E. GLANTZBERG.

ROTARY FAN.

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925,327.

Patented June 15, 1909.

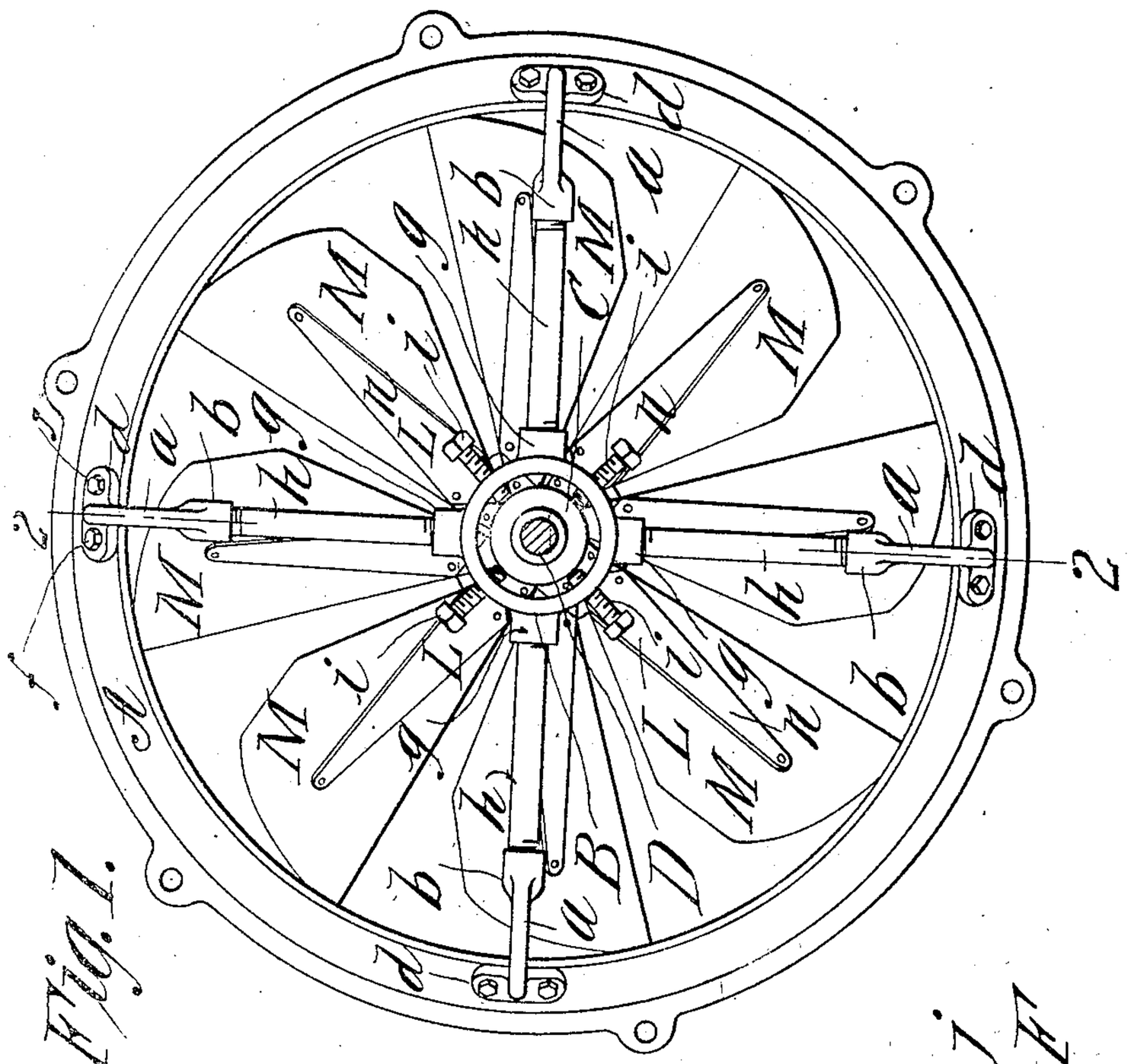

Fig. 1.

