Dec. 22, 1959 O. O. BROWN 2,918,553

CURRENT MAKING AND BREAKING ATTACHMENT

Filed July 18, 1958

FIG. 1

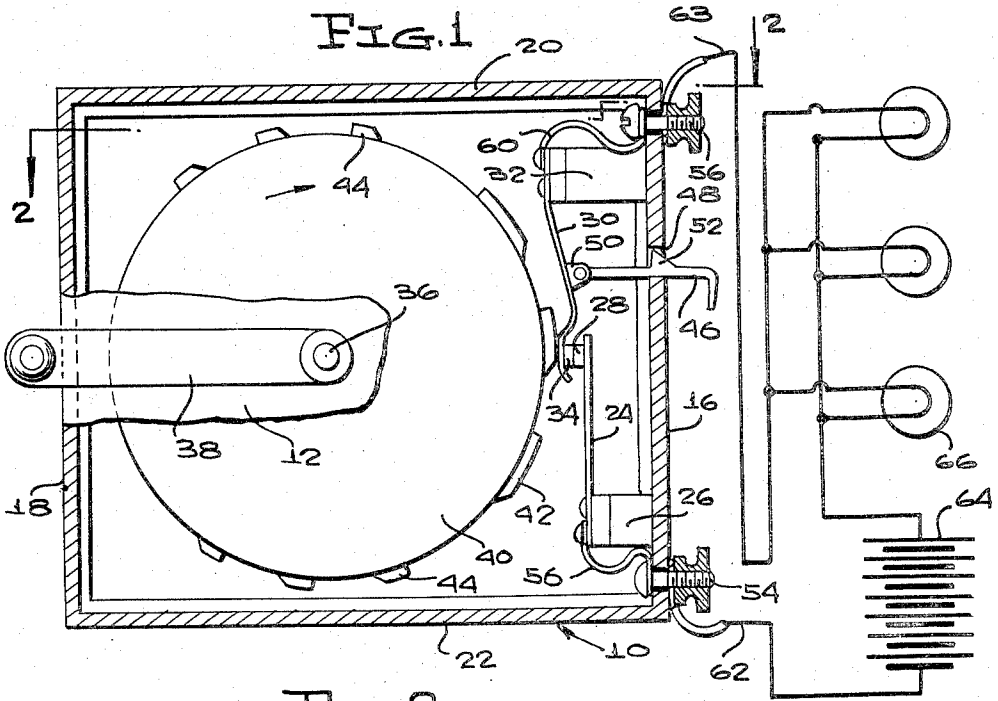


FIG. 2

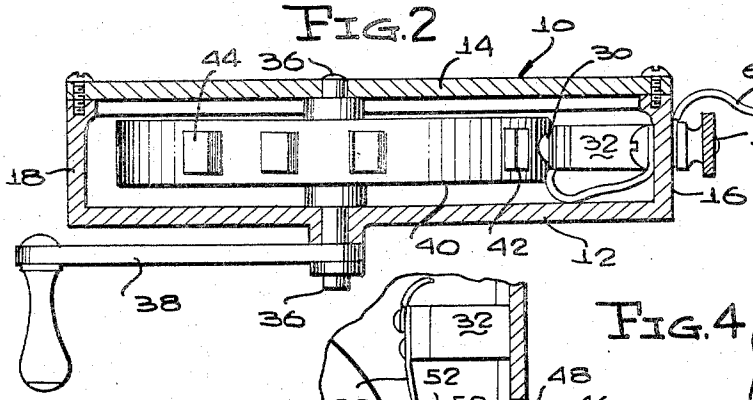


FIG. 3

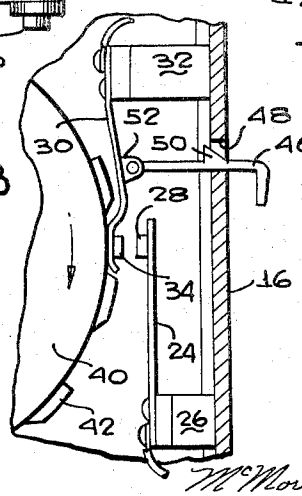
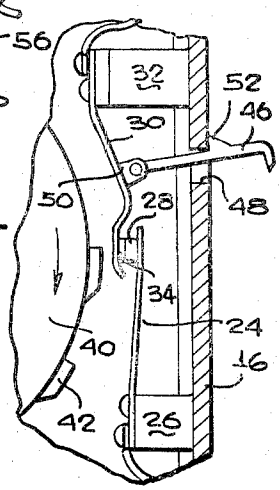


FIG. 4



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United States Patent Office 2,918,553
Patented Dec. 22, 1959

2,918,553

CURRENT MAKING AND BREAKING ATTACHMENT

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Application July 18, 1958, Serial No. 749,356

3 Claims. (Cl. 200—153)

The present invention relates to a current making and breaking attachment for a lighting system.

An object of the present invention is to provide a current making and breaking attachment which lends itself to employment in the lighting circuit of a boat in order to convert the lighting system into an emergency signaling system.

Another object of the present invention is to provide a circuit making and breaking attachment for incorporation in the lighting system of a boat which lends itself to ease of operation when used to send code messages indicating an emergency and using the lights of the lighting system as a signaling means.

A further object of the present invention is to provide a circuit making and breaking attachment for inclusion in a boat's lighting system which is simple in structure, one sturdy in construction and one which may be economically manufactured and assembled.

These and other objects and advantages of the present invention will be fully apparent from the following description when taken in conjunction with the annexed drawing, in which:

Figure 1 is a sectional view of the attachment according to the present invention, shown in circuit with a lighting system, the system being illustrated diagrammatically;

Figure 2 is a view taken on the line 2—2 of Figure 1;

Figure 3 is a fragmentary view of the assembly shown in Figure 1, showing the movable contact arms in an out-of-electrical-contact position; and

Figure 4 is a view similar to Figure 3, showing the contact arms in electrical-contact position.

