

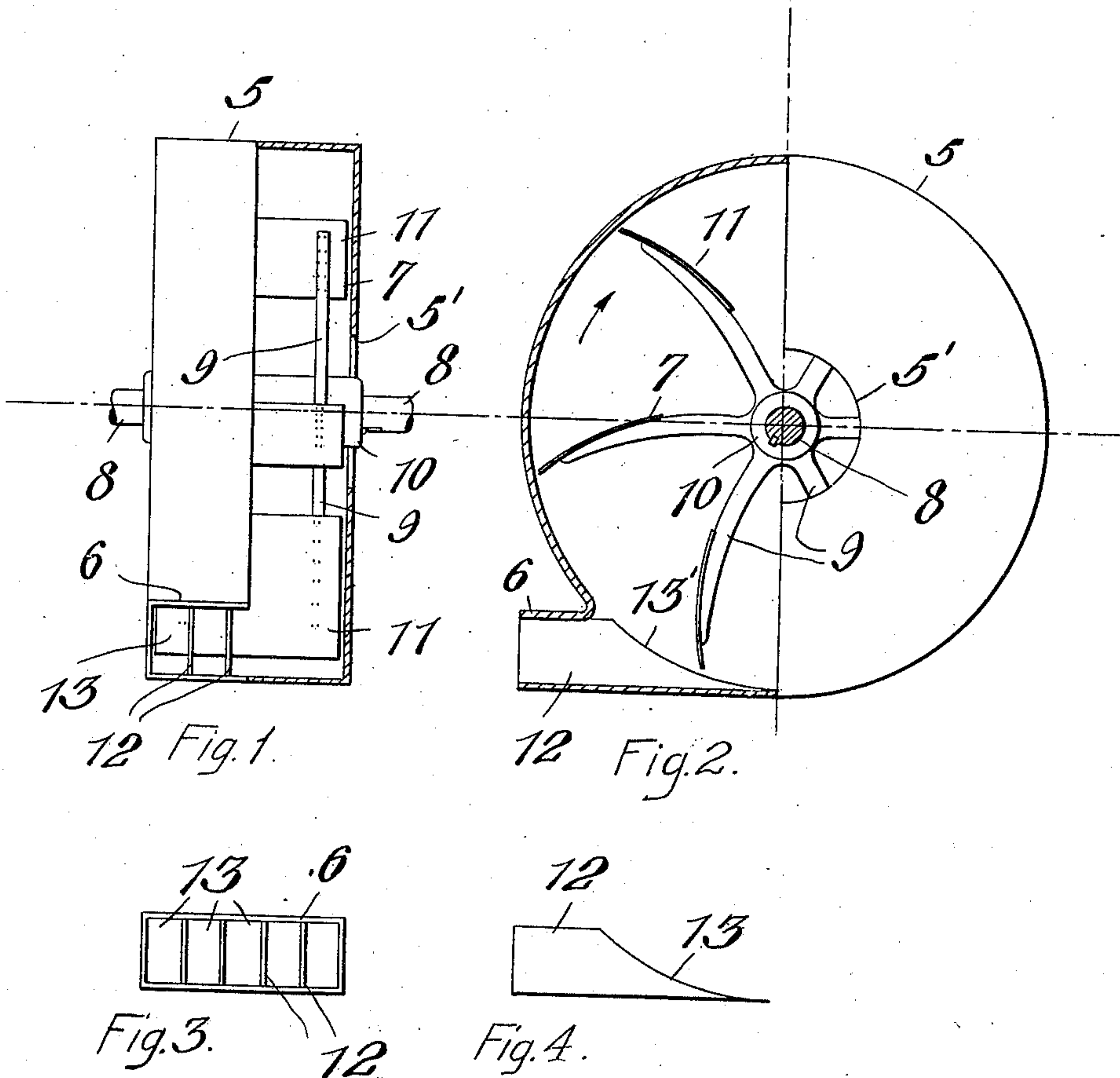
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FAN BLOWER.

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Patented Feb. 28, 1911.



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UNITED STATES PATENT OFFICE.

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FAN-BLOWER.

985,279.

Specification of Letters Patent. Patented Feb. 28, 1911.

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To all whom it may concern:

Be it known that we, ANTON OHLSON and CARL A. HALLIN, citizens of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented certain new and useful Improvements in Fan-Blowers, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to certain new and useful improvements in fan blowers adapted to be used for forcing air to forges or through a plurality of pipes for purposes of ventilation.

15 The principal object of our invention resides in the provision of a blower of the above character that is adapted to force the air into a plurality of channels with equal force and velocity so that the distribution thereof at distant points will be equalized.

