Dec. 12, 1967

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GENERAL PURPOSE FLOODLIGHT

Filed July 2, 1965

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FIG. 1

FIG. 2

FIG. 6

FIG. 5

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3,358,133
GENERAL PURPOSE FLOODLIGHT


Filed July 2, 1965, Ser. No. 469,170
9 Claims. (Cl. 240—3)

ABSTRACT OF THE DISCLOSURE

A rigid flat rectangular frame having a closed area at one end, the remainder of the frame forming a rectangular opening. The lamp is located at the edge of the opening adjacent the closed area. The primary reflector of scoop-like configuration is hinged to the frame at the opposite end of the opening and has a top wall inclining upwardly from the hinge joint and extending over the lamp and closed area. A semi-cylindrical auxiliary reflector is positioned at the edge of the opening contiguous to the closed area and serves, in conjunction with the primary reflector, to effect a wide beam uniformly distributed over a large area.

This invention relates to flood lights intended particularly for illuminating outdoor areas, such as parking lots, playgrounds, truck terminals, shopping centers and the like.

The invention has as its object a floodlight embodying a lightweight construction, economical to manufacture, convenient to install, and which functions to emit a wide beam covering a large area with a uniform distribution of light over the entire area, including the perimetric margin thereof.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is made to the accompanying drawings in which like characters designate corresponding parts in all the views.

In the drawings:

FIGURE 1 is an isometric view in perspective of a floodlight embodying our invention.

FIGURE 2 is an isometric view in perspective of the floodlight shown in FIGURE 1, with the reflector shown in open position.

FIGURE 3 is a lengthwise sectional view.

FIGURE 4 is a top plan view of the central portion of the light, with portions of the main and auxiliary reflectors broken away.

FIGURE 5 is a view taken on line 5—5, FIGURE 2.

FIGURE 6 is a view taken on line 6—6, FIGURE 2.

FIGURE 7 is a view taken on line 7—7, FIGURE 2.

The floodlight includes a rectangular shaped flat frame 10, the major portion of which is formed with rectangular opening in which a lens 11 is mounted. The frame 10 is formed with an inwardly extending flange 12 encircling the opening. There is a series of bosses 13 threaded to receive screws 15 which extend through clamping members 17 for clamping the lens 11 against the flange 12.

The opening and the lens 11 occupy the major portion of the frame. The remainder of the frame is closed by a wall 20.

The perimeter of the frame is formed with a rib 21 having a groove for the reception of a reflector sealing gasket 23, and a rib 25 spaced outwardly from the rib 21. The frame is also formed at opposite sides with laterally extending flanges 27. Blocks 28 are fixed to the flanges 27 at the closed end of the frame, as by screws 29, see FIG.

The blocks 28 are apertured to receive pivot screws 30, which also extend through legs 31 of a mounting yoke 32, and thread into a plate 33, as seen in FIGURE 7. The blocks 28 are also apertured to receive clamp screws 34. The plates 33 are positioned against the inner surfaces of the yoke legs 31, and the screws 30, 34, are spaced apart a distance to permit relative pivotal movement between the frame and the yoke 32.

When the screws 30, 34, are loosened, the frame may be adjusted about the pivot screws 30, and the frame clamped in adjusted position by tightening these screws. The yoke 32 is provided with a mounting coupling 35, which may be adapted to be secured to the upper end of a supporting post 36, as seen in FIGURE 1. One of the blocks 28 is provided on its external surface with a rib 37 extending diametrically of the pivot screw 30, and in cooperation with a graduated scale 38, provides a convenient means for determining the angle of elevation of the floodlight.

A bracket 40 is mounted on the frame at one side of the lens opening and in proximity to the closed wall 20, FIGURES 3 and 4. The bracket is fixedly secured to the frame by screws 41 and serves to support a lamp receptacle 43 for the reception of the base end of a lamp 44, with the lamp extending transversely of the frame above the junction of the lens opening and the wall 20. The bracket 40 is formed with a rearwardly extending arm 45, to which one end of a concave auxiliary reflector 46 is attached by screw 47, FIGURE 3. The lower edge of the reflector is formed with a flange 48 secured to the forward edge of the wall 20, as by screws 49. The concave side of the reflector confronts the lamp 44, and the reflector serves to divide the interior of the floodlight casing into a lamp compartment and a ballast compartment containing ballast component 50, 51. The ballast components are attached to a plate 52 fixed to bosses 53, as by screws 54. The bosses 53 are formed on the inner surface of the plate 20.

There is a main or primary reflector indicated generally at 57. The reflector 57 is preferably formed of sheet material, and has a flat planar perimetric flange 58 dimensioned comparable to the frame member 10, and adapted to seat against the gasket 23 when the reflector is in closed position, as shown in FIGURES 1 and 3. The reflector is formed at one end with an end wall 60 extending upwardly from the flange 58 and merging with a portion 61 of the rear wall, which is also formed with a portion 62 inclining downwardly to the flange 58 at the opposite end of the reflector. The joiner of the portions 61, 62, of the reflector top wall is in the area above the lamp 44. The reflector also has side walls 63 of somewhat triangular formation, all whereby the primary reflector is in general of scoop-like formation. When the reflector is in closed position, as shown in FIGURES 1 and 3, it forms, in conjunction with the frame and lens 11, an enclosed casing or housing.