Referring in greater detail to the drawing in which like numerals indicate like parts throughout the several views, the attachment of the present invention comprises a hollow casing 10 having a pair of spaced side walls 12 and 14, an end wall 16 connecting one of the adjacent ends of the side walls 12 and 14 together and another end wall 18 connecting the other adjacent ends of the side walls 12 and 14 together. A top wall 20 extends over the upper ends of the side and end walls and a bottom wall 22 extends over the lower ends of the side walls and end walls.

A first contact arm 24 is positioned within the casing 10 adjacent to and spaced from the end wall 16 and has one end fixedly mounted upon an insulating block 26 which projects from the inner face of the end wall 16 and is fixedly secured thereto. The other end of the contact arm 24 is spaced from the end wall 16 and carries an electrical contact 28.

A second contact arm 30 is positioned in end to end relation with respect to the arm 24 and is adjacent to and spaced from the end wall 16 and has one end fixedly mounted upon another insulating mounting block 32 which has one end projecting from the inner face of the end wall 16 and is fixedly secured thereto. The opposite end of the arm 30 is contiguous to the free end of the

arm 24 and carries on its confronting face another electrical contact 34 engageable with the contact 28.

A stub shaft 36 is journaled for rotation in a clockwise direction in the casing side walls 12 and 14, as shown in Figure 2, and has a portion adjacent one end projecting exteriorly of the casing side wall 12. Hand actuable means, embodying a crank 38, is carried on the projecting end portion of the stub shaft 36 for effecting the rotation of the stub shaft 36. A drum 40 is positioned within the casing 10 between the end wall 18 and the contact arms 24 and 30 and has its periphery facing the contact arms 24 and 30. The central portion of the drum 40 is fixedly secured to the intermediate portion of the stub shaft 36 for rotation with the latter.

