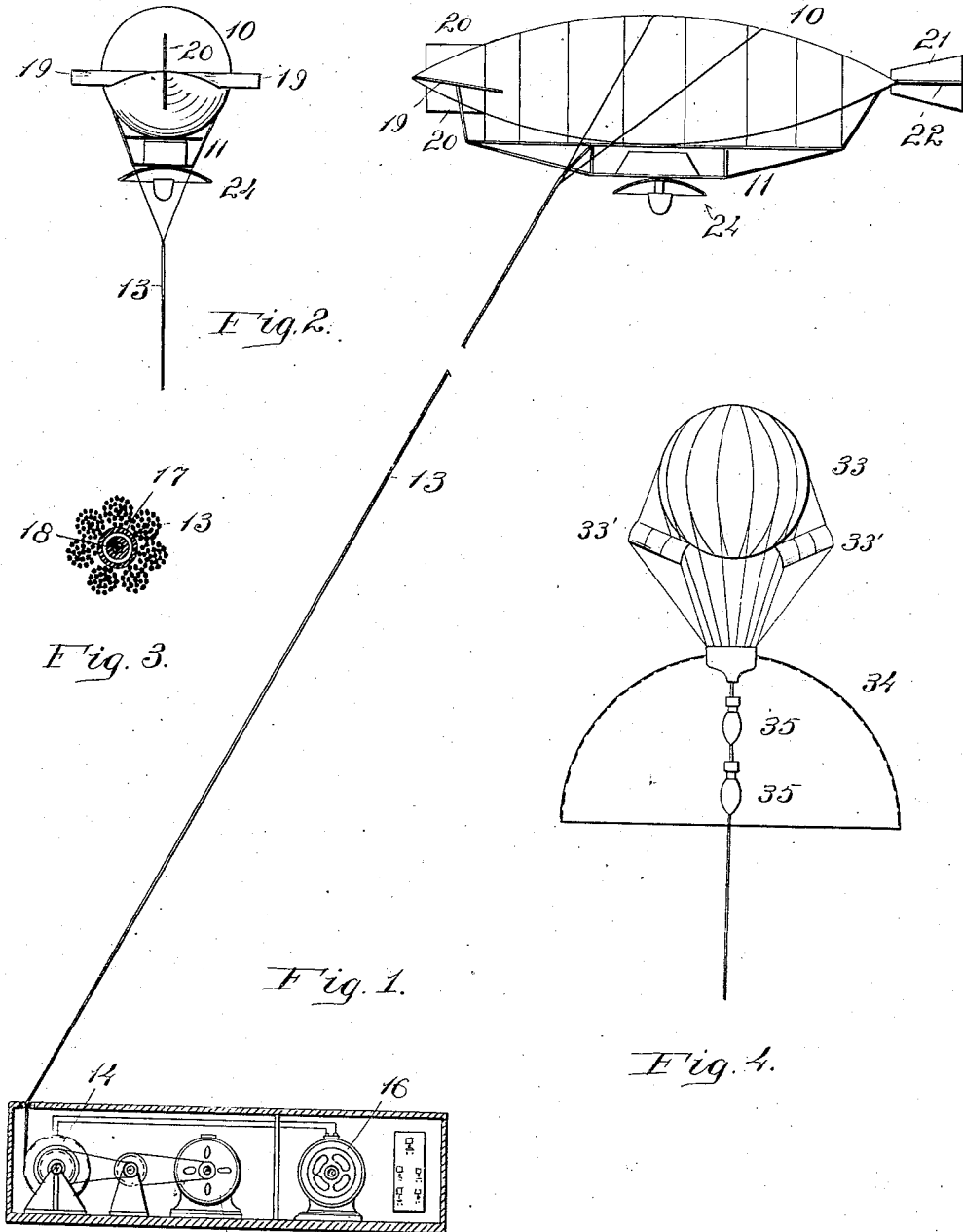


A. J. AUSTIN.
AERIAL ILLUMINATING MECHANISM.
APPLICATION FILED APR. 17, 1912.

1,039,476.

Patented Sept. 24, 1912.

2 SHEETS—SHEET 1.



Witnesses:

Moyd C. Chaffey.
Edmund F. Fissel.

