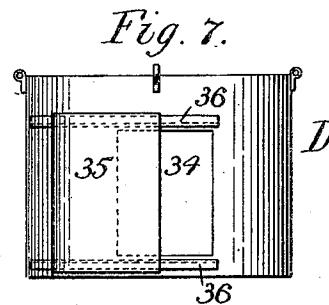
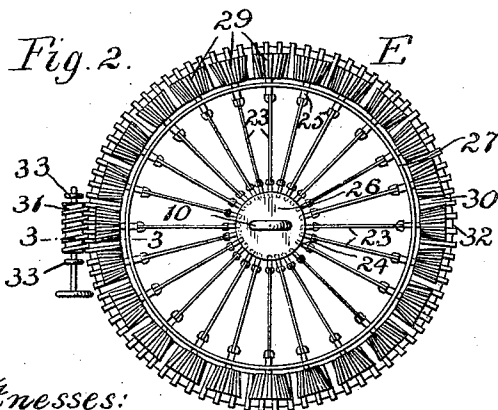
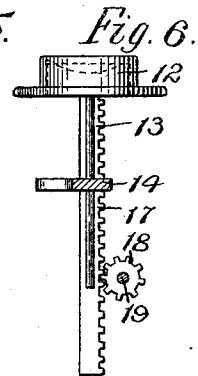
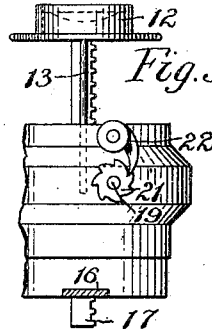
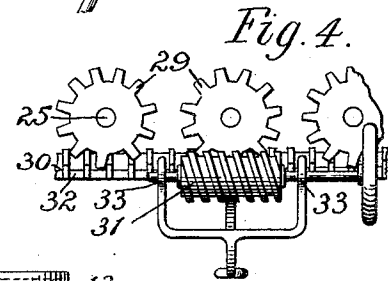
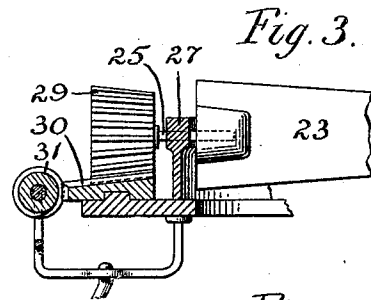
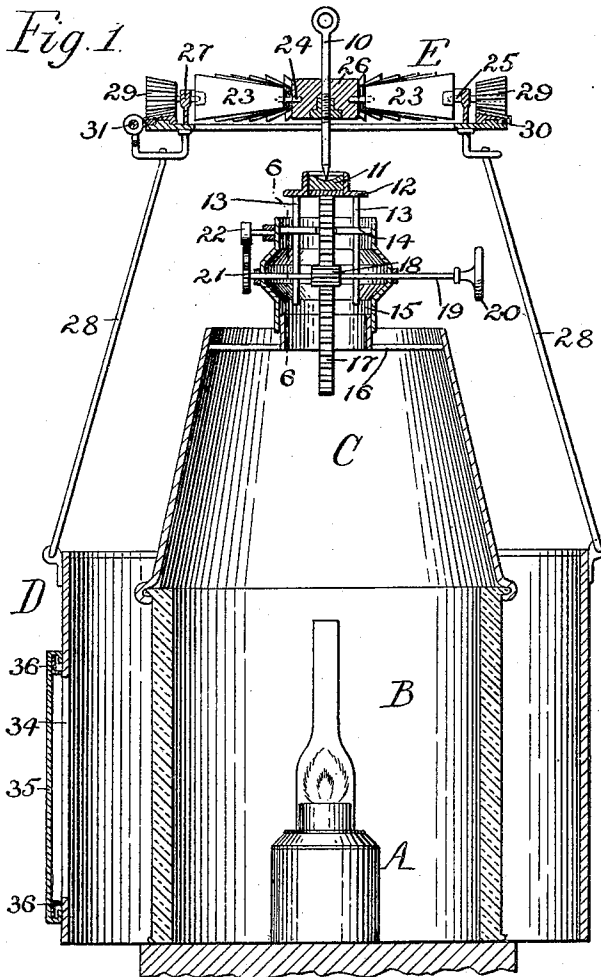


R. WHITE & T. CORNICK.
 OCCULTING LIGHT.
 APPLICATION FILED SEPT. 10, 1906.

938,031.

Patented Oct. 26, 1909.



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UNITED STATES PATENT OFFICE.

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TO ARTHUR JAMES DOVE, OF HALIFAX, NOVA SCOTIA, CANADA.

OCCULTING LIGHT.

938,031.

Specification of Letters Patent.

Patented Oct. 26, 1909.

Application filed September 10, 1906. Serial No. 333,933.

To all whom it may concern:

Be it known that we, RICHARD WHITE and THOMAS CORNICK, subjects of the King of Great Britain, residing at St. John's, Newfoundland, have invented a new and useful Improvement in Occulting Lights, of which the following is a specification.

This invention relates to that class of occulting lights in which the rotary motion of the shade or screen is produced by a wheel which is driven by the heat of the lamp. It has been found that the rotary speed of the shade in such lights varies considerably under varying conditions of the atmosphere and of the lamp, and that at times serious discrepancies exist between the actual period of occultation of a certain light and the supposed and advertised period. This is particularly objectionable in the lights of light houses because a discrepancy of this kind may render it impossible for the mariner to identify the light with certainty and to ascertain the location of his vessel.

The main object of this invention is to provide simple and efficient means for regulating the rotary speed of the shade or screen.

