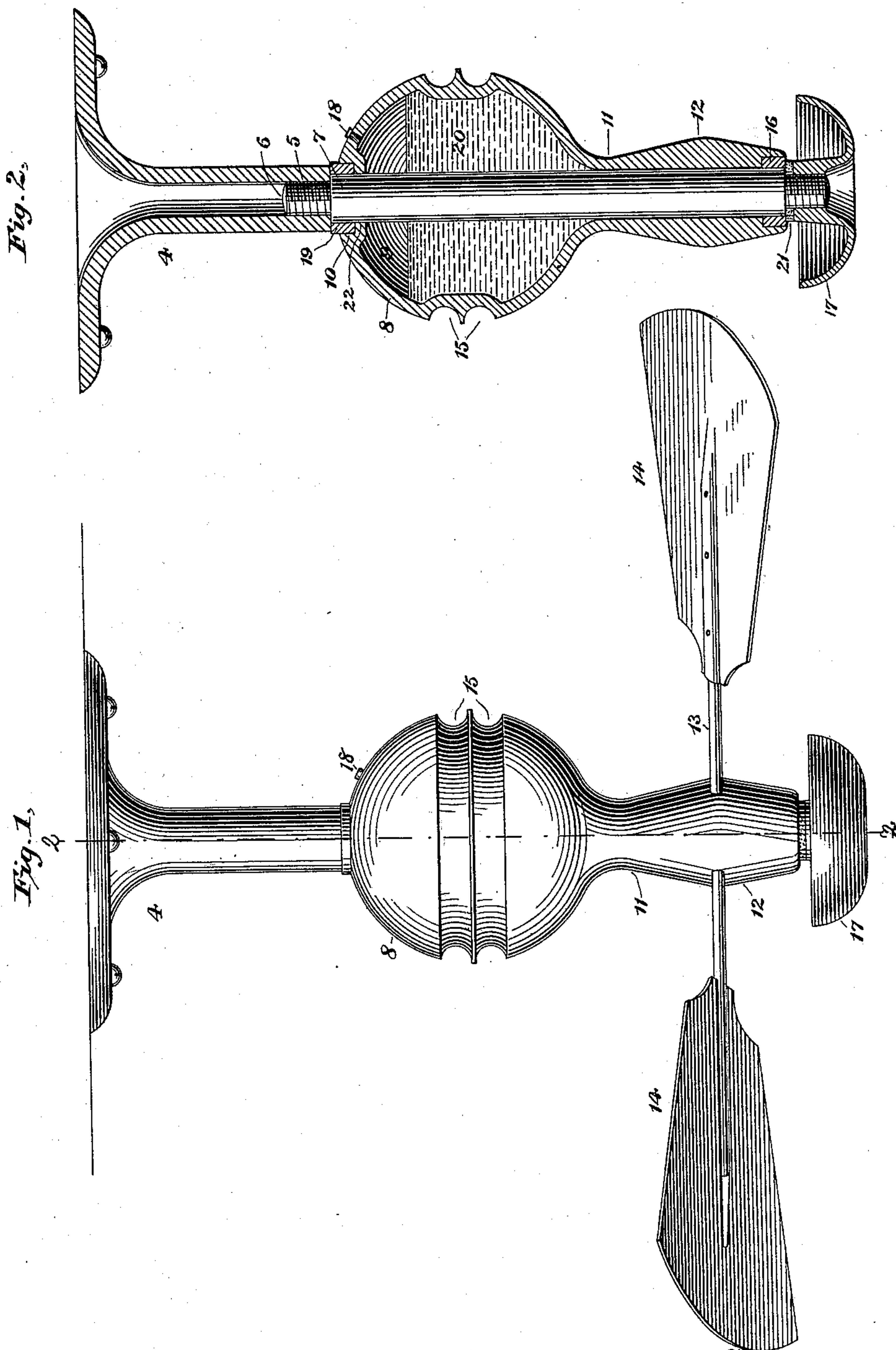


(No Model.)

C. E. WALDECK.
APPLIANCE FOR ROTARY FANS.

No. 408,555.

Patented Aug. 6, 1889.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES E. WALDECK, OF PATERSON, NEW JERSEY.

APPLIANCE FOR ROTARY FANS.

SPECIFICATION forming part of Letters Patent No. 408,555, dated August 6, 1889.

Application filed May 13, 1889. Serial No. 310,622. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. WALDECK, a citizen of the United States, residing at Paterson, county of Passaic, and State of New Jersey, have invented certain new and useful Improvements in Appliances for Rotary Fans, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to improvements in appliances for rotary fans that are usually employed for the purposes of cooling or ventilating apartments by creating air-currents.

The objects of my present improvements are to simplify, cheapen, and to render more efficient this class of fans.

In accordance with my invention the drive-pulley, besides its function of driving the fan, is made to perform the additional office of a lubricating device for keeping the bearings lubricated, and one of its hubs is suitably extended to form a fan carrier or hub in which the fan-blades are mounted.

The invention further relates to certain novel and peculiar constructions and combinations of the several parts of the device, all as hereinafter fully described, and then pointed out in the claims.

I have illustrated my invention in the accompanying drawings, wherein—

Figure 1 is a side view of a fan embodying my invention and shown as pendent. Fig. 2 is a sectional view of the same, the section being taken on a plane passing centrally and vertically through the fan, as indicated by line 2 2 in Fig. 1.

