Jan. 16, 1923. 1,442,467

Z. E. CHERNESKY.
PORTABLE FAN.
FILED AUG. 17, 1921.

Fig.-1.

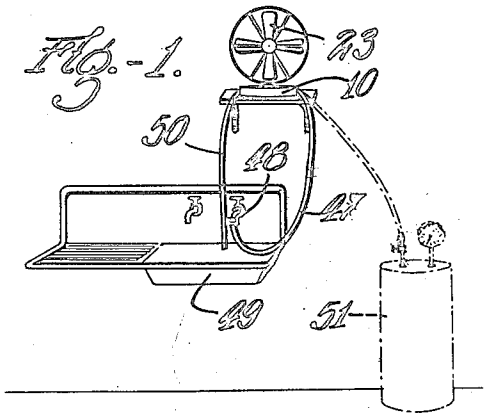


Fig.-2.

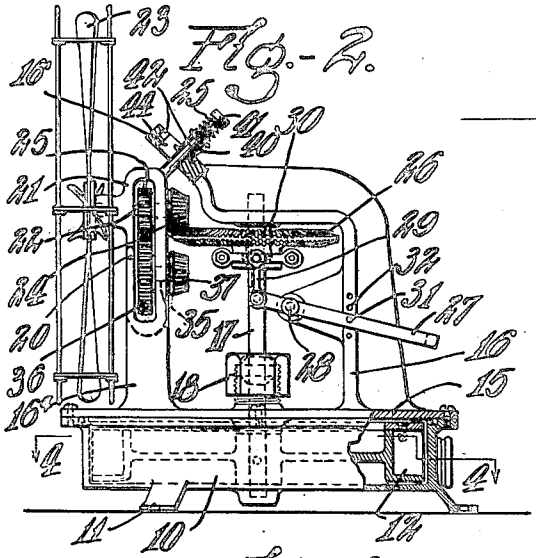


Fig.-3.

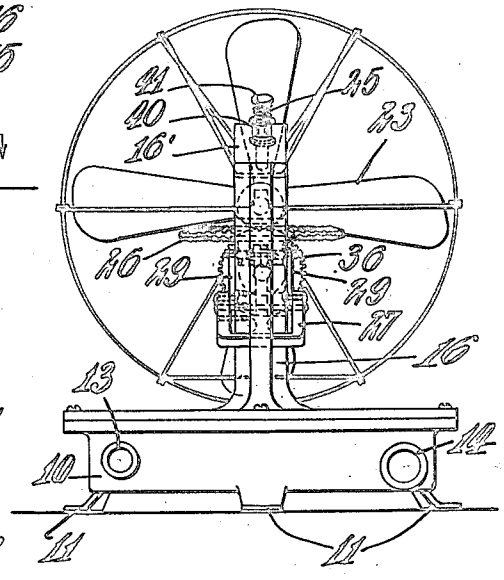
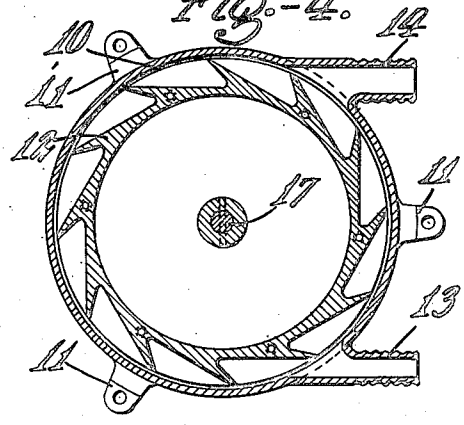


Fig.-4.



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UNITED STATES PATENT OFFICE.

ZOTIK E. CHERNESKY, OF MILWAUKEE, WISCONSIN.

PORTABLE FAN.

Application filed August 17, 1921. Serial No. 493,089.

To all whom it may concern:

Be it known that I, ZOTIK E. CHERNESKY, citizen of Russia, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Portable Fans, of which the following is a specification.

This invention relates to fans such as are used for cooling purposes in rooms of any kind, the invention having for an object to provide a novel type of fan, driven by fluid pressure instead of the commonly used electric motor.

Other specific objects of the invention relate to the adjustment of the speed of the fan, and the angle of its axis.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

Fig. 1 of the drawings is a perspective view of my improved fan showing its application to a house faucet.

Fig. 2 is a side elevation, with parts in vertical section, of the fan.

Fig. 3 is a rear view.

Fig. 4 is a horizontal section on the line 4—4 of Fig. 2.

