June 2, 1953 C. E. JONES 2,640,646

ELECTRIC CIRCULATING FLOOR FAN

Filed April 7, 1949

Fig. 1

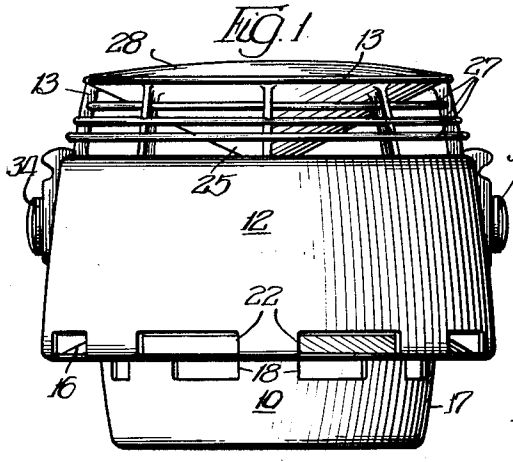


Fig. 4

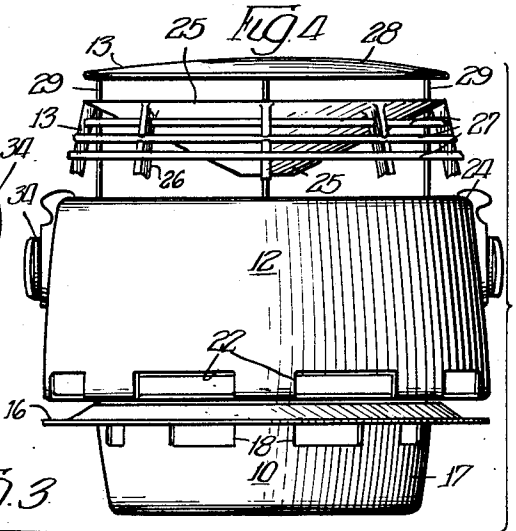


Fig. 3

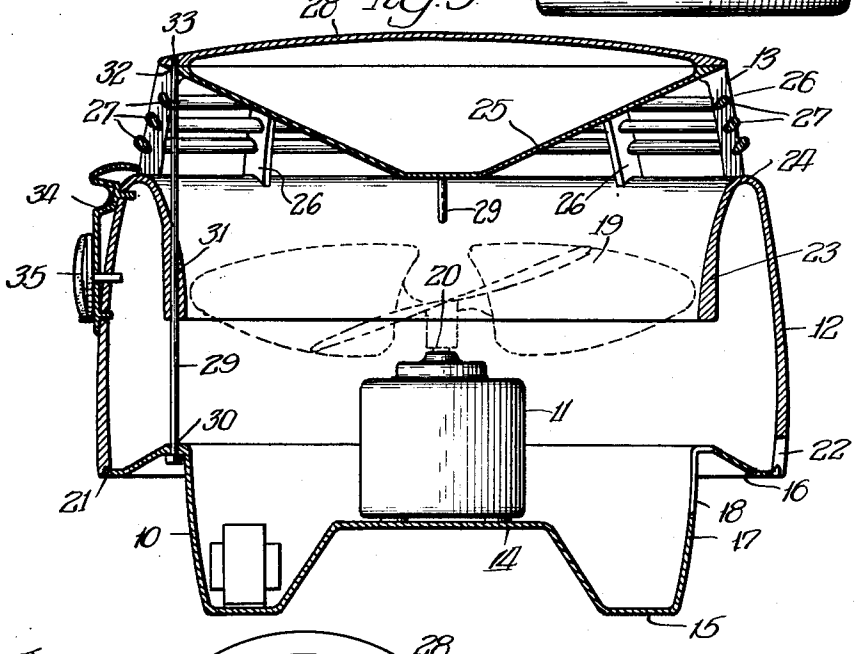
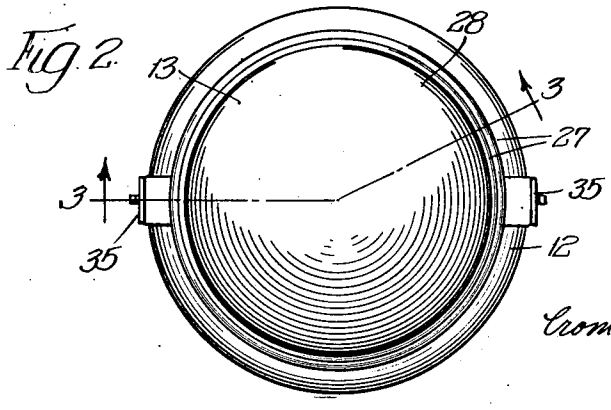


Fig. 2



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ELECTRIC CIRCULATING FLOOR FAN

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6 Claims. (Cl. 230—259)

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This invention relates to electric fans and is more particularly concerned with improvements in a circulating fan of the type adapted to be placed on the floor or a similar supporting surface.

