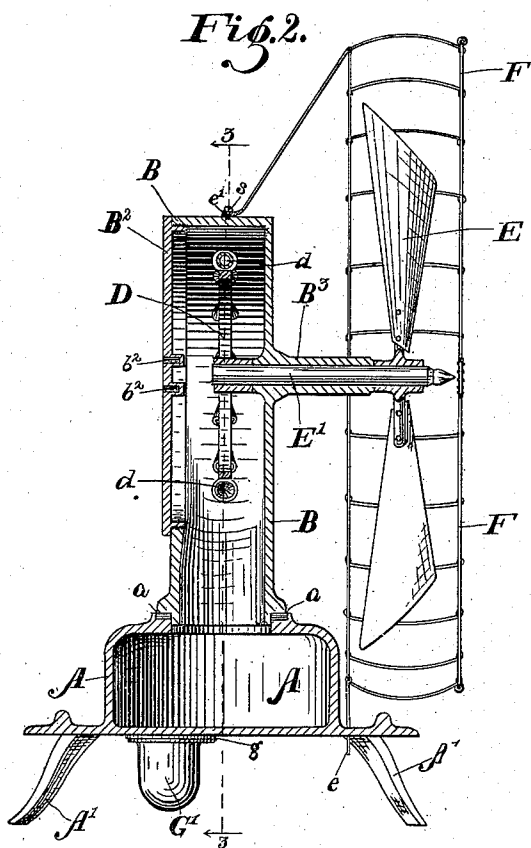
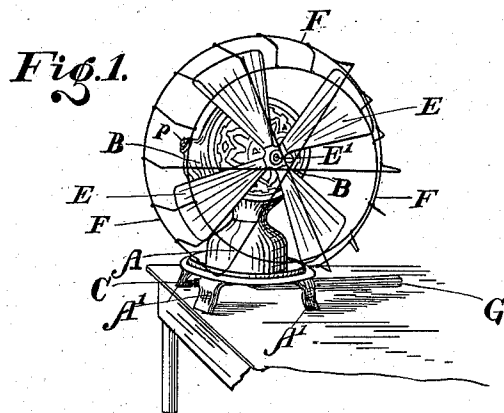


(No Model.)

W. J. MINGLE & T. BEMIS.
WATER MOTOR FAN.

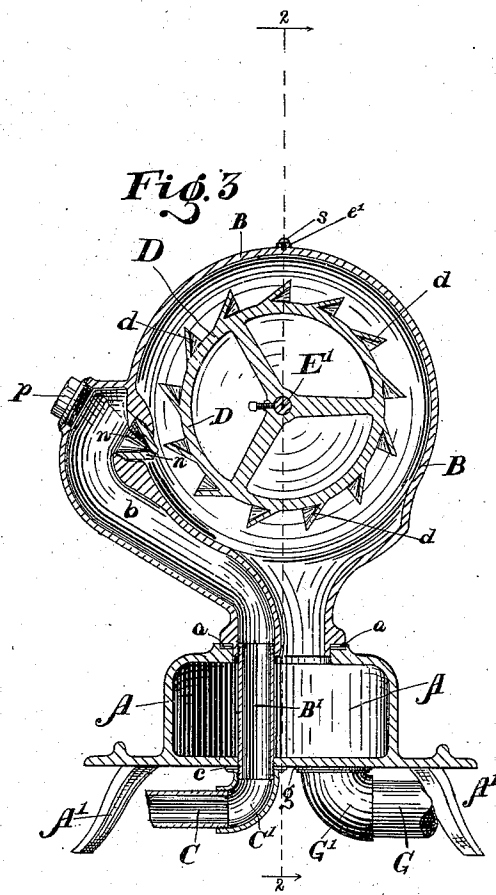
No. 565,772.

Patented Aug. 11, 1896.



WITNESSES:

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WILLIAM J. MINGLE, OF LANCASTER, PENNSYLVANIA, AND THOMAS BEMIS, OF INDIANAPOLIS, INDIANA, ASSIGNORS, BY MESNE ASSIGNMENTS, TO THE SPECIALTY MANUFACTURING COMPANY, OF INDIANAPOLIS, INDIANA.

WATER-MOTOR FAN.

SPECIFICATION forming part of Letters Patent No. 565,772, dated August 11, 1896.

Application filed July 26, 1894. Serial No. 518,623. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM J. MINGLE, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, and THOMAS BEMIS, residing at Indianapolis, in the county of Marion and State of Indiana, citizens of the United States, have invented certain new and useful Improvements in Water-Motor Fans, of which the following is a specification.

The object of our present invention is to produce a small cheap fan which may be conveniently connected to and operated by any ordinary water-supply. In shape it is very much like the usual form of electrical fans, and is intended to be an inexpensive substitute therefor.

Our said invention will be first fully described, and the novel features thereof then pointed out in the claims.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a perspective view of a fan embodying our said invention; Fig. 2, a vertical sectional view on the dotted line 2 2, in Fig. 3; and Fig. 3, a vertical sectional view on the dotted line 3 3, in Fig. 2.

