

H. G. NEELY.
CORNET.

APPLICATION FILED MAY 20, 1909.

Patented Aug. 9, 1910.

2 SHEETS—SHEET 1.

966,700.

Fig. 1.

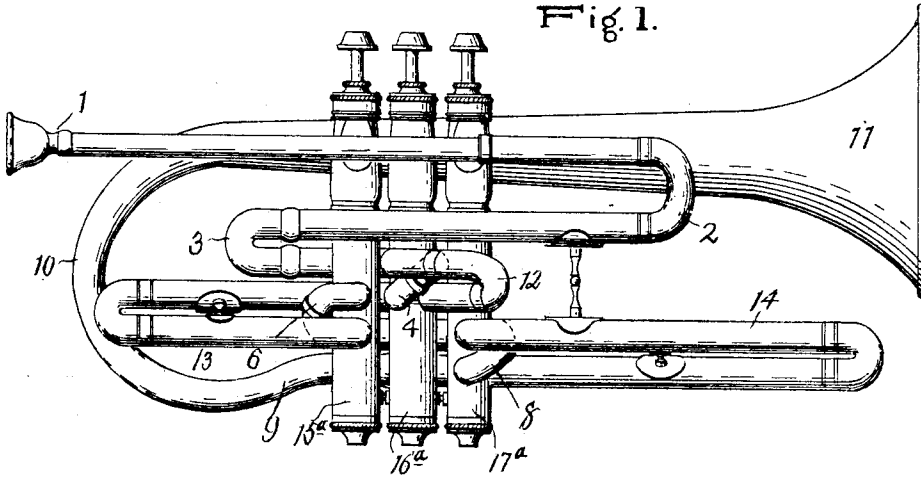


Fig. 2.

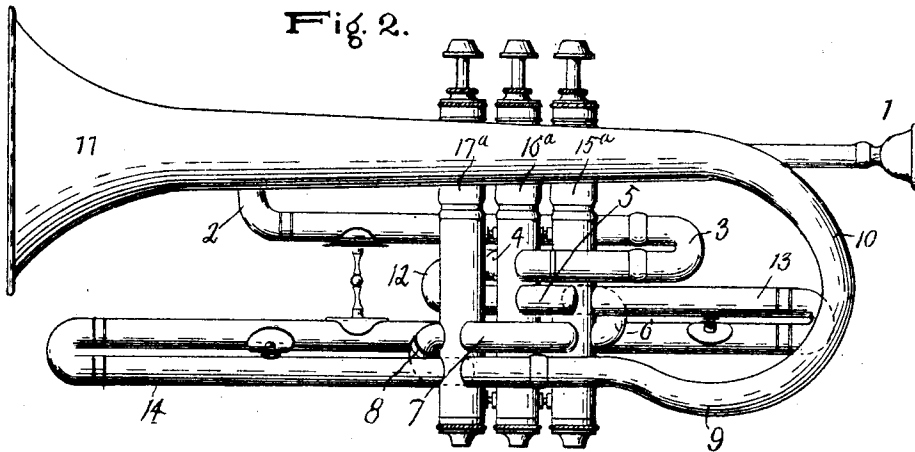
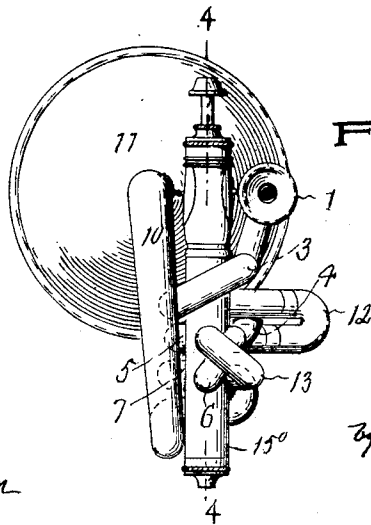


Fig. 3.



Witnesses

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2 SHEETS—SHEET 2.

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Fig. 4.

Fig. 6.