The perimeter of the flange 58 is formed with an inwardly extending flange 65. The bead 65 is not a closed bead, but the inner edge of the bead terminates in spaced relation to the flange 58, see FIGURES 3, 5 and 6.

The end of the primary reflector, opposite the end wall 60, is pivotally connected to the end of the frame by a pair of clips 70 having curved portions 71 partially encircling the head 65 on the reflector. The clips 70 are formed with inwardly extending flanges 72 placed in notches 73 formed in the perimeter of the frame by removal of a portion of the outer rib 25 at that location. The flanges 72 are threaded to receive screws 74 extending through apertures formed in the frame. The bead 65 is formed with slots 75 to receive the inner ends of the screws 74, see FIGURE 3. With this arrangement, the
rear end of the reflector may be moved upwardly to the position shown in FIGURE 2 to provide access to the interior of the casing for relamping the unit. The clips 70 are adjustable toward and from the receptacle to effect tight engagement of the flange 58 with the sealing gasket 23.

The primary reflector is maintained in closed position by screws 77, extending through clips 78, and also through apertures in the bead 65 at the sides and rear end of the reflector. The screws threaded into apertures 80 formed in the frame intermediate the ribs 21, 25. These screws 77, when tightened, also serve to press the remainder of the flange 58 tightly against the gasket 23, whereby the unit is rendered weatherproof when the reflector is closed.

The reflector 77 is moved to open position, as shown in FIGURE 2, by unthreading the screws 77 from the frame, and moving the rear end of the reflector upwardly. A reflector supporting rod 83 is provided to maintain the reflector in open position, see FIGURE 2. One end of this rod is bent and extends through an aperture formed in the rib 25 of the frame member. The opposite end of the rod is formed with a circular loop 85, which slidably encircles the bead 65 of the reflector. The screws 77 are of reduced diameter intermediate the head and threaded portion of the screw, whereby, when the screws 77 are unthreaded from the frame, the head of the screw 77 and in the bead 65. There is a screw and clip assembly positioned on the side of the reflector engaged by the loop of the support rod 83, and serves as a stop for the support rod when the reflector is moved from open position, as shown in FIGURE 2. When the rod 83 is unthreaded from the frame, the rear end of the reflector 87 is raised, the loop end 85 of the rod 83 slides along the bead 65 until it engages the captivated clip. When the upper looped end of the rod is moved rearwardly along the bead, the reflector may be returned to closed position, and in that position the rod 83 lies under the reflector flange 58, in the groove between the ribs 21, 25, see FIGURE 4.

The floodlight unit includes means detachably engaging the free end of the lamp 44 for supporting the same. This means consists of a rod 87 disposed vertically and formed at its upper end with means for engaging the free end of the lamp. The rod is pivotally mounted in the frame and spring means is provided for urging the upper end of the rod toward the lamp receptacle 43.

In the construction shown, the rod 87 is formed with an intermediate portion 88, which extends in a direction lengthwise of the frame beneath the flange 48 of the reflector 46. The portion 88 is bent to form a portion 89, see FIGURE 4, extending transversely of the frame. A tension spring 90 is connected at one end to the portion 89 and at its opposite end to the frame wall 20. The wall 20 is formed with an angular rib 91, recessed in one leg to receive the portion 88 of the lamp supporting rod, and in the other leg to receive the portion 89. It will be apparent that the portion 88 is pivotally mounted in the frame, and the spring 90 yieldingly urges the portion 88 toward the lamp receptacle 43. The upper end of the portion 88 is formed with a circular loop 92, which is encased by a heat insulating covering 93.

This arrangement affords adequate support to the free end of the lamp 44, which in the larger sizes of the floodlight unit, is of considerable length.

What we claim is:

1. A floodlight comprising a flat rigid frame of rectangular formation and having a closed area at one end, the remainder of said frame being formed with a rectangular opening, a lens mounted in said opening, a supporting bracket secured to said frame at the closed area thereof, a receptacle bracket mounted on the frame intermediate the ends thereof, a lamp receptacle carried by said receptacle bracket for the reception of a lamp, a primary reflector formed of sheet material and having a rectangular perimetric planar margin, said reflector being formed at one end with an end wall extending upwardly from said margin and a top wall inclining upwardly from the opposite end of the reflector to an area above said lamp and merging with the upper edge of said end wall, said reflector also having substantially triangular-shaped side walls extending from said margin and merging with said end and top walls, all whereby said reflector is of general scooped perimetric margin being dimensioned comparable to said frame for engagement with the perimetric area thereof, said reflector in conjunction with said frame and lens forming an enclosed casing, an auxiliary reflector mounted on the frame in said casing intermediate said lamp and the end wall of said primary reflector and serving to divide said casing into a lamp compartment and a ballast compartment, a lamp ballast mounted in said ballast compartment, the end of said primary reflector opposite the end wall thereof of being pivotally connected to the end of said frame opposite to said closed portion for movement from a closed position engaging said frame to open position to provide access to both of said compartments, and means cooperating with said frame and primary reflector to maintain the same in open position.

