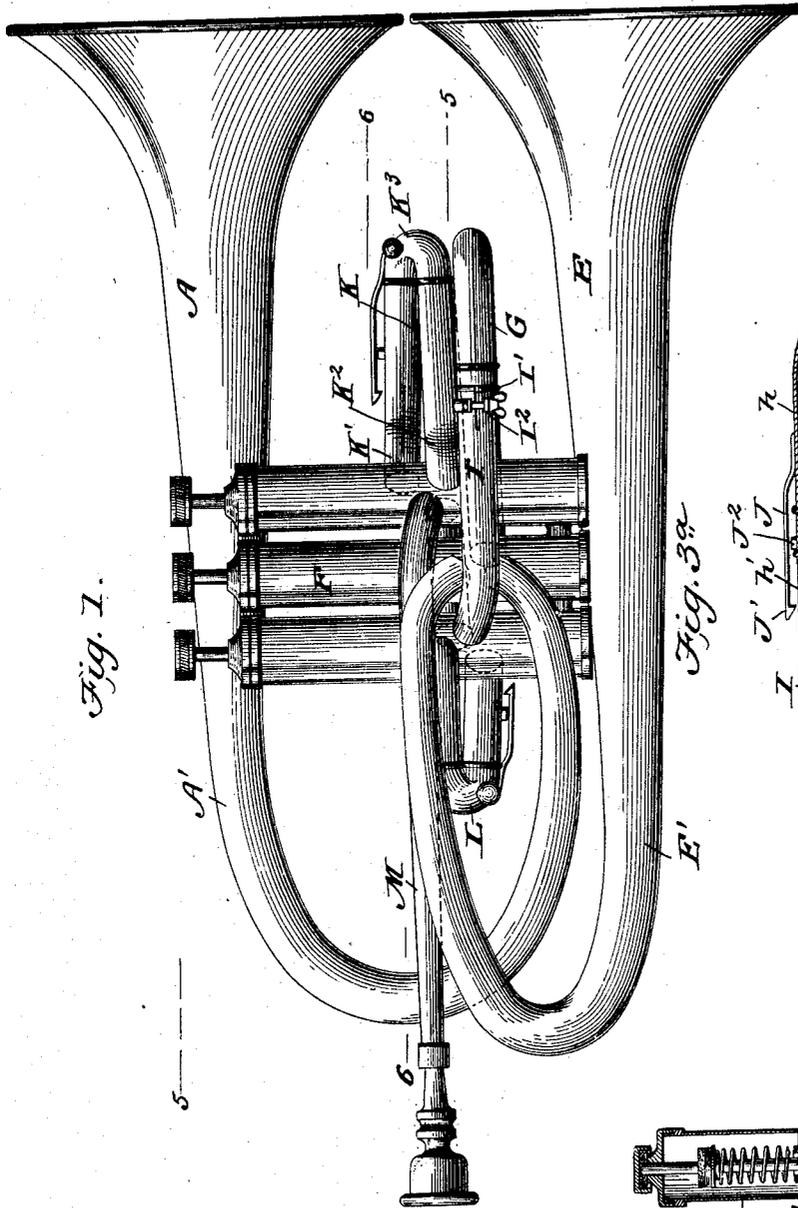


Fig. 1.

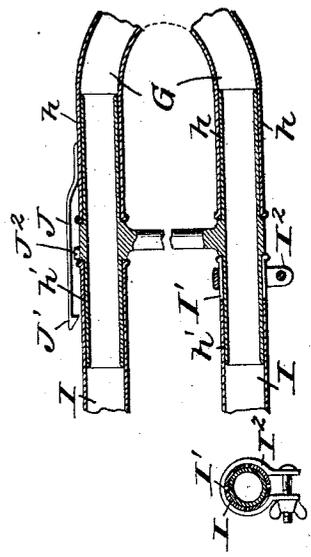


Fig. 3a

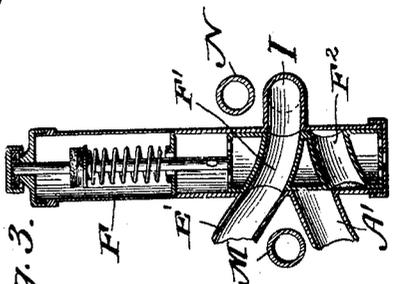


Fig. 3.

