

R. Y. BARROWS.
 ORGAN PIPE.
 APPLICATION FILED NOV. 29, 1910.

1,006,425.

Patented Oct. 17, 1911.

Fig. 1.

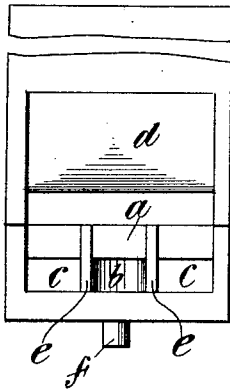


Fig. 2.

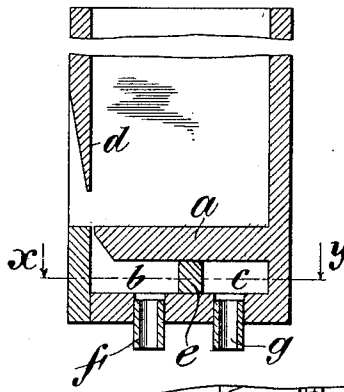


Fig. 3.

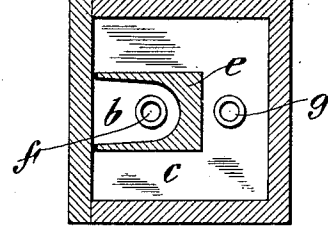


Fig. 4.

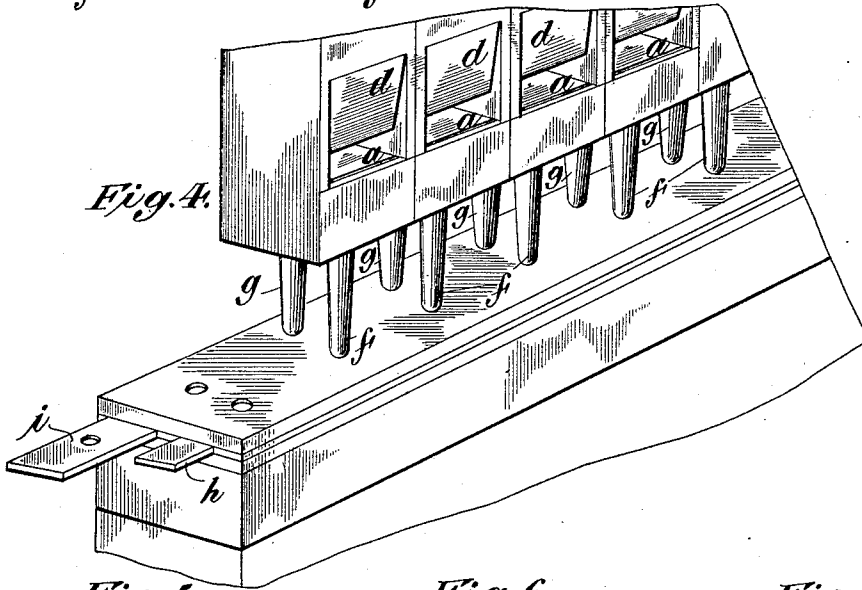


Fig. 5.

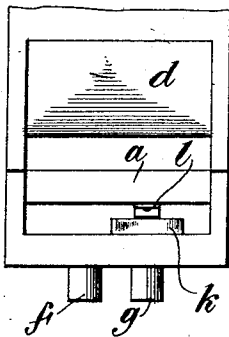


Fig. 6.

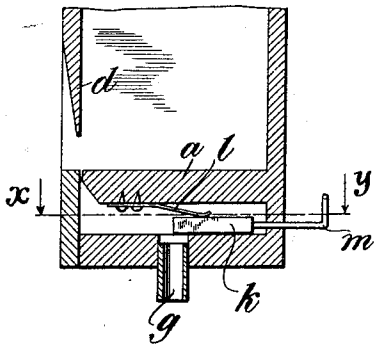
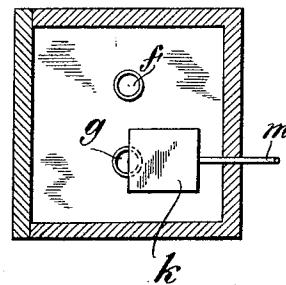


Fig. 7.



Witnesses:
 Geo. Schwarz.
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UNITED STATES PATENT OFFICE.

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ORGAN-PIPE.