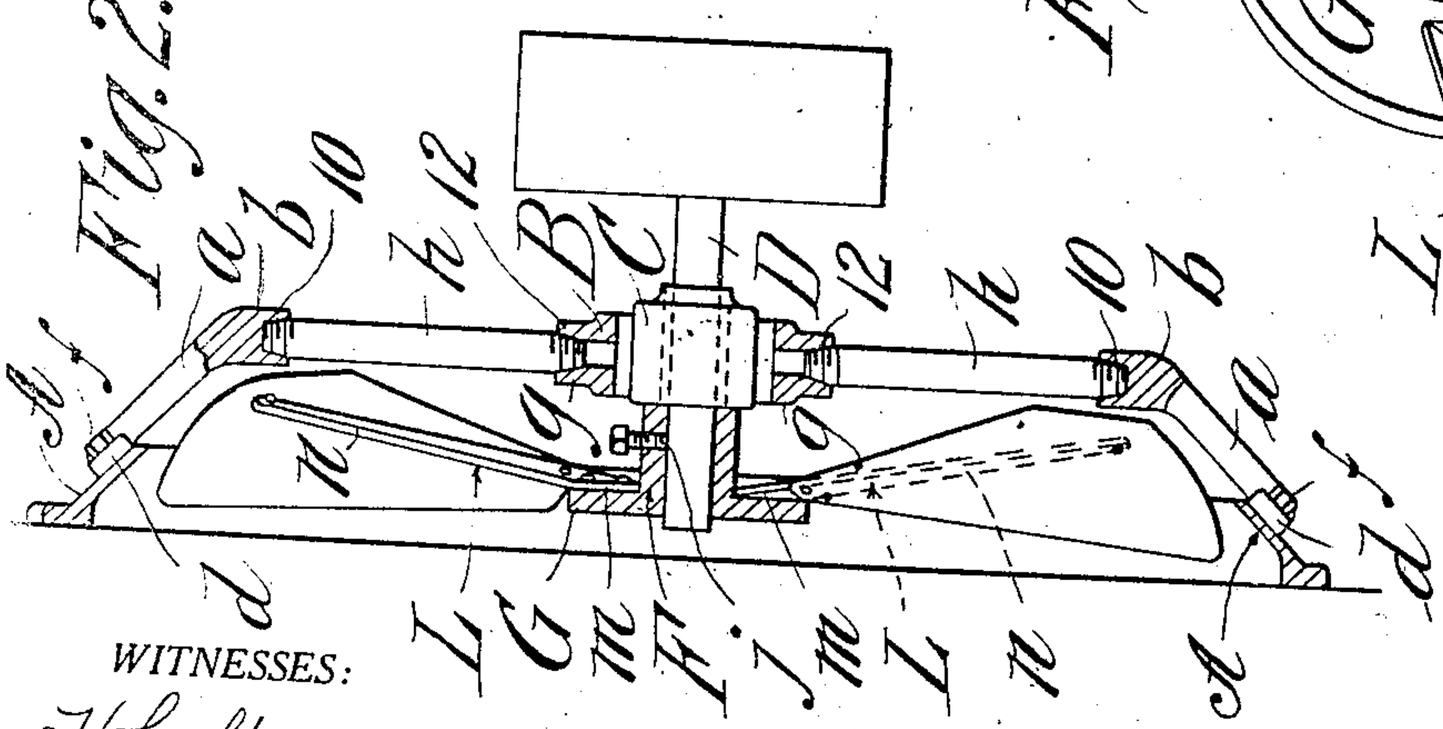

Fig. 2.

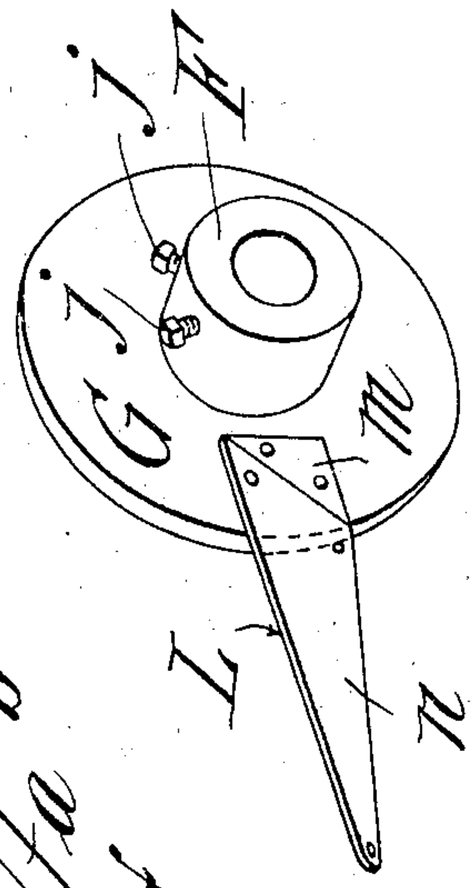

Fig. 3.

WITNESSES:

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UNITED STATES PATENT OFFICE.

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ROTARY FAN.

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Application filed October 1, 1908. Serial No. 455,683.

To all whom it may concern:

Be it known that I, ERNST GLANTZBERG, a citizen of the United States of America, and resident of New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Rotary Fans, of which the following is a full, clear, and exact description.

This invention relates to improvements in rotary fans, and the object is to produce a desirable and efficient fan of extremely inexpensive construction, and one by which fans of different diameters may be produced by simple expedients, as hereinafter more fully explained, without the necessity of different patterns and the production of different members therefrom for certain components of the fan.

The invention consists in the combination and arrangement of parts, and the construction of certain of the parts substantially as hereinafter described in conjunction with the accompanying drawings, and set forth in the claims.

