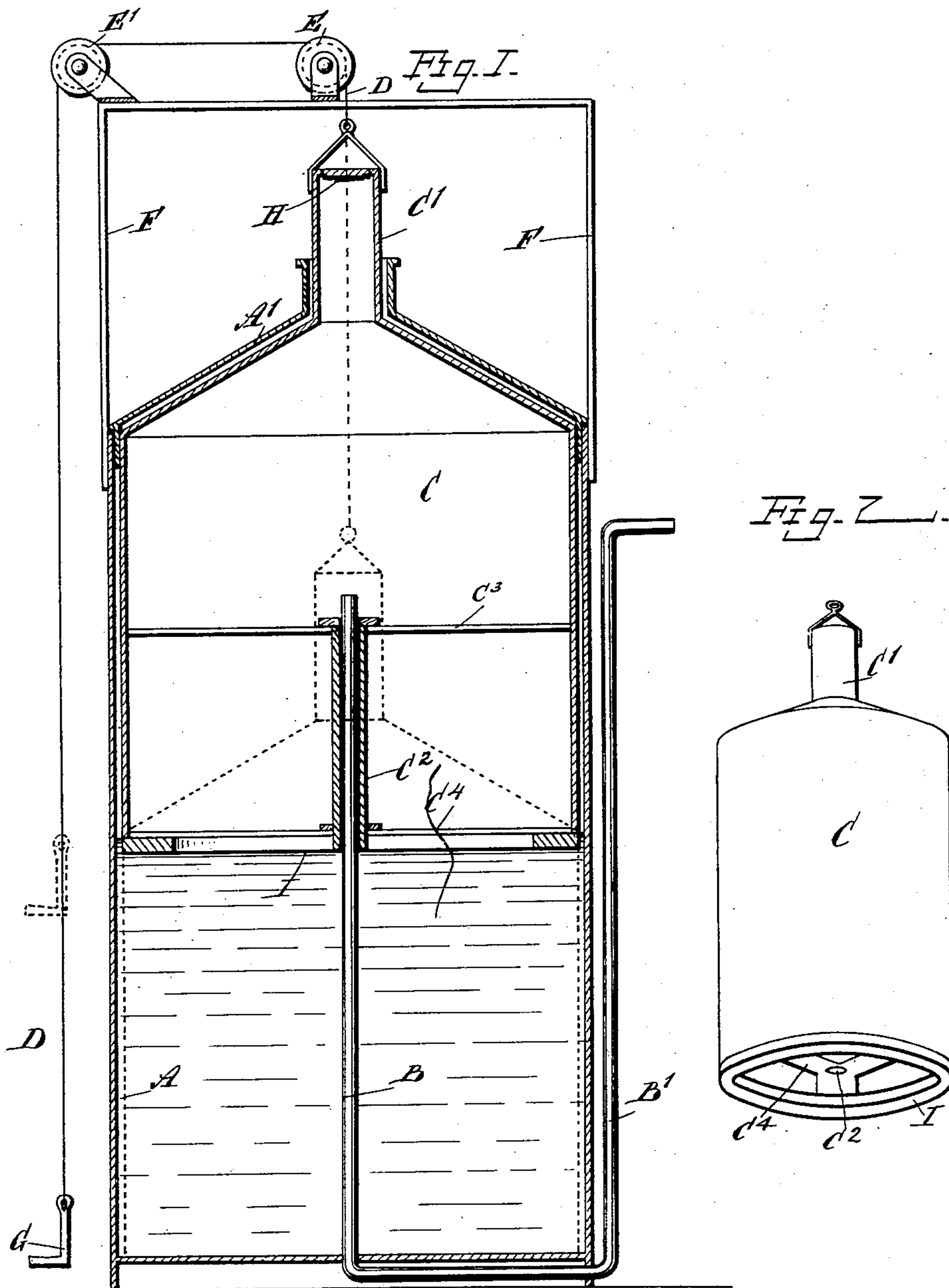


(No Model.)

A. M. SIDWELL, Jr.
AUTOMATIC BLAST GENERATOR.

No. 591,699.

Patented Oct. 12, 1897.



WITNESSES:

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UNITED STATES PATENT OFFICE.

AARON M. SIDWELL, JR., OF HENDERSON, TEXAS, ASSIGNOR OF ONE-HALF
TO SAMUEL E. MILLER AND RUBEN C. BURK, OF SAME PLACE.

AUTOMATIC BLAST-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 591,699, dated October 12, 1897.

Application filed April 9, 1897. Serial No. 631,466. (No model.)

To all whom it may concern:

Be it known that I, AARON M. SIDWELL, Jr., of Henderson, in the county of Rusk and State of Texas, have invented a new and Improved Automatic Blast-Generator, of which the following is a full, clear, and exact description.

