(No Model.)

H. G. NEELY.

CORNET.

No. 571,011. Patented Nov. 10, 1896.

Fig 1

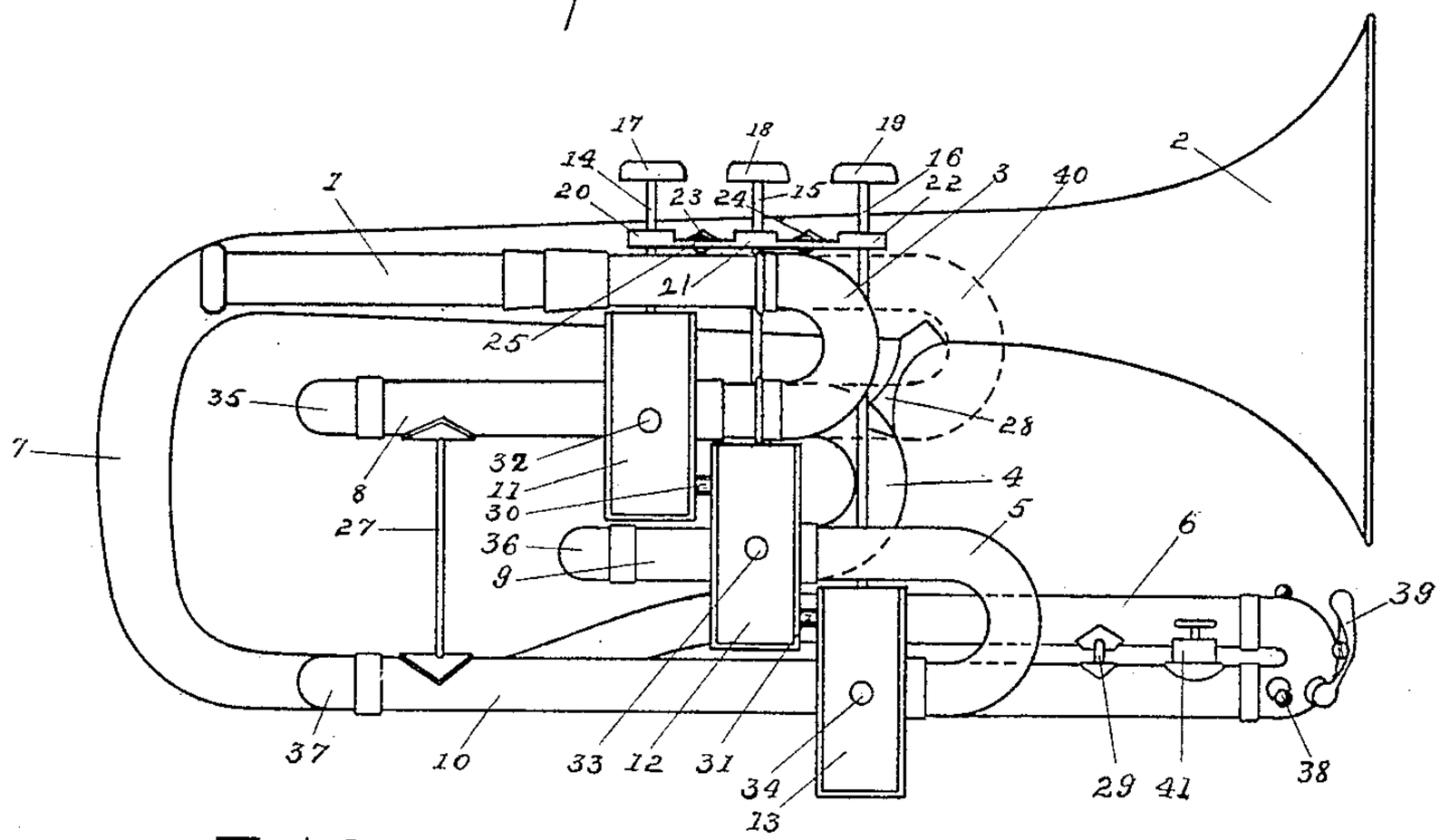


Fig. 2

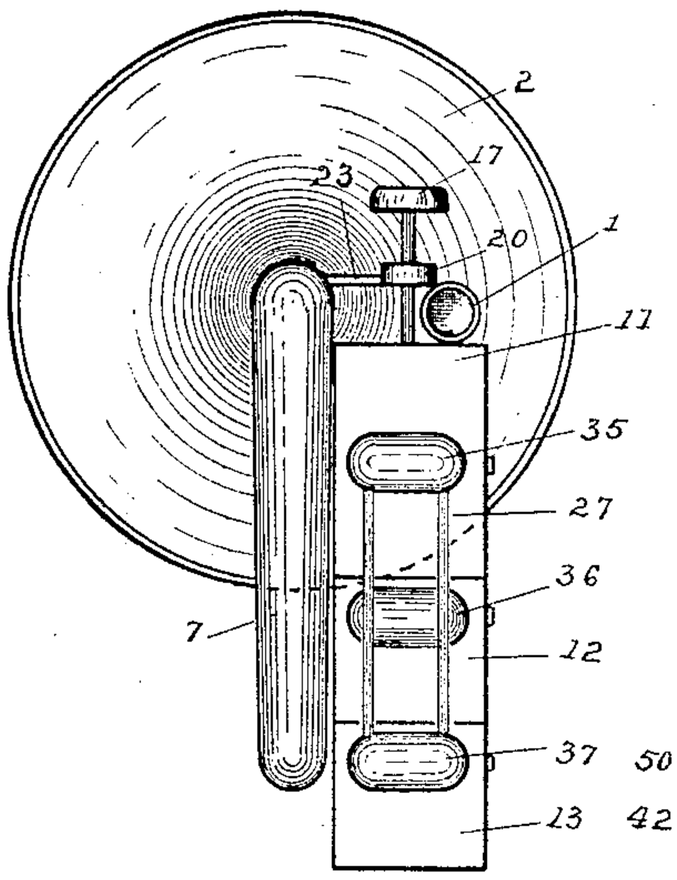


Fig. 3

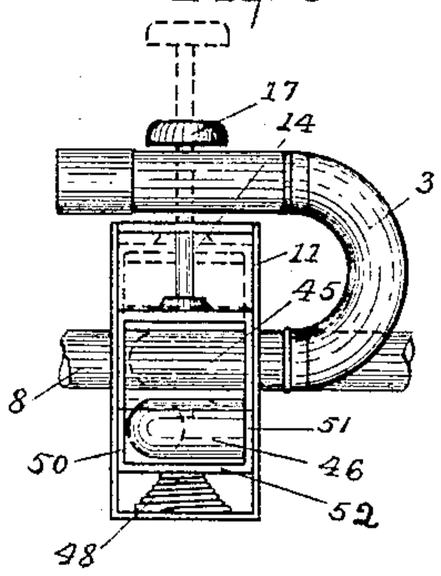


Fig. 4

