April 11, 1944. N. HANLEY 2,346,428.

BOWLING GAME

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Fig. 1

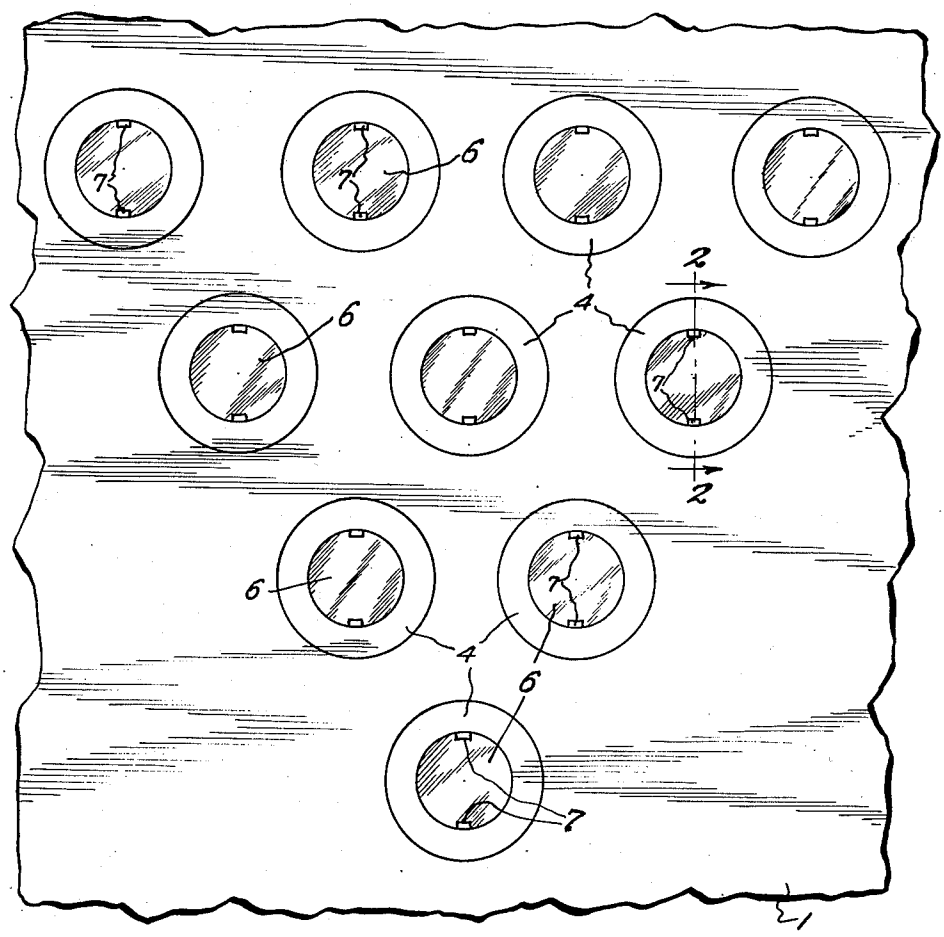
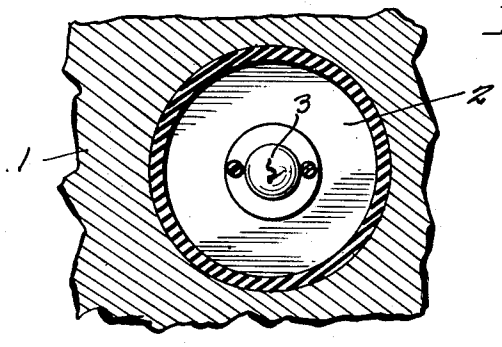


Fig. 3



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Fig. 4.