As here shown the motor of my improved fan comprises a circular casing 10 having feet 11. In this casing is mounted a vane wheel of any approved construction, the casing having inlet and outlet openings 13 and 14 for the motive fluid. The top of this casing is in the form of a removable plate 15 on which is fixed a bearing frame 16^a. The wheel 12 is fixed on a vertical shaft 17 extending upward through a stuffing box 18 in the plate 15 and supported at its upper end in the frame 16^a.

Pivotally attached as at 20 to the frame 16 is a bracket 21 in which is journaled a horizontal stub shaft 22 having the fan 23 fixed at one end and a bevel pinion 24 fixed to its other end, a spur pinion 25 being fixed to said shaft intermediate its ends. The bevel pinion 24 is adapted to mesh with one face of a double faced bevel gear 26 feathered on shaft 17 and movable into and out of engagement with pinion 24 by means of a U-lever 27 fulcrumed as at 28 to the frame 16 and connected by links 29 to a collar 30 swiveled on the hub of gear 26. The lever 27 is maintained in adjusted position by means of a pin 31 adapted to be passed through a hole therein into one of a pair of holes 32 in the frame 16.

Mounted in the bracket 21 is a stub shaft 35 on which is fixed a spur gear 36, meshing with the pinion 25, and a bevel gear 37, the relative sizes of the parts being such that the bevel pinion 37 will be spaced some distance from the bevel gear 26 when the latter is held out of engagement with the pinion 24. The pinion 37 is adapted to be brought into engagement with the lower face of gear 26 by swinging the bracket 21 on its pivot 20. The speed of the fan 23 is thus increased, while its axis is changed so that it directs the current of air downward. The bracket 21 is held in adjusted positions by means of a collar 40, loose on a pin 41 projecting from the free end of the bracket, and adapted to engage of a pair of sockets 42 formed in a part 16′ of the frame 16, this part being slotted as at 44 to receive the pin 41. A spring 45 surrounding the pin 41 urges the collar 40 toward the socket 42.

In use, the inlet 13 of casing 10 may be connected by a pipe 47 to an ordinary faucet such as 48 on a sink 49, an exhaust pipe 50 leading back to said sink. Or the pipe 47 may be connected to a compressed air tank 51. For use in a small room the fan may be arranged as in Fig. 1, with the fan axis horizontal, and bevel gear 26 meshing with bevel pinion 24 driving the fan at reduced speed.

For use in a large room the fan may be suitably elevated, and the bracket 21 shifted to bring pinion 37 into mesh with gear 26, driving the fan at increased speed and directing the current of air downward.

Having thus described my invention what I claim as new and desire to protect by Letters Patent of the United States is as follows:

1. In combination, a motor, a frame, a bracket hinged to said frame, a fan mounted on said bracket, a pair of spaced bevel pinions having different ratio drive connections with said fan, said bracket being adapted to be swung to different positions to vary with the angle of the fan and bring either of said bevel pinions into operative relation to the motor.

2. In combination, a rotary fluid motor, a vertical shaft on which said motor is fixed, a frame, a bracket hinged to said frame, a

stub shaft journaled in said bracket, a fan, a bevel pinion and a spur pinion all fixed on said stub shaft, a second stub shaft, said spur gear meshing with said spur pinion, said bevel pinions lying in a common plane and spaced from one another, a double faced bevel gear feathered on said vertical shaft and projecting between said bevel pinions, means for moving said bevel gear along said vertical shaft to bring it into or out of mesh with said first mentioned bevel pinion, and means for holding said bracket in position with said second bevel pinion in or out of mesh with said bevel gear.

3. In a combination, a rotary fluid motor, a vertical shaft on which said motor is fixed, a frame, a bracket hinged to said frame, a stub shaft journaled in said bracket, a fan, a bevel pinion and a spur pinion all fixed on said stub shaft, a second stub shaft journaled in said bracket, a spur gear and a bevel pinion on said second stub shaft, said spur gear meshing with said spur pinion, said bevel pinions lying in a common plane and spaced from one another, a double faced bevel gear feathered on said vertical shaft and projecting between said bevel pinions, means for moving said bevel gear along said vertical shaft to bring it into or out of mesh with said front mentioned bevel pinion, and means for holding said bracket in position with said second bevel pinion in or out of mesh with said bevel gear, said means including a pin on said bracket, a collar slidable thereon and adapted to engage in either of a pair of sockets in said frame, and a spring urging said collar toward said brackets.

In testimony whereof I have affixed my signature.

ZOTIK E. CHERNESKY.