2. A floodlight comprising a flat rigid frame of rectangular formation and having a closed area at one end, the remainder of said frame being formed with a rectangular opening, a lens mounted in said opening and closing the same, a mounting bracket secured to said frame at the closed area thereof, a receptacle bracket mounted on the frame intermediate the ends thereof, a lamp receptacle carried by said bracket for the reception of a lamp with the excess thereof extending transversely of the frame, a primary reflector formed of sheet material and having a rectangular perimetric planar margin encircled by a circular bead, said reflector being formed at one end with an end wall extending upwardly from said margin, and a top wall inclining upwardly from the opposite end of the reflector to an area above said lamp and merging with the upper edge of said end wall, said reflector also having substantially triangular side walls extending from said margin and merging with said end and top walls, all whereby said reflector is of general scooped perimetric formation, the perimetric margin of said reflector being dimensioned comparable to said frame for engagement with the perimetric marginal area thereof, said reflector forming in conjunction with said frame and lens an enclosed casing, an auxiliary reflector mounted on the frame in said casing intermediate said lamp and the end wall of the primary reflector and serving to divide said casing into a lamp compartment and a ballast compartment, a lamp ballast mounted in said ballast compartment, hinge clips mounted on the end of said frame opposite to said closed end, said clips partially engaging the bead on the end of said reflector opposite to the end wall thereof, said clips being cooperating with said bead to form a hinge joint between said primary reflector and the frame to permit pivotal movement of said reflector about said hinge joint from a closed position engaging said frame to an open position to provide access to said compartments.

3. A floodlight as defined in claim 2, and including means for adjusting said clips toward and from said frame.

4. A floodlight as defined in claim 3 and including a stay rod pivotally mounted on one end and having sliding co-action with the bead on said main reflector and being operable to maintain said primary reflector in open position.

5. A floodlight including a lens carrying frame, a bracket mounted on the frame, a lamp receptacle fixed to said bracket for the reception of the base end of a lamp, a lamp supporting rod pivotally mounted on said frame and extending upwardly therefrom and being pivotally connected with its upper end with a portion for engagement with the opposite end of said lamp, and spring means connected
5 to said rod and being operable to yieldingly urge the lamp engaging portion of said rod toward said receptacle.

6. A floodlight, a lens carrying frame, a bracket mounted on said frame and extending upwardly therefrom, a lamp receptacle fixed to the upper portion of said bracket for the reception of a base end of a lamp, means for supporting the opposite end of the lamp, including a rod mounted for pivotal movement relative to said frame and being formed at its end with a portion for engaging the opposite end of said lamp to support the same, and spring means connected to said rod and being operable to yieldingly urge the lamp engaging portion thereof toward said receptacle.

7. A floodlight comprising a lens carrying frame, a bracket mounted on said frame, a lamp receptacle mounted on said bracket for the reception of the base end of a lamp with the lamp extending transversely of said frame, a lamp supporting rod pivotally mounted to said frame and extending upwardly therefrom, the upper end of said rod being formed with a portion encircling the opposite end of said lamp, spring means connected to said rod and being operable to yieldingly urge said rod about said pivot toward said lamp receptacle.

8. A floodlight comprising a frame formed with a rectangular opening, a lens mounted in said opening, a bracket fixed to said frame in juxtaposition to one end of said opening, a lamp receptacle mounted on said bracket for the reception of the base end of a lamp with the lamp extending transversely of said frame, a rod member for supporting the opposite end of said lamp, said rod having an intermediate portion extending in a direction normal to the axis of said lamp and being journaled for rotation in said frame, said intermediate portion merging with a vertically extending arm terminating at its upper end in a loop portion for engaging the opposite end of the lamp, and spring means connected to said rod and being operable to yieldingly urge said loop portion toward said receptacle.

9. A floodlight structure comprising a flat rigid frame of rectangular formation and having a closed area at one end, the remainder of said frame being formed with a rectangular opening, a lens mounted in said opening and forming a closure thereon, a supporting bracket secured to the frame at the closed area thereof, a receptacle bracket mounted on the frame in proximity to the edge of said opening adjacent said closed area, a lamp receptacle carried by said receptacle bracket for positioning a lamp above said edge, a primary reflector formed of sheet material and having a rectangular parametric planar margin dimensioned comparable to said frame, said reflector including a top wall spaced upwardly from said closed area of said lamp, said top wall inclining downwardly to the opposite end of said opening, said reflector being hingedly connected to said frame at the opposite end of said opening, said reflector forming, in conjunction with said frame and lens, an enclosed casing, a semi-cylindrical auxiliary reflector mounted on said frame in proximity to said edge of said opening and extending parallel thereto, with the concave side of said auxiliary reflector confronting said lamp, said reflector having a chordal dimension comparable to the space between said frame and the top wall of said primary reflector.

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