

No. 646,046.

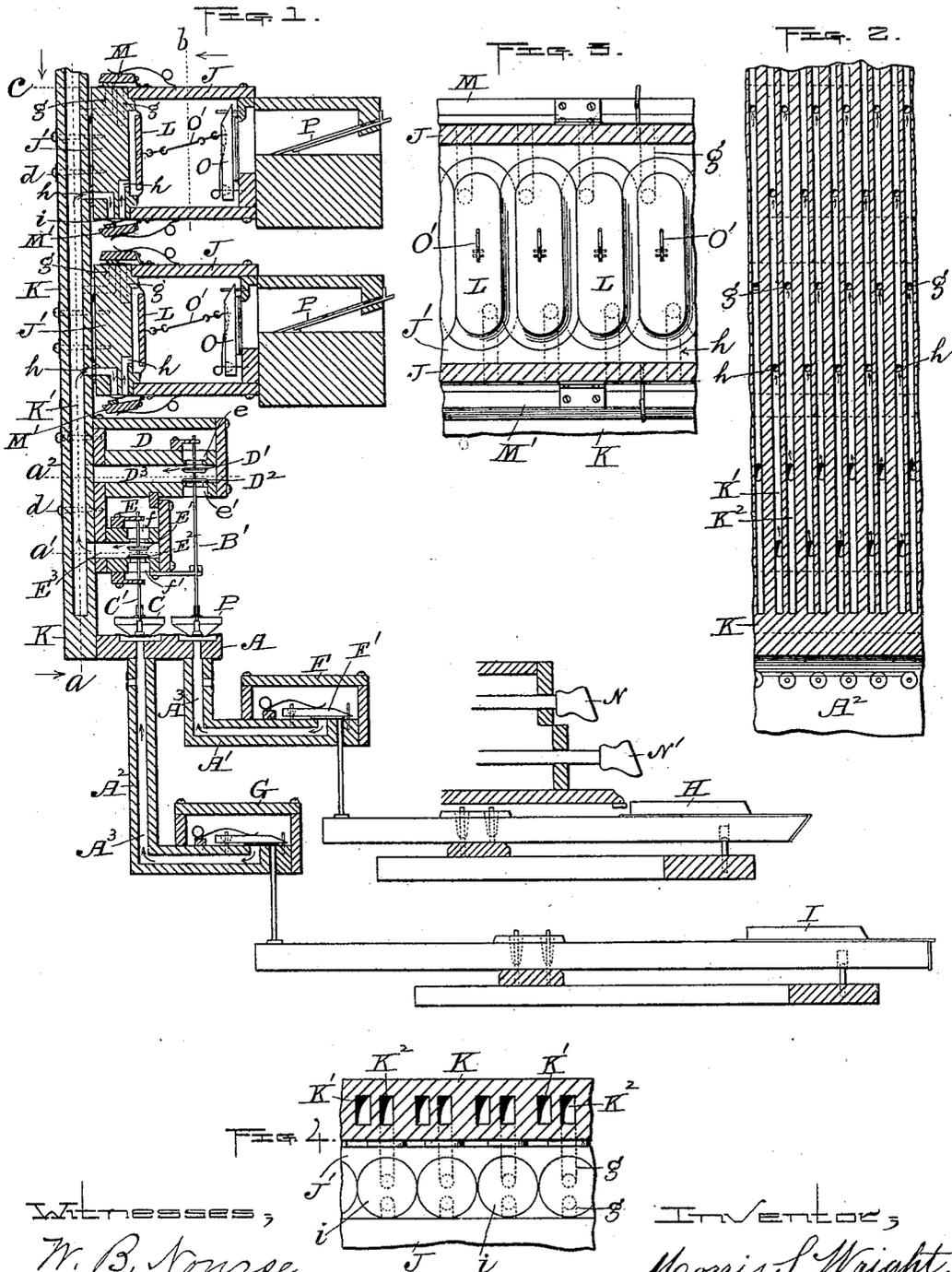
Patented Mar. 27, 1900.

M. S. WRIGHT.
REED OR PIPE ORGAN.

(Application filed Oct. 15, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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UNITED STATES PATENT OFFICE.

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REED OR PIPE ORGAN.

SPECIFICATION forming part of Letters Patent No. 646,046, dated March 27, 1900.

Application filed October 15, 1898. Serial No. 693,590. (No model.)

