C. H. J. DILG.

ROTARY FAN.

APPLICATION FILED MAY 26, 1913.

1,121,335. Patented Dec. 15, 1914.

Fig. 1.

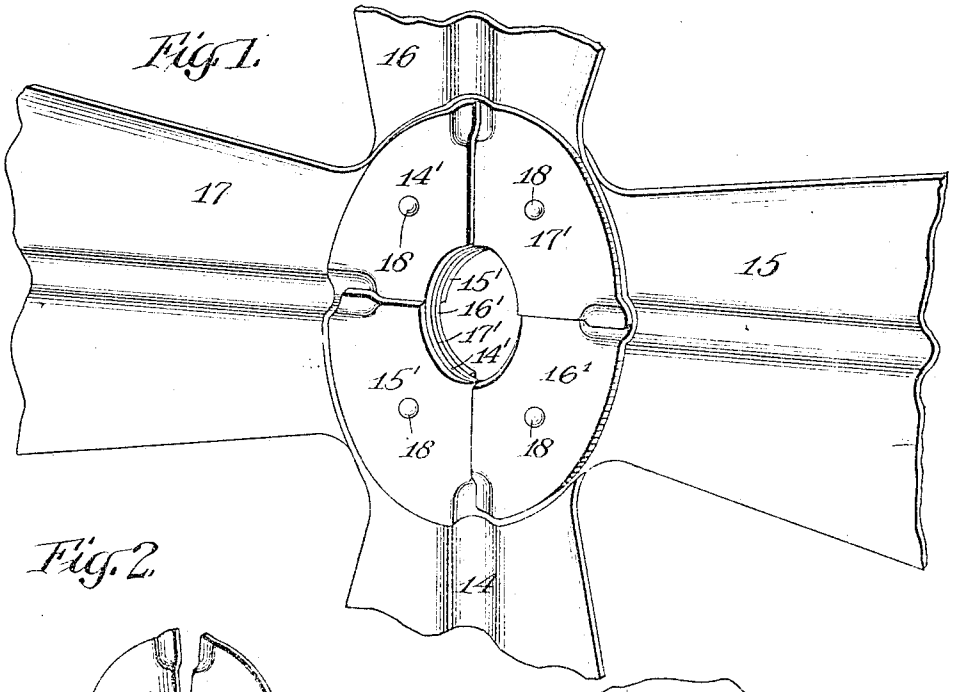


Fig. 2.

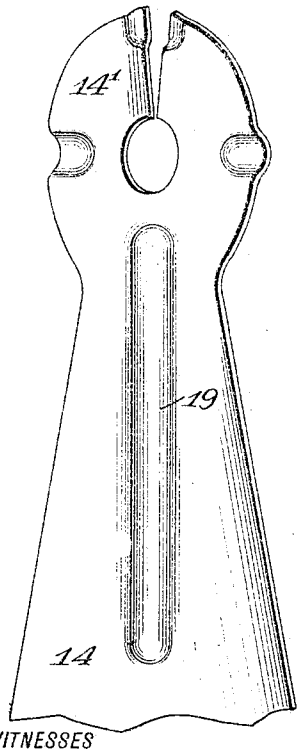
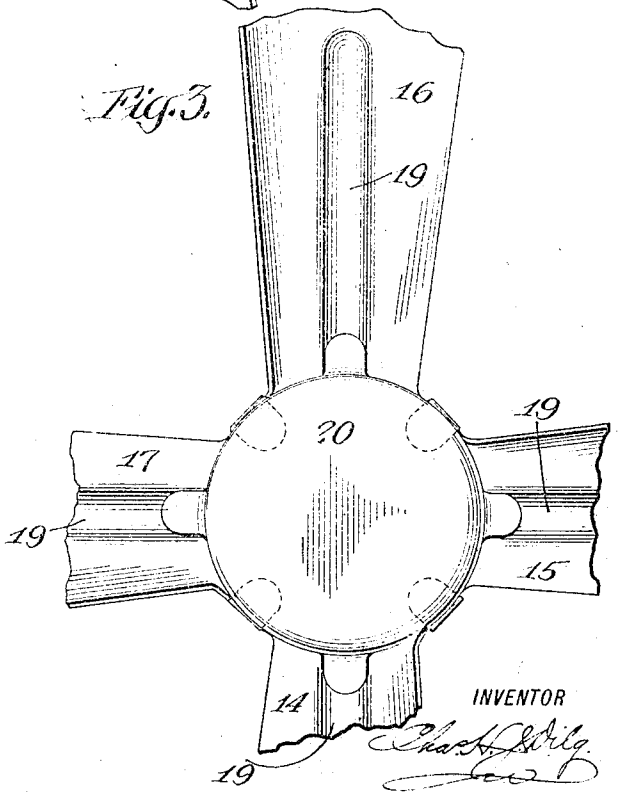


Fig. 3.



