

W. SPARKS.
 ROTARY FAN.
 APPLICATION FILED DEC. 18, 1911.

1,056,226.

Patented Mar. 18, 1913

FIG. 1,

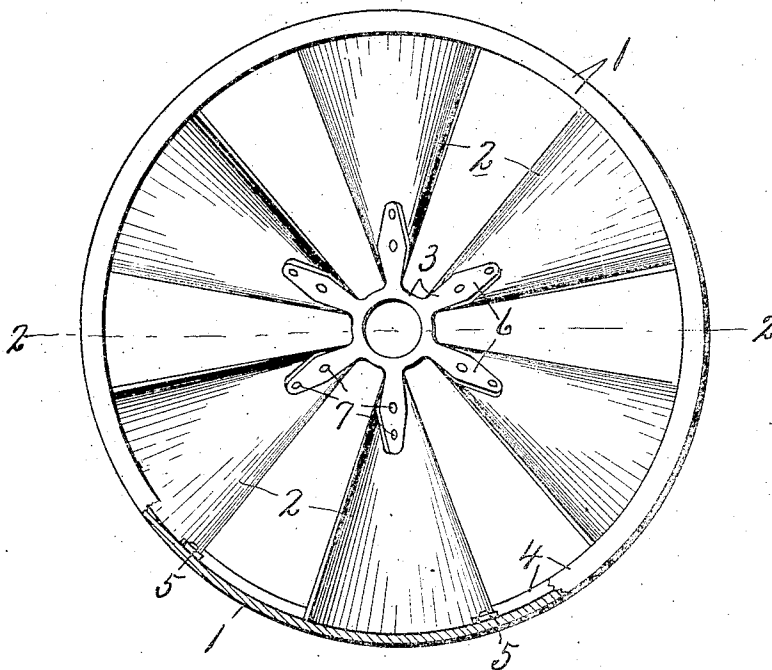
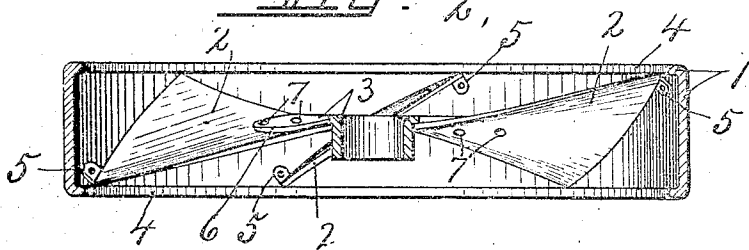


FIG. 2,



Witnesses
H. H. Hunt
H. E. Chase

Inventor
Wm. Sparks
 By *Howard P. Smith*
 Attorney

UNITED STATES PATENT OFFICE.

WILLIAM SPARKS, OF JACKSON, MICHIGAN.

ROTARY FAN.

1,056,226.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Application filed December 18, 1911. Serial No. 666,374.

To all whom it may concern:

Be it known that I, WILLIAM SPARKS, of Jackson, in the county of Jackson, in the State of Michigan, have invented new and useful Improvements in Rotary Fans, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in rotary fans of the class set forth in my pending application #655,137 filed October 17, 1911, in which the primary object is to inclose the blades within a rim of sufficient width to cover and protect the entire outer ends of the blades, thereby shielding such blades against contact with adjacent portions of the engine, radiator or other parts of an automobile in which these fans are adapted to be installed.

Aside from this broad object, another object is to enable the blades to be made separately from the rim and to provide means whereby they may be easily and quickly attached to such rim entirely within the planes of the opposite edges thereof. In other words I have sought to produce a fan which may be made from comparatively small pieces of sheet metal so as to utilize what has heretofore been waste stock in the production of a cheaper grade of fan yet sufficiently strong to withstand the strains to which it may be subjected.

Other objects and uses will be brought out in the following description.

In the drawings—Figure 1 is a face view, partly in section, of a rotary fan embodying the various features of my invention. Fig. 2 is a transverse sectional view taken on line 2—2, Fig. 1.

This fan comprises a rim —1— and a series of radial fan blades —2— arranged uniform distances apart circumferentially about a common axis and having their inner ends united by a web or central plate —3—, the latter being provided with a shaft opening for receiving the shaft of an engine or other motive power by which the fan is rotated.

The blades —2— are arranged at the same angle to the plane of rotation and are tapered and have their wider ends outermost or adjacent the rim and concentric therewith.

The rim —1— is of sufficient transverse width to cover and inclose the entire outer ends of the blades and its opposite edges are provided with inturned reinforcing flanges —4— for the purpose of stiffening the entire fan and also forming shields or guards to prevent contact of the blades with adjacent objects, as, for example, portions of the engine, radiator or other parts of an automobile in which the fan is adapted to be installed.

The outer ends of the blades while disposed diagonally or at an angle to the plane of rotation are located wholly within the guard flanges —4— and are provided near their corners with oppositely projecting lugs or flanges —5— which are secured by suitable fastening means as rivets to the rim —1—. These lugs or flanges constitute bearings engaging the inner face of the rim preferably in close proximity to the annular flanges —4— so as to not only stiffen the blades but also to stiffen the rim and to securely hold said rim in fixed concentric relation to the hub or web —3—. In this particular instance I have shown the web or plate —3— as made separately from the blades and is provided with radial arms —6— secured to the same side of said blades by suitable fastening means as rivets —7—, thereby forming a rigid connection between the inner ends of the blades and enabling me to use relatively small pieces of sheet metal which might otherwise be wasted.

What I claim is:

1. A rotary fan comprising a rim having its marginal edges provided with inturned guard flanges, separate blades having the corners of their outer ends secured to the rim in close proximity to the flanges, and a web uniting the inner ends of the spokes.

2. A rotary fan comprising a rim having its opposite edges provided with inturned guard flanges and fan blades having the corners of their outer ends disposed in close proximity to and between the flanges.

In witness whereof I have hereunto set my hand on this 11th day of Dec., 1911.

WILLIAM SPARKS.

Witnesses:

C. CLINE,

W. J. COBBETT.