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No. 814,615.

PATENTED MAR. 6, 1906.

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5 SHEETS—SHEET 2.

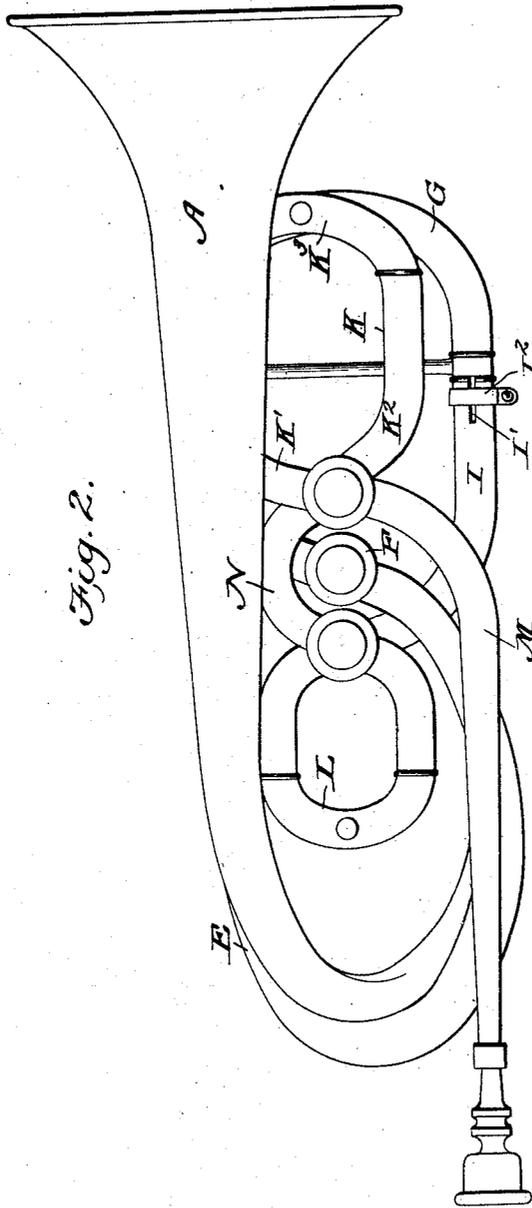


Fig. 2.

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5 SHEETS—SHEET 3.

