April 30, 1935. O. REDER 1,999,479

ARRANGEMENT FOR PRODUCING ILLUMINATED ADVERTISEMENTS ON AEROPLANES

Filed Dec. 21, 1932

Fig. 1.

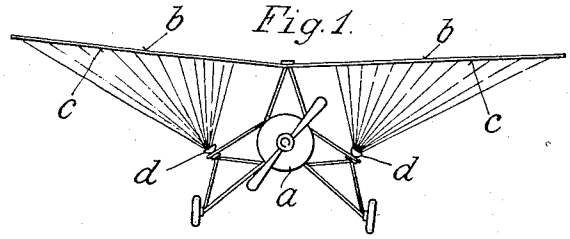


Fig. 2.

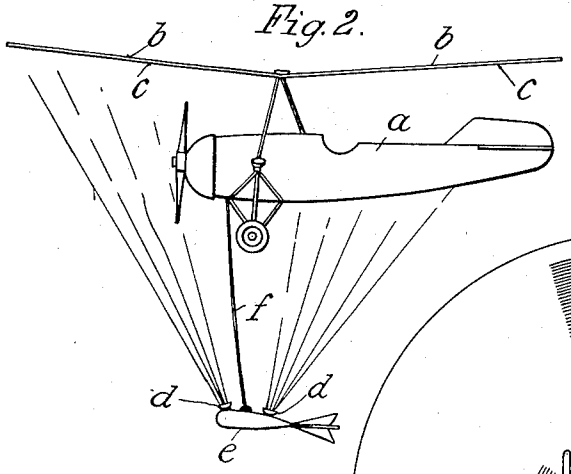


Fig. 3.

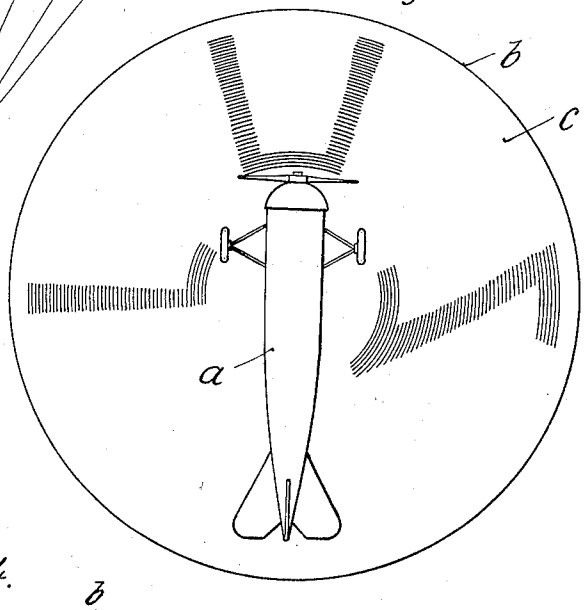
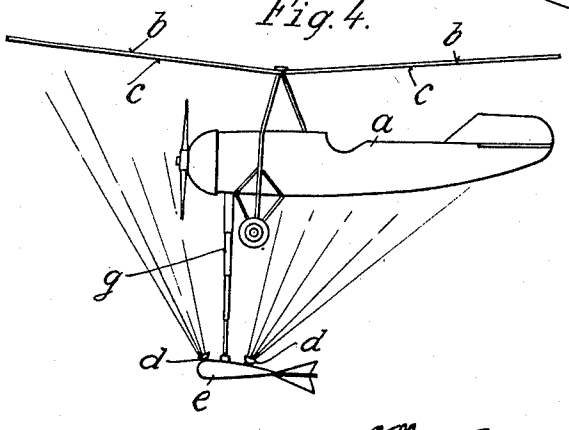


Fig. 4.



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UNITED STATES PATENT OFFICE

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ARRANGEMENT FOR PRODUCING ILLUMINATED ADVERTISEMENTS ON AEROPLANES

Otto Reder, Berlin, Germany

Application December 21, 1932, Serial No. 648,201
In Germany June 16, 1932

4 Claims. (Cl. 40—127)

My invention relates to improvements in aerial advertising devices and more particularly to aeroplanes employing rotating supporting surfaces, such as planes of the helicopter type or those known under the registered trade mark of "Autogiro".