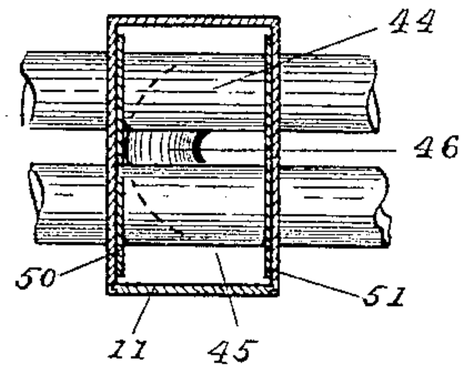


Fig. 5

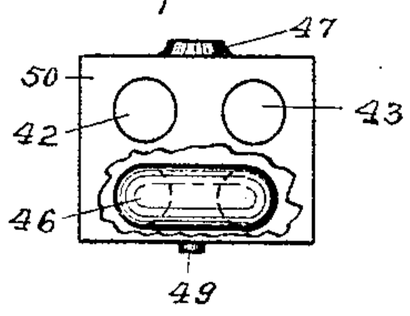


Fig. 6

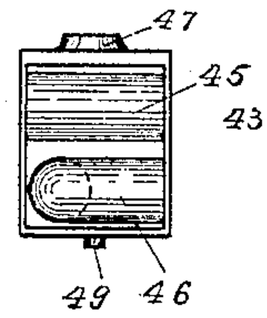
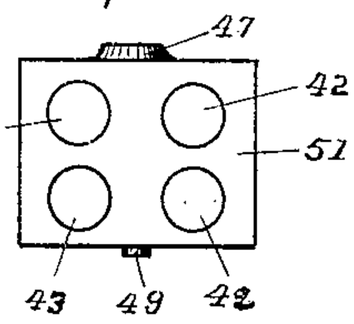


Fig. 7



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CORNET.

