

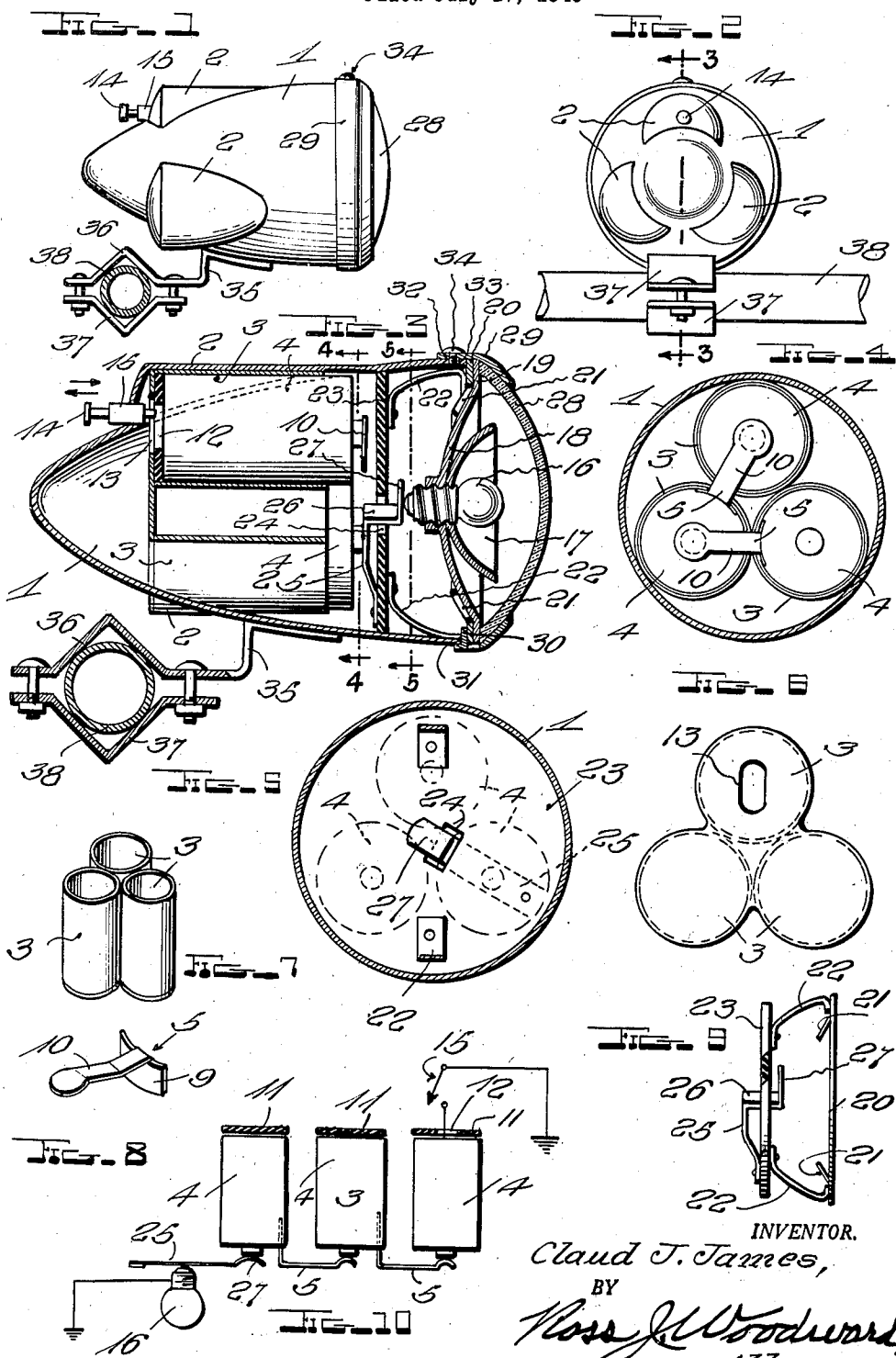
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BICYCLE LAMP

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BICYCLE LAMP

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3 Claims. (Cl. 240—7.55)

This invention relates to a bicycle lamp and it is one object of the invention to provide a lamp which may be used either as a headlight or as a safety light mounted at the rear of the bicycle.

