

No. 695,371.

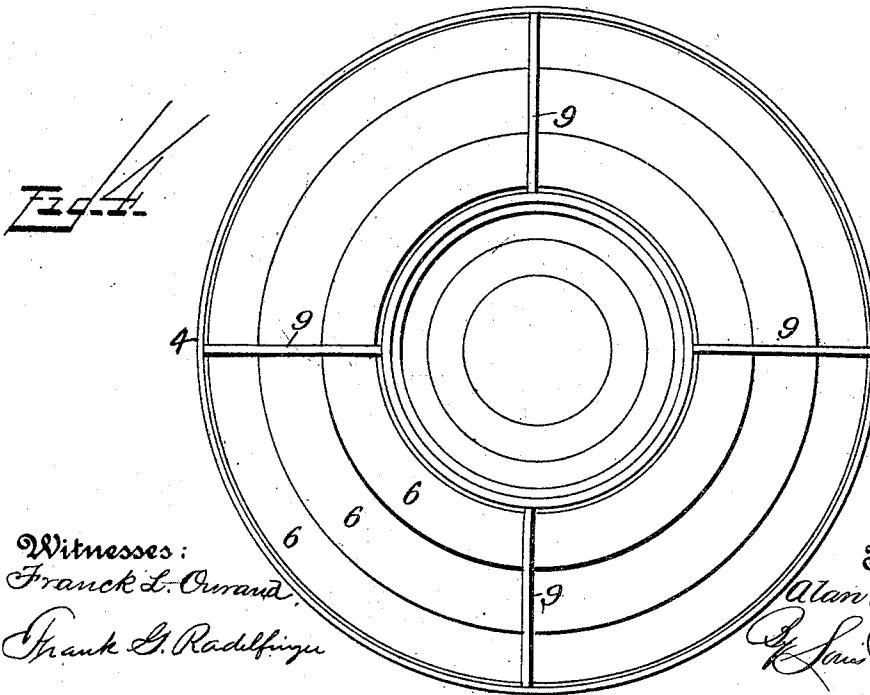
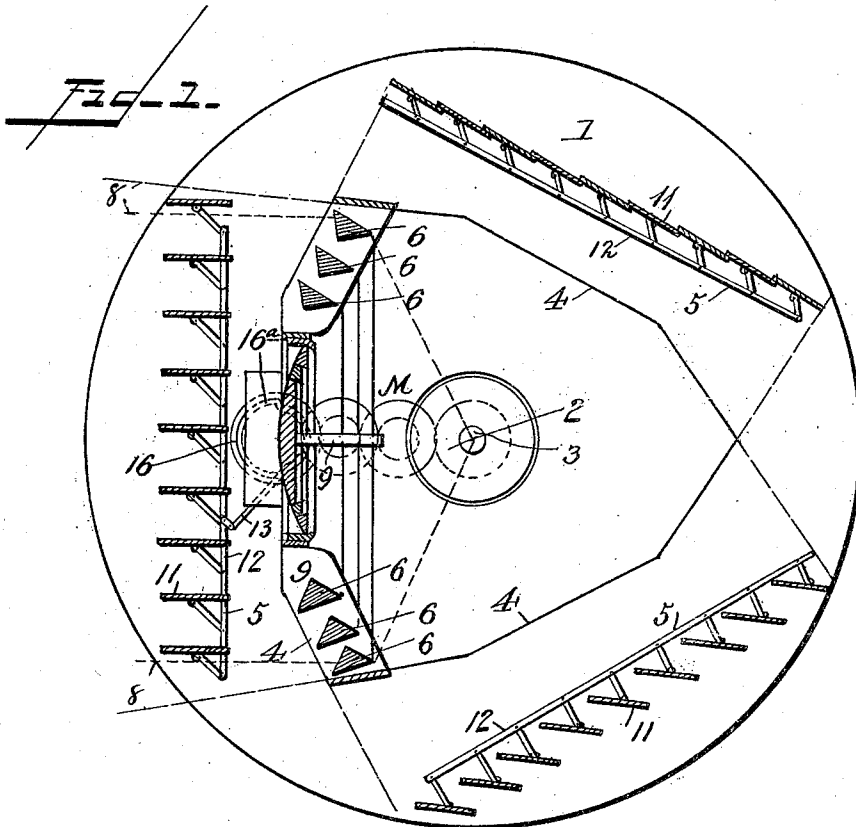
Patented Mar. 11, 1902.

A. BREBNER.
REVOLVING GROUP FLASHING APPARATUS.

(Application filed Mar. 31, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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(Application filed Mar. 31, 1900.)

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2 Sheets—Sheet 2.