SPECIFICATION forming part of Letters Patent No. 571,011, dated November 10, 1896.

Application filed September 2, 1896. Serial No. 604,605. (No model.)

To all whom it may concern:

Be it known that I, HERBERT G. NEELY, a citizen of the United States, residing at South Salem, in the county of Ross, in the State of Ohio, have invented certain new and useful Improvements in Cornets; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in that class of musical instruments known as "cornets." It can be applied to all wind musical instruments of that family; and the object of my invention is to produce an instrument having clear air-passages, a less number of turns in the air-pipes, and shorter valve-action than those commonly now in use, thus requiring less effort to play upon it and producing a purer clearer tone.

The following description, illustrated by the accompanying drawings, will enable those skilled in the art to understand the construction by which I secure these results.

Figure 1 is a side view of a B♭ cornet made according to my plan. Fig. 2 is a rear or mouth end view of the same; Fig. 3, a detail view of one of the valves with a detachable end of the valve-box removed to show the mechanism of the valve. Fig. 4 is a detail plan view of the valve with the top of the valve-box removed. Fig. 5 is a rear elevation of the valve with rear lower part of the side plate of the valve in part broken away to show the turn of the bent pipe-section in the valve-box. Fig. 6 is a detail side view, and Fig. 7 a front elevation, of the valve.

Similar numerals refer to similar parts throughout the several views.

Numerals 1, 2, 3, 4, 5, 6, and 7 represent the mouth-pipe, the bell, and main air-pipes of a cornet.

8, 9, and 10 are pipes for the first, second, and third valves, respectively.

Pipe-section 3 is removable for substitution in its place of another pipe 40 (shown in dotted lines) when it is desired to change the key of the instrument to A♮ or low pitch.

39 is a water-key, and 41 a music-rack holder, both of ordinary construction.

27, 28, 29, 30, and 31 are braces to connect the pipes and valve-boxes together.

11, 12, and 13 are valve-boxes connected together and to the air-pipes by braces. These valve-boxes have top, bottom, sides, and ends. The ends presented to view in Fig. 1 slide in grooves in the side pieces and are detachable by pushing them vertically upward, and thus affording free access to the valves.

32, 33, and 34 are lugs to aid in raising the slides by affording a hold for the fingers.

35, 36, 37, and 38 are turns in the pipe which slide for tuning the instrument.

To the front and rear sides of the valve-boxes the air-pipes are secured in alinement, the sides of the boxes having perforations at the point of contact to afford a clear air-passage from the pipes into the interior of the boxes. In each valve-box a vertical movable valve is mounted upon a spiral spring 48. The valves have side plates 50 and 51, which are secured together at the top and bottom by suitable cross-plates and are open at the ends, as shown in Figs. 3 and 6. In the upper part of these side plates are perforations 42 and 43. Between these side plates are secured short sections of air-pipes 44 and 45, adapted to register with the said perforations. In the lower part of the valve is a bent section or turn of air-pipe 46, which has its open ends secured to plate 51 against corresponding perforations 42 and 43, and which, when the valve is in its normal position, will register with the adjacent air-pipes, thus affording a clear air-passage through the valves and the pipes.

14, 15, and 16 are valve-stems having upon their upper ends the ordinary buttons for the fingers, and at the lower end, passing through the top of the valve-boxes, are attached by screw-threaded ends to the top 47 of the valve-plates. The upper ends of the valve-stems pass through the bearings 20, 21, and 22 of the bar 25, which is secured to the bell end of the air-pipe by the braces 23 and 24.

49 is a lug upon the bottom 52 of the valve-plate and working in the top of the spring 49 to secure it in proper position.

