Dec. 20, 1949 C. T. CLYNE 2,492,034

ILLUMINATED WRITING UNIT

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Fig. 1.

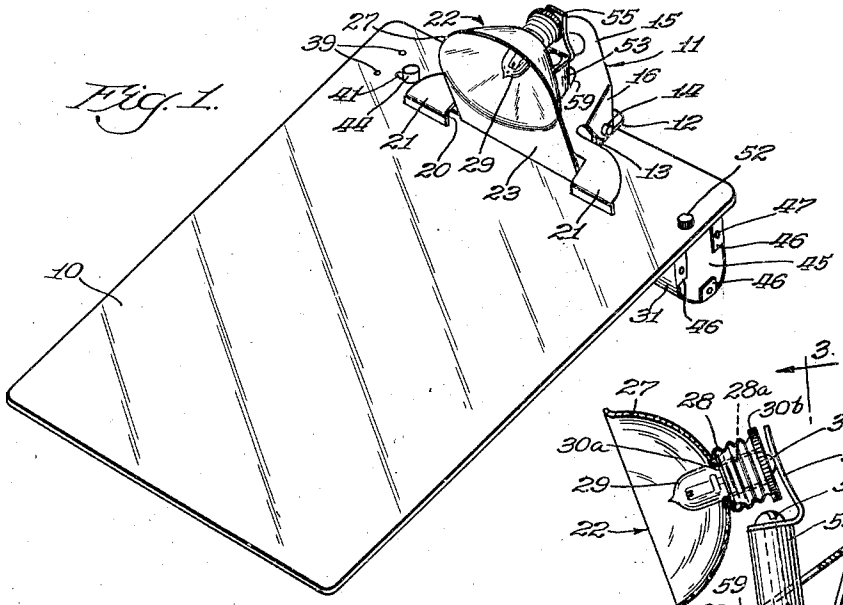


Fig. 2.

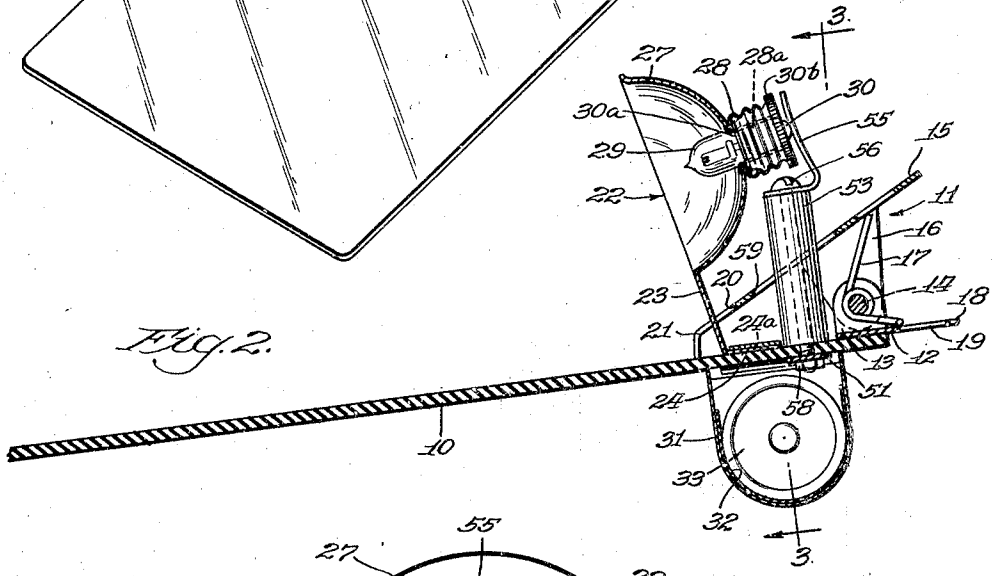
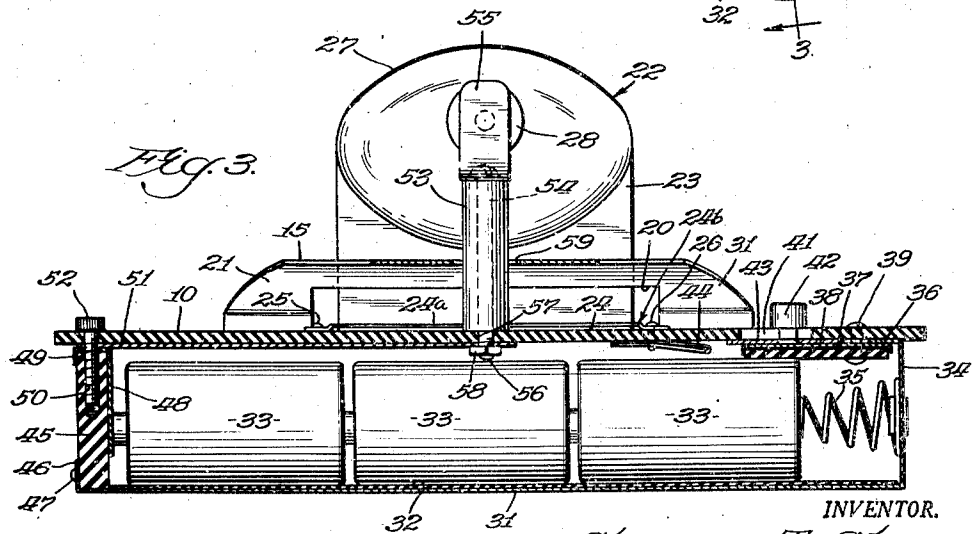