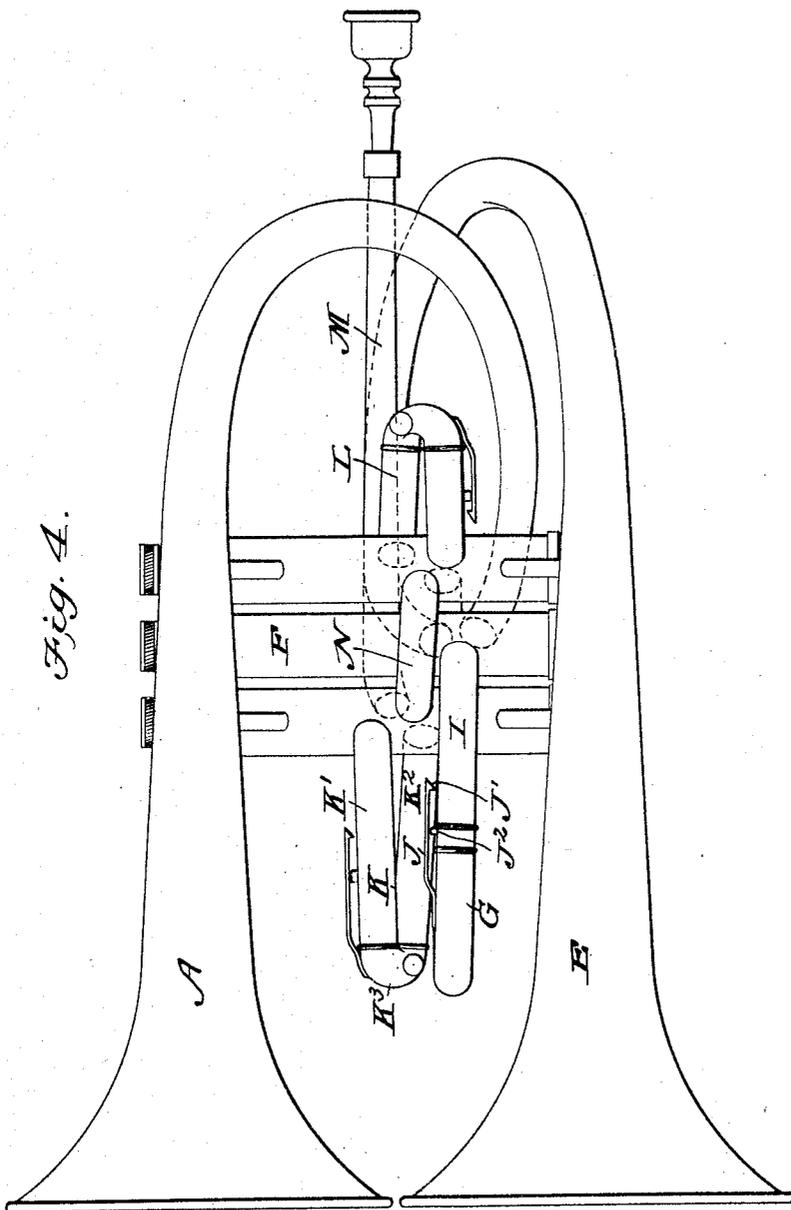


Fig. 4.

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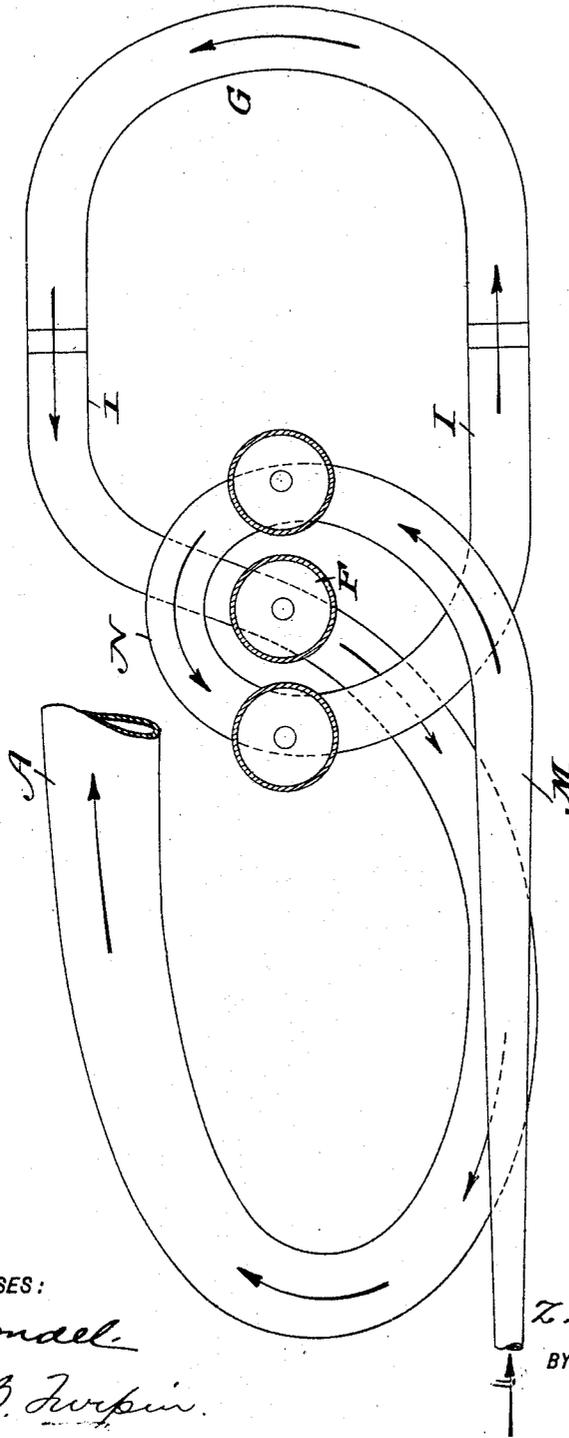
PATENTED MAR. 6, 1906.

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5 SHEETS—SHEET 4.

Fig. 5.



