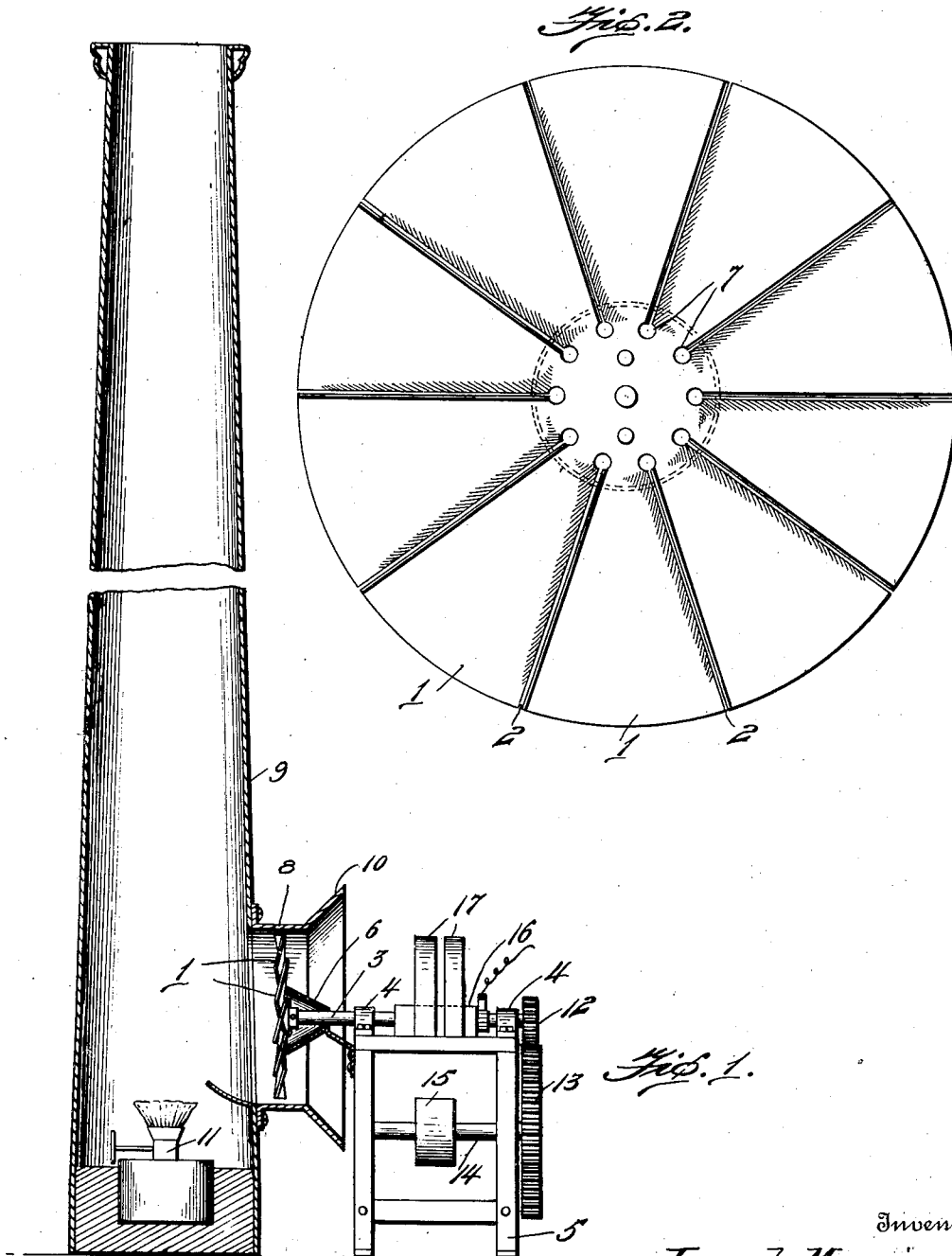


J. MESSINA.
FLUE OR DRAFT MOTOR.
APPLICATION FILED JUNE 8, 1911.

1,013,798.

Patented Jan. 2, 1912.