Another object of the invention is to provide a lamp wherein current is supplied to a lamp bulb by dry cells mounted within the lamp casing. It will thus be seen that the lamp is operated by batteries self-contained within the lamp casing and it is not necessary to supply current to the lamp bulb by conductors leading from batteries mounted at some other point on the bicycle.

Another object of the invention is to provide the lamp casing with improved means for mounting a plurality of batteries or cells within the casing and in cooperating relation to each other and also in cooperating relation to a contact engaged by the center terminal of a light bulb.

Another object of the invention is to provide the lamp with improved means for mounting a disc carrying a reflector and also formed with a socket through which the base of the light bulb is mounted.

Another object of the invention is to so mount the reflector carrying assembly that it is removably mounted in the forward portion of the casing and firmly held in place when the lens and its securing ring are applied and the band or ring secured to the casing. It will thus be seen that when the lens and its securing ring or band are released, the reflector assembly may be withdrawn from the casing and exhausted batteries removed and new ones substituted.

Another object of the invention is to provide contact members which may be easily applied to new batteries after being removed from exhausted batteries and a grounded circuit established through the light bulb and the casing when a switch carried by the casing is moved into circuit closing engagement with one of the batteries.

Another object of the invention is to provide a lamp of this type which is compact in construction and neat and attractive.

The invention is illustrated in the accompanying drawings wherein:

Fig. 1 is a side elevation of the improved lamp.

Fig. 2 is a view looking at the rear of the lamp.

Fig. 3 is a sectional view on an enlarged scale taken longitudinally through the improved lamp.

Fig. 4 is a sectional view taken transversely through the lamp on the line 4—4 of Fig. 3.

Fig. 5 is a sectional view on the line 5—5 of Fig. 3.

Fig. 6 is a view looking at the rear of the sockets or cups for holding the batteries.

Fig. 7 is a perspective view of the cups.

Fig. 8 is a perspective view of one of the contacts applied to the batteries as conductors between the batteries.

Fig. 9 is a view showing the reflector assembly principally in side elevation and partially in section.

Fig. 10 is a wiring diagram.

This improved bicycle lamp has a casing 1 which is formed of conductive metal. The casing is open at its front end and tapers rearwardly to a point at its rear end, portions of the casing intermediate the length thereof being bulged outwardly to form pockets 2 opening into the interior of the casing and in which are mounted cups 3 for holding the batteries 4. Three batteries and cups to hold the same have been shown, but it is to be understood that any number desired may be provided and a corresponding number of pockets 2. Two of the batteries carry clips or conductors 5, each of which is formed as shown in Fig. 8. Referring to this figure, it will be seen that the clip has a base plate 9 which is curved transversely and carries an arm 10. The base plates 9 of the clips are fitted between the shells of the batteries and the paper jackets thereof and the arms 10 extend radially therefrom for engagement with the center contacts of adjoining batteries. Discs 11 of insulation are placed at the inner ends of the sockets to prevent contact of the battery shells with the pockets, and one of these discs is formed with a slot 12 registering with a slot 13 in the end wall of the pocket in which it fits so that when the plunger 14 of a push button switch 15 is pressed inwardly, it will engage the exposed end of the battery in this socket and ground the battery on the casing to close a circuit.

In order to mount the light bulb 16 and the reflector 17, there has been provided a concavo convex plate 18 having a flat marginal portion 19 which bears against a ring 20 having inwardly extending tongues 21 which extend at an incline and engage the inner face of the plate 18. The ring 20 is of an external diameter adapting it to bear against the front end of the casing 1 and against the inner surface of the ring are secured brackets 22 formed from strips of metal. These brackets are curved longitudinally and have their inner ends bent inwardly and secured