It is an object of the invention to provide a circulating floor fan which is efficient in operation, which comprises a minimum number of parts, which is readily assembled and disassembled, and which may be economically manufactured.

It is another object of the invention to provide an electric fan of the type described having a base, a side wall casing and a top which are particularly adapted to be formed of molded plastic materials and which may be readily assembled with the motor and fan blades without the use of special tools or equipment.

It is another object of the invention to provide a circulating floor fan of the type described having a casing which comprises a base for supporting a motor with its drive shaft in vertical position, an imperforate side wall surrounding the fan blades mounted on the motor drive shaft, and a top member having a deflecting cone positioned above the base in spaced relation to the top edge of the side wall, the space between the side wall and the cone being provided with a grill-like construction whereby the fan blades are protected against damage while at the same time children and others are prevented from contacting the blades with their fingers.

It is still another object of the invention to provide a floor fan having a casing which comprises a perforated base for supporting the motor and fan blades, an imperforate side wall guard member encompassing the fan blades, and a top having an internal air deflecting cone arranged in spaced relation to the upper edge of the side guard member whereby air is circulated from the holes in the base upwardly through the side guard member and out between the deflecting cone and the top edge of the side guard member.

These and other objects of the invention will be apparent upon the consideration of the preferred form of the fan which is shown by way of illustration in the accompanying drawings wherein:

Fig. 1 is a side elevation of a circulating floor fan incorporating the principal features of the invention;

Fig. 2 is a top elevation of the fan;

Fig. 3 is a section taken on the lines 3—3 of Fig. 2 to an enlarged scale; and

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Fig. 4 is an exploded side elevation of the fan with parts in partially disassembled relation.

Referring to the drawings there is illustrated a fan construction which embodies the principal features of the invention and which is particularly adapted to be positioned or supported on a floor or other surface where it will circulate air in an upward direction.

The fan comprises a circular base 10 which supports a motor 11, a tubular side wall or guard member 12 which encompasses the motor 11 and a top construction 13 which deflects the air outwardly between its bottom edge and the top edge of the side wall member.

The base 10 is shaped to provide a generally cylindrical upwardly opening member having a bottom wall with a portion which projects upwardly in the center to provide a central platform or support 14 for the motor 11. The motor 11 may be secured on the platform 14 in any conventional manner. The remaining or outer portion of the bottom wall serves as a supporting rim 15 for contacting the floor or other supporting surface on which the fan is placed. The base 10 is provided at its top edge with an outwardly and downwardly directed peripheral flange 16 on the outer edge of which the side wall member 12 is supported. The vertical side wall portion 17 of the base member 10 is provided along its upper margin with the peripherally spaced apertures 18 for permitting air to be drawn into the casing by the fan blades 19. The motor 11 is supported on the platform 14 with its shaft 20 in a vertical direction for supporting the fan blade construction 19. The latter extends substantially above the peripheral flange 16 of the base member 10.

Side wall member 12 which constitutes a guard for the blade construction 19 is generally cylindrical in shape and provided at its lower edge with an internal groove 21 in which the outer edge of the peripheral flange 16 of the base 10 is received to support the same. Adjacent the lower edge of the side wall 12 a series of peripheral apertures 22 are provided for permitting the air to be drawn by the fan blades 19 into the guard member 12. The upper margin of the guard member 12 is provided with a reversely directed flange 23 which curves inwardly and downwardly towards the fan construction 19 and forms a peripheral disposed apron member terminating adjacent the outer peripheral path of the fan construction 19.

The top member 13 which rests on the curved

top edge 24 of the side wall member 12 supports a central downwardly extending air deflecting cone formation 25. At its outer peripheral edge the cone 25 is provided with a series of integral, relatively narrow strut members 26 which are downwardly and outwardly directed in circumferentially spaced relation. The bottom ends of strut members 26 rest on the edge 24 of the side wall member 12. A series of peripheral extending vertically spaced rod-like guard rings connect the strut 26. The rings 27 are teardrop in cross sectional shape and of decreasing diameter in the upward direction to facilitate fabrication by molding. A decorative top plate 28 is provided which covers the deflecting cone 25.

The base member 10, side guard member 12 and top members 13 are held in assembled relation by a series of peripherally spaced bolt-like rod members 29. The bolt members 29 extend through apertures 30 in the base member 10, vertically aligned apertures 31 in the side guard member 12 and apertures 32 in the top member 13. The cover plate 28 of the top 13 is provided with threaded sockets 33 in which the threaded ends of the bolt members 29 are engaged to secure the casing members in assembled relation.