In the said drawings like numbers of reference designate like parts of the device throughout.

Referring to the drawings, the number 4 designates a stand or bed-plate having suitable screw-holes for receiving attaching-screws, by means of which the stand may be secured to the ceiling or wherever else desired. This stand is preferably made hollow for the purpose of lightness.

The mouth of the head of the stand 4 is screw-tapped at 5 to receive the screw-stem 6

on the end of the spindle 7, which by this means is secured rigidly in the stand.

My novel drive-pulley 8 is of a bulbous or globular form, with a hollow or chambered interior 9. The spherical body of the drive-pulley 8 is provided with a radially-disposed tubular extension or hub 11, which is considerably prolonged, so as to form a carrier or fan-hub 12 for mounting the fan-blades 14, which in this instance is accomplished by screwing the screw-threaded ends of the shanks 13 of the blades into suitable screw-threaded sockets formed in the part 12, as will be understood from the drawings. For the purpose of receiving the shanks of the fans, the fan-hub 12 is slightly thickened or swelled, as indicated. At a point diametrically opposite the tubular extension 11 the globe of the drive-pulley 8 is formed with a circular aperture 22, the material about the mouth of which is slightly thickened, and an annular shoulder 10 surrounds the outer side of the mouth and forms an annular recess in the end of the globe, into which takes the bushing 19.

The pulley 8 is formed with one or more belt-grooves 15, that run circumferentially around the same, and are designed to receive the belts. In the present case two such belt-grooves are shown, one being for the driving-belt and the other for the driven belt.

The pulley 8 and the extended parts thereof are loose on the spindle 7, on which they are held in position by means of a suitable collar 16, and the rotation of the pulley serves to rotate the fan-hub 12 and the blades 14, carried thereby. The several parts 8, 11, and 12 are made integral, the same preferably being a hollow casting of suitable metal.

The hollow interior 9 of the pulley 8 is used as a reservoir for a lubricant 20 for lubricating all the bearings of the fan, and the operation of the same in fulfilling this function will be at once understood from the drawings. When the fan is pendent, the oil-cup 17, which is screwed upon the reduced screw-threaded outer end of the spindle 7, will serve as a catch-receptacle for the waste oil from the bearings. A soft washer 21 is interposed between the collar 16 and oil-cup 17 to relieve the parts from the dead-thrust when in operation.

This oil-reservoir in the drive-pulley will deliver the oil continually to the bearings whether the fan be pendent, standard, or arranged horizontally. If preferred, for convenience of filling the reservoir 9 with oil, the upper side of the pulley may be provided with an ordinary filling-hole 18, for pouring oil therein, and the hole provided with a suitable removable plug.

10 In practice I have found it very convenient to use vaseline as a lubricant, and in doing so I remove the casting 8 11 12 by taking off the oil-cup and collar, and then fill the reservoir 9 with vaseline and replace it again.
15 The reservoir is of such capacity as to require filling only at rare intervals, and this is a desirable advantage in devices of this class that are usually located in inaccessible places.

Of course the fan-hub 12 and the drive-pulley 8 may be made separate and secured together, so that the latter may drive the former, but it will be manifestly preferable to have all these parts formed in a single casting, as described, since there are evident advantages in such construction.

The number and shape of the fan-blades 14 may be varied to suit the taste. The fan shown has four blades extending horizontally at right angles to each other. However, only two of the same are visible, since the view is taken along a line dividing the angle between two of the blades.

The design of the fan appliances forms no part of the claims herein made, since the same forms the subject-matter of another application of mine.

40 Having thus described my improvements in rotary fan appliances, what I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a spindle, of a hollow or chambered drive-pulley loose on the

spindle and a loose tubular shaft or hub having fan-blades mounted thereon and driven by the said pulley, the hollow of the pulley acting as a reservoir for supplying lubricant to the bearings of the pulley and the said fan-blade-carrying shaft or hub, substantially as and for the purpose set forth.

2. The combination, with a spindle, of a drive-pulley 8, having an integral tubular extension 11 12 for carrying the fan-blades, substantially as and for the purpose set forth.

3. The combination, with the fixed spindle 7, of the single hollow casting comprising the globe-shaped pulley 8, having hollow interior 9 and one or more circumferential grooves 15, the hub or extension 11, aperture 22, and the fan-carrier 12, for carrying the fan-blades 14 14, and means for holding the casting in position on the spindle, the hollow interior 9 of the pulley serving as an oil-reservoir, substantially as and for the purpose set forth.

4. The combination, with the attaching-stand 4 and the vertical spindle 7, fixed therein, of the single casting comprising the globe-shaped drive-pulley 8, formed with hollow interior 9, and having the radial tubular extension or hub 11 prolonged into the fan-hub 12, the aperture 22, diametrically opposite the extension 11, the exterior of the globe-like pulley being formed with one or more circumferential belt-grooves 15, the collars 16 and 19, for mounting the parts on the spindle, and the hollow interior 9 of the pulley acting as an oil-reservoir, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand and affixed my seal, in the presence of the two subscribing witnesses, this 11th day of May, 1889.

CHARLES E. WALDECK. [L. S.]

Witnesses:

WILLIAM T. RYLE,
WILLIS FOWLER.