The periphery of the drum 40 carries a plurality of spaced protuberances 42 and 44, each having one end face sloping away from the periphery of the drum 40. A releasable latch element 46 has an intermediate portion extending through a hole 48 provided in the end wall 16. A portion of the latch element 46 adjacent one end is within the casing 10 and is pivotally connected to a boss 50 which projects from the face of the contact arm 30 adjacent the end wall 16. The portion of the latch element 46 adjacent the other end is exteriorly of the casing end wall 16 and has a shoulder 52 projecting from one side thereof.

A first binding post and nut assembly 54 is supported in the portion of the casing end wall 16 adjacent the bottom wall 22 and is electrically connected by means of a wire 56 to the contact arm 24 adjacent its point of support upon the block 26. Another binding post and nut assembly 58 is supported in the portion of the casing end wall 16 adjacent the top wall 20 and is electrically connected by means of a wire 60 to the adjacent end of the contact arm 30. Other wires 62 and 63 electrically connect the binding post and nut assemblies 54 and 58 to a lighting system which includes a battery 64 and a plurality of incandescent lamp bulbs 66, shown schematically in Figure 1. The bearing faces of the protuberances 42 are longer than are the bearing faces of the protuberances 44, as shown most clearly in Figure 1.

In use, the attachment of the present invention is installed in electrical circuit with the lighting system of a boat, or other vehicle, and the latch element 46 is normally held, as in Figure 4, in the position in which the shoulder 52 engages the outer face of the end wall 16 and the resilient contact arm 30 is bent so that the contacts 28 and 34 are in engagement and the circuit of the lighting system is intact. When it is desired to use the lighting system as an emergency signaling means, the latch element 46 is moved to the position in which the shoulder 52 is out of engagement with the end wall 16, as in Figure 3, this disengaging the contacts 28 and 34. Upon application of a manually applied turning force to the crank 38, the shaft 36 and drum 40 are caused to rotate bringing in succession each of the protuberances 42 and 44 near the nonconfronting face of the contact arm 30 and engaging the free end of such arm 30 on the sloping one end of each protuberance and thereafter bearing against the contact arm 30 for the length of each protuberance and releasing the contact arm 30 at the end of such protuberance. The contact arm 24 is also resilient to the extent necessary for it to bend away from the drum 40 when pressed by the contact arm 30. It will be seen that the protuberances 44 are of a shorter length than the protuberances 42. Upon rotation of the drum 40, the protuberances 44 effect successive illumination of the bulbs 66 for three short periods, representing "dots." The longer bearing faces of the protuberances 42, when engaging the contact arms 30, cause the bulbs 66 to be

illuminated for three spaced periods of illumination each of a length longer than the period of illumination when affected by the protuberances **44**. These longer periods of illumination represent "dashes." Altogether, the one complete revolution of the drum **40** will effect the signaling of the letters "S–O–S" in the international Morse code.

When no emergency is present the latch element **46** may be moved to the position in which the shoulder **52** is held by the outer surface of the end wall **16**. This enables the bulbs **66** to be illuminated at will and when necessary to display as running lights of the boat on which the attachment of the present invention is employed.

Preferably, the casing **10** is fabricated of a nonconductive material with the drum **40** similarly fashioned. However, the drum and casing may be fabricated of any suitable materials with regard to the insulating of the binding post and nut assemblies **54** and **58** from each other and from any grounded portion, if any, of the lighting system with which the attachment is employed.

The current making and breaking attachment of the present invention may be employed with a portable light such as a flashlight or emergency hand light, if desired.

