

(No Model.)

G. A. SPANG.  
PRESSURE BLOWER.

No. 466,805.

Patented Jan. 12, 1892.

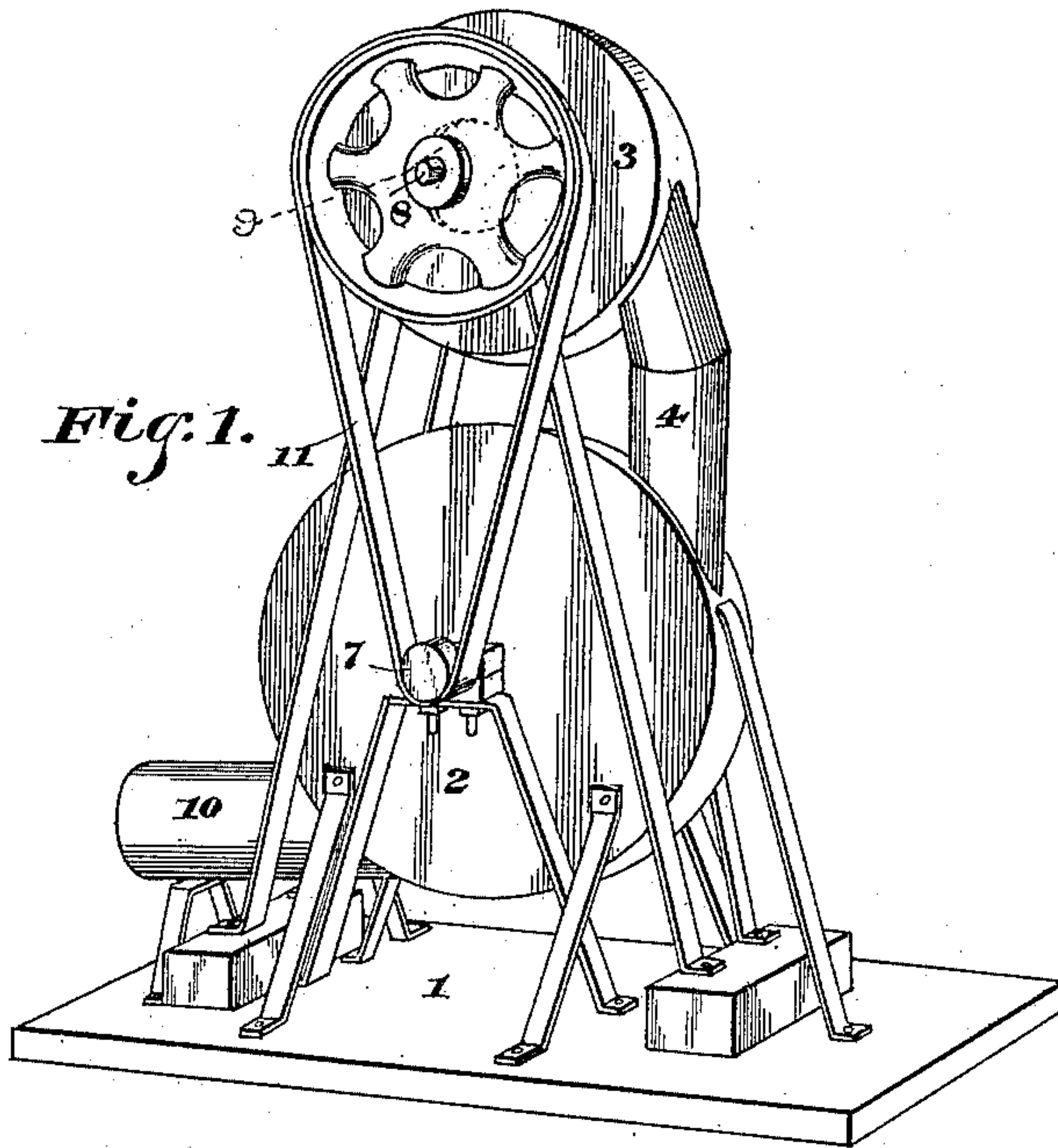
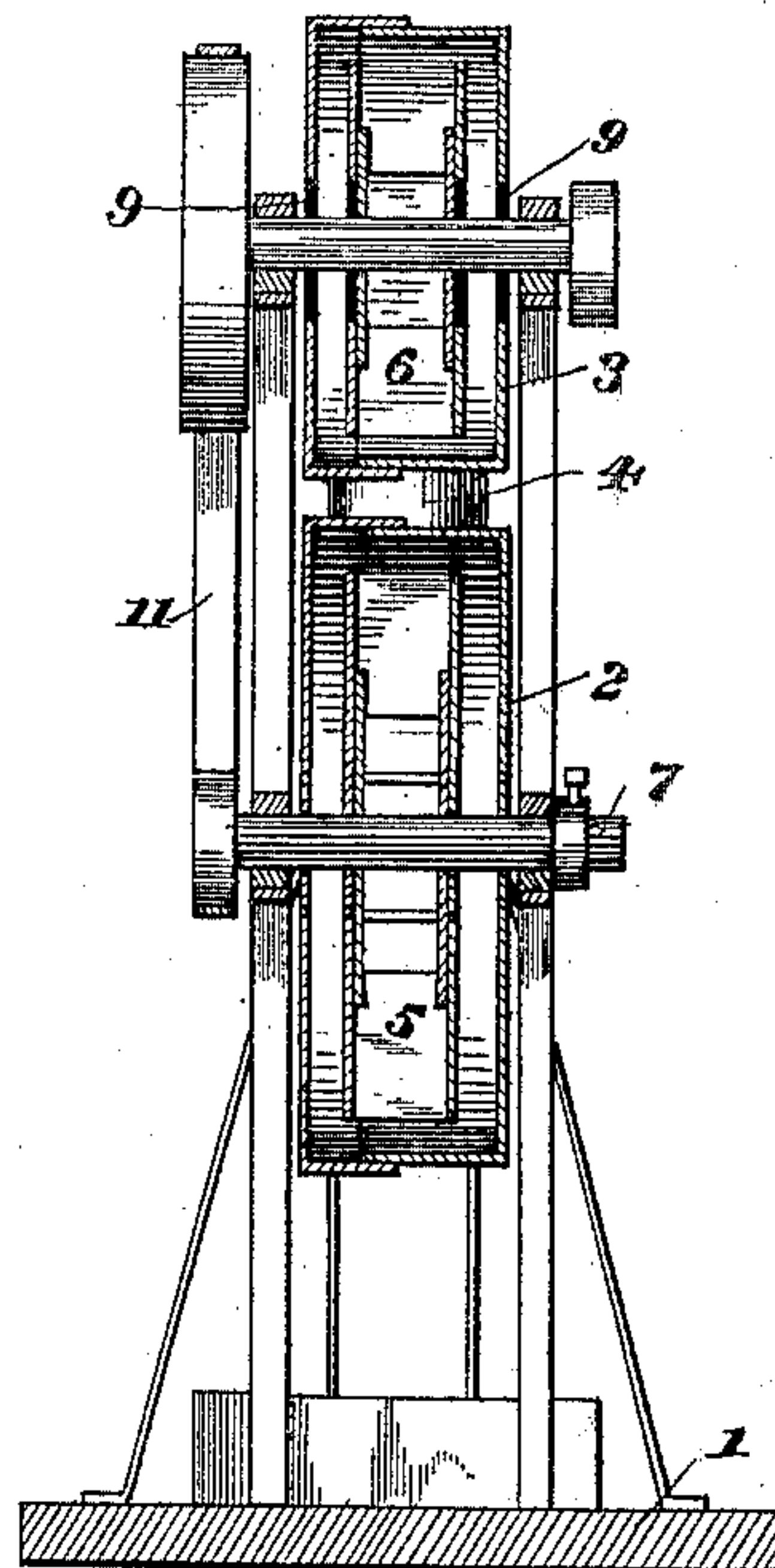
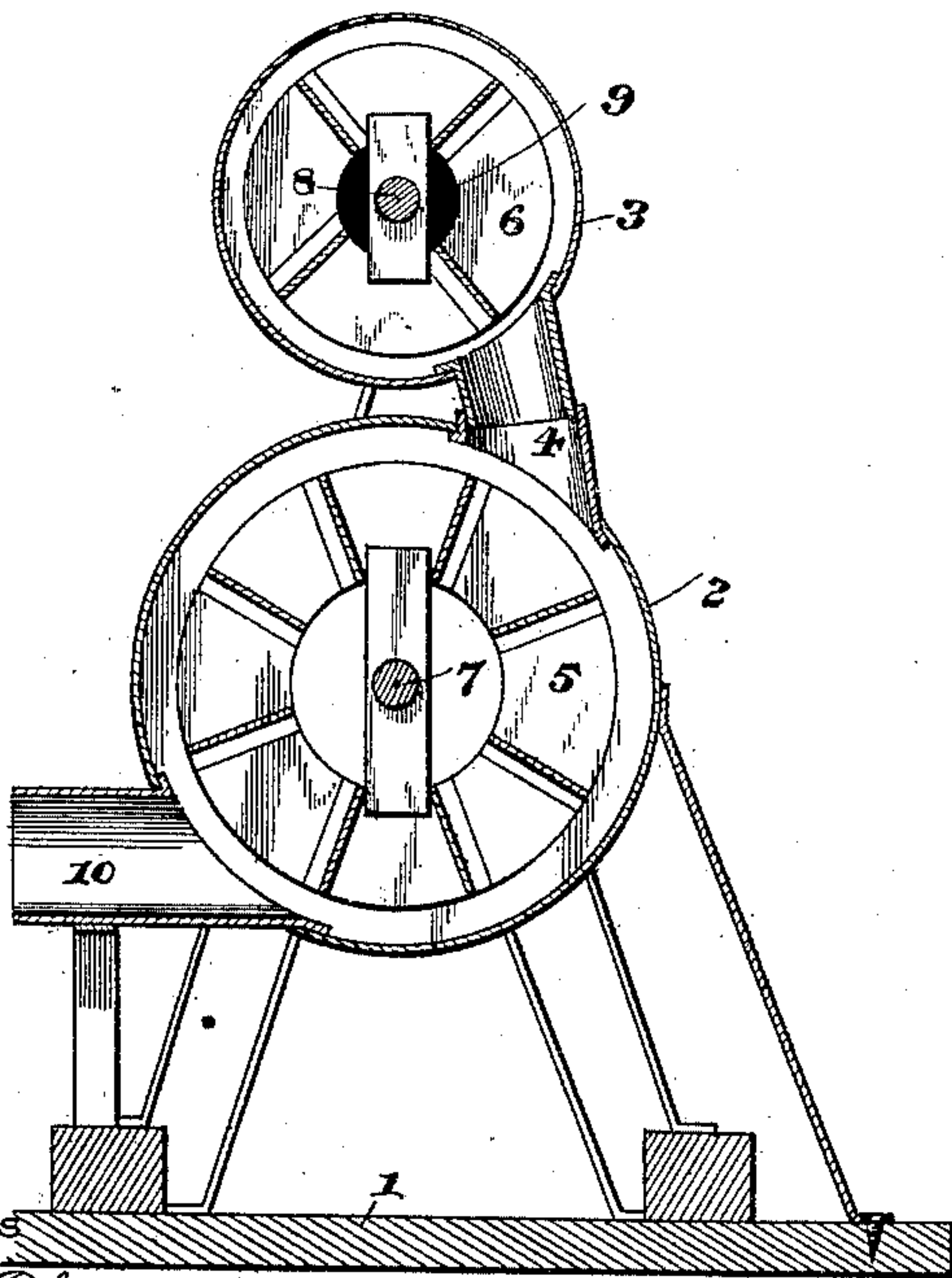


