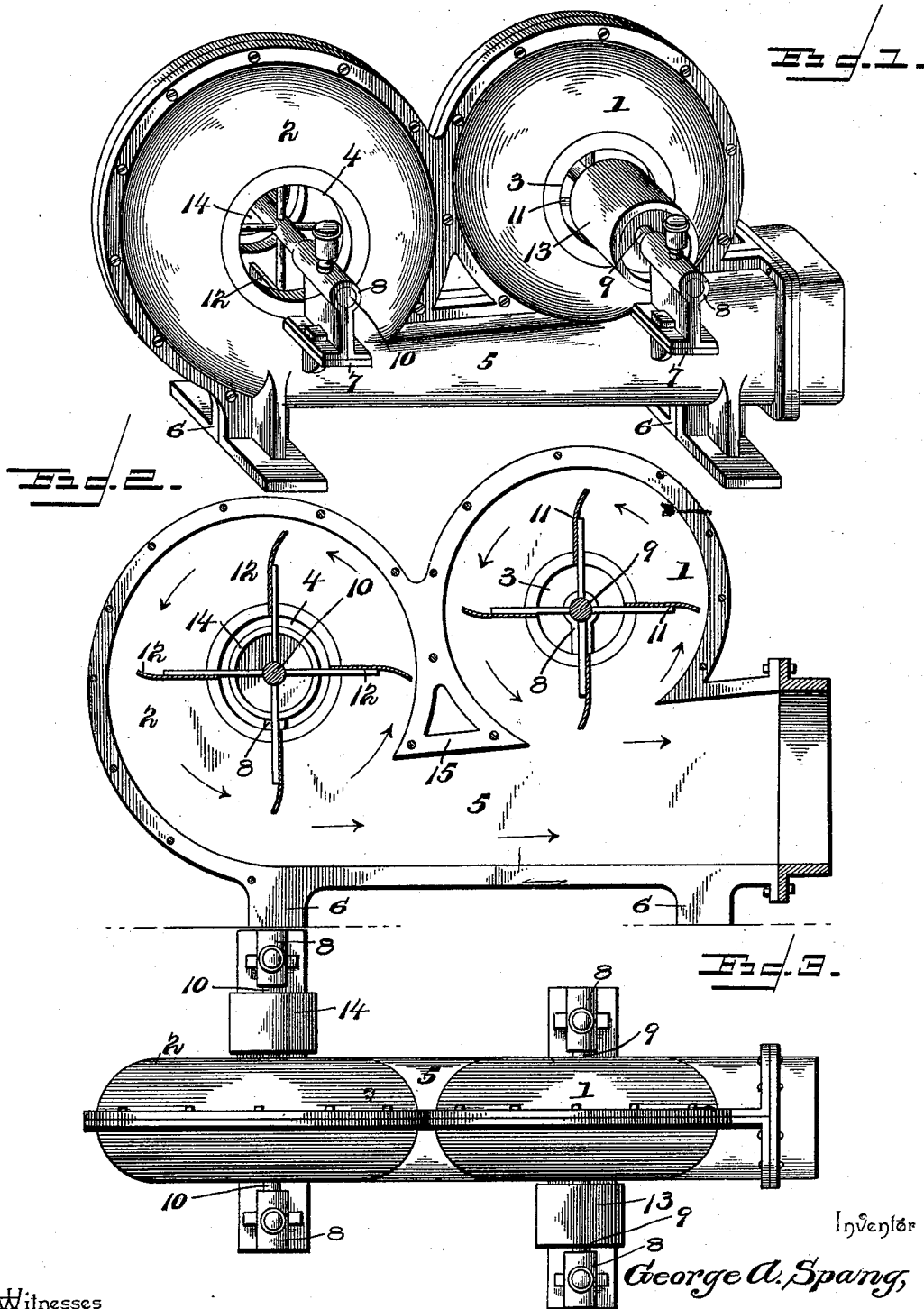


(No Model.)

G. A. SPANG.
PRESSURE BLOWER.

No. 519,650.

Patented May 8, 1894.



Witnesses
E. H. Stewart.
C. D. Doyle.

By his Attorneys.

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

GEORGE ASHBELL SPANG, OF NORTH TONAWANDA, NEW YORK.

PRESSURE-BLOWER.

SPECIFICATION forming part of Letters Patent No. 519,650, dated May 8, 1894.

