2 Sheets—Sheet 1.

E. S. SCRIPTURE.

Organ-Blower.

No. 200,349. Patented Feb. 12, 1878.

Fig. 1.

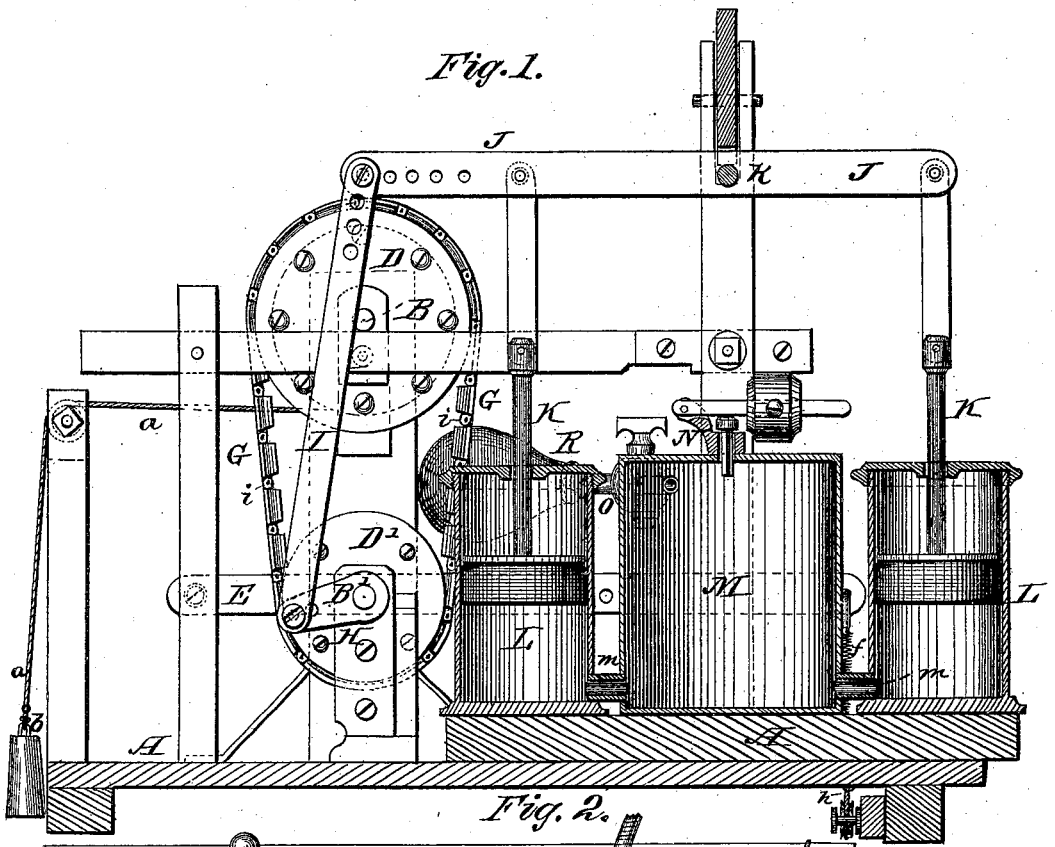
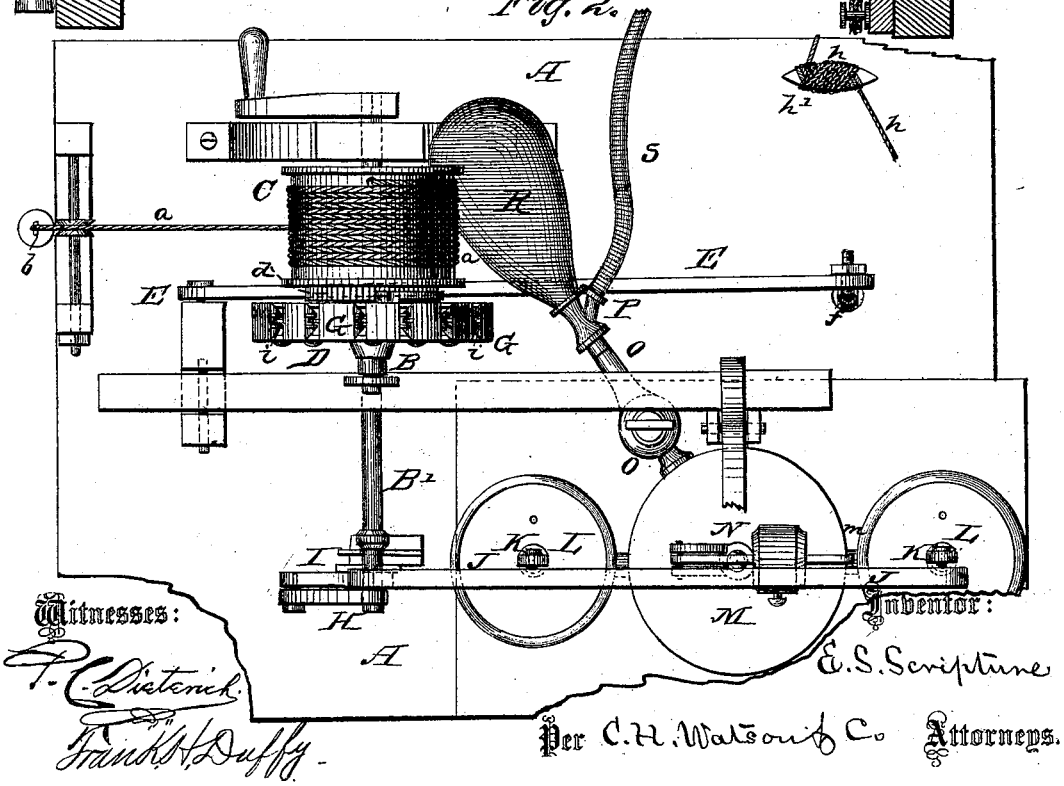