In the accompanying drawings: Figure 1 is a sectional elevation of an occulting light embodying our invention. Fig. 2 is a top plan view of the driving wheel and connecting parts. Fig. 3 is a vertical section in line 3—3, Fig. 2, on an enlarged scale. Fig. 4 is a side elevation of the worm adjusting mechanism at right angles to Fig. 3. Fig. 5 is a side elevation of the rack and pinion adjusting mechanism at right angles to Fig. 1, on an enlarged scale. Fig. 6 is a vertical section in line 6—6, Fig. 1, on an enlarged scale. Fig. 7 is a detached elevation of the rotary shade, on a reduced scale.

Like reference letters and numerals refer to like parts in the several figures.

A represents the lamp, B the lens surrounding the same, C the funnel extending upwardly from the lens and preferably tapering upwardly, D the rotary shade or screen, and E the driving wheel of the same which is arranged horizontally above the funnel so as to be rotated by the ascending current of hot gases.

The driving wheel is provided with an upright pointed spindle 10 which rests in a cup 11, of agate or other suitable anti-friction material, seated in a vertically-movable step or base 12. The latter is provided with an

adjusting mechanism by which it can be raised or lowered, thereby raising or lowering the wheel and increasing or reducing the distance at which the wheel is located above the funnel. By raising the wheel the rotary speed of the latter is reduced, owing to the increased distance from the flame and the freer escape of the hot gases, and by lowering the wheel its speed is increased. The vertically-adjustable supporting step 12 is guided by upright guide bars 13 in the top piece 14 of a stationary frame 15 mounted on a cross piece 16 which extends across the funnel at the top thereof.

The step 12 is adjusted by a rack bar 17 which extends downwardly from the step and is engaged by a pinion 18 secured to a transverse shaft 19 which is provided with a thumb-piece 20 and journaled in the stationary frame 15. The rack bar and step are held against accidental downward movement by a ratchet wheel 21 and pawl 22.

The driving wheel E is provided with vanes or wings 23 which are so mounted in the wheel that their inclination or angle can be adjusted. This adjustment of the vanes provides an additional means for regulating the rotary speed of the shade and increases the total range or capacity of adjustment of the mechanism and also the nicety or closeness of the adjustment.

The vanes 23 are journaled by radial pivots 24 25, respectively, in the hub 26 and the rim 27 of the wheel. The shade D is suspended from the rim 27 of the wheel by rods 28 or other suitable devices.

The outer pivot 25 of each vane is provided with a pinion 29 and the several pinions of the vanes are engaged by an annular gear rim 30 which is arranged upon the wheel rim 27 below these pinions. By rotating this gear rim all of the vanes are turned simultaneously about their axes, whereby their inclination is adjusted simultaneously. The gear rim 27 is rotated and held in position by a worm 31 which engages the correspondingly toothed edge 32 of the rim. This worm is journaled in bearings 33 secured to the wheel rim 27. By rotating this worm the gear rim is rotated and the angle of the vanes adjusted, thus effecting a very fine speed adjustment with great nicety, while by raising or lowering the support of the wheel by means of the rack and pinion adjusting device a quicker and coarser adjustment is

effected. These adjusting means enable the rotary speed of the wheel and shade to be regulated with great nicety and the desired frequency or period of occultation to be maintained under the varying conditions which may arise in use.

The shade is provided with an opening 34 through which the light is emitted and the width of this opening in the horizontal or circumferential direction can be regulated by a movable cover or door 35 which is attached to the shade in any suitable manner, for instance, as shown, by horizontal guides 36 on which the door is slidably mounted. By increasing or reducing the width of the opening the duration of the flash is regulated.

We claim as our invention:

1. The combination of a lamp, a rotary shade, a driving wheel for said shade arranged above said lamp and actuated by the hot gases ascending therefrom, and means for adjusting the wheel toward or from the lamp to regulate the rotary speed of the wheel and shade, substantially as set forth.

2. The combination of a lamp, a rotary shade, a driving wheel for said shade arranged above said lamp and actuated by the hot gases ascending therefrom, a vertically-adjustable support for said wheel, and a rack and pinion by which said support is adjusted, substantially as set forth.

3. The combination of a lamp, a rotary shade, and a driving wheel for said shade actuated by the hot gases ascending from said lamp, said wheel comprising vanes which are adjustable as to their inclination to regulate the rotary speed of the wheel and shade, substantially as set forth.

4. The combination of a lamp, a rotary shade, and a driving wheel for said shade actuated by the hot gases ascending from said lamp, said wheel comprising vanes

which are adjustable as to their inclination, and means for adjusting the inclination of the vanes simultaneously, substantially as set forth.

5. The combination of a lamp, a rotary shade and a driving wheel for said shade actuated by the hot gases ascending from said lamp, said wheel comprising vanes which are adjustable about radial axes, and an annular adjusting device which engages said vanes, substantially as set forth.

6. The combination of a lamp, a rotary shade and a driving wheel for said shade actuated by the hot gases ascending from said lamp, said wheel comprising vanes which are adjustable about radial axes, pinions on said vanes, an annular gear rim engaging said pinions, and means for rotating said gear rim, substantially as set forth.

7. The combination of a lamp, a rotary shade, a driving wheel for said shade actuated by the hot gases ascending from said lamp and comprising vanes which are adjustable as to their inclination, and means for raising and lowering said wheel, substantially as set forth.

8. The combination of a lamp, a rotary shade, a driving wheel for said shade actuated by the hot gases ascending from said lamp and comprising vanes which are adjustable about radial axes, a common adjusting device engaging said vanes, a vertically-movable support on which said wheel is mounted, and means for adjusting said support up or down, substantially as set forth.

Witness our hands this 18th day of August, 1906.

RICHARD WHITE.
THOMAS CORNICK.

Witnesses:

ARTHUR R. BULLLEY,
A. D. PARSONS.