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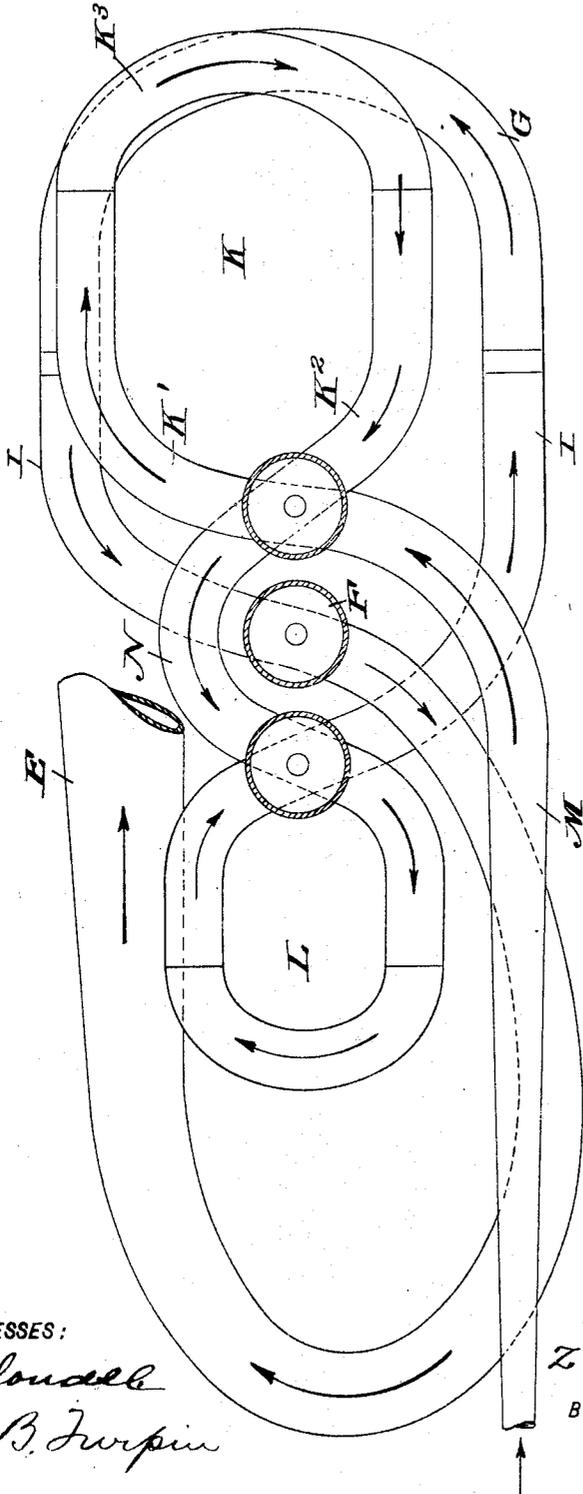
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5 SHEETS—SHEET 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

Z ALBERT MEREDITH, OF TAHLEQUAH, INDIAN TERRITORY.

CORNET.

No. 814,615.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed January 19, 1901. Serial No. 43,889.

To all whom it may concern:

Be it known that I, Z ALBERT MEREDITH, residing in Tahlequah, in the Cherokee Nation and Indian Territory, have made certain new and useful Improvements in Cornets, of which the following is a specification.

This invention is an improvement in cornets and similar valved instruments, and has for an object to provide a novel construction and arrangement of the tubing and air-passages whereby to avoid short bends or angles; also, to dispense with the usual second slide and introduce in lieu thereof a second bell through which the tone is emitted in all instances when the second valve is depressed; and the invention consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a cornet embodying my invention. Fig. 2 is a top plan view thereof. Fig. 3 is a detail sectional view illustrating the second valve. Fig. 3^a shows the slide-stop in detail. Fig. 4 is an elevation of the cornet from the opposite side from that shown in Fig. 1. Fig. 5 is a diagrammatic horizontal section on about line 5 5 of Fig. 1 with arrows indicating the passage of the air in producing an open tone. Fig. 6 is a diagrammatic horizontal section on about line 6 6 of Fig. 1 with arrows indicating the passage of air through the instrument when all the valves are depressed.