Fig. 2.



Witnesses:

F. C. Dieterich.

Frank H. Duffy.

Inventor:

E. S. Scripture

Per C. H. Watson & Co. Attorneys.

2 Sheets—Sheet 2.

E. S. SCRIPTURE.

Organ-Blower.

No. 200,349. **Patented Feb. 12, 1878.**

Fig. 3.

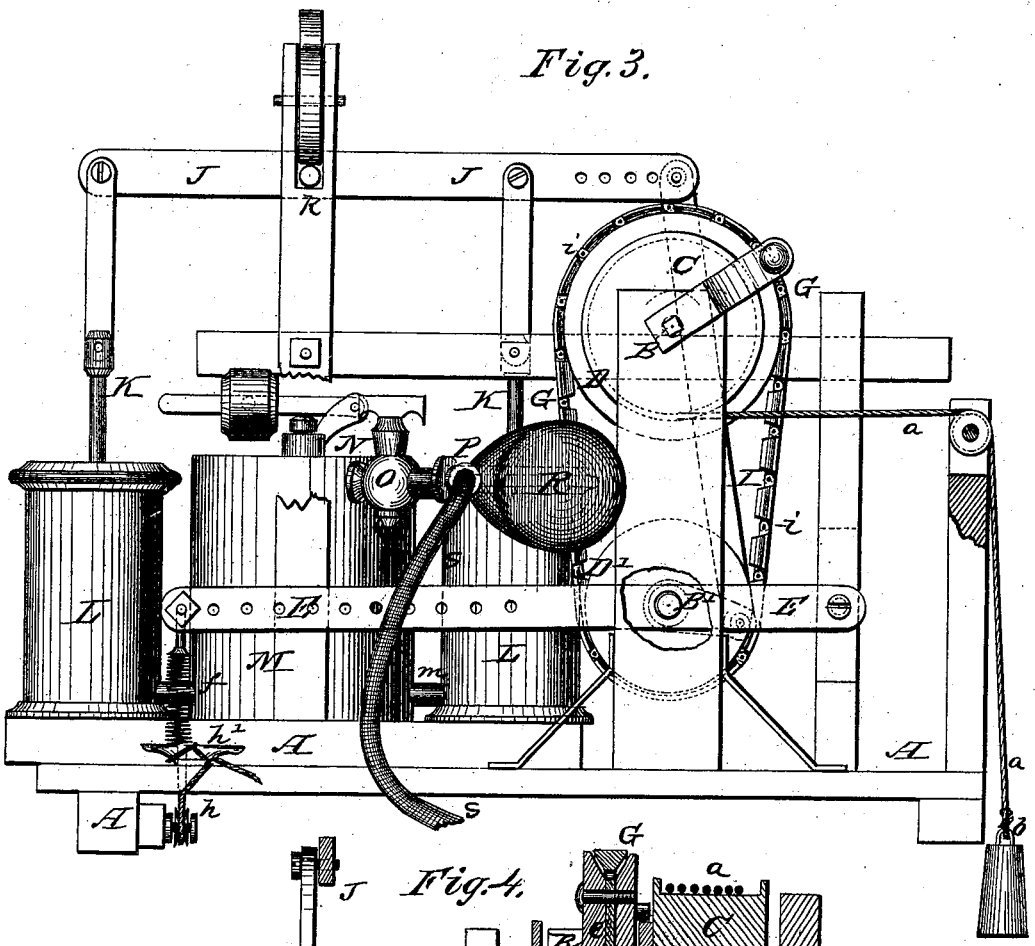


Fig. 4.