What is claimed is:

1. A current making and breaking attachment comprising a hollow casing including a pair of spaced side walls and an end wall connecting each of the adjacent ends of said side walls together, a first contact arm positioned within said casing adjacent to and spaced from one of said end walls and having one end fixedly secured to said one end wall and having the other end spaced from said one end wall, a resilient second contact arm positioned within said casing adjacent to and spaced from said one end wall and having one end fixedly secured to said one end wall and having the other end contiguous to and normally in engagement with said other end of said first contact arm, a drum rotatable in the clockwise direction positioned within said casing between said first and second contact arms and the other of said casing end walls and having the periphery thereof facing toward said contact arms, a plurality of protuberances arranged in spaced relation along and carried by the outer periphery of said drum, hand actuable means operatively connected to said drum for effecting the rotary movement thereof, a releasable latch element extending through and normally in engagement with said casing one end wall and having a portion adjacent one end exteriorly of said one end wall and having the portion within said casing pivotally connected to said second contact arm intermediate its ends, a first binding post supported in said casing one end wall and electrically connected to said one end of said first contact arm, and a second binding post supported in said casing one end wall and electrically connected to said one end of said second contact arm, said first and second binding posts being adapted to be connected in circuit with a lighting system, the protuberances of said drum upon being rotated in the clockwise direction successively bearing against said other end of said second contact arm and urging said second contact arm other end into contact with said other end of said first contact arm when said latch element has been released from engagement with said casing one end wall.

2. A current making and breaking attachment comprising a hollow casing including a pair of spaced side walls and an end wall connecting each of the adjacent ends of said side walls together, a first contact arm positioned within said casing adjacent to and spaced from one of said end walls and having one end fixedly secured to said one end wall and having the other end spaced from said one end wall, a resilient second contact arm positioned within said casing adjacent to and spaced from said one end wall and having one end fixedly secured to said one end wall and having the other end contiguous to and normally in engagement with said other end of said first contact arm, a drum rotatable in the clockwise direction positioned within said casing between said first and second contact arms and the other of said casing end walls and having the periphery thereof facing toward said contact arms, a plurality of spaced protuberances each having one end face sloping outwardly from said drum arranged in spaced relation along and carried by the outer periphery of said drum, hand actuable means operatively connected to said drum for effecting the rotary movement thereof, a releasable latch element extending through and normally in engagement with said casing one end wall and having a portion adjacent one end exteriorly of said one end wall and having the portion within said casing pivotally connected to said second contact arm intermediate its ends, a first binding post supported in said casing one end wall and electrically connected to said one end of said first contact arm, and a second binding post supported in said casing one end wall and electrically connected to said one end of said second contact arm, said first and second binding posts being adapted to be connected in circuit with a lighting system, the protuberances of said drum upon being rotated in the clockwise direction successively engaging by said sloping one end faces and then bearing against said other end of said second contact arm and urging said second contact arm other end into contact with said other end of said first contact arm when said latch element has been released from engagement with said casing one end wall.

3. A current making and breaking attachment comprising a hollow casing including a pair of spaced side walls and an end wall connecting each of the adjacent ends of said side walls together, a first contact arm positioned within said casing adjacent to and spaced from one of said end walls and having one end fixedly secured to said one end wall and having the other end spaced from said one end wall, a resilient second contact arm positioned within said casing adjacent to and spaced from said one end wall and having one end fixedly secured to said one end wall and having the other end contiguous to and normally in engagement with said other end of said first contact arm, a stub shaft journaled in said side walls of said casing for rotation in the clockwise direction and having the portion adjacent one end extending exteriorly of one of said side wails, a drum positioned within said casing and having the periphery thereof facing toward said contact arms, said drum being mounted upon said stub shaft for movement therewith, a plurality of protuberances arranged in spaced relation along and carried by the outer periphery of said drum, a releasable latch element extending through and normally in engagement with said casing one end wall and having a portion adjacent one end exteriorly of said one end wall and having the portion within said casing pivotally connected to said second contact arm intermediate its ends, a first binding post supported in said casing one end wall and electrically connected to said one end of said first contact arm, a second binding post supported in said casing one end wall and electrically connected to said one end of said second contact arm, said first and second binding posts being adapted to be connected in circuit with a lighting system, the protuberances of said drum upon being rotated in the clockwise direction successively bearing against said other end of said second contact arm and urging said second contact arm other end into contact with said other end of said first contact arm when said latch element has been released from engagement with said casing one end wall, and hand actuable means on said one end of said stub shaft for effecting the rotary movement of the latter.

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