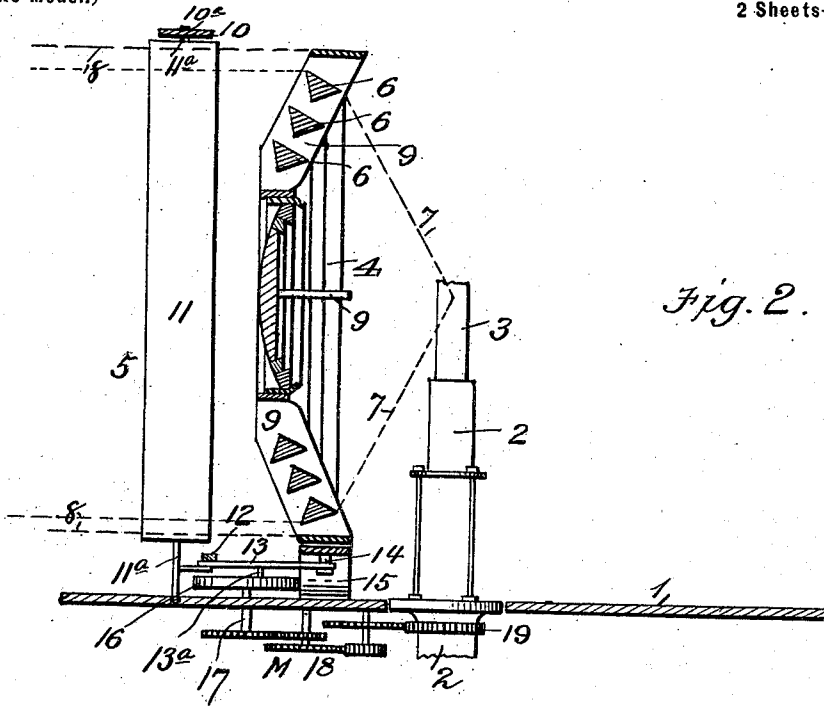


Fig. 2.

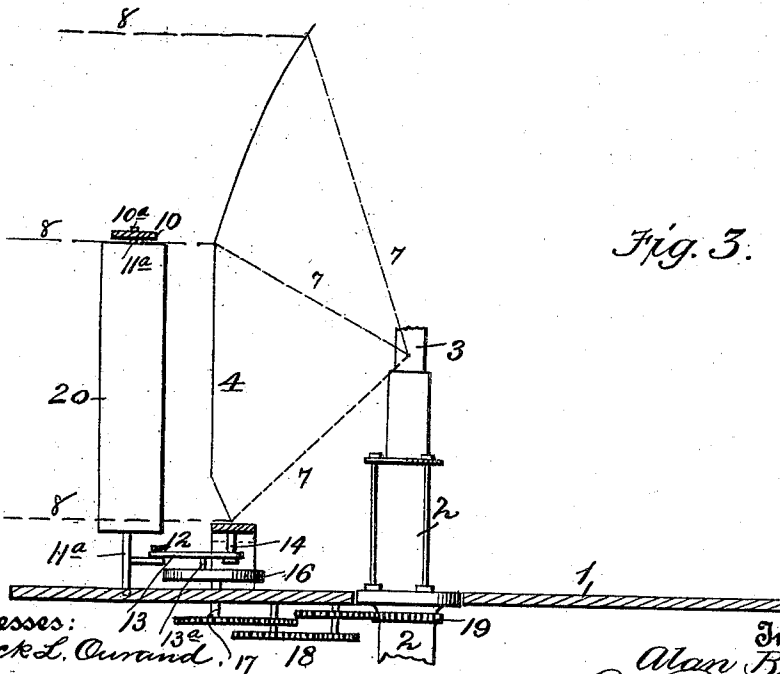


Fig. 3.

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UNITED STATES PATENT OFFICE.

ALAN BREBNER, OF LONDON, ENGLAND.

REVOLVING GROUP-FLASHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 695,371, dated March 11, 1902.

Application filed March 31, 1900. Serial No. 10,947. (No model.)

To all whom it may concern:

Be it known that I, ALAN BREBNER, a subject of Her Majesty the Queen of Great Britain, residing at 4 Nemours road, Acton, London, W., in the county of Middlesex, England, have invented a new and useful Revolving Group-Flashing Apparatus, of which the following is a specification.

My invention relates to improved forms of eclipsing screens for use in combination with a revolving light-house; and its object is to provide group-flashing characteristics containing flashes of sufficient duration, of great intensity, and following one another at short intervals or in compact sequence. Its object is similar to that of a previous invention for which application for patent was filed in December, 1899, Serial No. 741,641; but the means for eclipsing the light now proposed differs from the one therein disclosed.

The novel construction employed in carrying out my invention is fully described in this specification and claimed, and illustrated in the accompanying drawings, forming a part thereof, in which—

Figure 1 is a horizontal section of my device, taken through the lenses, burner, and screens. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a modified form of my device. Fig. 4 is a detail section on the lenses.

Like numerals of reference designate like parts in the different views of the drawings.

The numeral 1 designates a circular table which is mounted to revolve about a vertical pillar 2 as an axis. The pillar 2 supports a burner 3 of ordinary design. The table 1 may be supported on conical rollers or on a mercury float and revolved uniformly by any of the well-known means suitable for this purpose. The table 1 serves to support all of the working parts of my device excepting the burner 3, before mentioned, and comprising three lenses 4 and three screens 5. The lenses 4 are set one hundred and twenty degrees apart and at equal distance from the burner 3. The lenses are circular and consist of concentric series of triangular prisms 6, positioned to deflect rays of light shown in dotted lines 7 in substantially parallel direc-

tions represented by dotted lines 8. The prisms are secured together by radial strips 9.