1,006,425.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROBERT Y. BARROWS, a citizen of the United States, and a resident of Rutherford, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Organ-Pipes, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

The invention relates more particularly to improvements in organ pipes of the class known as flute or flue pipes, such as the diapasons, flutes, tibias, gambas, etc., whereby two or more degrees of power or qualities of tone may be obtained at will from one pipe, the principal object being to make it possible to provide a considerable range of power in one set of pedal pipes and thus do away with the necessity of providing several sets of such pipes where a range from very soft to very loud is required. For instance, in organ construction, the expense of and space required for one large pedal pipe are more than that of three or four octaves of manual pipes and for this reason, as is well known, many organs have a very inadequate pedal equipment; and where, as is usually the case, but one set of pedal pipes is provided, they must be of medium power whereby they are too powerful for soft passages and too weak for heavy ones, with the result that all small and medium sized organs lack entirely the dignity possessed by the larger ones.

In accordance with the preferred form of the invention, each pipe embodying the improvements, has its air passages so constructed that the air may be made to strike either on the whole width of the lip, or on a portion or portions of it as desired. Thus, if the air is directed against the middle third of the lip of the pipe a soft tone will result; if against the two outer thirds only, a louder tone will be produced, while if directed against all three portions at the same time, the full power of the pipe will be heard. The invention, however, may be carried out in other ways as by providing a pipe of the usual form with two or more inlets instead of one, one or more of these being arranged to pass less than the normal supply of air required to produce the full power of the pipe, either through restricting the area of the air passages of these addi-

tional inlets, or supplying them with air at reduced pressure.

For a more detailed explanation of the improvements, reference may be had to the accompanying drawing in which—

Figure 1 is a view in front elevation of the lower end of an organ pipe embodying the invention, the cap underneath the lip being removed. Fig. 2 is a view of the lower end of said pipe in vertical section. Fig. 3 is a view of the same in horizontal section, the plane of which is indicated by the line *x—y* in Fig. 2. Fig. 4 is a detail view is perspective of a set of pipes mounted upon the wind-chest, and showing a convenient method of control, and, Figs. 5, 6 and 7 are views corresponding to Figs. 1, 2, and 3, but illustrating another embodiment of the invention.

Referring first to Figs. 1, 2, and 3, it will be seen that the space underneath the block *a* is divided into two chambers *b* and *c* each of which is adapted to deliver air upon the lip *d*. Thus, the chamber *b* may be formed by a U-shaped partition *e* built into the space underneath the block and so constructed as to cause the air introduced into said chamber *b* through its inlet *f* to be delivered upon the middle third of the lip *d*. In such case, the remainder of the space below the block *a* will constitute the chamber *c* into which air may be introduced through an inlet *g* and delivered so as to act upon the two outer thirds of the lip *d*. In this way, by providing suitable means to control the passages *f* and *g*, such as the usual sliders *h*, *i* (Fig. 4) operated by stop-handles (not shown), air may be admitted to act upon one-third, two-thirds or upon the whole width of the lip, as may be desired, thus making it possible to produce in a single pipe with one lip considerable variations in power and tone quality. Of course, it will be understood that by constructing the air passages in different ways, the variations may cover as great a range as is desired.

In Figs. 5 to 7, where another embodiment of the invention is shown in which three different degrees of power may be obtained in a single lip organ pipe, the space underneath the block is not sub-divided, as in the case of the construction shown in Figs. 1 to 3, but the air inlets *f* and *g* are provided with means whereby they may deliver dif-

ferent wind pressures to the block. Such means may consist, for instance, of a valve or slide h held in place by means of a spring l and movable so as to restrict one of the
 5 air passages g through the medium of a wire m extending through the side of the pipe. Thus, by having one inlet arranged to admit one-third and the other inlet two-thirds of the maximum air supply, three
 10 different degrees of power will be obtainable, the inlets being used simultaneously when the full power of the pipe is required.

On an organ supplied with pipes embodying the improvements and having two
 15 manuals and pedal, it would be possible to play simultaneously a soft pedal bass a medium accompaniment and a loud solo, although the organ contained but a single stop or set of pipes.

20 While the invention will probably be of greatest utility when applied in the pedal department of an organ, it is obvious that it is not limited to such application.

I claim as my invention:

25 1. An organ pipe having a plurality of air supply passages leading to a single lip and means to control the air admitted from at

least one of said passages, whereby the power of the pipe may be varied over a considerable range.

2. An organ pipe of the "flue" variety having a plurality of air supply passages leading in underneath its block, and means to control the air admitted from said passages to a single lip, whereby the power
 35 of the pipe may be varied over a considerable range.

3. An organ pipe having air supply passages arranged to deliver air against different portions of the lip, and means to control the air in said passages.

4. An organ pipe having the space underneath its block divided into a plurality of chambers each adapted to deliver air upon a portion of the lip; air supply passages
 45 leading into each chamber, and means to control the air delivered upon the lip from each chamber.

This specification signed and witnessed this 19th day of November, A. D., 1910.

ROBERT Y. BARROWS.

Signed in the presence of—

JOHN W. THOMPSON,
 LUCIUS E. VARNEY.