WITNESSES

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ROTARY FAN.

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To all whom it may concern:

Be it known that I, CHARLES H. J. DILG, a citizen of the United States, residing in the borough of Bronx, city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Rotary Fans, of which the following is a specification, reference being had therein to the accompanying drawings, forming part thereof.

My invention relates to rotary fans, such as electric fans, and particularly to the construction of the blades for such fans.

General objects of my invention are strength, compactness and rigidity of construction, and inexpensiveness and facility of manufacture.

Another specific object of my invention is to provide fan blades which will be strong and which can be economically manufactured, and which can be easily assembled in compact form with the blades in substantially the same plane.

Still other objects and advantages of my invention will appear from the following description.

I shall now describe the embodiment of my invention illustrated in the accompanying drawings, and shall thereafter point out my invention in claims.

Figure 1 is a detail perspective view on enlarged scale of the hub and portions of the blades of the rotary fan. Fig. 2 is a detail in face elevation of a portion of one blade. Fig. 3 is a front elevation of the hub and portions of the blades of the rotary fan with the cover plate attached.

The rotary fan construction comprises a number of blades having slitted or split hub portions so interlocked together that the blades are arranged in substantially the same plane, thereby providing a compact construction. Preferably also the hub portions are made intergral with the respective blades, both being stamped out of the same sheet of metal, thereby economizing manufacture.

The illustrated fan is composed of fan blades 14, 15, 16 and 17, the respective hub portions 14', 15', 16' and 17' of which are centrally perforated for the reception of the shaft 3 of the motor, and are split or slitted preferably radially from the perforations to the peripheries on the side opposite the blades in axial alinement therewith, as shown in Fig. 2. The split ends are sprung apart and the hub portions are successively interlocked, as shown in Fig. 1, so that each hub portion embraces between its split ends portions of the other three hub portions, and tightly grips the same because of the resiliency of the metal, the hub portions being provided with a depression on one face and a projection on the other face, formed by indenting the metal, and these depressions and projections interlock when the hub portions are brought into their proper positions rotarily, as shown. The hub portions are then secured together by rivets 18. The blades are thus brought into alinement or into the same plane, that is, the front and rear edges of the blades are in rotative alinement, the blades, as usual, being twisted at an angle to their plane of rotation, and a compact arrangement of the blades is thereby provided.

To give strength and rigidity to the blades, longitudinal ribs 19 may be stamped or otherwise formed in the blades. Finally, for protection to the hub portions and to the end of the armature shaft 3, a cover plate or disk 20 may be secured over the hub portions. The flexible fastening ears of the cover plate are arranged with alternate ears turned over the periphery of the hubs between the blades and with the intermediate ears laid in the strengthening ribs of the blades. This cover plate 20 may also be ornamental, as is desired.

It is obvious that various modifications may be made in the construction shown and above particularly described within the principle and scope of my invention.

I claim:—

1. A rotary fan comprising a plurality of blades composed of sheet metal, and each having a slit hub portion, the hub portions being arranged with their flat faces parallel and successively contiguous and each hub portion being entered into the slits of all the other hub portions, whereby they are successively interlocked.

2. A rotary fan comprising a plurality of blades composed of sheet metal and each having a hub portion provided with a substantially central shaft-receiving perforation and with a slit extending from the perforation to the periphery, the hub portions being arranged with their flat faces parallel and successively contiguous and with their

perforations in register and each hub portion being entered into the slits of all the other hub portions, whereby they are successively interlocked.

3. A rotary fan comprising a plurality of blades composed of sheet metal having hub portions provided with substantially central shaft-receiving perforations and with similarly disposed radial slits extending from the respective perforations to the peripheries, the hub portions being arranged with their flat faces parallel and successively contiguous and with their perforations in register and each hub portion being entered into the slits of all the other hub portions, whereby they are successively interlocked.

4. A rotary fan comprising a plurality of blades composed of resilient sheet metal, and each having a slit hub portion having a depression in one flat face and a projection on the opposite face, the hub portions being arranged with their flat faces parallel and successively contiguous and each hub portion being entered into the slits of all the other hub portions and rotarily disposed with its projection in the depression of the adjacent hub portion, whereby the hub portions are resiliently and successively interlocked.

5. A rotary fan comprising a plurality of blades composed of resilient sheet metal and having hub portions provided with substantially central shaft-receiving perforations and with similarly disposed radial slits extending from the respective perforations to the peripheries and with a depression on one flat face and a projection on the opposite face, the hub portions being arranged with their flat faces parallel and successively contiguous and with their perforations in register and each hub portion being entered into the slits of all the other hub portions and rotarily disposed with its projection in the depression of the adjacent hub portion, whereby the hub portions are resiliently and successively interlocked.

In testimony whereof, I have affixed my signature in presence of two witnesses.

CHAS. H. J. DILG.

Witnesses:
G. BAMMANN,
WM. A. LINDSAY.