

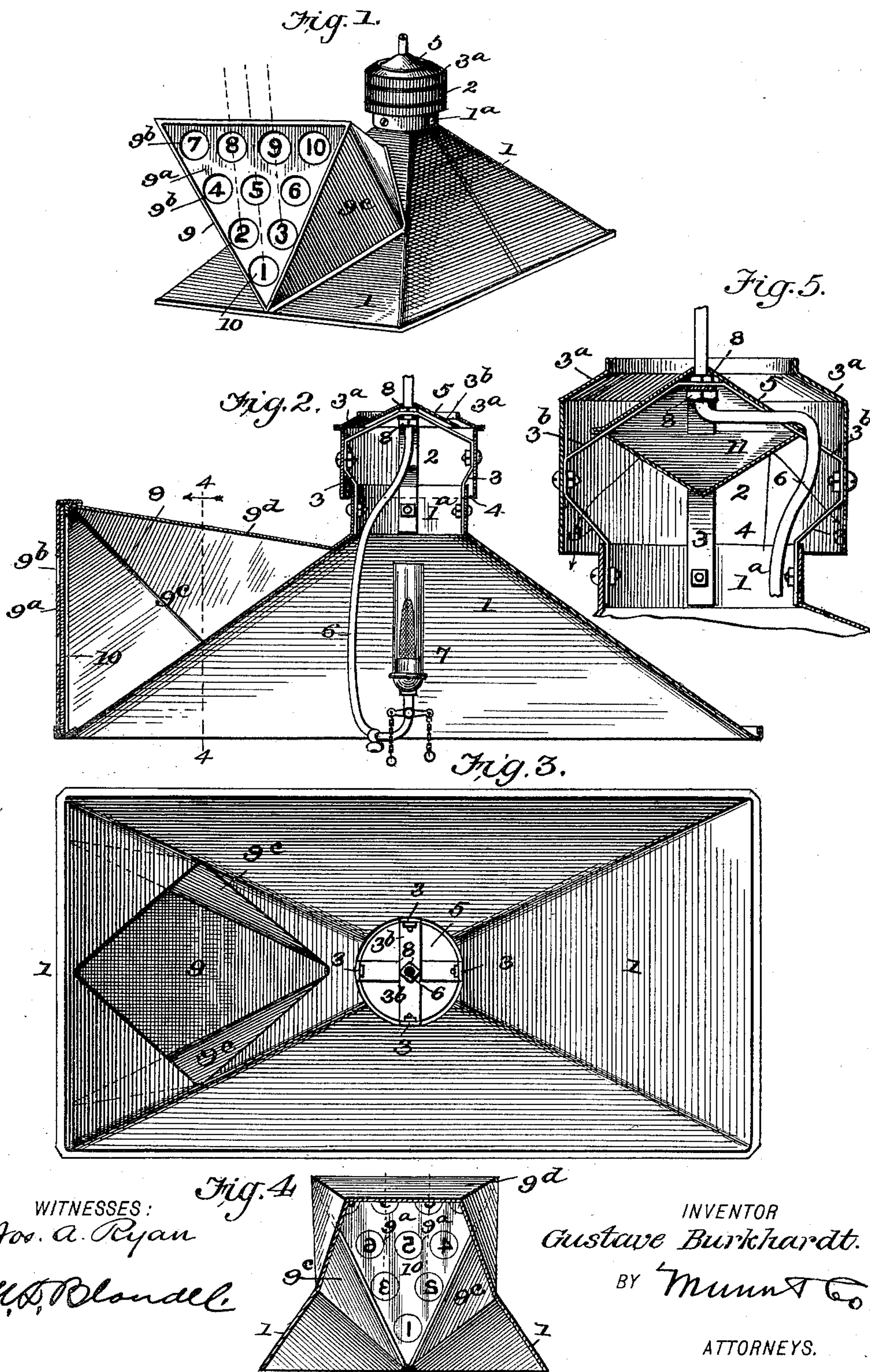
No. 626,590.

Patented June 6, 1899.

G. BURKHARDT.
BOWLING ALLEY LIGHT AND PIN INDICATOR.

(Application filed Nov. 23, 1898.)

(No Model.)



UNITED STATES PATENT OFFICE.

GUSTAVE BURKHARDT, OF CHICAGO, ILLINOIS.

BOWLING-ALLEY LIGHT AND PIN-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 626,590, dated June 6, 1899.

Application filed November 23, 1898. Serial No. 697,272. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVE BURKHARDT, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Bowling-Alley Light and Pin-Reflector, of which the following is a specification.

This invention is in the nature of an improved appliance for reflecting the light and indicating the set of the pins on bowling-alleys; and it primarily seeks to provide a reflector of this character of an economical construction and in which the reflector-walls are so arranged relatively to the light that the rays thereof can be positively concentrated within a desired radius and the burner held invisible.

Another feature of my invention lies in providing a reflector of the kind stated with a supplemental portion having a triangle or pin set face shape, with light-openings for numerals corresponding in number and arrangement with the set of the pins of the alley, whereby the bowler can see how every pin is numbered, so that when any pin is not properly spotted he can readily call the number.

