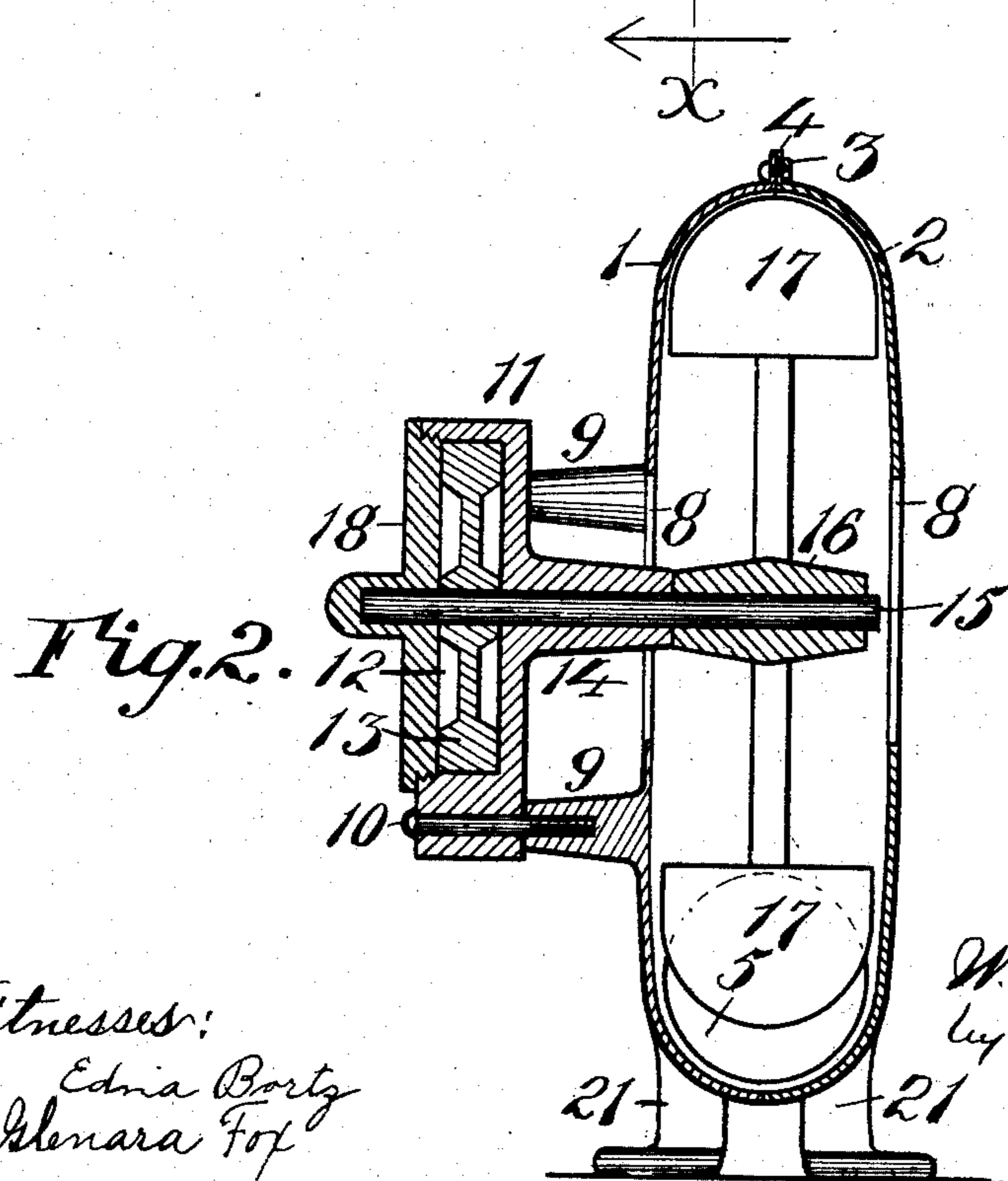
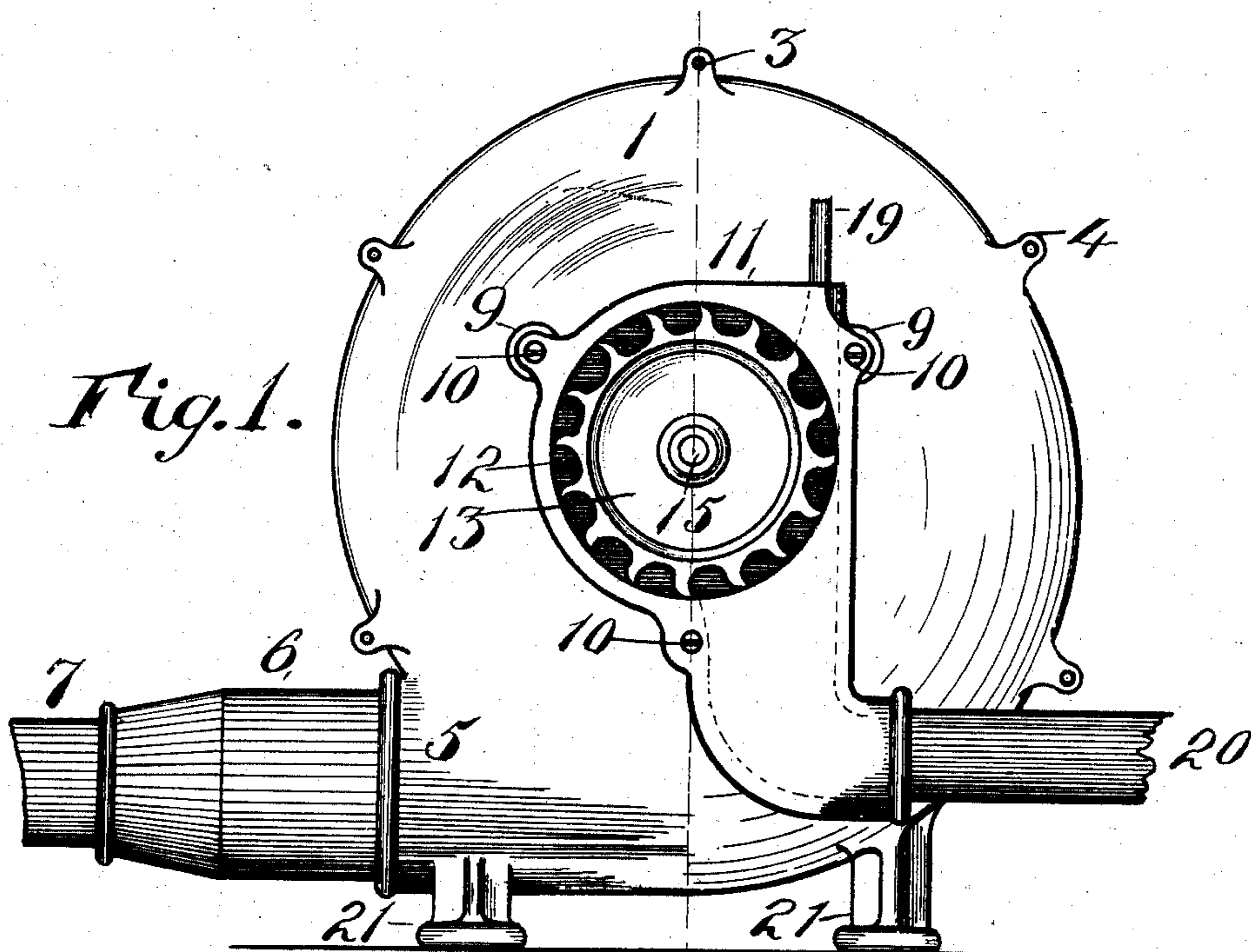