Located just beyond the lenses 6 and at right angles to the reflected rays 8 are the screens 5. These screens are constructed on substantially the same plan as slat blinds or shutters and comprise frames 10, within which are pivotally mounted parallel slats 11, having reduced ends 11^a, which form spindles which engage apertures 10^a in the frames 10. The lower spindles 11^a project beyond the frames 10, and each bears an arm 11^b, which is pivotally connected to a link-bar 12, which couples them all together to enable the slats 11 to be actuated in unison. To actuate the link-bars 12 to operate the screens 5, a mechanism M is provided for each screen and comprises a lever-arm 13, pivoted at one end on a stud 14, depending from a standard 15, mounted on the table 1 and at the other end to the bar 12. The lever 13 carries a pin 13^a, which engages a groove 16^a in a horizontal cam 16, carried by a vertical shaft 17. The shaft 17 is connected by a train 18 of gearing to a gear 19, carried by the pillar 2, with which gear the last gear of the train 18 meshes.

By virtue of the construction above set forth the rotation of the table 1 will actuate the trains of gearing 18, rotate the cam 16, and operate the levers 13 to reciprocate the link-bars 12 to intermittently open and close the screens 5. When the screens 5 are open, parallel beams of light will pass through, which will sweep around as the table revolves. In practice the screens 5 are set as shown in Fig. 1, so that while one screen is open one of the others is closed and the other screen half closed. The result of this arrangement is that if the table revolves once in seven and one-half seconds the flashes would take place in the following order: first, flash of one-tenth of a second, then an eclipse of two and four-tenth seconds, a flash of one-tenth of a second, an eclipse of two and four-tenth seconds, a flash of one-tenth of a second, long eclipse of seven and four-tenth seconds; total period, twelve and one-half seconds.

Such a characteristic as the foregoing could not be obtained with a single-beam optical apparatus unless it were caused to rotate so fast as two and one-half seconds per revolu-

tion instead of seven and one-half seconds, as in the above case, and unless the burner used were three times larger than that required with the treble-beam apparatus—
5 both serious drawbacks.

It is evident that the axis of the slats of the screens 5 are not necessarily vertical.

The screens may be made to extend only half-way up, and thereby leave half of each
10 lens exposed in this case, but half of the light would be cut off. This modified construction is shown in Fig. 3, where screens 20 are used, which always leave half the lenses uncovered.

15 Having described my invention, what I claim as new, and wish to secure by Letters Patent, is—

1. A revolving optical apparatus of two or more sides in combination with a burner and
20 with a complete set of eclipsing-screens, one to each side of the optical apparatus, placed outside and revolving with it, each of said screens composed of a number of interdependent parts opening and closing simultaneously, the whole combination so disposed that
25 the beam of light issuing from each side of the apparatus can be eclipsed or allowed to pass out independently of the beams from the other sides, together with the necessary operative means therefor, substantially as set
30 forth, and for the production of group-flashing lights.

2. A revolving optical apparatus of two or more sides in combination with a burner and
35 with a complete set of eclipsing-screens, one to each side of the optical apparatus, placed inside and revolving with it, each of said screens composed of a number of interdependent parts opening and closing simultaneously, the whole combination so disposed that
40 the light falling on each side of the said optical apparatus can be stopped or allowed to pass on to such side of the said optical apparatus independently of the light falling on
45 the other sides of it, together with the necessary operative means therefor, substantially as set forth, and for the production of group-flashing lights.

3. In combination with a burner, a revolving optical apparatus of two or more sides,

subtending only a portion of the vertical angle of light from the said burner, the other portion of the said vertical angle of light being received by fixed-light optical apparatus, which spreads it uniformly round the horizon, 55 each side of the said revolving-light apparatus having a composite screen of interdependent parts adapted to it, capable of being opened or closed independently of the composite screens adapted to the other sides of 60 the said revolving-light apparatus, together with the necessary operative means therefor, the whole combination so disposed that, while a permanent fixed light emerges from the fixed-light apparatus, the revolving-light ap- 65 paratus, with its adjuncts, produces a group-flashing light, substantially as set forth.

4. In a device of the character described, a stationary burner, a table adapted to rotate thereabout, a number of single-beam lenses 70 carried by the table, a screen for each lens comprising a number of interdependent pivoted strips, and means for automatically opening and closing the screens, substantially as described. 75

5. In a device of the character described, a stationary burner, a table adapted to rotate thereabout, a number of single-beam lenses carried by the table, a screen for each lens comprising a number of interdependent piv- 80 oted strips, and means carried by the table and receiving its motion from the stationary burner for opening and closing the screens, substantially as described.

6. In a device of the class described, the 85 combination with a stationary burner, a table mounted to rotate about said burner, a plurality of prismatic lenses carried by said table, a screen corresponding to each of said burners, and means for automatically operat- 90 ing said screens to intermittently eclipse the light from said burner, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of 95 two subscribing witnesses.

ALAN BREBNER.

Witnesses:

R. WESTACOTT,
ALFRED NUTTING.