2 SHEETS—SHEET 1.



Witnesses

Wm. A. [unclear]
A. B. [unclear]

By

Inventor
Joseph Messina

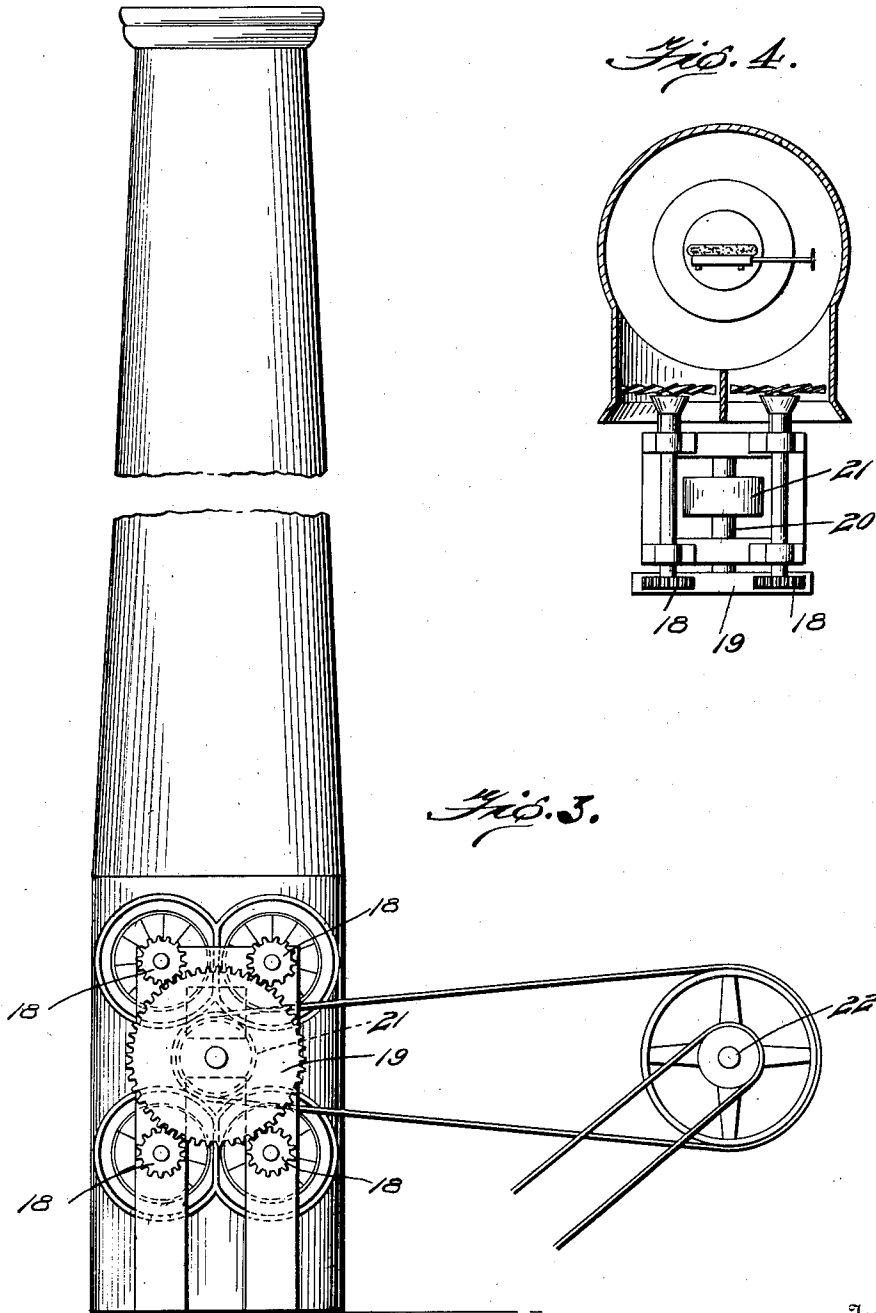
Gustav [unclear]

Attorney

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Witnesses
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UNITED STATES PATENT OFFICE.

JOSEPH MESSINA, OF NEW ORLEANS, LOUISIANA.

FLUE OR DRAFT MOTOR.

1,013,798.

Specification of Letters Patent.

Patented Jan. 2, 1912.

Application filed June 3, 1911. Serial No. 631,175.

To all whom it may concern:

Be it known that I, JOSEPH MESSINA, a subject of the King of Italy, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Flue or Draft Motors, of which the following is a specification.

My invention relates to improvements in fluid motors, and it consists in the constructions, combinations and arrangements herein described and claimed.

