

PATENT SPECIFICATION

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(54) IMPROVEMENTS IN OR RELATING TO ELECTRIC FANS

(71) We, FOONG WENG HING and FOONG WENG CHEW, both Malaysian Citizens, of 81/83 Kuala Kangsar Road, Ipoh, Perak, Malaysia, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to electric fans.

According to this invention there is provided an electric fan comprising a rotatable fan blade, an electric motor arranged to rotate said fan blade, and a housing and guard within which said fan blade and said motor are contained, said housing and guard including grills through which air may be fanned and comprising two halves which are identical to one another and interchangeable with one another, and said electric motor including a motor housing which also comprises two halves which are identical to one another and interchangeable with one another.

The provision of each of the housing and guard and the motor housing in the form of two identical and interchangeable halves reduces the cost of producing these parts of the electric fan, since only one mould is required in each case, and also reduces the cost of and simplifies the stocking of spares for replacement.

Preferably said grills through which air may be fanned are arranged in such manner that in operation air is delivered by the fan dispersed evenly over a wide angle, for example of about 130°, so that a soft even breeze is produced by the fan in operation.

Preferably said fan includes one or more manually adjustable deflection vanes disposed within said housing and guard and in the path of air delivered by the fan blade in operation for adjusting the distribution of air by the fan.

The invention will be further understood from the following description by way of example of an embodiment thereof with reference to the drawings accompanying

the Provisional Specification, in which:—

Figure 1 shows a front-view of an electric fan provided with a stand;

Figure 2 shows a wide view of the fan shown in Figure 1; and

Figure 3 shows a cross-sectional view of the fan shown in Figure 1, the cross-section being taken on the line III—III, the stand not being shown in Figure 3.

Referring to the drawings, the electric fan shown therein comprises a fan blade 1 which is arranged for rotation on the shaft 2 of an electric motor 3 having a motor housing which comprises two identical and interchangeable halves 4. The fan blade 1 and the electric motor 3 are contained within a housing and guard 5 of the electric fan, the electric motor 3 being mounted within the housing and guard 5 by means of a supporting frame 6. The housing and guard 5 comprises two identical and interchangeable halves 7 which are clipped together by means of projections 8 (see Figure 2) disposed thereon. Each of the halves 7 of the housing and guard 5 is provided with grills 9 through which air may be fanned; the grills are so designed that in operation of the electric fan air is fanned out and dispersed at an angle of about 130° to provide a suitable velocity and even distribution of air to a wide area to produce a comfortable and non-disturbing soft even breeze for persons sitting in front of the fan.

The electric fan shown in the drawings also includes a plastics material vane 10 which is disposed in the path of air fanned by the fan blade and is manually adjustable by means not shown for producing a wider angle of air distribution or a distribution of air in a particular direction as required. The electric fan shown in the drawings is provided with a stand 11 of conventional form which provides a support for the housing and guard 5 of the fan and on which the fan may be pivoted to provide a particular direction of fanned air.

Instead of the manually adjustable deflection vane 10, the electric fan may be

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5 provided with one or more automatically oscillating deflection vanes to effect a directionally varying distribution of air from the fan. Such oscillating vanes may be
10 powered by a low cost drive arrangement consisting either of reduction rubber wheels or pulleys or a small auxiliary bladed rotor powered by the high velocity air delivered by the fan itself. Alternatively, the fan could be oscillated or rotated by an external and separate drive arrangement of known form.

15 It will be appreciated that, with suitable modification or replacement of the means for mounting or supporting the fan, which in Figures 1 and 2 is shown as being constituted by the stand 11, the fan described above may be used for a variety of purposes. For example the fan may be used as a ceiling fan, as a wall fan, as an extractor (exhaust) fan, as a fresh air intake fan, or as
20 a table, floor, or stand mounted fan, or as an "under the table" fan in which the fan is disposed in a horizontal position to provide an upward flow of air which is circulated to
25 persons sitting around the table.

WHAT WE CLAIM IS:—

30 1. An electric fan comprising a rotatable fan blade, an electric motor arranged to rotate said fan blade, and a housing and guard within which said fan blade and said

motor are contained, said housing and guard including grills through which air may be fanned and comprising two halves which are identical to one another and interchangeable with one another, and said electric motor including a motor housing which also comprises two halves which are identical to one another and interchangeable with one another.

2. A fan as claimed in Claim 1 wherein said grills through which air may be fanned are arranged in such manner that in operation air is delivered by the fan dispersed evenly over a wide angle.

3. A fan as claimed in Claim 2 wherein said angle is substantially 130°.

4. A fan as claimed in any one of Claims 1 to 3 and including one or more manually adjustable deflection vanes disposed within said housing and guard and in the path of air delivered by the fan blade in operation for adjusting the distribution of air by the fan.

5. An electric fan substantially as herein described with reference to the drawings accompanying the Provisional Specification.

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WHAT WE CLAIM IS:—

1. An electric fan comprising a rotatable fan blade, an electric motor arranged to rotate said fan blade, and a housing and
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motor are contained, said housing and guard including grills through which air may be fanned and comprising two halves which are identical to one another and interchangeable with one another, and said electric motor including a motor housing which also comprises two halves which are identical to one another and interchangeable with one another.

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