

No. 640,585.

Patented Jan. 2, 1900.

F. B. PALMER.  
REFLECTOR.

(Application filed July 11, 1899.)

(No Model.)

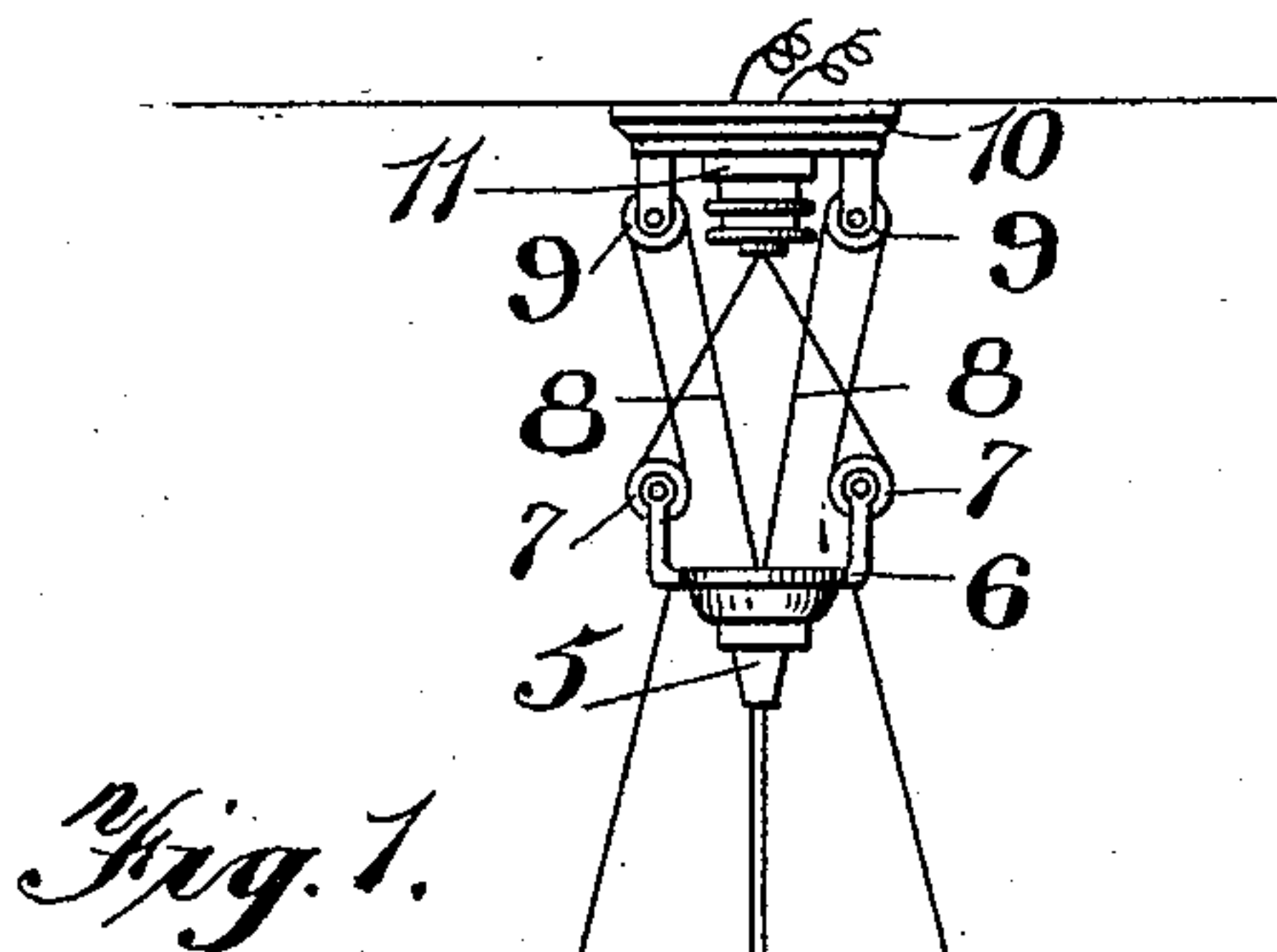


Fig. 2.