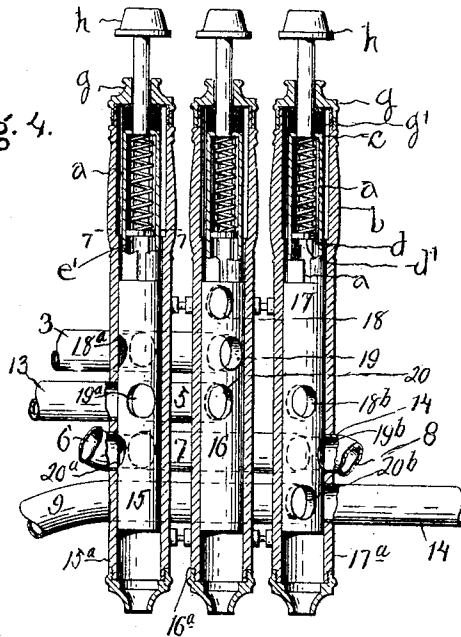
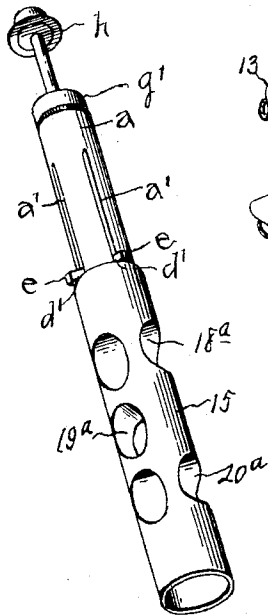


Fig. 7.

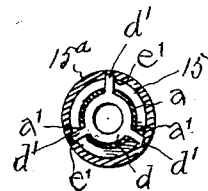
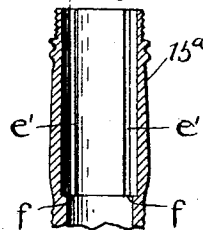
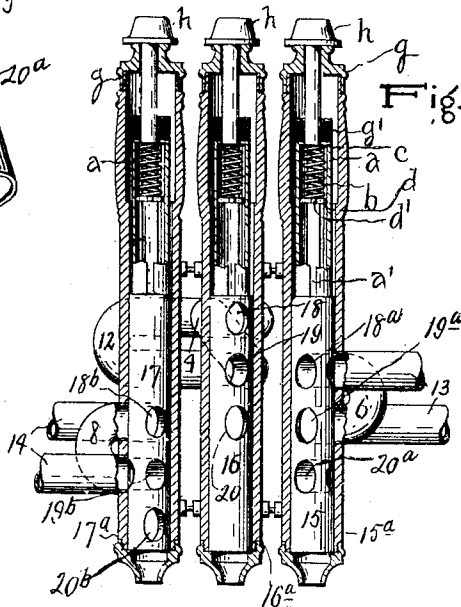


Fig. 5.

Fig. 8.



Witnesses

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UNITED STATES PATENT OFFICE.

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CORNET.

966,700.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed May 20, 1909. Serial No. 497,221.

To all whom it may concern:

Be it known that I, HERBERT G. NEELY, a citizen of the United States, resident of College Hill, in the county of Hamilton and State of Ohio, have made a certain new and useful Invention in Cornets; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the invention, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 is a side view of the cornet. Fig. 2 is a similar view taken from the opposite side. Fig. 3 is an end view of the cornet. Fig. 4 is a sectional detail view on the line 4—4 Fig. 3 with parts broken away and showing the valves in their raised or normal positions. Fig. 5 is a similar view taken from the opposite side showing the valves in their depressed positions. Fig. 6 is a detail perspective view of one of the valves. Fig. 7 is a detail cross section on the line 7—7, Fig. 4. Fig. 8 is a detail view of a portion of the valve cylinder.

The invention relates to wind musical instruments and particularly to cornets, being applicable to all instruments of the cornet family.

The object of the invention is the production of an instrument having a clear air passage, a minimum number of turns in the air pipes and a shorter valve action, increasing the musical compass, requiring less effort to play and capable of giving a purer and clearer tone.

Other objects and advantages will hereinafter appear.

The invention consists in the novel construction and combinations of parts as hereinafter set forth.

In the accompanying drawings, illustrating the invention, the numerals 1 to 11 inclusive represent the mouth piece, bell and main piping of a cornet, 12, 13 and 14 the valve slides (being long crooks) for the second, first, and third valve respectively, used for the valve tones, and 6, 4 and 8 are small or short crooks for the first, second and third valve respectively, used for the open tones. Each valve cylinder has a long crook and a short crook located within the branches of the long crook, both crooks having direct

connection with said cylinder. The first, second and third valves are designated 15, 16 and 17, and the valve cylinders 15^a, 16^a and 17^a respectively. Thus each valve cylinder carries a long and a short crook, one or the other of which is brought into use to produce a change in pitch of one, two or three semi-tones, by the movement of the piston valve thereof now to be described. Each valve is a depressible piston valve and has three horizontal ports one above the other perforating the valve from side to side and which open out of line at one side of the valve while at the opposite side of the valve the port openings are in line one above the other.