In said drawings the portions marked A represent the base on which the fan is mounted; B, the water-wheel case; C, the water-supply pipe; D, the water-wheel; E, the fan; F, the guard for said fan, and G the water egress or waste pipe.

The base A is preferably mounted on legs A', and contains a chamber to receive the waste-water as it leaves the water-wheel. It is preferably circular in horizontal section, with a circular opening on its upper side which is formed for a seat to receive the water-wheel case.

The water-wheel case B is a flat circular case set on edge, with one side developed into a standard which rests upon and is secured to the base A. Cast in this case and forming part thereof is a by-path *b*, which leads up to a convenient point from which to discharge the water against the wheel, and a

section of pipe B' is screwed into the bottom end of this by-path, and is adapted to extend down through an orifice in the bottom of the case A to the outside thereof, where, as will be presently described, it is connected to the supply-pipe. Near the upper end of the by-path an orifice is formed leading to the outside of the case, which, when the apparatus is assembled in condition for use, is closed by a plug *p*. A hole is drilled through the inner side of said by-path in the direction it is desired that the nozzle shall point, and in this hole is screwed the small nozzle *n*, through which a fine stream of water is directed against the wheel. As will be readily observed, this nozzle is removable, and by providing two or more with orifices of different sizes they can be readily interchanged, and a greater or less force thus employed in driving the fan. Usually, however, the nozzle-orifice may be very small, one-sixteenth of an inch being commonly quite sufficient. One side of the case is formed of a screw-cap B², which can be removed by an appropriate wrench inserted in the wrench-holes *b*², as shown in Fig. 2, and the whole interior of the case thus exposed. Extending out from the other side of the case is a long bearing B³ for the shaft of the device, upon the inner end of which the water-wheel is mounted and the outer end of which carries the fan proper.

The water-pipe C leads from any appropriate source of water-supply (not shown) and connects to the fitting C', which is screwed onto the lower end of the short pipe B'. This pipe B' serves both as a conduit for the water and as a bolt to unite the base A and the case B. Said pipe B' is screwed firmly into the lower end of the by-path which forms an integral part of the case B. Its lower end extends through an orifice in the bottom of the base A. A suitable packing, in the form of a washer *c*, being placed around the lower end of this pipe B' outside the case, and the fitting C' screwed up tightly against it, it serves also as a nut, and draws the parts A and B tightly together, and as a packing *a* is interposed in the seat in the upper portion of

the base A, in which the case B rests, the joints are also rendered water-tight, and the parts are all thus effectually united without the use of either screws, bolts, or other devices.

5 The water-wheel D is a small wheel with proper buckets formed on the edge, and is adapted to be driven by the force of the water coming in through the nozzle *n*. It is fixedly mounted on the shaft E', upon the other end
10 of which is the fan E, the arrangement of these parts being simple and easily understood. The hub of the water-wheel acts as a collar at one end of the shaft and the hub of the fan as a collar at the other end, and
15 the shaft is thus prevented from moving longitudinally in either direction.

The guard F is formed of wire in the ordinary manner, and covers the fan-blades and prevents things from coming in contact there-
20 with. It is secured to the base A by having two points *e* extend through small holes in the rim of said base and to the water-wheel case by a screw *s*, passing through an eye or loop *e*, as shown in the drawings.

25 The waste-pipe G is secured to a fitting G', which in turn is screwed into a suitable opening in the bottom of the base A. By the use of suitable packing-rings *g* or other material used in such joints this connection is also
30 rendered water-tight, all in a usual and well-known manner.

As will be readily observed, this device can be manufactured and assembled complete ready for use, with the fittings C' and G' al-
35 ready attached, so that in order to put it in use all that is necessary is to connect a supply-pipe to the fitting C' and a waste-pipe to

the fitting G' and turn on water, when the fan will at once operate.

Having thus fully described our said inven- 40 tion, what we claim as new, and desire to secure by Letters Patent, is—

In a water-driven fan structure, the combination, of a base containing a waste-water chamber, a water-wheel case formed with one 45 side removable, and having a by-path formed integrally therein which constitutes a part of the water-inlet, and with its lower side developed into a hollow standard which rests upon the base and registers with an opening to the 50 waste-water chamber therein, a section of pipe which extends up through said waste-water chamber and is connected to the lower end of said by-path in the water-wheel casing, a fitting screwed onto the lower end of said 55 pipe to bear against the under side of said base and secure it and the wheel-casing together, packing in said joints, a water supply connected with said pipe, a discharge-nozzle leading from the by-path to the wheel-casing, 60 a waste-pipe leading from said waste-water chamber, and the wheel and fan, all substantially as set forth.

In witness whereof we have respectively signed this specification each in the presence 65 of two witnesses.

WM. J. MINGLE.
THOS. BEMIS.

Witnesses as to Mingle:

F. T. HETHERINGTON,
THOS. BENNETT.

Witnesses as to Bemis:

CHESTER BRADFORD,
JAMES A. WALSH.