The invention in its specific nature comprehends certain details of construction and arrangement of parts, as will be first described and then particularly pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved reflector. Fig. 2 is a vertical longitudinal section thereof. Fig. 3 is an inverted plan view. Fig. 4 is a cross-section on the line 4 4 of Fig. 2. Fig. 5 is a cross-section of a modified construction of the same.

In its practical construction my improvement comprises an outer body or hood member 1 having a substantial conical shape, the length and width of the bottom thereof depending on the character of the space over which it is desired to spread the direct and radiating rays of the lamp or burner.

When used for bowling-alleys, the body 1 is made elongated or of rectangular shape, so that when properly placed over the alley it will disseminate the light-rays transversely the width of the alley only and lengthwise of the alley to such distance as may be desired.

In the practical application of my invention

I find the best results by forming the angle lines of the sides and ends of the reflector, so that with six reflectors the regulation length of alley can be lighted to the very best possible advantage.

The end and side walls of the body 1 concentrate and terminate in a ventilator or off-take-collar 1^a, to which the hood portion 2 is secured by means of braces 3, said hood portion 2, as will be clearly observed by reference to Fig. 3, being of a larger diameter than the collar 1^a to produce the annular air-space 4, while the open upper end has an inward-projecting flange 3^a, which laps over the ends of the center deflector-cone 5, suspended within the hood 3 by the transverse members 3^b of the braces 3, which braces also form the support for the feed or hanger pipes 6, which carries the burner or lamp 7, said pipe being held secure by the nuts 8, as shown.

While any style of burner may be used in connection with my form of reflector, yet to obtain the best results I employ a Welsbach type of lamp, so placed within the reflector that the light or burner portion is on a plane above the bottom of the reflector, and thereby held invisible.

Another reason for using a Welsbach type of burner is that by reason of the peculiar form of reflector the mantle is not in danger of drafts, and in consequence a "by-pass" in the feed-valve can be employed to allow a small flame to burn by day as well as at night, thereby keeping the mantle and chimney constantly warm and ready for use at any time, thus effecting a saving of mantles and chimney.

I also provide the front portion of the reflector with a device termed an "indicator" for the purpose of facilitating communication between the bowler and pin-setter as to the set of the pins or the number of them left standing after a ball has been rolled. The said indicator is in the nature of a triangular headlight 9, whose transparent face 10 is vertical, the apex of the angle being at the bottom. In this face 10 there are ten sight-openings 9^b, which are arranged and numbered corresponding to the set of the pins on the alley. The plate 10 being rendered opaque save where the numerals "1" to "10" are located and the interior of the indicator being

open to access of light-rays from the burner 7, it is apparent the said numerals may be readily seen by the bowler. Should the latter note any inaccuracy in the spotting of the pins, he can instantly inform the setter of the fact by calling out the numbers on the indicator which correspond to or represent the particular pins observed to be out of place. Thus if the bowler perceives the middle pin of the third row from the front is not spotted he calls out the number "5," whereby the setter is instantly able to recognize and correct the error, or if pins "2," "8," and "9" be out of place their numbers are called and the error corrected in the same way. Again, should pins "2," "8," and "9" remain standing after the first ball and the bowler find it difficult by reason of a dim light or defective eyesight to determine with certainty the exact number and position of such standing pins the setter may quickly inform him by calling out the numerals "2," "8," "9." The side walls 9^a are so placed or inclined as to aid in reflecting the light-rays toward the face 9^a, and they are in turn reflected back and downward more or less upon the alley.

In Fig. 5 is illustrated a slight modification of my invention in which a supplemental double conical deflector 11 is added which opposes the hood 5 and serves as means for deflecting intense heat out through the airspace between the ventilator-top and the upper end of the deflector-body. In this form the feed-pipe is bent outward at right angles, so as not to pass through the bottom of said deflector 11 and bent down at one side thereof, as shown. The portions 3^b of the braces extend inward and upward from the sides of the hood to which they are secured and pass through the sides of the deflector alongside its conical top.

While my form of deflector is more particularly adapted for bowling-alleys, it is obvious that the same, minus the pin-indicator portion, may be readily employed for billiard-tables, in which event the angles of the side

walls are made so as to reflect the light to the edges of the table only.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The improved reflector for the purpose specified, comprising the conical body, the ventilating-hood arranged over the collar of said body, a conical deflector arranged in the upper portion of the hood, braces attached to said collar and extending transversely beneath the said deflector, the pendent, lamp, feed-pipe which passes through said braces and reflector, and screw-nuts 8, applied as shown, whereby the hood proper, the deflector, and feed-pipe are rigidly secured together and supported in due position, as shown and described.

2. The improved reflector for tenpin-alleys, comprising the conical body, the hood set thereon, the double conical deflector arranged in the hood, braces attached to the collar of the body and inner sides of the hood, and extending inward and upward alongside the under sides of the deflector, and a pendent, lamp feed-pipe, passing through the side of the deflector and secured to the top thereof together with the aforesaid braces, as shown and described.

3. The improved light-reflector for tenpin-alleys, the same having a conical body which is open underneath and provided with a headlight or chamber at its front end which is open to and receives light from the interior of the reflector, and whose face is of triangular shape, an indicating-plate therein provided with sight-openings arranged corresponding to the normal arrangement of pins set upon the alley, and a transparent plate placed adjacent thereto and having corresponding numerals from "1" upward, as shown and described.

GUSTAVE BURKHARDT.

Witnesses:

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