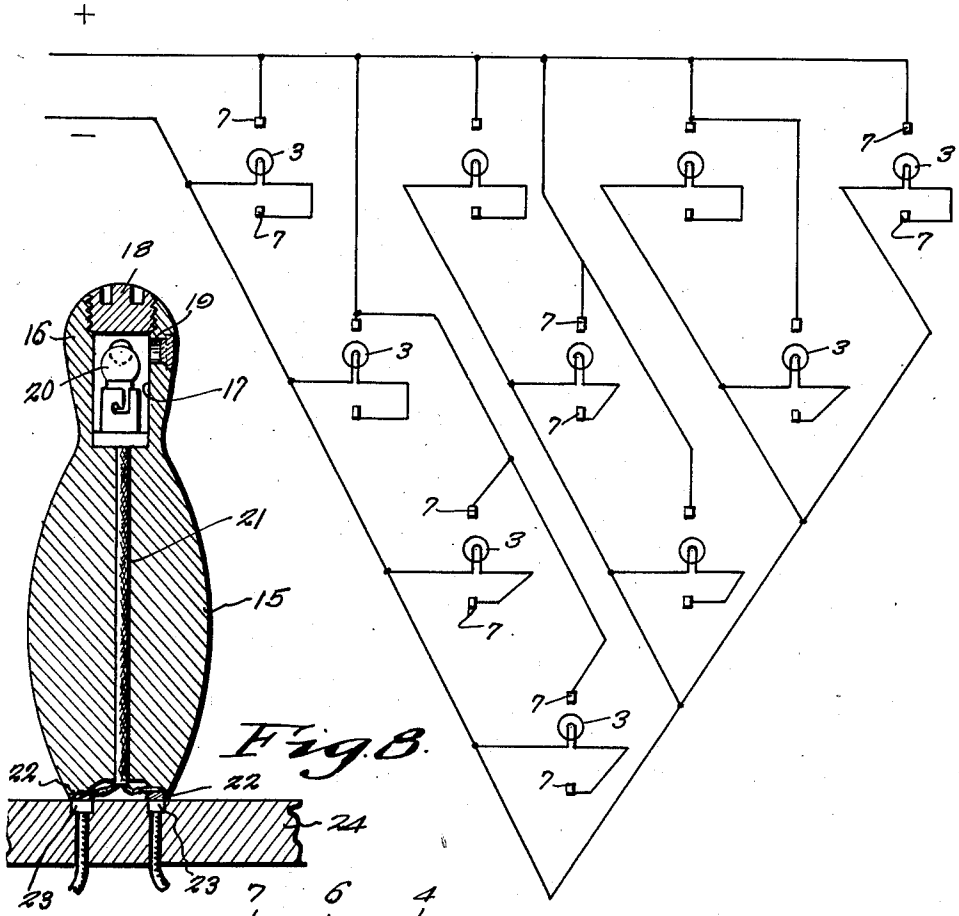


Fig. 8.

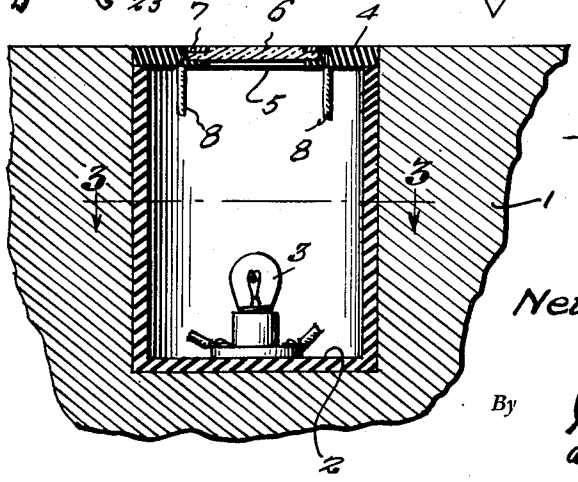


Fig. 2.

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BOWLING GAME

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Fig. 5.

