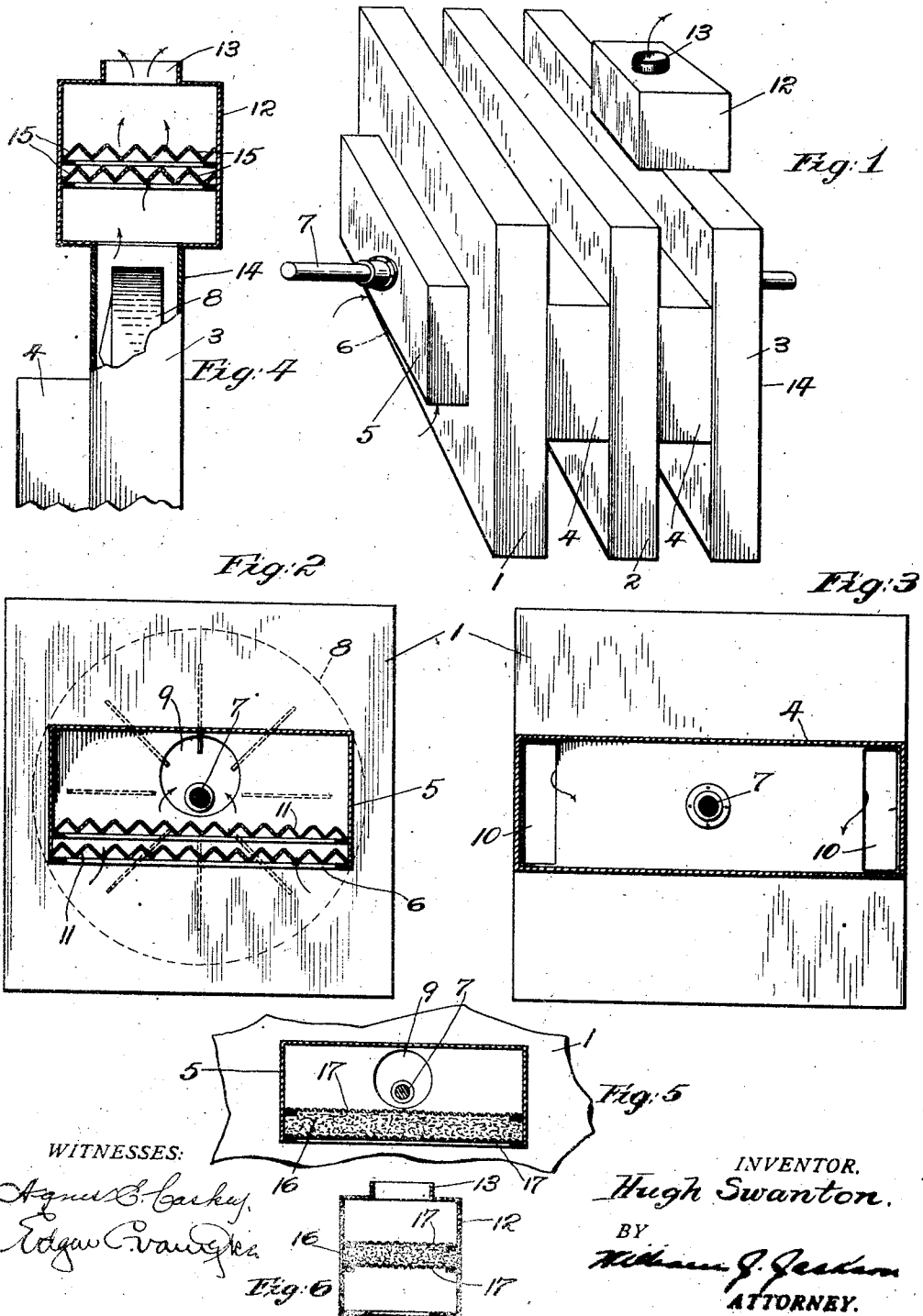


H. SWANTON.
AIR COMPRESSOR FOR BLOWING ORGANS.
APPLICATION FILED MAR. 28, 1912.

1,058,491.

Patented Apr. 8, 1913.



UNITED STATES PATENT OFFICE.

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AIR-COMPRESSOR FOR BLOWING ORGANS.

1,058,491.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HUGH SWANTON, a British subject, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Air-Compressors for Blowing Organs, of which the following is a specification.

This invention has particular relation to air compressors for blowing organs of the multiple series centrifugal fan type and has for its principal objects to provide, first, simplicity and cheapness of construction, and second, to provide apparatus, the escape of noise from which to the organ is reduced to a minimum.

A further object of the present invention is to provide an air compressor for blowing organs, in which units consisting of separate casings combined with connecting chambers are provided for individual fans, thereby eliminating the necessity for the construction of special casings to house two, three or more fans as may be necessary.

A further object of the present invention is to provide an air compressor for blowing organs, the configuration of which is such that comparatively large radiating surfaces are present for effectually dissipating objectionable or dangerous rises in temperature.

A still further object of the present invention resides in the providing of non-conducting sound screens of porous material for the air inlet and outlet ports of the air compressor.

With these and other objects in view the invention consists of the improvements hereinafter described and finally claimed.

The nature, characteristic features and scope of the invention will be more fully understood from the following description, taken in connection with the accompanying drawings forming part hereof, and in which:

Figure 1, is a perspective view illustrating an air compressor for blowing organs, the same being made up for illustrative purposes of three units, consisting of three fan casings with complemental connecting chambers. Fig. 2, is an end view of the fan casing shown at the left-hand side of Fig. 1, the same being partly sectioned, and showing the air inlet chamber, Fig. 3, is a similar view of the opposite face of said fan casing, also partly sectioned, showing the connect-

ing chamber, Fig. 4, is a fragmentary view partly sectioned of the fan casing shown at the right-hand side of Fig. 1, and Figs. 5, and 6, are fragmentary views principally sectioned, illustrating a slightly modified form of the invention.