Inventor:
A. J. Austin

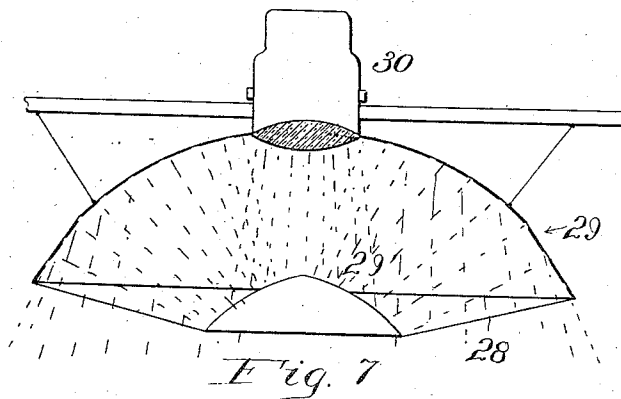
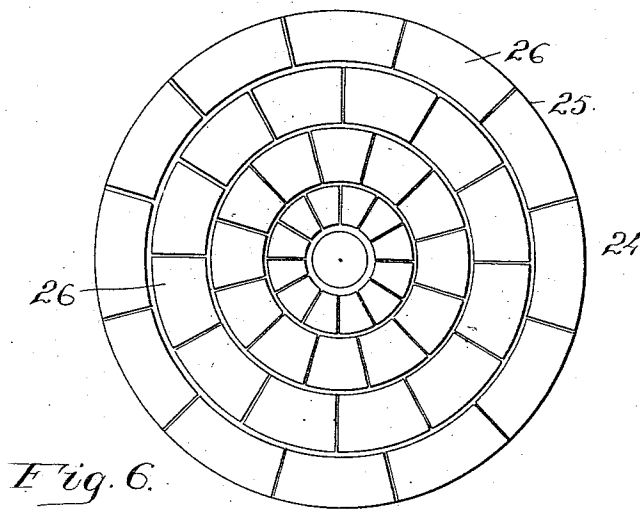
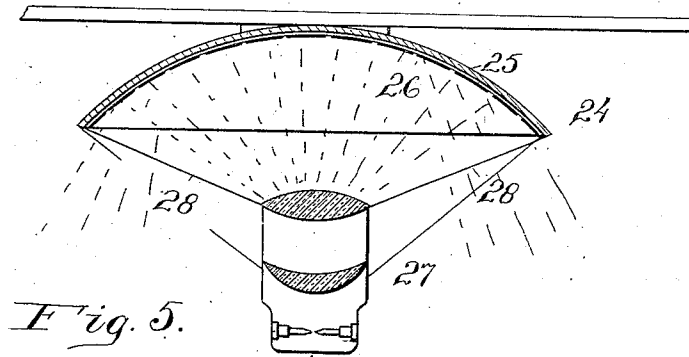
By *[Signature]*
Atty.

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2 SHEETS—SHEET 2.



Witnesses:

Floyd C. Chaffey.
Edmund Hasold.

Inventor:

A. J. Austin

By *[Signature]*
Atty:

UNITED STATES PATENT OFFICE.

ARCHIBALD J. AUSTIN, OF LOS ANGELES, CALIFORNIA.

AERIAL ILLUMINATING MECHANISM.

1,039,476

Specification of Letters Patent.

Patented Sept. 24, 1912.

Application filed April 17, 1912. Serial No. 691,522.

To all whom it may concern:

Be it known that I, ARCHIBALD J. AUSTIN, a citizen of the United States, and resident of Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Aerial Illuminating Mechanism, of which the following is a specification.

My invention pertains to lighting systems, and it has particular reference to means for illuminating cities.

The invention provides a balloon or other suspensional means for holding or carrying a powerful searchlight and reflectors whereby the light produced will be disseminated in all directions downwardly, and it also comprises means for holding the gas field in a stable position, and suitable mechanism for elevating and holding the suspensional means, as will now be set forth in detail.

In the accompanying drawing, Figure 1. is a view of a dirigible type of balloon, moored to suitable mechanism, and carrying a light and reflecting apparatus. Fig. 2. is an end view of the balloon. Fig. 3. is a section of the cable employed. Fig. 4. is a view of a spherical type of balloon, with a modified type of lighting and reflecting apparatus. Fig. 5. is a vertical section of a reflector, with a searchlight below the same. Fig. 6. is a reflector as viewed from below, and Fig. 7. is a vertical section of a reflector with a reverse reflecting field below the main reflector.

In carrying out my invention it is to be understood that I contemplate using any suspensional means, which may be available to hold the light, and reflectors in stable position in the air. In general I purpose using some type of balloon which is moored to the earth by suitable means, and adapted to be raised or lowered to different altitudes as lighting conditions may warrant, or require, and the balloon is equipped with a powerful searchlight or a plurality of small lights, which project their beams against suitable reflecting surfaces, so that the beams may be projected downwardly to cover as large an area as possible, and thus serve for lighting cities. In this case I show a dirigible balloon 10 which carries beneath it a frame work 11, to the forward end of which the cable 13 is attached, this cable extending down to a drum 14, which is part of the

power plant from which the balloon is moored.