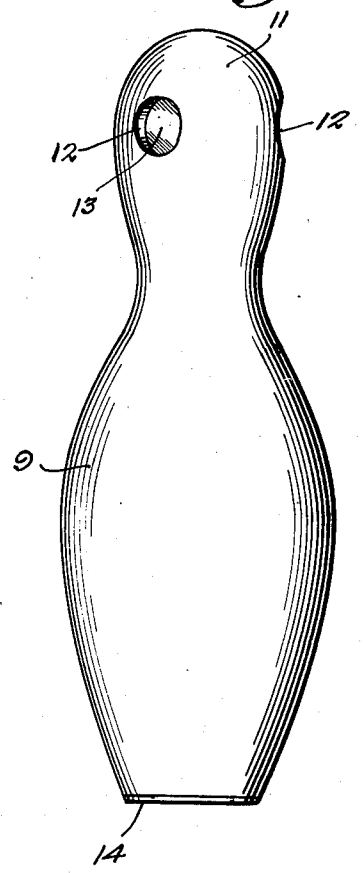
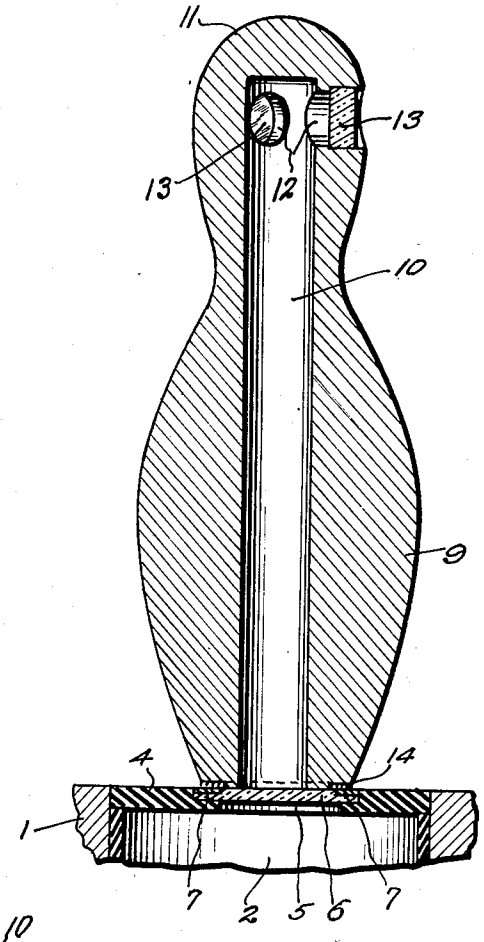


Fig. 6.



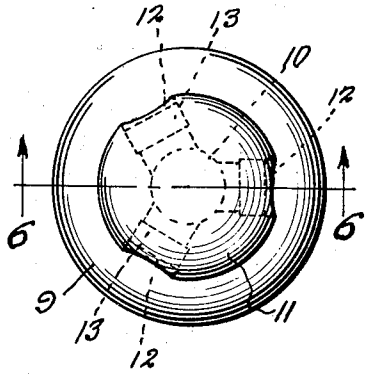


Fig. 7.

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2,346,428

UNITED STATES PATENT OFFICE

2,346,428

BOWLING GAME

Newton Hanley, Los Angeles, Calif.

Application September 4, 1942, Serial No. 457,341

6 Claims. (Cl. 273—37)

The present invention relates to new and useful improvements in bowling games, and has for its primary object to provide, in a manner as hereinafter set forth, an apparatus of this character comprising novel means for automatically illuminating electrically each pin when it is set up or spotted.

Another very important object of the invention is to provide a bowling apparatus of the aforementioned character comprising a construction and arrangement whereby the lights will be extinguished when the pins are knocked down.

Still another very important object of the invention is to provide a bowling game of the character described wherein correct spotting of the pins will be necessary in order to cause the illuminating means to function.

Other objects of the invention are to provide a bowling game of the character set forth which will be comparatively simple in construction, strong, durable, novel in appearance, and which may be manufactured and installed at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a top plan view of a portion of a bowling alley embodying the present invention.

Figure 2 is a fragmentary view in vertical section, taken substantially on the line 2—2 of Figure 1.

Figure 3 is a fragmentary view in horizontal section, taken substantially on the line 3—3 of Figure 2.

Figure 4 is a diagrammatic view of the electric wiring system.

Figure 5 is an elevational view of one of the pins.

Figure 6 is a vertical sectional view, taken substantially on the line 6—6 of Figure 7, but showing, in addition, a portion of the alley.

Figure 7 is a top plan view of one of the pins.

Figure 8 is a vertical sectional view through another form of the invention.

Referring now to the drawings in detail, it will be seen that reference numeral 1 designates a portion of a bowling alley on which a set of ten pins are to be arranged in the usual manner. The alley 1 has formed therein a plurality of insulated chambers 2, one for each pin. Electric lamps 3 are mounted in the chambers 2.

The chambers 2 are cylindrical and said chambers are provided with circular closures 4 of insulating material which are flush with the surface of the alley 1. The closures 4 have formed therein centrally located circular openings 5 in which disks 6 of suitable transparent material are mounted. Diametrically opposite contacts 7 are embedded in the disks 6 and electrically connected, as at 8, with the lamps 3. The elements 6 and 7 are flush with the upper surfaces of the closures 4.