The rotating wings of aeroplanes of this type, forming the lifting air screw, normally comprise a plurality, for example three or more, wing blades which rotate at a relatively high speed. The speed of rotation necessary to lift the plane is so high that the individual wing blades are then no longer clearly visible. When the plane is in the air, the eye of the observer perceives the lifting air screw only as a circular disc.

One of the objects of the present invention is to utilize the disc surface described by such rotating wing blades as a display or advertising surface particularly for illuminated advertising.

Another object of the invention is to make this disc surface serve as a projection screen on which may be projected pictures, figures, words, etc. to be displayed.

I have found that the rotating wing blades, owing to their size, describe a disc surface sufficiently large for taking, for instance, illuminated advertisements, even when flying at a high altitude, the circular surface thus provided by the rotating blades being in any case substantially larger than, for example, the surface of aeroplanes provided only with rigid non-rotating supporting surfaces. I have also found that the display surface is normally so high above the body of the plane that the fuselage does not interfere with the advertisement. On the other hand, it is sufficiently near for no appreciable loss of light to occur between the projection lamps and the display surface. It is, therefore, possible to project pictures, letters or the like onto the disc surface described by the rotating blades, by the aid of projection or cinematographic apparatus. The pictures, inscriptions or the like give the impression as though they are being formed on a coherent circular disc. The wing blades are preferably painted dull white or coated with a diffusely reflecting material.

In order that the invention may be clearly understood, constructional details thereof are described hereinafter, by way of example, with reference to the accompanying drawing; in which

Fig. 1 is a front view of a plane provided with one advertising or display arrangement according to the invention.

Fig. 2 is a side view of another form of construction.

Fig. 3 is a diagrammatic view from below.

Fig. 4 is a side view of a modification of the construction shown in Fig. 2.

Similar reference letters refer to similar parts throughout the several views.

The fuselage *a* of the aeroplane has rotatably secured thereto rotating supporting wings *b* whose lower sides or surfaces *c* during rotation, serve as a displaying or advertising surface cooperating with the projection lamps or cinematographic apparatus *d*.

As shown in Figs. 1 and 2, projection lamps *d*, or the like, for projecting the advertisements, etc., onto the underside of the wing blades *c* may be fixed either to special struts or to the struts of the landing gear of the plane, or to a special flying body *e* which is pulled by a rope *f* from the aeroplane.

Fig. 4 shows a modified form of securing the flying body *e* to the aeroplane. In accordance with this embodiment, the rope *f* may be replaced by a telescoping tube *g* connected to the carrying body *e* for the projection lamps *a*.

While I have illustrated and described in detail various specific embodiments of my invention, I contemplate that other adaptations and changes may be made without departing from the scope or spirit of my invention as defined in the appended claims.

For example, it will be readily understood by those skilled in the art that it is possible to secure lamps, bulbs, luminous tubes, or the like on, in or from the rotating wings and arrange suitable control means for lighting the same at a given instant to produce the desired stationary or moving pictures, letters, or other intelligence for display or advertising purposes.

It is evident that a multiplicity of light effects can be obtained by combining the arrangement of the picture projection on the surface formed by the rotating blades and that of the illuminating arrangement provided on the blades themselves. The invention thus provides a possibility of arranging various advertising displays, with or without movement, simultaneously if so desired.

I claim:

1. In combination with an aeroplane for displaying advertising intelligence, rotatable supporting members for said aeroplane adapted to produce an apparent surface during rotation, a separate body adapted to be lowered from said aeroplane, and means associated with said body for projecting said intelligence on said surface.

2. In a device for the production of moving or

stationary intelligence for display purposes, an aeroplane of the type having rotatable supporting members, means for projecting said intelligence on an apparent surface produced by the rotation of said supporting members, a separate body for carrying said means, and means for lowering said body from said aeroplane and maintaining said body a definite distance from said surface.

3. An aerial display device comprising an aeroplane having rotatable supporting wings and means for producing advertising intelligence on an apparent surface produced by the rotation of said wings, including a separate flying body adapted to be lowered from said aeroplane, means associated with said flying body for projecting advertising intelligence onto said surface, and means for lowering said flying body to a desired position below said aeroplane, said lowering means including a telescoping tube.

4. An aerial display device comprising an aeroplane having rotatable supporting members and means for producing advertising intelligence on an apparent surface produced by the rotation of said members, including a separate body adapted to be lowered from said aeroplane, means associated with said body for projecting advertising intelligence onto said surface, and means for lowering said flying body to a desired position below said aeroplane.

OTTO REDER.