The expansive force of the spring 49 keeps the valve elevated when in its normal position, and the bent section 46 in the lower part registers with the adjacent pipes. When the

valve is pressed down, as shown in Fig. 3, the straight interior air-pipe sections 45 and 44 register with the adjacent air-pipes, thus giving a clear and continuous air-passage between the pipes upon both sides of the valves, as shown in Fig. 4. Thus in Fig. 3 the dotted lines show the valve and valve-stem when in normal position. When the valve is pressed down in the box 11, Fig. 3, there will be a continuous air-passage through the valve from pipe 3 to pipe 8, the turn 35, and the return into section 44 and the pipe 4. It will be seen that the air-passage is lengthened without increasing the number of the turns in the pipes, and that when the pressure is removed the valve is forced upward, and the bent section 46 will then register with air-pipes and the air-passage be correspondingly shortened. The same result is secured in the same manner in the valves in valve-boxes 12 and 13.

To deaden the sound of contact of the buttons 17, 18, and 19 with the bearings 20, 21, and 22 and of the valve with the bottom of the valve-box, pieces of cork may be interposed in any suitable manner.

The novel features of my invention are comprised in the valves and valve-boxes. No matter how many valves are pressed open, only the same number of turns in the air-pipes is used that is used when all are closed, whereas in the old style the use of each additional valve increases the number of turns and makes the tones uneven.

The total number of turns in a cornet constructed according to my plan when there are three valves is eight all being easy and natural, while in a cornet with a like number of valves of the old style the number of turns is thirteen, and when in natural tone four turns and three square cut-offs are also used.

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

1. A valve for cornets or other musical instruments of its class, comprising a pair of plates in parallel arrangement, rigidly connected at their extremities by proper cross-pieces, a pair of parallel pipe-sections transversely fixed in coincident openings in the upper portion of said plates for the purpose specified, a curved pipe-section whose ends are fixed in adjacent openings in the forward end of one of said plates as shown, the said parallel and curved pipe-sections to alternately register with the adjacent pipes, a valve-stem mounted in suitable bearings and operatively connected with said valve, the said valve thus constructed being mounted in a containing box or case and supported by a proper coil-spring, adapted to automatically return the valve to its seat after each operation thereof all arranged as described and shown.

2. In a cornet, the valve-boxes 11, 12 and 13, each having a detachable end slide and having fixed to the front and rear sides the adjacent air-pipes as shown, and having mounted in the box a spring-pressed valve, having a bent section of air-pipe secured in the lower part between parallel side plates, adapted to register at the open ends with the adjacent air-pipes, and also having straight air-pipe sections secured between said side plates in the upper part of said valve adapted to register with the adjacent air-pipes leading into the box when the valve is pressed down and thereby forming a continuous free air-passage through the pipes, and said valve being operated by a suitable stem mounted in proper bearings and operatively connected with said valve.

3. In a cornet or other musical instrument of its class, a valve-box having connected in alinement with its opposite sides the air-pipe of the instrument communicating with the valve in said box, and having mounted in said box a vertically-movable valve, mounted upon a coiled spring and having opposite side plates properly connected by cross-pieces and also having a bent air-pipe section adapted to register at the forward end with the adjacent air-pipes when in its normal position, and also having straight air-pipe sections secured to said valve sides and adapted to register with the said adjacent air-pipes when said valve is pressed downward and the said valve being operated by means of a suitable stem mounted in proper bearings and operatively connected with said valve.

4. In a cornet or other musical wind instrument of its class a valve-box with the air-pipe leading to and communicating with the same, a vertically-movable valve mounted in said valve-box upon a spiral spring, and having a detachable stem with finger-button for operating the valve, operatively connected with the said valve, a bent section of air-pipe fixed in said valve adapted to register at its open ends with the air-pipes leading into the forward end of the valve-box, when the valve is in its normal position, and straight sections of pipes also fixed in said valve adapted to register at each end with the air-pipes when said valve is pressed down and thereby forming a continuous air-passage without increasing the number of turns in the air-passage, in combination with the mouthpiece, the air-pipes and bell of said instrument all arranged as described and shown.

Signed by me this 29th day of August, 1896.

HERBERT G. NEELY.

Witnesses:

HUGH EVANS,

AARON H. GREGORY.