The fan is assembled by first fastening the motor 11 to the central portion 14 of the base 10 and then positioning the side guard member 12 and top cone member 25 on the rods 29 while the rods 29 are held in the apertures 30. Thereafter the top cover plate 28 is positioned to place the threaded ends of the rods 29 in the sockets 33 and permit the tightening of the rods to secure the members in assembled relation.

Handle forming members 34 may be secured adjacent the top edges of the side guard member 12 and one of the handle members 34 may contain a switch, indicated at 35, for controlling the current to the motor. Other electrical equipment such as condensers or the like may be positioned along side the motor 11 within the base 10.

The casing members 10, 12 and 13 are particularly designed for fabrication by molding of plastic materials such as Bakelite, nylon or similar plastics of a thermo-setting character. These members may be formed also of metal such as aluminum or stainless steel.

The entire fan assembly is characterized by simple construction of light weight materials with a minimum of parts providing easy assembly, efficient operation and durability. The imperforate side guard or wall member 12 prevents a child or other person from reaching the fan blade construction with the fingers and thus eliminates accidents which are common with most fans of this type as ordinarily constructed. The spaces between the rings 27 and the top edge 24 of side member 12 are sufficient for the proper circulation of air outwardly of the fan casing while the apertures 18 and 22 in the base and side wall 12 are large enough to permit the entrance of an adequate supply of air to the casing.

While particular materials and specific details of construction are described in the illustrated form of the device it will be understood that other materials and other details of construction are contemplated within the scope of the invention.

I claim:

1. A fan assembly comprising an upwardly opening base member having a raised central portion for supporting a fan motor and fan blade construction thereon, said base member having an outwardly directed peripheral flange, a substantially vertical side wall member extending upwardly from the outer edge of said flange, said side wall member extending above said fan blade construction, and forming a guard therefor, and a top member comprising a central air deflecting cone portion and a perforate peripheral forming portion extending downwardly of the periphery of said cone portion and supported on the upper edge of said side wall member, said base member having perforations therein permitting air circulation upwardly through the casing formed by said members.

2. A fan assembly comprising an upwardly opening base member having a raised central portion for supporting a fan motor and fan blade construction, said base member having an outwardly extending peripheral top flange, a cylindrical side wall member extending upwardly from the outer edge of the flange on said base member, said side wall member having marginal portions reversely bent and extending above said fan blade to form a guard for said fan blade, a top member comprising an imperforate central air deflecting cone and a perforate cylindrical side portion extending downwardly from the edges of said cone and supported on the upper edge of said side wall member, and tie rods connecting the flange on said base member with said side wall member and marginal portions of said top member in rigid assembled relation, said tie rods extending within said side wall member and said top member.

3. A fan assembly comprising a base member having a central portion forming a support member for a motor, said motor having a vertical shaft and fan blades thereon extending above said base member, a substantially vertical side guard member extending from the margin of said central support upwardly above said fan blades, a central air deflecting cone arranged in rigid spaced relation above said fan blades, and peripherally spaced cone supporting struts extending downwardly from the periphery of said cone in engagement with the upper margin of said side guard member, said side guard member having circumferentially spaced air passages adjacent its lower edge whereby to permit air circulation through the casing formed by said members.

4. A fan assembly as recited in claim 3 and ring members arranged in inwardly and upwardly spaced relation connecting said downwardly extending struts.

5. In a fan assembly an upwardly opening base member having a central portion forming a support for a fan motor and fan blade construction, said base member having an outwardly directed peripheral flange, a cylindrical side wall member extending upwardly from the outer edge of said flange, said side wall member extending above said fan blade construction and having reversely bent marginal portions extending to a point adjacent the outer periphery of the fan blade construction to form a guard therefor, a top member comprising a central air deflecting cone and a cylindrical side forming portion extending downwardly from said cone and supported on the upper edge of said side wall member, and tie rods connecting the flange on said base member with said top member in rigid assembled relation, said tie rods extending within said top member and being connected to the reversely bent portions of said side wall member, and said base member having perforations therein permitting air circula-

tion upwardly through the casing formed by said members.

6. A fan assembly, adapted to be placed on a horizontal supporting surface, comprising a base member, a vertically extending side wall forming member and a top member, said base member having a central portion for supporting a motor with a vertical shaft and a fan blade construction thereon, said base member having its margins connected to the lower portions of said side wall forming member, said side wall forming member having the upper marginal portions reversely bent inwardly and downwardly and terminating adjacent the outer periphery of the fan blade construction to form a guard therefor, said top member comprising a central imperforate air deflecting cone and a peripheral portion extending downwardly from the edge of said cone with the lower edge thereof supported on the upper edge of said side wall forming member,

said side wall forming member having air admitting apertures adjacent the bottom thereof and said peripheral portion of said top member having apertures therein permitting air to flow therethrough.

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