My cornet, as shown, includes the usual bell A, which is shown in Figs. 1 and 4 as the upper bell, a lower bell E being provided for purposes presently described. While the bells A and E are preferably arranged as shown, such arrangement may be varied, and for convenience of reference I will refer to the bells A and E, respectively, as the "first" and "second" bells. These bells in material, size, and shape are intended to be made alike, so the character of tone emitted from both will be the same, and all open tones and tones produced by the depression of the first and third valves, either singly or jointly, are emitted through the first bell A. On the other hand, all tones produced when the second valve is depressed, whether alone or in conjunction with the first or third valve or either of same, will be emitted from the second bell E, as will be more fully described.

In cornets and similar valved instruments—such, for instance, as tenor, alto, and baritone horns—it is common to provide what is known as the "second slide" in con-

nection with the second valve-casing, which second slide is introduced when the second valve is depressed for the purpose of providing the additional length of tubing required to secure the lowering of the tone which it is desired to secure by depressing the second valve, as is well known to makers and players of such instruments. This second slide is necessarily short and involves sharp bends or curves, which, as is well known, increases the resistance to the passage of the air, increases the difficulty of playing the instrument, and also affects the tone. My invention seeks to avoid this difficulty, and while in the ordinary instrument the air is passed through the second valve, thence through the second slide when the second valve is depressed, and thence through the second valve to the tube leading to the first bell, which in the ordinary instruments is the only bell employed, by my invention I discharge the air from the second valve when the latter is depressed to the tube leading to the second bell and make such tube of sufficient length to provide the additional length of tube ordinarily secured by the second slide. The first bell extends from the second valve, and the second bell also leads from the second valve and has its tubing E' made of sufficient length to secure the lowering of tone ordinarily effected by means of the second slide.

The valve F, being the second valve, is shown in detail in Fig. 3 and operates when depressed to discharge to the tube E' of the second bell E. This is the position in which it is shown in Fig. 3, from which it will be noticed the port F' of the valve establishes communication between the tuning-slide G, which opens into the valve-casing, and the tube E' of the second bell E. When the valve F is raised or in normal position, its port F² establishes communication between the tuning-slide G and the tube A' of the first bell A and the air passes in such adjustment of the valve directly to the first bell. Thus it will be noticed my invention involves the direction of the air when the second valve is depressed off through the second bell instead of passing such air through a second slide and then directing it to discharge through the first bell, as in the common cornet, it being understood that whenever an open tone is produced or the first or third valve, or both of them, are depressed the tone is emitted through the first bell, while in all instances when the second valve is depressed, whether alone or in

conjunction with either or both of the other valves, the tone is emitted from the second bell. It should also be understood in this connection that in order to secure uniformity of tone quality I make both bells of the same size, shape, and material.

In pulling the slides of instruments of the class in question it is not always easy to quickly adjust them to the desired position. It is also desirable that such slides should be readily removable whenever desired. To this end I provide the form of stop shown in detail in Fig. 3^a, in which figure I have shown this stop mechanism applied to the tuning-slide; but it is manifest that in practice I purpose applying the stop devices in connection with the other slides of the instrument, as shown. The tuning-slide G (shown in Fig. 3^a) has the tube *h* slidable at *h'* in a tube-section I, which is slitted at *I'* and embraced by a clamping-band *I*², which may be tightened to lock the parts *h* and *I* together when the tube *h* has been adjusted to the desired position in tuning. The slide G is movable to secure a quick change to the key of A, and in order to stop the slide in such position it is provided with a spring-arm J, hooked at *J'* to engage with an abutment *J*² and operating to stop the slide when drawn out in the change to A. If it is desired to remove the slide, it is only necessary to lift the hook *J'* over the abutment *J*². By this means the change to the key of A can be quickly and accurately effected and the slides can be stopped accurately in their outermost positions as desired, and it will be understood that the first and third slides are also provided in practice with the automatic stop, as shown, and that when the slide G is adjusted in changing to the key of A the first and third slides are also adjusted, this being well understood by players and makers of the instrument.