20 Another object is to provide a device of great simplicity and one which may be utilized for a large number of useful purposes and may be economically manufactured.

25 With these and other objects in view, the invention consists in the novel construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

30 Figure 1 is an elevation partly in section illustrating a blower constructed in accordance with the present invention; Fig. 2 is a side view partly in section; Fig. 3 is a front end elevation of the outlet channels; and Fig. 4 is a detail side elevation of one of the partition or division blades.

35 Referring more particularly to the drawings, 5 indicates a substantially circular casing which is formed at its base with a tangentially extending outlet 6. This outlet is preferably rectangular in cross section and is adapted to receive the air from the blower or fan casing to discharge the same into the pipes from whence it is carried to the point of utilization.

40 A rotary fan 7, is centrally mounted in the casing 5, upon the power shaft 8. This fan is in the form of a plurality of radially extending curved arms or spokes 9, integrally formed with a central hub portion 10, said hub portion being keyed upon the drive shaft. Each of the arms 9, has secured thereto a fan blade 11, said blades being secured to the arms adjacent to their ends. As

will be obvious from reference to Fig. 1 of the drawings, the arms 9, are disposed adjacent to the opposite sides of the fan casing 5, and extend in parallel relation thereto and to each other, the said arms providing very rigid connections for the fan blades 11.

45 Within the tangentially extending outlet mouth 6, of the casing a plurality of vanes or division blades 12, are arranged. As shown in Fig. 3 these blades are disposed in spaced parallel relation between the top and bottom walls of the outlet and may be secured in position in any desired manner. Four such blades are preferably employed and provide five separate and distinct channels 13, through which the air is forced upon rotary movement being imparted to the fan. The blades 12 are shown in detail in Fig. 4 and it will be noted that the upper edge of one end of these blades is curved as at 13' the curve extending for more than one half of the entire length of the blade. The curved upper edge 13' of the blade describes an arc and is disposed in the same plane as the inner wall of the fan casing 5. Thus as shown in Fig. 2 when the division blades are arranged in the outlet 6, of the casing their inner ends form a continuation of the inner wall of the annular body portion of the casing 5.

50 In the operation of our improved blower, when the power is applied to the shaft 8, in any suitable manner, upon the rotation of the fan, the air which is drawn into the fan casing through a central opening 5', in the side thereof is forced into the several chambers 13, of the outlet 6, the fan rotating in the direction indicated by the arrow in Fig. 2 of the drawings. Thus it will be obvious that the air discharged from the fan casing is expelled in equal quantity from the several chambers 13. Pipes may be arranged over the outlet 6, of the casing, said pipes being separately connected to each of the air chambers whereby the air may be carried therefrom and conveyed to any distant point where it is desired to apply the same.

55 A device of this character is adapted for a large number of useful purposes. It may be employed in the simultaneous operation of a plurality of forges, or for directing air into several ducts for the purpose of ventilation. Furthermore, it may be used for blowing saw-dust in a planing mill, or suction pipes may be connected to the chambers, the

rotation of the fan reversed and the device used for cleaning purposes.

From the foregoing it is believed that the operation and construction of our improved
5 blower may be readily understood without necessitating a more extended description. The air will be forced from the fan casing into the several division chambers of the outlet with equal pressure in each of said
10 divisions. This is the particular feature of our invention and by this operation we are enabled to more satisfactorily distribute the air to be carried through the plurality of channels and convey the same to distant
15 points where it is to be utilized, than has been possible with devices of a similar character as previously constructed. As each of the chambers 13, has direct communication with the fan casing, this object is satisfactorily attained, the power of each of the
20 fan blades being alike and their areas are similar as the speed of rotation of said fan is constant.

While we have shown and described the
25 preferred embodiment of our invention it will be understood that the same is susceptible to numerous modifications without materially departing from the essential features or sacrificing any of the advantages thereof.

Having thus described our invention, what is claimed as new is:— 30

In a fan blower, the combination with a cylindrical casing having a tangentially extending outlet at its bottom, a rotary fan mounted in said casing, of a plurality of
35 vertically arranged blades in said outlet equally spaced from each other and from the side walls of the outlet to provide a plurality of air receiving chambers, the inner ends of said blades being curved and disposed in the
40 same plane as the wall of the casing, said curved ends extending through the greater portion of the length of the blade and terminating at its lower edge in a fine point
45 to provide a continuous unbroken surface for the interior of the casing, said blades being adapted to divide the air expelled by said fan into the outlet to equalize the pressure in each of said chambers. 50

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

ANTON OHLSON.
CARL A. HALLIN.

Witnesses:

H. BERG,
E. C. JOHNSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