The invention relates to air-compressors; and its object is to provide a new and improved automatic blast-generator designed for the use of jewelers, dentists, and other persons, and arranged to produce a steady and uniform blast and to permit of increasing or decreasing the force of the blast as required, according to the nature of the work on hand.

The invention consists of certain parts and combinations, as will be fully described hereinafter and defined in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a sectional side elevation of the improvement, and Fig. 2 is a reduced perspective view of the air vessel of the device.

The improved apparatus is provided with a suitably-constructed tank A, adapted to be partly filled with water or other liquid, and into the said tank A extends vertically an air-delivery pipe B, reaching with its upper end above the level of the liquid in the tank A, the outer end B' of the pipe being extended upwardly on the outside of the tank above the inner end of the pipe to connect by a flexible tube the pipe or the like with a suitable blowpipe.

The inner end of the delivery-pipe B opens into the air vessel C, open at the bottom and extending with its end into the liquid contained in the tank A. The upper contracted end C' of the air vessel C is hung on a rope or chain D, passing over pulleys E E', journaled in suitable brackets attached to a frame F, secured to the upper end of the tank A, and on the downwardly-extending part of the rope or chain D is formed a stirrup G of any desired form and adapted to be engaged by the operator's hand or foot and be pressed downward, so as to raise the vessel C within the tank A. The upward movement of the

vessel C within the tank A is limited by the cover A', preferably arranged removably on the tank, as indicated in the drawings.

In the contracted end C' of the vessel C is arranged an air-inlet valve H, adapted to open inwardly on the upward movement of the vessel C to fill the latter with air, the said valve closing during the downward movement of the vessel and while the air is compressed therein.

In order to insure a downward movement of the vessel C, I make the same sufficiently heavy by providing the same with a suitable weight or weights I, in the shape of rings, attached to the lower end of the vessel. In order to steady the movement of the vessel C in the tank A, I provide the vessel with a tube C², fitted snugly around the delivery-pipe B, the said tube being held in position by spiders C³ and C⁴, attached to the side wall of the vessel C. Now when the several parts are in the position as illustrated in Fig. 1 the vessel C, by its weight, moves downward in the tank A, so as to compress the air contained in the vessel, the compressed air passing through the pipe B to the blowpipe containing a suitable valve, which when opened allows the air to pass in a blast through the blowpipe upon the work on hand. As the air is discharged from the blowpipe the vessel C sinks farther down, thus maintaining a steady and uniform supply of compressed air to the blowpipe. When the air in the vessel C has been used up, the operator then closes the valve in the blowpipe and presses the stirrup G downward to raise the vessel C back to its uppermost position. The valve H opens during the upward movement of the vessel C, so as to again fill the latter with air during the upward movement. The above-described operation is then repeated.

Now it will be seen that by increasing or diminishing the weight of the vessel C a stronger or a lighter blast may be obtained, according to the nature of the work on hand.

It will further be seen that the device is always ready for use and may be utilized for various purposes.

By enlarging the various parts the device can be readily used to furnish a blast strong enough for forging and brazing various arti-

cles, the device being thus useful for bicycle repairers and other mechanics. By the aid of an air-motor similar to the water-motor the device can be used in various places for running fans in halls, stores, saloons, dwellings, barber-shops, &c. It will further be seen that light machinery—such as sewing-machines, lathes, &c.—can readily be driven by this power-generating apparatus.

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

1. An automatic blast-generator having an exterior tank capable of containing a liquid
15 in its lower portion, an air vessel movable vertically within the tank, the air vessel having a contracted upper end, an air-inlet valve commanding said contracted upper end, a guide-tube, a spider rigidly holding the guide-
20 tube centrally within the air vessel, and an air-tube standing vertically from the bottom of the tank, the guide-tube being slidable on the air-tube and having a portion extended out of the tank.

25 2. An automatic blast-generator having an exterior tank, the lower portion of which is capable of containing a liquid, an air vessel

movable vertically within the tank and open at the bottom, the air vessel having a valve-controlled air-inlet, a guide-tube located centrally within the air vessel, a spider holding the guide-tube rigid with the air vessel, and an air-pipe standing vertically from the bottom of the tank and having one end extended outside of the tank, the guide-tube receiving
35 and sliding on the air-tube.

3. An automatic blast-generator having an exterior tank with an apertured cover, an air vessel movable vertically in the tank and having a contracted upper end capable of projecting through the aperture of the cover, an inlet-valve controlling the contracted upper
40 end of the air vessel, a guide-tube located centrally within the air vessel, spiders rigidly attached to the tube and to the air vessel
45 whereby to hold the tube, and an air-pipe standing vertically from the bottom of the tank and slidably received within the guide-tube, the air-tube projecting out of the tank.

AARON M. SIDWELL, JR.

Witnesses:

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