The disks 6 are adapted to receive thereon pins 9 of suitable material. The pins 9 have formed therein vertical, centrally located light transmitting passages 10 which extend from the lower ends of said pins to a point adjacent the upper ends thereof. The heads 11 of the pins 9 have formed therein a plurality of radial windows 12 which communicate with the passage 10, said windows being provided with suitable lenses 13. The base portions of the pins 9 have embedded therein contacts 14 for bridging the contacts 7.

It is thought that the operation of the invention will be readily apparent from a consideration of the foregoing. Briefly, when the pins 9 are properly spotted on the disks 6, the contacts 14 on the lower ends or base portions of said pins electrically connect the pairs of contacts 7, thereby closing the electric circuits in which the lamps 3 are interposed. The electric lamps 3 illuminate the windows 12 in the pins 9 through the disks 6 and passages 10. If desired, either or both of the elements 6 and 13, also the lamps 3, may be suitably colored. As each of the pins 9 is knocked down, the electric circuit to the lamp 3 therebeneath is broken and said lamp is extinguished. When the pins 9 are reset they must be properly spotted on the disks 6 to again close the lamp circuits.

In the embodiment illustrated in Figure 8 of the drawings, reference numeral 15 designates a pin having formed in its head portion 16 a chamber 17. A removable plug 18 in the upper portion of the chamber 17 permits access to be had thereto. A plurality of radial windows 19 in the head 16 communicate with the chamber 17. An electric lamp 20 is mounted in the chamber 17 for illuminating the windows 19.

The lamp 20 is electrically connected by a conductor cord 21 to a pair of contacts 22 which are embedded in the lower end or base of the pin 15. The contacts 22 are engageable with contacts 23 which are embedded in the surface of an alley 24. One of the contacts 23 is electrically connected with any suitable source of current. Of course, the other contact 23 is

grounded. As will be readily apparent, when the pin 15 is properly spotted on the alley 24 with the contacts 22 engaged with the contacts 23, the lamp 20 is lighted for illuminating the windows 19 in the pin 15. If desired, the lamp 20 or the windows 19 may either or both be suitably colored.

It is believed that the many advantages of a bowling game constructed in accordance with the present invention will be readily understood, and although preferred embodiments of the apparatus are as illustrated and described, it is to be understood that further modifications and changes in the details of construction may be had which will fall within the scope of the invention as claimed.

What is claimed is:

1. A bowling game of the character described comprising a pin including a head having a plurality of radial windows therein, lenses in the windows, and means for illuminating the windows from within the pin.

2. A bowling game of the character described comprising a pin having a light transmitting passage therein open at one end, said pin further having a plurality of radial windows therein communicating with the light passage adjacent its other end, and lenses mounted in the windows.

3. A bowling game of the character described comprising a pin including a head portion having a chamber therein, said head portion further having a plurality of radial windows therein communicating with the chamber, lenses in the windows, a removable closure threadedly mounted in the upper portion of the chamber, an electric lamp mounted in the chamber for illuminating the windows, contacts mounted on the base of the pin, and conductor means electrically connecting the contacts with the lamp.

4. A bowling game of the character described comprising an alley having a plurality of chambers therein, closures for the tops of the chambers, said closures including transparent disks, pins engageable on the closures, said pins having vertical passages therein open at their lower ends and further having windows therein communicating with the passages, electric lamps in the chambers for illuminating the windows through the disks and the passages, and coacting means on the pins and the closures for controlling electric circuits to the lamps.

5. A bowling game of the character described comprising an alley having a plurality of chambers therein, electric lamps in the chambers, pins engageable on the alley over the chambers, said pins having vertical passages therein open at their lower ends for receiving light from the lamps, said pins further having windows therein communicating with the passages, and coacting means on the pins and alley for controlling electric circuits to the lamps.

6. A bowling game comprising an alley, a set of opaque pins for mounting on the alley, said pins having windows therein, electric lamps for illuminating the windows from within the pins, electric circuits for the lamps, said circuits comprising exposed pairs of spaced contacts on the pin receiving surface of the alley, and means on the bases of the pins for electrically connecting the pairs of contacts when said pins are in an upright position on the alley.

NEWTON HANLEY.