No. 865,133.

PATENTED SEPT. 3, 1907.

W. C. STEVENS.
ROTARY FAN MOTOR.
APPLICATION FILED JAN. 29, 1906.



Witnesses:
Edna Bortz
Glenara Fox

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UNITED STATES PATENT OFFICE.

WILLIAM C. STEVENS, OF AKRON, OHIO, ASSIGNOR TO THE CROWN DRILLING MACHINE COMPANY, OF AKRON, OHIO, A CORPORATION OF OHIO.

ROTARY FAN-MOTOR.

No. 865,133.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed January 29, 1906. Serial No. 298,530.

To all whom it may concern:

Be it known that I, WILLIAM C. STEVENS, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented new and
5 useful Improvements in Rotary Fan-Motors, of which the following is a specification.

My invention has relation to improvements in means for rotating fans, blowers, etc.

The object of my invention is to produce a simple
10 means for running a fan or blower, suitable for use in portable mechanism, and especially designed to be used in connection with forges employed in sharpening and repairing well-drilling tools, and from the nature of the use to which the device is put, it is necessarily
15 transported from place to place, and experience has shown that the use of a belt and pulley in connection therewith is not attended with satisfactory results; and hence, the primary object sought is to furnish a simple compact motor attached to a fan and arranged
20 to be driven by steam from any suitable supply.