The power plant comprises a motor 15 to control the balloon, and a dynamo 16 to supply an electric current for the light in the balloon, and I propose to have the hoisting cable 13 provided with a hollow core 17, within which the conductor 18 is placed, although it may be independent of the suspension cable.

The dirigible has at its forward end a plane 19 at each side, normally at an angle of incidence, and a pair of vertical fins 20 is also provided as shown in Fig. 1. The rear end of the dirigible has vertical and longitudinal fins 21, 22, so that the gas field is thus held in a stable position, when moored by the cable, and the effect of a moving air current acting against the forward planes would be to elevate the dirigible as the normal angle of incidence of the planes, acting in conjunction with its fixed position on the cable would tend to raise the balloon and thus move it forwardly, instead of dragging it downwardly, as would be the case without the forward planes. In this case I show the dirigible provided with a single light and reflector, although it is obvious that it may carry two or more.

The reflector 24, may be parabolic in form, or of such other shape or outline in its reflecting surface as experience may dictate, and in order to be able to construct a large reflecting surface, I provide a body 25 of the proper shape which has its inner surface covered with mirrors 26, which are so shaped and disposed in abutting positions that they together form a reflecting surface which is very effective in propagating the light beams over a large area. This reflector is secured to the frame of the dirigible in any suitable manner, and in order to utilize a searchlight I may mount it either above or below the reflecting surface.

In Fig. 5, I show the searchlight 27 mounted below the reflector, so that it projects its beams upwardly, the light being supported by suitable stays 28, extending down from the reflector body, and, in practice the light may be made adjustable, as to position, so that by raising or lowering the light the range or area of the beams projecting from the reflector may be varied. Instead, however, of mounting the light below

the reflector I may locate it centrally above the reflector 29, as shown in Fig. 7, and project the beams downwardly. In this type of illuminator, I mount a reflector 29', centrally below the reflector so that the beams from the light 30 will be reflected upwardly and outwardly from the reflector 29', and thus also serve for illuminating a large area.

I may also employ a spherical type of balloon 33, Fig. 4, which has stabilizing wings 33', and carries a reflector 34. Within this reflector a plurality of ordinary arc lights 35 or other illuminating mechanism may be disposed in such a manner as to disseminate light, and this type of structure and arrangement of light distribution is particularly serviceable where only small areas are to be illuminated.

I do not confine myself to any particular form of suspensional mechanism, nor to the character of the apparatus, employed to generate or project the rays, as these features may be modified without departing from the spirit of my invention.

What I claim as new, is:

1. In a moored suspensional structure, a gas container, a horizontally-disposed frame attached thereto, a single reflector rigidly secured to the frame, and searchlight on said structure adapted to project its light against said reflector and disperse its rays downwardly at right angles to the axis of the frame.

2. In illuminating mechanism, a horizontally-disposed elongated gas container, a rigid frame beneath extending from end to end, a single searchlight and reflecting means on said frame midway between the ends, a cable attached to the forward end

of the frame to anchor said gas container to a station, and means for supplying power from a station to the suspended light.

3. In illuminating mechanism, a horizontally-disposed elongated gas container, a rigid frame beneath extending from end to end, means for stabilizing the same, a horizontally-disposed reflector beneath the gas container and rigidly fixed to the frame, a light adapted to project its beams against said reflector and to disperse its rays downwardly and a power plant on the earth having a drum and a cable between said drum and the forward end of the frame of the gas container.

4. In illuminating apparatus, a gas container having on said container fixed vertical and horizontal stabilizing planes at the extreme forward end, and vertical and horizontal tail planes at its rear end, a frame below said container extending from end to end thereof, a reflector of large area rigidly secured to the frame midway between its ends and adapted to project light rays downwardly, a searchlight to direct its beams upwardly into said reflector, an anchoring station, a hollow anchoring cable from the forward end of the frame of the gas container to the station, and means for transmitting electricity from the anchoring power station to the searchlight through said hollow cable.

Signed at the city of Los Angeles county of Los Angeles State of California, this 20th day of March 1912, in the presence of witnesses.

ARCHIBALD J. AUSTIN.

Witnesses:

EDMUND KASOLD,
J. S. ZERBE.