By my invention I seek to form the cornet with a system of air-passages which are made possible by the arrangement of tubing shown and by the employment of two bells, by which means I eliminate all short turns from the instrument in both valve and open tones and am able to construct a cornet or other wind instrument of the same family that cannot only be played with much less exertion, owing to less friction in the air-passages, but will give more volume and possess more carrying power and also a better quality of tone and absolute equality in purity and volume in all valve and open tones. By eliminating the second slide, as before described, I am able to dispense with the return-bend usually employed in connecting the front end of the mouth-pipe with the third valve and am able to lead such mouth-pipe as it extends forward directly to the third valve, into which it opens, as shown in Fig. 6. It will be noticed that the mouth-pipe curves gradually into the third valve and forms, with the opposite

branch of the third slide, a gradual compound curve, avoiding all sharp or abrupt bends at this point. The third valve-slide K is formed with the branches *K'* and *K*², which connect with the third valve and are gradually curved, as shown, and it is also provided with the gradual rounded end *K*³, the several parts forming a slide which is entirely clear and free of any sharp bends or angles and is at the same time capable of the adjustments desired in changing key. In the production of the open tones, as will be understood from Fig. 5, the third slide K and the first slide L are out of the air-passage, as is usual. In such use of the instrument the air passes from the mouth-pipe M through the third valve to the connecting-pipe N, which extends from the third to the first valve, then passes from the first valve through the tuning-slide and from such slide through the second valve to the upper bell. This is shown in Fig. 5, from which it will be seen the curves or bends are gradual and long and the obstruction to the passage of the air is reduced to the minimum. In the production of the valve-tones when all three valves are depressed the passage of the air is as indicated in Fig. 6. In this operation the air passes from the mouth-pipe through the third slide K, as before described, then passes through the connecting-pipe N, then through the first slide L, then through the tuning-slide, and then as the second valve is depressed is directed out through the lower bell. By directing the mouthpiece to the third valve, as shown, which is rendered practical by the omission of the second slide, and by passing the air almost diametrically through the valves I am able to form the slides K and L with the long and gradual curves practically in alinement with the pipes which lead to and from such slides, and so dispense with all sharp bends in the instrument. It should be understood that the first and third valves are suitably ported to establish communication in the operation of the cornet between the several tubes with which they cooperate.

By the described construction it is manifest I am able to produce a cornet or like instrument which is entirely free of sharp bends or curves, this result being effected by the provision of the lower bell, by the formation of the slides on long gradual curves, and by the connection of the mouth-pipe with the third valve in the described manner, which is rendered practical by the elimination of the second slide.

What I claim is—

1. A cornet or like instrument having the usual three valves only and the first and second bells, the latter being connected with the second valve-casing and emitting the tone when the second valve is depressed and the first bell emitting the tone upon the depression of either the first or third valves or both without the second substantially as set forth.

2. A cornet or like instrument having the three valves, the first and third slides and the connecting-pipe between the first and third valve, the tuning-slide between the first and second valve, such slides and the connecting-pipe being bent on gradually-rounded curves, and the first and second bells leading from the second valve, the second bell being used in lieu of the usual second slide, and the mouth-pipe leading to the third valve-casing, such mouth-pipe and the communicating branch of the third slide opening into the casing practically on opposite sides thereof whereby to avoid sharp bends or angles substantially as set forth.

3. A cornet or like instrument provided with the usual bell and with the first, second and third valves only and with the first and third slides and also having in lieu of the second slide a second bell similar to the usual one, the tube of the second bell furnishing the length of the tube usually supplied by the second slide, and provided with a valve which when depressed directs the tone to discharge from the second bell, substantially as described.

4. A cornet or like instrument provided with the valves and their casings and having the first and third slides in connection with their respective valve-casings and gradually curved, the mouth-pipe leading to the third valve-casing and opening thereinto practi-

cally on the opposite side from the opening into the casing of the slide with which the mouth-pipe communicates, the usual bell, and the second bell connected with the second valve-casing in lieu of the usual second slide substantially as set forth.

5. A cornet or like instrument, having the three valves only and their casings and provided with the usual bell and with a second bell, both said bells being connected with the second valve-casing and lying in the same plane and in a plane parallel to that of the valve-casings, the second bell having its tubing extended to supply the length of tubing ordinarily supplied by the second slide for which the second bell is substituted, substantially as set forth.

6. A cornet or like instrument substantially as described having three valves only and the corresponding first and third valves, and the mouthpiece leading to the third valve-casing, the usual first bell, and the second bell connected with the second valve-casing and having its tubing extended to supply the length of tubing ordinarily supplied by the second slide for which the second bell is substituted, substantially as set forth.

Z ALBERT MEREDITH.

Witnesses:

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