

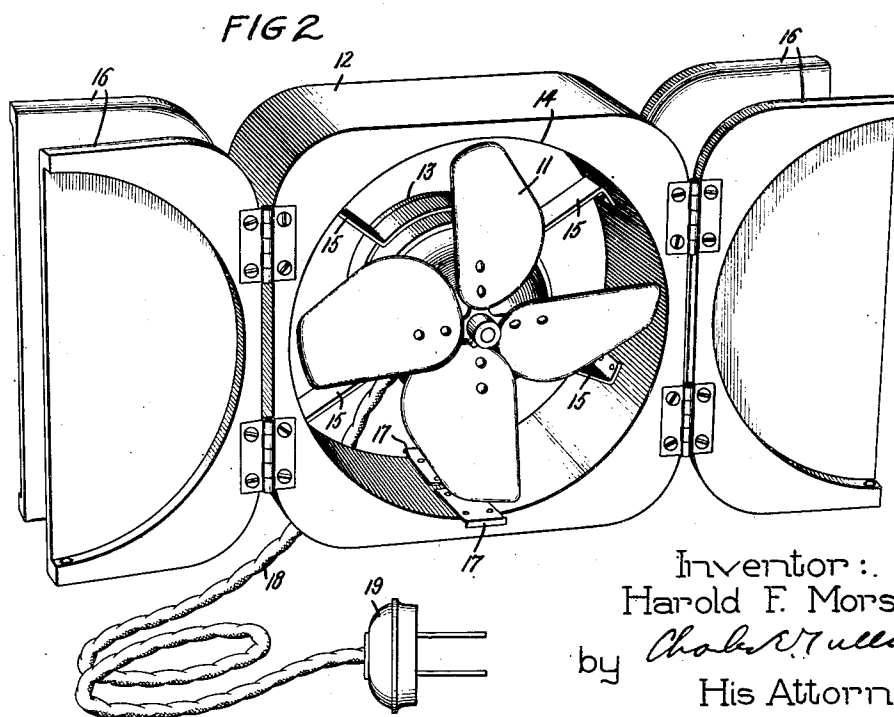
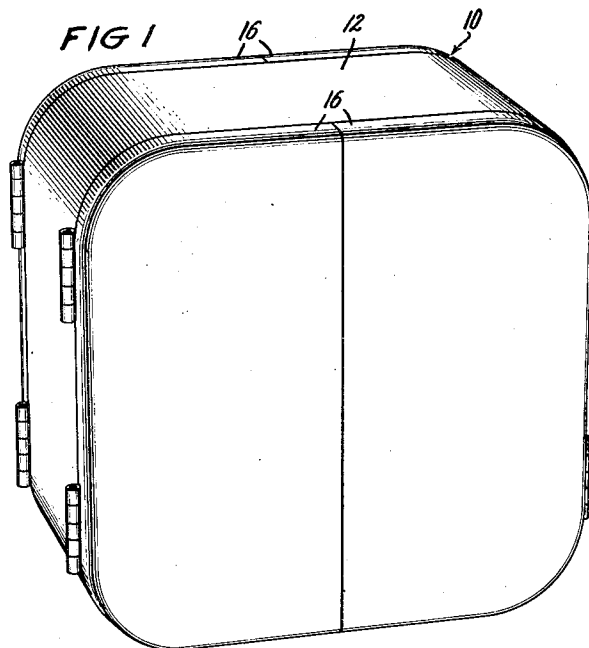
Aug. 28, 1934.

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1,971,827

FAN

Filed Feb. 9, 1932



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UNITED STATES PATENT OFFICE

1,971,827

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Application February 9, 1932, Serial No. 591,771

2 Claims. (Cl. 230-273)

My invention relates to electric fans and more particularly to a portable electric fan with a housing completely enclosing the fan.

The object of my invention is to provide a small portable fan with a housing having closure means so that the fan may be completely enclosed and carried without any danger of damage to the fan.

Another object of my invention is to provide closure means for the housing which may also serve as additional support for the housing in the open position.

What I consider to be novel and my invention will be better understood by reference to the following specification and appended claims when considered in connection with the accompanying drawing.

In the drawing, Fig. 1 is a view in perspective of the fan completely enclosed in its housing, and Fig. 2 is a view in perspective of the fan with the covers open.