Fig. 2.

Fig. 3.



Witnesses

B. E. Ober

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By his Attorneys,

Ca. Snow & Co.

Inventor

George A. Spang.



# UNITED STATES PATENT OFFICE.

GEORGE A. SPANG, OF BUTLER, PENNSYLVANIA.

## PRESSURE-BLOWER.

SPECIFICATION forming part of Letters Patent No. 466,805, dated January 12, 1892.

Application filed April 15, 1891. Serial No. 389,056. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE A. SPANG, a citizen of the United States, residing at Butler, in the county of Butler and State of Pennsylvania, have invented a new and useful Pressure-Blower, of which the following is a specification.

The invention relates to improvements in blowers.

10 The object of the present invention is to simplify and improve the construction of blowers and increase the volume and force of the blast without correspondingly increasing the speed of the fans.

15 The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claim hereto appended.

20 In the drawings, Figure 1 is a perspective view of a blower constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view. Fig. 3 is a vertical transverse sectional view.

25 Referring to the accompanying drawings, 1 designates a frame provided with bearings and supporting a lower fan-casing 2 and an upper fan-casing 3, which are approximately cylindrical and are connected by a pipe 4 and  
30 contain fans 5 and 6, which are mounted on shafts 7 and 8, journaled in the bearings of the frame. The upper casing is provided with central openings 9, arranged around the shaft 8 and forming inlet or supply openings  
35 for the admission of air, and the lower casing is closed at its center and is provided at its lower end with the outlet-pipe 10. The air enters through the openings 9 and is forced by the fan 6 through the pipe 4 into the casing 2, and the fan 5 of the casing 2 forces the  
40 air through the outlet, whence it is distributed as desired. The lower casing is larger than the upper one and its fan revolves about three times as rapidly as the other one, and it acts  
45 as a suction-fan and prevents backing up of air when the fans are run at a high speed.

It has been found by experience that this arrangement of fans increases the force and volume of the air and greater results are obtained than the simple combined results of 50 the fans were the same working independently and exhausting through a common outlet-pipe and each being provided with independent inlet-openings. The fans are run by the same motive power, but at a different rate of 55 speed, and to accomplish this their shafts are connected by a belt 11 and are provided with different-sized pulleys.

A few advantages incident to the arrangement are: It prevents backing up of air when 60 run at high speed, it gives greater pressure with less power, and the lower fans act as a suction, and when resistance is great the upper fan prevents checking of lower or sending air out of inlet-opening, which is a great 65 objection to old blowers.

I do not limit my invention to arranging the fans in a vertical position, as it is obvious that the same results will be gained by locating them horizontally. 70

What I claim is—

In a blower, the combination of the large lower casing having an outlet, the small upper casing arranged above the large lower casing and communicating with and delivering 75 into the same and provided with an inlet, the shafts 7 and 8, journaled in the casings, the fans arranged in the casings and mounted on the shafts, the large pulley carried by the upper shaft 8, the small pulley carried by the 80 lower shaft, and the belt connecting the pulleys, whereby the two fans are operated simultaneously by the same power at different rates of speed, the lower fan moving at the greater rate of speed, substantially as described. 85

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

GEORGE A. SPANG.

Witnesses:

JOHN BAUMARA,  
A. E. REILEED.