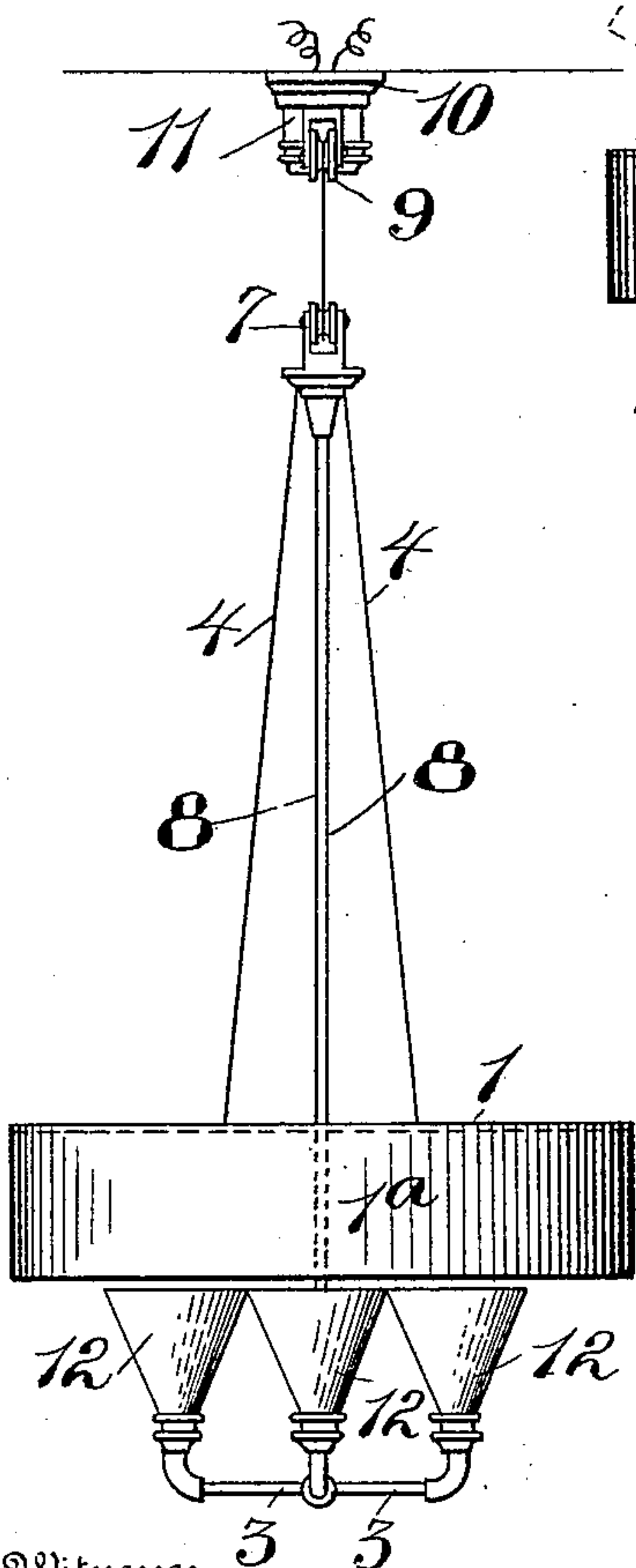
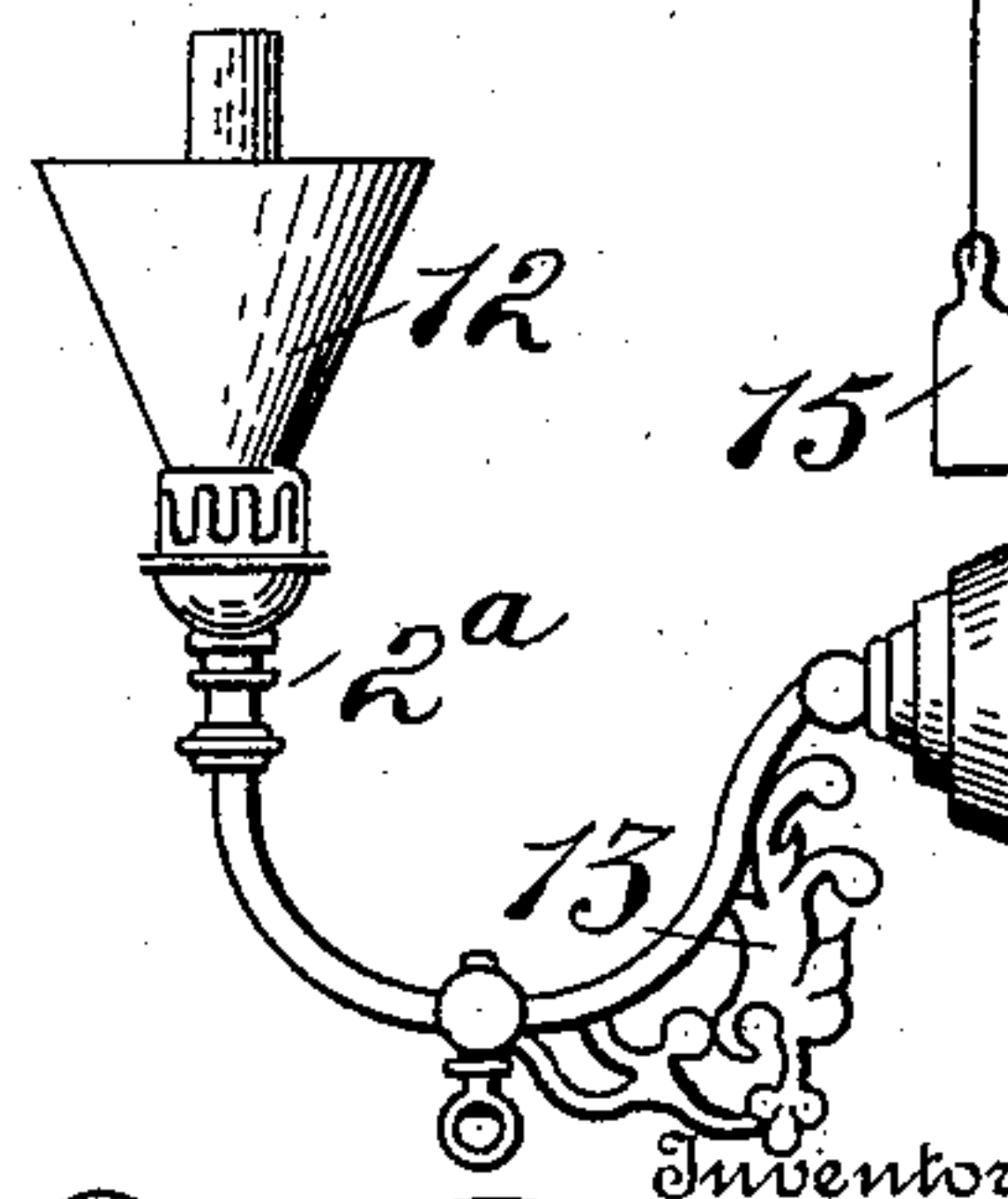