To the accomplishment of the aforesaid object, my invention consists of the novel construction, combination and arrangement of parts constituting the invention to be hereinafter referred to and illustrated in the
25 accompanying drawings which form a part of this specification in which is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

30 In the accompanying drawings, in which similar reference numerals indicate like parts in the different figures: Figure 1 is a side elevation of my device; and, Fig. 2 is a section on line X of Fig. 1.

My device is primarily designed for use in connection with the ordinary centrifugal type of fans.

In the drawings, the fan casing is represented by the reference characters 1 and 2, which designate the two halves thereof which are united by bolts 3 passing through suitable ears 4, whereby the two halves of the
40 fan casing are maintained in proper relation with respect to each other. This casing is provided with an outlet 5 to which is ordinarily secured a reducing nozzle 6, from which leads a pipe 7 to a point where the air driven by the fan is to be utilized. The air driven
45 forward by the fan is taken into the fan casing through side openings 8, as is usual in such cases. On the member 1 of the fan casing are a plurality of outwardly-extending perforated posts 9, and these posts 9 are preferably integral with the casing body.

50 Secured on the posts 9 by means of cap-screws 10 is the motor casing 11, which is hollow and provided with a cylindrical recess 12. In this recess 12 is placed the rotary piston 13, which may be of any desired or preferred type. From the rear face of the motor casing 11

extends an integral member 14 which is centrally per- 55
forated to receive a rotatable shaft 15, on which is tightly mounted the piston 13. This shaft 15 is arranged to project centrally into the hollow of the fan casing and there sustain a hub 16 on which are mounted the fan blades 17, in the ordinary way. The front of the
60 recess 12 in the motor casing is closed by a cap 18, which is secured to the casing 11 by means of screw threads, and this cap 18 is centrally perforated to receive and steady the forward end of the shaft 15 and serve as a bearing therefor. The operating fluid is ad- 65
mitted to and properly directed against the buckets on the rotary piston 13 by means of an induction pipe 19, which may be connected with any source of fluid supply under pressure. Below the recess 12, the casing 11 is hollowed out and turned abruptly to one side, and
70 into this bent portion is secured a pipe 20 by which the supply of exhaust fluid is carried away. The fan may be mounted upon ordinary feet 21, as is customary with this type of devices.

The operation of the device, while believed to be ap- 75
parent from the foregoing description, is as follows: A constant stream of fluid, such as steam, is introduced through the induction pipe 19, and, which, encountering the buckets on the piston 13 causes the rapid rota- 80
tion thereof and a simultaneous movement of the shaft 15 and fan blades 17 which draw air into the fan casing through the openings 8 and deliver it in a constant stream through the discharge pipe 7. The fluid used for the motive power, after acting on the buckets on the rotary piston, passes downward through the hollow casing 85
11 and out through the exhaust pipe 20 to any convenient place. As has already been referred to, the use of a belt and pulley for rotating a fan in the field where drilling operations are being undertaken meets with very poor success, due to the weather conditions and
90 the exposure of the belt to dampness and other similar conditions; and hence, the use of a motor, such as herein described, has been found extremely serviceable by reason of the fact that the fan and the motor may be placed at any reasonable distance from
95 the boiler which furnishes the steam, the only thing necessary being the use of enough pipe to carry steam to the motor.

What I claim and desire to secure by Letters Patent, is—

100 The combination in a device of the class designated, of an upright fan casing provided with a plurality of integral laterally-extending posts having in their ends longitudinally-arranged threaded holes, a motor casing having an opening in one face and comprising a hollow cylindrically- 105
formed member with projecting ears provided with means through which may be passed holdfast devices for engagement with the holes in said posts for retaining said casing detachably in position, said casing being further provided with an integrally depending outlet from the interior

thereof and having an interiorly-threaded portion adjacent
said opening, said motor casing also provided with an in-
tegrally-projecting sleeve extending from one face thereof
to said fan casing, a shaft mounted in said sleeve extend-
5 ing into said fan casing, a fan mounted on said shaft
within said fan casing, a rotary motor provided with
peripheral buckets mounted in said motor casing, a fluid
inlet in said motor casing, an exteriorly-threaded cap ar-
ranged to engage in the threads in the opening in said
10 motor casing and close the same, said cap being provided

with an elongated hollow lug, the opening in which is
arranged to inclose and support the extended end of said
shaft when said cap is secured in position.

In testimony whereof I have hereto set my hand in
presence of two subscribing witnesses.

WILLIAM C. STEVENS.

Witnesses:

C. E. HUMPHREY,
GLENARA FOX.