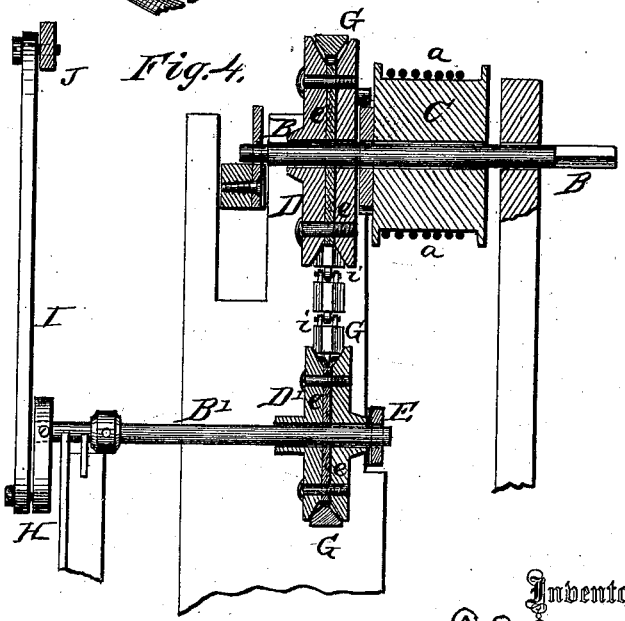
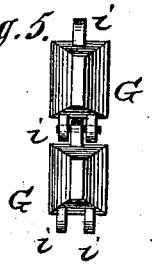


Fig. 5.



Witnesses:

P. C. Dieterich

Frank H. Duffy

Inventor:

E. S. Scripture

Per C. H. Watson & Co Attorneys

UNITED STATES PATENT OFFICE.

ELIPHALET S. SCRIPTURE, OF BROOKLYN, N. Y., ASSIGNOR TO HIMSELF, WM. H. HARWAY, AND MARY W. HENDRICKSON, OF SAME PLACE.

IMPROVEMENT IN ORGAN-BLOWERS.

Specification forming part of Letters Patent No. **200,349**, dated February 12, 1878; application filed January 23, 1878.

To all whom it may concern:

Be it known that I, ELIPHALET S. SCRIPTURE, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Using Compressed-Air Organs; and I do hereby declare that the following is a full, clear, and exact description thereof, 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, and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in the construction and arrangement of a machine for furnishing and using compressed air for operating an organ or other air-instruments, as will be hereinafter more fully set forth.

In the annexed drawings, which fully illustrate my invention, Figure 1 is a longitudinal section of my invention. Fig. 2 is a plan view of the same. Fig. 3 is a side elevation thereof, and Figs. 4 and 5 are detailed views of detached parts.

A represents the base or bed plate of my machine, upon which is erected a suitable frame-work or standards for supporting the various shafts and other parts of the machine. B is a horizontal shaft, on which is secured a drum, C, having a cord, *a*, attached to and wound around it, the other end of said cord being provided with a hook, *b*, for the attachment of a suitable weight to operate the machine; or the drum C may be hollow, and a spring arranged within it for the same purpose.

The drum C is, by an ordinary pawl-and-ratchet device, *d*, connected with the main driving-wheel, placed loosely on the shaft B, so that the weight or spring operating on the drum C will also rotate said wheel, while, by means of a crank or key applied on the end of the shaft, said shaft and drum may be turned in the opposite direction to wind up the weight or spring without turning the driving-wheel. This wheel is made of two separate disks, D D, the inner surfaces of which, at their peripheries, are beveled inward at such an angle as may be desired. These disks are provided with central hubs bored out to fit on the shaft B, and between the two disks are placed one or more elastic washers, *e*, of india-rubber or other suitable material, which will yield to the contraction of the space between the two disks, when it may become necessary to bring the two angular surfaces nearer together, on account of wear or for other reasons. This wheel is then completed by bolting or otherwise fastening the two disks together, and it is, by a link driving-chain, connected with a similar wheel, D′, secured on a shaft, B′. The driving-chain is composed of a series of links, G, made in the form of triangular blocks, slightly curved, and fitting between the angular surfaces of the wheels. At one end of each link is a single perforated ear, *i*, and at the other end are two similar ears. The single ear of one link is placed between the two ears of the adjoining link, and a pin, bolt, or rivet passed through them, as shown.