10 indicates the assembled fan and housing in general. A fan 11 is shown mounted in the housing 12 and driven by a motor 13. Housing 12 has a cylindrical opening 14 extending from one end of the housing to the other. The fan 11 and motor 13 are supported in opening 14 by means of radially extending arms 15. Housing 12 is provided with hinged covers or closure means 16 for each end of the housing to close completely the opening 14. Covers 16 are held in a closed position by means of catches 17. Covers 16 extend from the top to the bottom of the housing 12 and thus when in the open position serve as additional supports for the housing 12. The top and bottom of the housing 12 are flat and covers 16 have portions extending in the same planes so the fan may be placed on either end. An electric cord 18 and plug 19 are provided to connect the motor 13 to an electric circuit. When it is desired to close the fan, the cord 18 and plug 19 may be placed in the opening 14 around the motor 13.

When the covers 16 are closed the fan may be carried with safety in a handbag or suitcase without any danger of any damage being done by the compacting of clothes or articles about it in the handbag or suitcase. This is important in a portable fan because the blades must be dynamically balanced and the blades are easily twisted or distorted by the compacting of clothes about them which would destroy the balance of the blades and cause the fan to be noisy in operation and to vibrate excessively making the fan walk. When the fan is in use the covers 16 are open and form an additional support for the fan to prevent a slight jar or vibration upsetting the fan. In ad-

dition, the mounting of the fan 11 and motor 13 within the cylindrical opening 14 with the fan 11 adjacent one end of the opening protects one from the danger of injury by coming in contact with the fan while it is in operation because anything inserted from the front of the opening will be forced out without damage to it and the housing 12 is of such depth that it would be practically impossible to come in contact with the opposite side of the fan. By this arrangement the housing 12 serves as a guard for the fan as well as a housing. Of course a guard of wire netting could be provided if desired as additional protection.

As shown in Fig. 2, the covers 16 are swung through an angle of 180 degrees from their closed position. It may be desirable to place the covers 16 at an angle less than 180° when they are in the open position to accommodate the fan to a particular shape of supporting member or to locate it on a support in a particular place adjacent other devices. By the construction of the covers 16 they will provide good support in any open position.

In addition to the support which these covers 16 provide they may be utilized to control the air circulated by the fan. The covers on the front of the fan may be so placed as to direct the air stream from the fan. The column of air projected by a fan increases in width as it moves from the fan. The width of this column may be reduced by placing the covers at an angle less than 90° with their closed position. Thus the air projected may be concentrated in as small a band as desired. If it is desired to direct the air at an angle to the direction which the fan is facing then one of the covers may be used as a baffle. The covers when used to confine the air to a narrow band or as baffles will be held in position against the pressure of the impinging air by their engagement with the support on which the fan rests.

The rear covers may be used to control the amount of air moved by the fan by varying the opening for the entrance of air. Thus if the rear covers 16 are placed at any angle less than 90° with their closed position they will reduce the area through which the air may be drawn. By this arrangement the fan may be so placed that a stream of air will be directed toward a person and if the amount of air is more than desired it may be regulated by a proper positioning of the rear covers.

From the foregoing it may be seen that a portable fan is provided which may be carried with safety in a hand-bag or the like in close contact

with other articles and when in use has a relatively stable support and may be so regulated as to the width and direction of the air stream and the quantity of air moved.

5 What I claim as new and desire to secure by Letters Patent of the United States, is:—

1. A portable electric fan comprising a housing with a flat bottom and having a cylindrical opening extending from end to end, a motor located
- 10 entirely within the opening of said housing and supported centrally thereof by radially extending arms, a fan secured to said motor adjacent one end of the opening of said housing, and hinged covers for each end of the housing with portions
- 15 located in the same plane as the base of the housing to provide additional support for the fan when in the open position.

2. In a portable electric fan, a housing with flat top and bottom and having a cylindrical opening extending from one end to the other, a motor located wholly within said opening and supported by radially extending arms, a fan secured to the motor adjacent one end of the opening, and covers for each end of the housing hinged at each side of the opening, said covers serving to close the opening of the housing and having flat portions extending in the same planes as the top and bottom of the housing in the open position to provide additional support for the housing when in the open position.

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