against a disc 23 formed of insulation which fits snugly within the casing and, at its center, is formed with an opening 24. A contact strip 25 is secured against the inner face of disc 23 and extends radially of the disc and is bent to extend in spaced relation to the disc for engagement with the center terminal of one of the batteries, as shown in Figs. 3 and 10. The free end portion of the contact strip 25 is bent to form a neck 26 which passes outwardly through the opening 24 and is bent to form a head 27 for engaging the center terminal of the light bulb 16. From an inspection of Figs. 3 and 10, it will be seen that a grounded circuit is provided, the switch and shell of the bulb being grounded on the casing, and that when the switch is closed the circuit will be closed and the bulb energized. Light from the bulb is projected through the lens 28 which fits against the outer face of the marginal portion of the plate 18 and is secured by a mounting ring 29. This ring or band fits snugly about the forward end portion of the casing and, at one side, is punched to form a tongue 30 which projects inwardly and passes through an opening 31 formed in a side portion of the casing near the open end thereof. In diametrically opposed relation to the tongue 30, the band or ring is formed with an opening 32 for registering with a threaded opening formed in the casing. When the band is applied, the tongue 30 is engaged through the opening 31 and the band then swung into place about the casing until the opening 32 registers with the threaded opening 33. The screw 34 is then passed through opening 32 and screwed into opening 33 and the band will be firmly but releasably held in place. Resiliency of the contact 25 causes it to remain in engagement with the battery and the center contact of the bulb to assure steady flow of current when the switch is closed and, in addition, urges the plate outwardly so that tension is provided to prevent rattling of parts when a bicycle is ridden along rough roads.

The lamp may be used either as a headlight at the front of a bicycle, or as a safety light at the rear thereof. In the present illustration, there has been shown a bracket 35 having jaws 36 and 37 for gripping a handle bar 38 or other support at the front of the bicycle but it is to be understood that other forms of brackets may be provided for mounting the lamp at the front or at the back of a bicycle.

Having thus described the invention, what is claimed is:

1. A lamp comprising a casing open at its front end, the rear portion of the casing being provided with pockets spaced from each other circumferentially thereof, a battery holder in said casing consisting of a plurality of cups removably seated in the pockets, said cups extending longitudinally in the casing and open at their front ends, batteries in said cups, conductor clips carried by certain of said batteries and consisting of base portions fitting between shells of the batteries and insulating jackets therefor, and arms extending from the bases for bearing against the center terminals of companion batteries and connecting the batteries in series, a switch carried by said casing for engaging the shell of an end battery when in a circuit closing position, a mounting removably fitting within the open end of said casing and having an inner disc of insula-

tion, a ring spaced forwardly from said disc and having arms extending rearwardly and secured upon said disc, rearwardly extending tongues carried by said ring, a resilient contact strip secured against the rear face of said disc for engaging a center terminal of the other end battery, said resilient contact strip having its free end portion passing outwardly through the disc and bent to form a terminal head in front of the disc, a plate bearing against the front face of the ring and the tongues carried thereby, a reflector in front of said plate secured through the center thereof, a bulb having its base mounted through the reflector and the disc and its center terminal bearing against the terminal head of the resilient contact strip, a lens bearing against margins of said plate, and a securing band about said lens detachably secured about the forward portion of said casing.

2. A lamp comprising a casing open at its front, and provided with pockets spaced from each other circumferentially of the casing with portions opening into the casing, a battery mounting consisting of holders united in side by side relation to each other as a unit and removably mounted in said casing with portions engaged in the pockets and open ends presented forwardly, insulated batteries in said holders connected in series, a switch carried by said casing for engaging the shell of an end battery of the series when in circuit closing position, a mounting removably inserted in the open front end portion of said casing, and including an insulated contact for engaging the center terminal of the other end battery of the series and a ring of conductive metal for engaging the casing, a metal plate seated against said ring, a reflector carried by said plate, a bulb mounted through said reflector with its center terminal engaging the contact strip, and a lens removably mounted at the front end of the casing.

3. A lamp comprising a casing open at its front, pockets extending longitudinally of the rear portion of the casing in spaced relation to each other circumferentially thereof with portions projecting outwardly therefrom laterally of the casing and their inner side portions and inner ends opening into the casing, a battery mounting consisting of a group of cups united in side by side relation to each other and removably mounted in the casing with portions engaged in said pockets and open ends of the cups presented forwardly, batteries in said cups connected in series, a switch carried by the rear end of one pocket with a portion extending into the pocket for engaging the rear end of the shell of one battery when in circuit closing position, a mounting removably inserted in the open front end portion of said casing and including a casing engaging member of conductive material and a contact strip insulated from each other, the contact strip being disposed in position for engaging the center terminal of a battery other than the batteries engaged by the switch, a reflector having a mounting member of conductive metal bearing against the casing engaging member, a bulb having its base mounted through the reflector and its center terminal bearing against the contact strip, and a lens removably mounted at the front end of the casing.

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