The inner end of the shaft B′ has a stationary bearing, while the outer end has its bearing in a lever, E, pivoted at one end, and the other end by a spiral spring, *f*, connected with a cord or chain, *h*. The spring *f* serves to produce upon the lever E such extra power as may be required for the purpose of obtaining the extra tractive force that may be needed upon the wheel-surfaces. This is done by merely drawing down upon the spring by means of the cord *h* and cleat *h′*, or other equivalent means.

On the inner end of the shaft B′ is a crank-arm, H, connected by a pitman, I, with one end of a walking-beam, J, hung upon journals at *k*. This end of the walking-beam, as well as the upper end of the pitman I, are provided with series of holes, as shown, so that the point of junction may be changed at pleasure to regulate the stroke.

To the walking-beam J, at equal distances from the pivot *k*, are connected two piston-rods, K K, which connect with pistons in the two air-pumps L L, and these two pumps are, by short pipes *m m*, connected with the compressing and distributing reservoir M, suitable valves being, of course, arranged in the pumps and pipes.

From and by the compressed air in the res-

ervoir M the requisite measure and amount of atmospheric pressure may be had at the moment required for an extra swell of any special note in gracing the music, which is to be attained by a judicious arrangement of key valves or gates properly attached to the distributing-reservoir, and worked therefrom by means of proper mechanical appliances with conducting-pipes, &c., and thus the performer is enabled to produce automatically and instantaneously an extra air-pressure, similar to that exerted by the lungs of a person when playing upon a flute or fife, which tends to give extra grace and force to the music thus executed.

By the construction of this apparatus the starting and stopping of the air-pumps are automatically effected. When the pressure within the reservoir M is sufficient to balance the force exerted by the weight or spring connected to the drum C, the machine stops, and it again starts when the pressure, by being drawn off, is reduced below said force, and thus maintaining at all times the required pressure in the reservoir.

On top of the reservoir M is a safety-valve, N, by which the pressure of the air in the reservoir may be governed and controlled.

O is the discharge-gate, to which is attached the main conducting-pipe P, for supplying the organ or other instrument of music requiring air.

The motive or other driving power is to be measured and gaged to any required degree which shall be just sufficient to keep and maintain the requisite pressure in the compressing-reservoir, and which will be sufficient to keep up a pressure just beyond the waste from the key-board, so that a surplus will be always on hand for the use of all extra swell-keys, and when the maximum quantity thereof is reached the moving power is balanced, and the pumps stop until the pressure falls below that standard, when it again starts.

Another mode of limiting the power to force in the air may be by regulating the endless-chain pressure within the grooves of the wheels D and D′, whose traction power may be limited thereby.

R represents an auxiliary air receiver and distributer, which is made of any strong elastic material, and of a size sufficient to contain an ample amount of compressed air for all the purposes above mentioned, the compressed air being let into said receiver R by opening the gate O, which gate is to be closed again when the machine is to come to a rest.

The peculiar advantage attained by the use of this flexible air-compressor is that by being compressed by any mechanical device an instantaneous swell may be given to any note on the key-board without calling upon the main reservoir M for the immediate effect, which is to be directed to the said note by opening a valve or gate, to be situated at the terminus of the flexible pipe S, which valve or gate may be worked by and from any mechanical device by the operator's foot or otherwise, while by another pipe, attached to and leading from the compressor M, the requisite amount of air is conveyed directly to the organ air-box.

A pipe may also lead from the flexible air-distributer R, to effect a whistle-blow, and worked similar to the Scotch bag-pipes.

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

1. The combination of an operating mechanism worked by weight or spring, one or more air-pumps, and an air receiver and distributer, all constructed and arranged to operate substantially as described, whereby the operating mechanism is automatically stopped and started by the variable pressure in the receiver, as herein set forth.

2. In an organ-blower, the angular driving-wheels D and D′, each made in two parts, with washers *e* between said parts, and connected by the endless chain formed of triangular links G, jointed together, substantially as herein set forth.

3. The auxiliary flexible air receiver and distributer R, arranged in connection with the main receiver M, to operate substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ELIPHALET S. SCRIPTURE.

Witnesses:
C. H. WATSON,
J. BRINKERHOFF.