In the drawings,—Figure 1 is a front elevation of the fan; Fig. 2 is a sectional view as taken substantially on line 2—2, Fig. 1; Fig. 3 is a perspective view showing a flanged sleeve carried on the rotary shaft of the fan and showing one of the carrying brackets affixed thereon.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings:—A represents the annular outer case of the fan having supporting brackets, *a*, in the present instance four in number, at regular intervals around it, extending beyond its edge, constructed with its inner end portions *b* bent to lines substantially perpendicular to the axis of the annular case, and having inwardly opening screw threaded sockets 10 therein. The said brackets have perforated attachment lugs *d* whereby, through means of the bolts *f f* they are detachably inclined on the annular fan case A.

B represents a ring concentrically related to and within the annular fan case A, the same being provided with outwardly extending hubs *g* having screw threaded sockets 12 radially alined with the screw threaded sockets 10 in the bent extremities of the brackets *a;* and rod or pipe sections *h h*, in the present instance 4 in number having threads at their opposite ends are screw engaged both in the sockets 10 of the brackets and the sockets 12 appurtenant to the said ring B.

C represents an annular shaft bearing member concentrically within the ring B, a plurality of screws threading through the ring having centralizing engagements with said shaft bearing member C; and the fan shaft D is rotatably supported in the bearing member C and has a sleeve F affixed thereon by one or more set screws *j*. The said sleeve is provided with a circular flange G having its face in a plane perpendicular to the shaft axis, and located concentrically within the annular fan case A.

A series of fan carrying brackets L are provided for as many of the fan blades M as are included in the rotary fan; and each of these brackets has inner end portions *m*, sidewise related, and secured by screws or rivets to the face of said flange G,—each bracket furthermore comprising outer extremities *n* which are bent or twisted into planes oblique to the flange face, while the fan blades are secured in their properly oblique positions by screws, bolts or rivets, to and for being supported and carried by the obliquely disposed outwardly extending portions *n* of the bracket. The said brackets may be rapidly and cheaply produced, for instance, from pressed steel by being stamped out and struck up to the form described and shown and made with the rivet or bolt holes in appropriate places therein.

In the assemblage of the parts the sections of iron pipe or solid rod, for constituting the bearing supporting member *h* may be provided with their ends screw threaded, one end of each being screw engaged in the threaded hub *g g* of the ring B before the brackets are screw engaged with the other ends of the rod like members *h* and fastened to the annular case A. For fans of larger or smaller sizes, it is only required to cut off the lengths of pipe *h* of the proper dimensions and make their ends screw threaded for engagements in the manner described with the brackets *a* and the ring B in whatever separation the latter may be from the former, and the necessity of making patterns and parts therefrom for important members included in the fan structure is obviated.

I claim:—

1. In a rotary fan, the combination with an annular outer case having supporting brackets, at intervals around it, provided with screw threaded sockets therein, of a

centralized ring including the fan shaft bearing-support, provided with screw threaded sockets at intervals around it radially alined with the first named sockets, rod or pipe sections having threads at their opposite ends, screw engaged both in the sockets of said brackets and of said ring, and a fan-blade carrying-shaft rotatably mounted in the said bearing support therefor.

2. In a rotary fan, the combination with an annular outer case having supporting brackets, at intervals around it, extending beyond its edge, constructed with inner end portions bent to lines substantially perpendicular to the axis of the annular case and having screw threaded sockets therein, and means for detachably confining said brackets on the case, of a centralized ring including a fan shaft bearing-support, provided with outwardly opening screw threaded sockets at intervals around it, radially alined with the first named sockets, pipe sections having threads at their opposite ends, screw engaged both in the sockets of said brackets and of said ring, and a fan-blade carrying-shaft rotatably mounted in the said bearing support therefor.

3. In a rotary fan, in combination, an annular outer casing having supporting brackets at intervals around it, extending beyond its edge, constructed with inner end portions bent to lines substantially perpendicular to the axis of the annular case and having inwardly opening screw threaded sockets therein, means for detachably confining said brackets on the case, a centralized ring provided with outwardly extending hubs having screw threaded sockets radially alined with those in the bent extremities of said brackets, pipe sections having threads at their opposite ends screw engaged both in the sockets of said brackets and the said ring, an annular shaft bearing member concentrically within said ring, a plurality of screws threading through the ring and having centralized engagements with said shaft bearing, a fan shaft rotatable in said shaft bearing and having a sleeve affixed thereon which is provided with a circular flange having its face in a plane perpendicular to the shaft axis, a series of fan blade carrying brackets consisting of plates having inner end portions sidewise related and secured to the face of said flange and having outer extremities in planes oblique to such flange face and fan blades secured on the obliquely disposed portions of said brackets.

Signed by me at New Britain, Conn., in presence of two subscribing witnesses.

ERNST GLANTZBERG.

Witnesses:

HENRY J. WATSON,

G. VON LEHANTZ.