An object of my invention is to provide an improved fluid motor adapted for ready attachment to a chimney, or draft conduit, and which will operate efficiently at the relatively small draft heads usually employed.

A further object of my invention is to provide an inexpensive and compact fluid motor constructed to rotate at high velocity with a minimum of end thrust and wasteful friction, thereby furnishing a maximum of power when actuated by air under small effective pressure.

In the accompanying drawings, forming a part of this application and in which similar reference symbols indicate corresponding parts in the several views: Figure 1 is an axial section of a chimney, or draft conduit, showing one embodiment of my invention applied thereto; Fig. 2 is an enlarged face view of the rotor, or wind wheel, shown in Fig. 1; Fig. 3 is a front elevation of a chimney, showing a slight modification, and Fig. 4 is a section through the chimney on the line 4—4 of Fig. 3, with my invention shown in plan.

Referring especially to Figs. 1 and 2 of the drawings, 1 indicates a rotor comprising a disk divided into a series of vanes by axial slots 2; said vanes being preferably inclined through a small angle, as shown in Fig. 1, and cooperating to present an almost continuous disk to an axially-flowing current of air. This provides an efficient construction for utilizing the energy of the entire axial current of actuating air at all rotative speeds of the vane wheel 1. The wheel 1 is secured on a shaft 3, which is journaled in bearings 4 on any suitable support 5. A hollow conical deflector 6 is stationarily supported on the support 5, with its open base adjacent to the pressure face of the vane wheel and circumscribing a series of apertures in the latter. A conduit 8, communicating with a chimney 9, or other draft

passage, closely surrounds the periphery of the vane wheel 1 and is provided with a diverging admission end 10, which cooperates with the conical deflector 6 to provide an annular, converging passage for admitting the entering current of air and directing the latter at increased velocity axially against the vanes of the wheel 1. By this construction, currents of air flowing under relatively small effective pressures are delivered at an efficient velocity to the vane wheel, and axially directed uniformly over the entire operative surface of the vanes. The diverging current of air deflected along the outer surface of the cone 6 tends, by an injector action, to produce a reduction within the hollow interior of the latter; the maintenance of such area of reduced pressure against the adjacent portion of the vane wheel tending to counterbalance the axial thrust of the actuating air current on said wheel. This provides a highly advantageous means for minimizing axial thrust on the shaft bearings 4, and eliminates the wasteful friction losses incident thereto. Such counterbalancing is highly important in this type of motors, since even slight friction caused material losses at the high rotative speeds employed. Under certain conditions of construction or operation, the wheel 1 may be provided with a series of apertures 7 opening within the base of the deflector cone 6 to prevent an excessive reduction of pressure within the latter.

I have shown the chimney provided with a lamp 11 for causing a draft, but, obviously, any other well known means could be employed for this purpose.

The shaft 3 is shown connected by a reduction gear 12 and 13 with a drive shaft 14 provided with a pulley 15. If electrical power is desired, an armature 16 can be mounted directly on the high-speed motor shaft 3, in cooperative relation to field magnets 17 on the support 5.

Figs 3 and 4 illustrate a slight modification, in which a plurality of the above described vane wheels are employed with a chimney. The construction is exactly similar to that previously described, with the exception that the several wheel shafts carry pinions 18 which mesh with a common gear wheel 19 on a drive shaft 20. Power can be taken from the drive shaft in any desired manner, as by a pulley 21 thereon for belting to a counter shaft 22.

I have illustrated preferred and satisfactory constructions, but changes could be made within the spirit and scope of my invention.

5 Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a fluid motor, the combination of a rotatably mounted vane wheel provided with an annular series of apertures within the inner ends of the vanes thereof, and a stationary hollow, conical deflector concentrically supported with the periphery of its open base adjacent to the pressure face of said wheel and circumscribing such annular series of apertures, substantially as described.

2. In a fluid motor, the combination of a

rotatably mounted vane wheel provided with a series of apertures within the inner ends of the vanes thereof, a hollow, conical deflector stationarily supported with the periphery of its open base adjacent to the pressure face of said wheel and circumscribing such series of apertures, and a conduit surrounding said wheel and terminating in an outwardly flared open end positioned coaxially with said conical deflector.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH MESSINA.

Witnesses:

GUISEPPE PUORARO,
F. E. MARTINEZ.