To all whom it may concern:

Be it known that I, MORRIS S. WRIGHT, of the city and county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Reed or Pipe Organs; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 represents a vertical transverse section through so much of a reed-organ as is necessary to illustrate my improvements. Fig. 2 is a vertical longitudinal section through the secondary channel-board, taken on line *a*, Fig. 1, looking in the direction indicated by the arrow. Fig. 3 represents, upon an enlarged scale, a vertical longitudinal section through part of one of the tone-chambers, taken on line *b*, Fig. 1, looking in the direction of the arrow and showing a front view of several of the separate secondary pneumatics and the cut-off valves thereof, all the following figures also being upon the same enlarged scale. Fig. 4 is a horizontal section through part of the secondary channel-board, taken on line *c*, Fig. 1, looking down, as shown by the arrow and showing some of the flexible pneumatic cut-off valves of the tone-chamber hereinafter described. Fig. 5 is a horizontal section through a part of the secondary channel-board just above the primary pneumatics, showing a plan of some of said pneumatics. Fig. 6 is a similar sectional view to Fig. 1 of one of the tone-chambers and part of the secondary channel-board upon an enlarged scale. Fig. 7 is a similar view to Fig. 6, showing certain modifications in the construction, which will be hereinafter described. Fig. 8 represents the front end of one of the tone-chambers with the end of an ordinary organ-pipe applied thereto, and Figs. 9 and 10 are horizontal sections taken on lines *a'* and *a''*, respectively, Fig. 1.

The object of my invention is to effect improvements in the reed or pipe organs covered by my United States Patent No. 509,506, dated November 28, 1893, whereby the capacity in variety of tones of said instrument may be increased without increasing its size over the old style of instruments; and it consists in combining with the instrument a double pri-

mary pneumatic system connected with each secondary pneumatic in the tone-chambers, each tone-chamber containing a series of separate secondary pneumatic and reed valves, one of each for each pair of primary pneumatics and each reed, the channel-board of said tone-chamber being also provided with two double channels and cut-off valves for each secondary pneumatic controlled by two "stops" for each tone-chamber, as will be hereinafter more fully set forth.

In order that others skilled in the art to which my said invention appertains may better understand the nature and purpose thereof, I will now proceed to describe it more in detail.

Referring to the drawings, A represents the primary channel-board, upon which is mounted the double rows or series of primary pneumatics B C, the same being arranged in pairs in this instance transversely thereon and connected by means of vertical wire stems B' C' with the double cut-off or switch valves D' D² and E' E² of the wind-chests D and E, respectively. In this instance said primary channel-board A has two branches A' A², both extending vertically for a short distance, and then horizontally to receive and support the wind-chests F G, which are connected, as usual, with the upper and lower banks of keys H and I, respectively. Said wind-chests F G are also connected with the primary pneumatics by means of the primary channels A³ A³ in the aforesaid primary channel-board and its branches. The wind-chests D E and tone-chambers J J are in this instance detachably fastened by means of screws *d* to the secondary channel-board K. Said wind-chests are each provided with a separate channel D³ E³, respectively; also, with the air-outlets *e e'* and *ff'*, respectively, which are opened and closed by the cut-off or switch valves D' D² and E' E², previously mentioned, when the primary pneumatics are operated as hereinafter described. Said separate wind-chest channels D³ C³ connect with separate channels K' K² in the secondary channel-board K, which in turn respectively connect with two separate double channels *g g* and *h h*, formed in the top and bottom edges of the tone-chamber channel-board J' of tone-chamber J, thereby, as will be seen, forming double separate connections

between each transverse pair of primary pneumatics B C and each separate secondary pneumatic L. Over the central outlets of each double channel *h h g g* in the tone-chamber channel-board *J'* is fitted a flexible pneumatic cut-off valve *i*, and over said flexible valves are in turn arranged the long hinged cut-off valves *M M'*, which are in practice mechanically connected with the stops *N N'* of the instrument. As the mechanism for obtaining said connections between said stops and cut-off valves is old and well understood and does not constitute a part of my invention it is deemed unnecessary to illustrate or describe the same. Each tone-chamber, as will be observed by the above-described construction, is provided with two stops for each secondary pneumatic L instead of one, as usual. Therefore each of said secondary pneumatics being capable of operation from two separate primary pneumatics, and said primary pneumatics being in turn operated, one from one of the keys of one bank or manual and the other from one of the keys of the other bank or manual, it is obvious that the same reed of each pair of primary pneumatics may be operated from either manual.

In case it is desired to use a certain stop operating a certain tone on both manuals it is necessary by the old method to have two separate stops for each manual, whereas in my improved instrument one stop and reed answers for both manuals. One reed or tone being thus connected with both manuals the same may be operated by either at will. By this construction it is unnecessary to have a coupler connection between the manuals, as usual, as the full organ may be played from either manual.

As is well known, different organists have different ideas as to where they want the different stops arranged, both as regards the "swell manual" and the "great manual"—as, for instance, one may want a flute tone in the swell manual, while another may want it in the great manual. If they want the flute tone in both manuals of an old-style instrument, it is obvious that the capacity of the instrument must necessarily be decreased as to variety of tones with the same size of instrument. By my instrument both may be accommodated, as one and the same flute tone or any other desired tone may be played, as aforesaid, from either manual without decreasing the variety of tones or increasing the instrument above its usual size.

In this instance the keys *H* of the upper bank or manual connect with and operate the primary pneumatics *B* and the keys *I* of the lower bank or manual connect with and operate the primary pneumatics *C*, while the upper "stops" *N* are adapted in practice for operating the top cut-off valves *M* and the lower stops *N'* the bottom cut-off valves *M'*; but I do not limit myself to said arrangement. I have also in this instance shown the instrument as being operated by air-pressure; but

since it may in practice be operated by air-suction I do not limit myself thereto.