Each valve piston has a hollow slotted upper portion *a*, in which is located a coil spring *b*, which bears at its upper end against the head *c*, of the part *a*, and at its lower end against a star *d*, having radial lugs *d'*, *d'*, which project through the slots *a'*, *a'*, of the part *a*, slightly beyond the sides of the valve proper at *e*, *e*. The valve is inserted in the valve cylinder from the upper end, when the radial lugs *d'*, *d'*, where they project beyond the valve at *e*, *e*, will engage with longitudinal or vertical grooves *e'*, *e'*, of the cylinder. When these lugs rest or bear upon the lower end walls *f*, *f*, of the grooves *e'*, *e'*, the inward movement of the valve is stopped, the valve being upheld in normal undepressed position by the coil spring *b*, thereof, which is of stiff character. A top piece *g*, has threaded engagement with the upper end of the valve cylinder and limits the upward movement of the valve through contact with the upper end thereof, which is provided with a washer or cushion abutment at *g'*. Upon depression of the valve the downward movement thereof is limited by contact of the head *h*, of the valve stem *h'*, with the top piece *g*. When the open tone is used or the valves are in their normal undepressed positions the air passes from the mouthpiece around the usual crook 2, thence rearward through crook 3, thence forward into the middle valve cylinder 16^a, where the air communicates with the short crook 4, through the lower and middle ports 19 and 20 of the middle valve 16. From the port 20 the air passes through the short pipe 5 to the first valve cylinder, where such air communicates through the lower and middle ports 19^a and 20^a of the valve 15 with the

short crook 6. From the port 20^a the air passes through the short pipe 7 to the third valve cylinder, where such air communicates through the lower and middle ports 19^b and 20^b of the valve 17 with the short crook 8. From the port 20^b the air passes forward through pipe 9 around crook 10 to the bell of the instrument. When the valve tones are used the air passes first through the relatively long crook 12 and the upper and middle ports 18 and 19 of the middle valve 16. From the port 19 the air passes through the short pipe 5 to the first valve cylinder, where it communicates through the upper and middle ports 18^a and 19^a of the valve 15 thereof with the relatively long crook 13. From the port 19^a the air passes through the short pipe 7 to the third valve cylinder, where it communicates through the upper and middle ports 18^b and 19^b of the valve 17 with the relatively long crook 14. From the port 19^b the air passes forward through the pipe 9, around the crook 10 to the bell of the instrument. The change from the open tone to the valve tone is accomplished by means of a single extra port in each valve, and the number of turns given the air column is the same for open and valve tones, thereby giving absolute equality in all of the tones. As the air is constantly traveling in a downward direction, the only upward progression thereof being the last large curve 10 to the bell, and there being no sharp turns of the air column or obstructed valve ports to check or retard the same, the advantage is evident.

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

40 1. In a wind musical instrument, a valve cylinder carrying a long crook and a relatively short crook, and a valve in said cylinder having three ports, the upper and middle ports having communication with
45 one said crook and the lower and middle ports having communication with the other said crook.

2. In a musical wind instrument, a valve

cylinder having a depressible piston valve provided with three ports located one above the other, said valve cylinder carrying a long crook directly connected at both ends thereof to the cylinder and having communication with the upper and middle ports of the valve thereof when depressed, and a relatively short crook directly connected at both ends thereof to the cylinder and having communication with the lower and middle ports of the valve in normal position.

3. In a musical wind instrument, a plurality of valve cylinders having depressible piston valves, each valve having three ports located one above the other, each valve cylinder carrying a long crook directly connected at both ends thereof to the cylinder and having communication with the upper and middle ports of the valve thereof when depressed, and a relatively short crook directly connected at both ends thereof to the cylinder and having communication with the lower and middle ports of the valve in normal position.

4. In a wind musical instrument, a plurality of valve cylinders having depressible piston valves, each valve having three ports located one above the other, the ports of each valve opening in line at one side and out of line at the other side of the valve, each valve cylinder carrying a long crook directly connected at both ends thereof to the cylinder and having communication with the upper and middle ports of the valve thereof when depressed, and a relatively short crook directly connected at both ends thereof to the cylinder and having communication with the lower and middle ports of the valve in normal position, the short crook of each valve cylinder being located within the long crook thereof.

In testimony whereof I affix my signature, in presence of two witnesses.

HERBERT G. NEELY.

Witnesses:

THEODORE W. PYLE,
STANLEY K. HENSHAW.