Application filed November 7, 1893. Serial No. 490,295. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ASHBELL SPANG, a citizen of the United States, residing at North Tonawanda, in the county of Niagara and State of New York, have invented a new and useful Pressure-Blower, of which the following is a specification.

My invention relates to improvements in pressure blowers, consisting essentially in an improvement over the device shown in my former patent, granted January 12, 1892, Serial No. 466,805.

The object of my present invention is to so arrange the co-operating fans that they will discharge into a common outlet, and thereby, with the same peripheral velocity and number of revolutions per minute of the fans, the pressure and velocity of the blast will be increased; or, conversely, the same pressure and velocity of blast may be attained with a reduced peripheral velocity and a less number of revolutions per minute of the fans.

With this object in view, I arrange the fans tandem and employ a common outlet which is arranged at a common tangent to the two fans, each fan being provided with an inlet, and the blast from both fans proceeding in a common direction and combining to form a common blast.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings: Figure 1 is a perspective view of a blower embodying my invention. Fig. 2 is a longitudinal section of the same. Fig. 3 is a plan view.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 and 2 represent, respectively, the front and rear fan-casings, provided with side inlets 3 and 4, and 5 represents the common discharge or outlet, which is straight throughout its length and is arranged at a tangent to the two casings, suitable supports 6 being provided upon the lower side of said discharge. Projecting laterally from the opposite sides of the casings are brackets 7, carrying the journal-boxes 8, in which are mounted the fan-shafts 9 and 10, which extend respectively through

the casings 1 and 2. Said shafts carry the rotary fans 11 and 12, which are adapted to rotate in the same direction, as indicated by the arrows in Fig. 2, and motion is communicated to the fans through the belt-pulleys 13 and 14, which are secured, respectively, to the shafts 9 and 10, upon opposite sides of the vertical plane of the fan-casings.

Reference to Fig. 2 will show that the movements of the lower sides of the fans are directly in alignment with the discharge 5; and, as the fan-casings are separated by the intervening wall 15, which extends downward below the plane of the top of the outlet-end of the discharge, the discharge from one of the fans cannot produce back pressure upon the other. The shaft of the front fan is arranged in the plane above that occupied by the shaft of the rear fan, thereby causing the rear fan to discharge in a plane somewhat lower, or beneath that of the front fan, the two blasts being united and proceeding in a common direction after leaving the front fan. It will be noted that the curvature of the rear wall of the front fan-casing prevents the air which is discharged from the front fan from meeting the current of air which proceeds from the rear fan at an abrupt angle, and producing conflict and interference with a consequent loss of velocity, but on the other hand the two currents of air leave the fans by which they are produced in approximately parallel planes or directions, and thence proceed in a common direction without diminishing the combined effect. In the drawings I have shown the front fan of a somewhat smaller diameter than the rear fan, and in practice it is desirable to drive the front fan at a greater velocity than the rear fan.

I am aware that it is common to construct blowers with twin fans connected with a common discharge by means of a Y-pipe, but the disposition of the arms of this Y-connection causes the two blasts to unite at an angle, thereby producing an interference and friction which is avoided by the tangential arrangement above described.

It will be understood that various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. A pressure blower having a plurality of fans disposed in tandem, and a common discharge or outlet arranged tangentially to said fans, substantially as specified.

2. A pressure blower having a plurality of fans, and a common discharge or outlet arranged tangentially to and upon the same side of said fans, substantially as specified.

3. A pressure blower having a plurality of fans disposed in tandem and arranged in independent fan-casings provided respectively with air-inlets, and a common discharge or outlet arranged tangentially to the fans, substantially as specified.

4. A pressure blower having a plurality of fans, and a common discharge or outlet arranged at a tangent to said fans, the shaft of the rear fan being arranged in a plane below

that of the shaft of the front fan, whereby the rear fan discharges in a plane lower than the front fan, substantially as specified.

5. A pressure blower having a plurality of fan-casings, and a common discharge or outlet connecting said casings and arranged at a tangent thereto, a separating wall arranged between the fan-casings and extending below the plane of the upper side of said discharge or outlet, and rotary fans located respectively in the said casings, each casing being provided with an air inlet, substantially as specified.

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

GEORGE ASHBELL SPANG.

Witnesses:

W. S. BRANDON,
CHAS. I. WATSON.