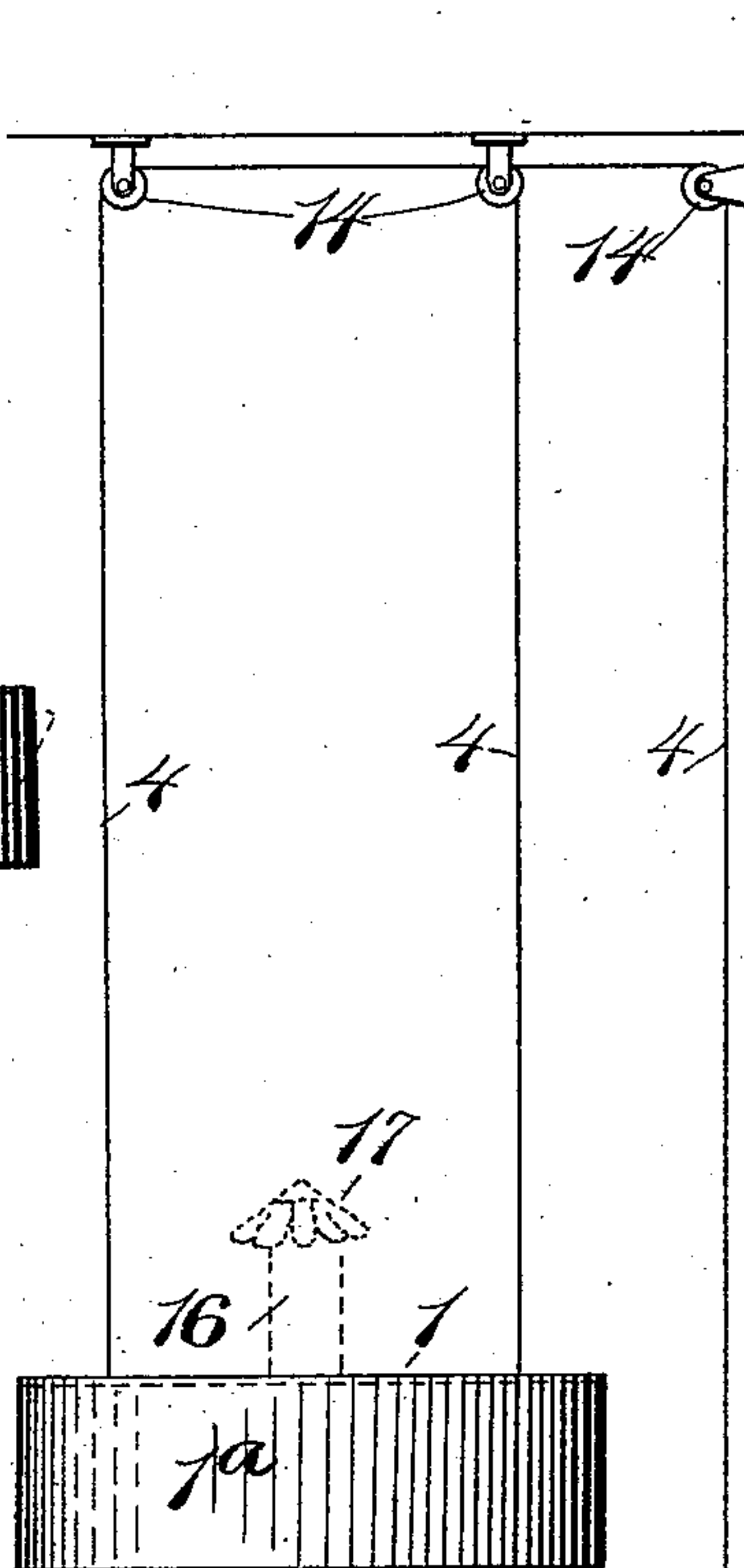