In operation it will be understood that the various wind-chests and tone-chambers are all supplied with air under equal pressure from the usual source of supply. Therefore when the cut-off valves *M M'* are open, an equal pressure existing at each side of the secondary pneumatics, an equilibrium thereof is maintained and they remain stationary, which is their normal positions, with their respective reed-valves *O* closed, as is shown in the drawings. They thus remain until one of the keys—*H*, for instance—is pressed down. This causes its wind-chest valve *F'* to be opened and its primary pneumatic *B* to be raised to close the wind-chest outlet *e* and open the channel-outlet *e'*, thereby permitting the air back of the secondary pneumatic to escape through the various channels and said outlet *e'*. Said removal of the air-pressure from the back of said secondary pneumatic permits the latter to be forced back by the air-pressure in the tone-chamber, and by said operation the reed-valve is also drawn back through the wire connection *O'* and opened, thereby causing the reed *P* or pipe *Q* to speak, according to which is combined with the instrument.

In order to economize in space, I have arranged each alternate transverse pair of primary pneumatics above the level of the adjoining pairs—one pair, in this instance, being arranged to come on a level with the top of the primary channel-board and the ones next thereto a little above the same, as is shown in Figs. 1 and 5, thereby admitting of said pneumatics being placed close together, only sufficient longitudinal space being necessary between them to receive the wire stems *B' C'*.

It is obvious from the foregoing description that while increasing the capacity of the instrument in the way of tone effects I have not increased the instrument above the usual length of such instruments. The cost thereof is also not materially increased over the old style of instruments. It will also be apparent that the capabilities of such an instrument may be further augmented by employing an additional number of primary pneumatics in each transverse row and making the other parts thereof to correspond therewith in practice without departing from the principle of my invention. I therefore reserve the right to use more than two primary pneumatics, cut-off valves, and channels with each secondary pneumatic, if desired.

In Fig. 7 I have shown a modification of the tone-chamber and adjacent parts. In this instance, instead of employing one secondary pneumatic *L* for each pair of double channels *g g h h* in the tone-chamber channel-board *J'* and connected with the reed or pipe valve *O* by means of one wire connection *O'*, as previously described, I have shown two separate secondary pneumatics *L' L'*—one at the top and the other at the bot-

tom of the tone-chamber—one for each double channel *g g h h* and independently connected by means of arms $L^2 L^2$ and wires $L^3 L^3$ with one of the reed or pipe valves *O*. As
 5 will be observed, the same result may be obtained by this construction as by that first described and shown by the other figures of the drawings, and since the same principle is carried out by both I reserve the right to use
 10 either construction in practice.

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

1. In a reed or pipe organ, the primary
 15 channel-board, having branches upon which are mounted the key wind-chests and their valves, with which the keys for playing the instrument are connected, said channel-board and its branches, also having a separate
 20 channel to each primary pneumatic; said primary pneumatics, arranged in pairs on said primary channel-board; the secondary channel-board and double wind-chest, having double, connecting-channels, one for
 25 each primary pneumatic of each pair, and two, double, cut-off or switch valves, for each double wind-chest, each separately connected with the primary pneumatics of each pair; in
 30 combination with the tone-chambers, each containing a series of separate, secondary pneumatics and reed-valves, one of each for each pair of primary pneumatics and each reed or pipe—the channel-board of each of said tone-chambers being also provided with
 35 two, double channels and cut-off valves for each secondary pneumatic, controlled by two “stops” for each tone-chamber, substantially as and for the purpose set forth.

2. In a reed or pipe organ, the combination
 40 of the secondary channel-board, having two

channels for each reed or pipe, with the tone-chambers, each containing a series of separate, secondary pneumatics and reed-valves, one of each for each pair of primary pneumatics and each reed or pipe, and said valves
 45 connected with said secondary pneumatics—the channel-board of said tone-chamber being also provided with two, double channels and cut-off valves for each secondary pneumatic, controlled by two “stops” for each
 50 tone-chamber, substantially as and for the purpose set forth.

3. In a reed or pipe organ, the pairs of primary pneumatics, the double wind-chests, their double cut-off or switch valves and the
 55 secondary channel-board, said wind-chests and channel-board each having two separate, connecting-channels for each pair of primary pneumatics, and said cut-off or switch valves connected with said primary pneumatics, in
 60 combination with the tone-chambers, having two “stops” for each, and each containing a series of secondary pneumatics and valves, one of said valves for each pair of primary pneumatics and each reed or pipe, and con-
 65 nected with said secondary pneumatics, the channel-board of said tone-chamber being also provided with two, double channels for each valve in the tone-chamber, and each reed or pipe; the flexible and “stop,” cut-off valves,
 70 arranged over the outer openings of said double channels in the tone-chamber channel-board, and the secondary pneumatics, arranged over the inner openings thereof, substantially as and for the purpose set forth.
 75

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