Referring to the drawings and more particularly to Figs. 1, to 4, inclusive, the air compressor of the invention is shown as comprising a series of units consisting of spaced fan casings 1, 2, and 3, adjacent casings being connected by means of chambers 4. As clearly illustrated in Figs. 1, and 2, the end casing 1, is provided upon its outer face with an inlet chamber 5, having an inlet port 6, in its bottom. It may be stated in this connection that the fan casings are preferably of rectangular configuration, although, obviously, circular or similar casings may be employed if desired. In this connection, however, it has been demonstrated that circular casings tend to create eddy currents, which absorb power, and as rectangular casings serve to greatly reduce these eddy currents, thereby increasing the efficiency of the apparatus, rectangular casings are to be preferred. Practice, moreover, has further demonstrated that by using rectangular fan casings, a greater area radiating surface is present in each casing, which condition serves to effectually dissipate objectionable or dangerous rises in temperature within the same. Obviously, any construction tending to decrease heat within the compressor is advantageous in the blowing of organs.

Within each of the casings 1, 2, and 3, and mounted for rotation with the shaft 7, are fans 8, of any preferred type. Communication is established between the air inlet chamber 5, and the casing 1, by means of an opening 9, see Fig. 2. Communication is established between the casing 1, and the first connecting chamber 4, by virtue of openings 10, see Fig. 3. Communication is established between the casings 2, and 3, through the second chamber 4, by similar openings 10, not shown in the drawings. Fitted to the inlet port 6, of the chamber 5, of the casing 1, is a non-conducting sound screen of porous material. In the specific embodiment of the invention shown in Figs. 1, to 4, this porous screen is shown as comprising superposed ribbons 11, of corrugated felt. These ribbons 11, extend en-

tirely across and completely close the opening 6, in the bottom of the chamber 5. Felt is preferably employed, because of its excellent properties as a non-conductor of sound and because it is extremely porous. This, while effectively serving to deaden noise generated within the compressor, at the same time permits of the free passage of air through it. Obviously, by making two ribbons of felt, corrugated, additional sound-resisting area is provided. The end fan casing 3, is shown as having mounted upon its upper face an air outlet chamber 12, provided with an outlet port 13. The casing 3, is of a construction similar to the other casings with this exception that the outer face 14, thereof is closed in contra-distinction to being provided with outlets 10. Within the outlet chamber 12, are arranged superposed ribbons 15, of corrugated felt similar in all respects to the ribbons 11, hereinbefore described. By this arrangement and construction of parts, both the inlet and outlet ports of the air compressor are provided with non-conducting sound screens, which effectively serve to confine sounds within and prevent the escape thereof to the organ to which the compressor is attached.

It may be here remarked that one or more of the above casings may be used and in the case of using a single casing, the connecting chamber 4, is dispensed with and the inlet and outlet chambers 5, and 12, are carried by a single casing.

In operation, power from any suitable source is applied to the shaft 7, and the fan 8, in the casing 1, in revolving, draws air in through the screen 11, and the air being first compressed by the fan in the casing 1, is discharged through the openings 10, into the connecting chamber 4; thence, into the casing 2, and so on through a series of units, the number of which is determined by the requirements of the organ until the air reaches the end casing, at which point it passes up through the screen 15, to the outlet port 13, from which point it is conveyed to an organ in the ordinary and well-understood manner.

In Figs. 5, and 6, a slightly modified form of screen for the inlet and outlet ports of the air compressor is disclosed. In lieu of ribbons of corrugated felt hereinbefore described, use is made of a layer of mineral slag wool 16. As shown in said figures, the slag wool 16, is confined by and between perforated metallic screens or wire gauze 17, of coarse mesh.

What I claim is:

1. An air compressor for blowing organs comprising a series of spaced, separate rectangular fan casings, adjacent casings having communication with one another, a connecting chamber of rectangular configuration for establishing such communication, one end casing having an air inlet port therein, and the other end casing having an air outlet port therein, a fan operative within each casing and a non-conducting sound screen of corrugated porous material operatively fitted across the respective ports.

2. An air compressor for blowing organs comprising a series of spaced, separate fan casings, adjacent casings having communication with one another, a connecting chamber for establishing such communication, one end casing having an air inlet port therein, and the opposite end casing having an air outlet port therein, a fan operative within each casing and a ribbon of corrugated felt forming a screen for each of said inlet or outlet ports.

3. An air compressor for blowing organs comprising a series of spaced, separate rectangular fan casings, adjacent casings having therebetween a rectangular connecting chamber, one end casing having a rectangular air inlet chamber and its complemental inlet port and the other end casing having an air outlet chamber and its complemental air outlet port, a fan operative within each casing and superposed ribbons of corrugated felt forming a non-conducting sound screen fitted within each of said inlet and outlet chambers and across said inlet and outlet ports.

4. An air compressor for blowing organs comprising a rectangular casing having air inlet and outlet ports, a fan operative therein and a non-conducting sound screen of corrugated porous material operatively fitted across the respective ports.

5. An air compressor for blowing organs comprising a rectangular casing having air inlet and outlet ports, a fan operative therein and a horizontally disposed non-conducting sound screen of corrugated porous material operatively fitted across the respective ports.

In testimony whereof, I have hereunto signed my name.

HUGH SWANTON.

Witnesses:

H. A. BIERCK,
JOHN GILMORE.