Fig. 3.



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# UNITED STATES PATENT OFFICE.

FRANCIS BEAUFORT PALMER, OF LONDON, ENGLAND.

## REFLECTOR.

SPECIFICATION forming part of Letters Patent No. 640,585, dated January 2, 1900.

Application filed July 11, 1899. Serial No. 723,491. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS BEAUFORT PALMER, a subject of the Queen of Great Britain and Ireland, residing at Lincoln's Inn, London, England, have invented Improvements in or Relating to Lamps for Illuminating Purposes, of which the following is a specification.

This invention has reference to an improved construction and arrangement of combined reflector, lamp or lamps, and shade or shades whereby a room or other apartment or a table or counter or other limited space can be illuminated in a pleasing and effective manner by reflected light instead of by direct light from the lamp or lamps, and the amount of light so reflected can be readily varied or shut off, or nearly so, according to requirement without its being necessary for this purpose to operate a switch or switches in the case of an electric lamp or electric lamps or a tap or equivalent device in the case of a gas or an oil lamp or lamps. According thereto there are used, in conjunction with a suitable reflector, one or more lamps and one or more opaque or partially-opaque shades that inclose or inclose the lamp or lamps except at a part or parts opposite the reflector, the reflector and shade or shades being so mounted and arranged that the distance between them can be varied at will, so that by bringing the reflector and shade or shades, with inclosed lamp or lamps, together the reflection of light from the reflector can be shut off or reduced to a minimum, and by moving the reflector and shade or shades apart to different extents the amount of reflected light can be easily varied to suit requirement. As will be obvious, such an arrangement can be constructed in various forms. Thus when there are two or more lamps each lamp may have a separate shade or one shade may inclose all or several of the lamps. The shade or shades may be movable to and from the reflector with or independently of the lamp or lamps, or the lamp or lamps, with shade or shades, may be stationary and the reflector alone movable. Also the arrangement may be such that the light of the lamp or lamps can be reflected downward or in a horizontal or in an inclined direction.

Figures 1 and 2 of the accompanying illus-

trative drawings show one arrangement of combined reflector, lamps, and shades according to this invention and specially suitable for lighting a table, counter, or other like limited space. Fig. 3 is a side view showing a modified arrangement.

In the arrangement shown in Figs. 1 and 2 the reflector 1 comprises a flat or nearly-flat sheet or plate of cardboard or other suitable material of circular or other shape convenient for suspension from a ceiling or bracket or arm and provided or not with a depending rim 1<sup>a</sup>, the under side of the sheet or plate and the inner side of the rim when used having a white or a tinted or colored or metallic surface or being otherwise adapted to reflect light. Below the reflector are several electric incandescent lamps 2, carried by a suitable frame or holder 3, that is suspended by a cord or other connection and pulleys in such a manner that the frame or holder, with lamps, hangs below the reflector and can be easily raised and lowered. The suspending cord or connection may conveniently inclose the wires carrying the electric current to and from the lamps 2. In the example shown the reflector 1 is suspended by cords 4 from a movable rose or centerpiece 5, provided with bearings 6 for guide-pulleys 7, and the lamp-holder 3 is carried by two cords 8, that inclose the lamp-conductors and pass freely through the movable rose 5 and each of which passes over a guide-pulley 9, journaled in bearings on a ceiling-rose 10, and under one of the guide-pulleys 7 on the rose 5 and is secured to a fixed centerpiece 11. The arrangement is such that when the lamp-holder 3 is raised or lowered the reflector 1 is simultaneously lowered or raised. Each lamp 2 is separately surrounded by an inverted conical opaque shade 12, of cardboard, celluloid, or other suitable material, that is closed at its lower end and open at its upper end and is of a height sufficient to prevent the light from the lamp falling directly on the table, counter, or other space to be lighted. Each shade has a white or other internal reflecting-surface, from which light will be reflected obliquely onto the reflector 1 above. As will be seen, the arrangement is such that when the lamps 2 and shades 12 are raised so that the top edges of the shades closely



approach the reflector 1 while the lamps are burning very little or no light will be reflected onto the table, counter, or other space from the reflector, and by pulling down the lamps and shades to a greater or less extent more or less light will be reflected in a downward and outward direction from the reflector onto the said table, counter, or other space to be lighted. The under or reflecting surface of the reflector 1 may be flat, as shown, or of conical, pyramidal, or other shape designed to efficiently reflect in a more or less lateral and downward direction the rays of light thrown thereon by the lamps. Also instead of the reflector being held horizontally, as shown, it may, when desired, be held in an inclined position, as indicated in dotted lines in Fig. 1, so as to reflect light in a more or less lateral and downward direction.

Fig. 3 is a side elevation showing a modified arrangement suitable for use with incandescent or other gas-lamps. In this arrangement the reflector 1 is formed with an opening above the lamp-burner (or above each lamp-burner, if there be more than one burner) for the escape of hot gases and products of combustion. The arrangement in other respects may be similar to that described for the electric lamps. In the particular example illustrated in Fig. 3 a single gas-lamp 2<sup>a</sup>, carried by a fixed wall-bracket 13, is employed, the reflector 1 being alone movable and carried by cords 4, that pass over guide-pulleys 14 and are connected to a counterweight 15. The opening in the reflector above the lamp is or may be fitted with a chimney 16, made of opaque material and provided with a cap 17, arranged to permit the hot gases and products of combustion to escape, but to prevent the emission of light therethrough.

What I claim is—

1. The combination of a reflector, a lamp arranged opposite the same, and a shade arranged to inclose said lamp except at a part opposite said reflector so as to prevent light being radiated therefrom except toward said reflector, said reflector and shade being movable toward and from each other.

2. The combination of a reflector, lamps arranged opposite the same, and a shade arranged to inclose each of said lamps except at

a part or parts thereof opposite said reflector, said lamps with shades being movable relatively to said reflector, substantially as described for the purpose specified.

3. The combination of a horizontally-supported reflector, a lamp carried below the same, and an opaque shade surrounding said lamp so as to prevent radiation of light therefrom except in an upward direction, said reflector and shade being movable toward and from each other, substantially as described for the purpose specified.

4. The combination of a reflector, an electric incandescent lamp, means adapted to support said lamp opposite said reflector and to carry the conductors leading to and from said lamp, and a shade arranged to surround said lamp except at a part thereof opposite the reflector, said reflector and shade being movable toward and from each other, substantially as described for the purpose specified.

5. The combination of a reflector, two or more lamps supported opposite the same, and two or more opaque shades each separately inclosing a lamp except at a part thereof opposite said reflector, the several lamps with shades being relatively movable toward and from said reflector, substantially as described for the purpose specified.

6. The combination of a reflector, a movable support arranged above and carrying said reflector, pulleys carried by said movable support, electric lamps arranged below said reflector and each inclosed in an opaque shade that is of upwardly-flaring shape and open at the top, a frame or holder carrying said lamps and shades, a fixed support arranged above said movable support, pulleys carried by said fixed support, and flexible cords connected to said frame or holder and to said fixed support, passing around the pulleys carried by said fixed and movable supports, and inclosing the conductors leading to and from said electric lamps, substantially as described for the purpose specified.

Signed at 77 Cornhill, in the city of London, England, this 23d day of June, 1899.

FRANCIS BEAUFORT PALMER.

Witnesses:

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