Fig. 3.



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ILLUMINATED WRITING UNIT

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7 Claims. (Cl. 240—6.4)

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The invention relates to an illuminated writing unit of the type comprising a base on the upper surface of which a sheet of paper or the like is carried and wherein an incandescent lamp is carried above the base for illuminating such sheet, the lamp deriving electrical energy from a battery or series of batteries carried by the base.

Illuminating writing units of the general type referred to are well known and ordinarily comprise specially constructed units involving rather complicated components adapted for special purposes. According to the present invention, an illuminating element is provided for a conventional type mounting board of the character including a spring-clamp at one end of the board for securing a sheet or sheets of paper to the upper surface of the board, the invention being directed in particular to the provision of an illuminating unit and support therefor that requires only slight alteration of the conventional clamp for the purpose of adapting the illuminating element to the board. The invention also relates broadly to improved means for carrying a battery or series of batteries in a convenient position below the board preferably along the same edge at which the clamp or securing means is positioned. Still further, the invention features improvements in the electrical connections between the battery casing and the incandescent lamp, such connections being combined as far as possible with supporting structure so that the entire unit is considerably simplified. Another aspect of the invention centers about the provision of improved means for detachably carrying the battery casing or housing on the board. Among other objectives sought to be achieved by the invention is the provision of an apparatus that is simple and economical to construct and highly efficient in use.

Other objects and features inherent in and encompassed by the invention will become apparent from a study of the ensuing description and accompanying sheet of drawings wherein there is described and illustrated, by way of example, a preferred embodiment of the invention.

In the drawings:

Fig. 1 is a perspective view showing the general construction of the unit;

Fig. 2 is a longitudinal sectional view emphasizing the mounting of the illuminating element and battery carrier; and

Fig. 3 is a transverse sectional view taken substantially on the line 3—3 of Fig. 2.

The unit chosen for the purpose of illustration comprises a base 10 in the form of a board that

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may be constructed of paper or fabric composition or any other appropriate material. The base includes at one end thereof an attaching element or securing device 11 for the purpose of securing a sheet of paper or like material to the upper surface of the board. The securing device includes a base or support 12 having a pair of transversely spaced ears 13 for carrying a transverse hinge pin 14 on which is mounted a movable clamp 15, the clamp including a pair of transversely spaced depending ears 16 apertured to receive the hinge pin 14. A torsion spring 17 (Fig. 2) is interposed between the base member 12 of the securing element and the clamp 15 for pressing the forward edge of the clamp downwardly toward the upper surface of the board 10 and thereby securing a sheet or sheets thereto.

The base 12 of the securing device extends beyond the proximate edge of the base 10 as at 18 and is apertured at 19 to provide an element by means of which the unit may be hung on a hook or the like. The forward portion of the clamp is cut out at 20 to bifurcate the clamp and provide a pair of transversely spaced furcations 21, the front edges of which serve to engage the sheet or sheets carried on the upper surface of the board 10. The securing device 11 just described is representative of a conventional type of device with the exception of the cut out portion 20. According to the present invention such conventional securing device is altered simply by the provision of the cut out 20 for the purpose of accommodating the improved illuminating unit.

The illuminating unit, designated generally by the numeral 22, comprises a metal reflector bracket 23 having a flanged bottom portion 24 detachably inserted and frictionally held beneath a bridge portion 24^a of a metal strap 24^b. Opposite ends of this mounting strap are secured to the board by a pair of transversely spaced metal rivets 25 and 26. Said bracket projects upwardly through the cut out portion 20 and between the furcations 21 of the forward portion of the clamp 15. Thus the bracket is spaced rearwardly of the forward edges of the furcations 21 to avoid interference with the effectiveness of the latter in securing a sheet or sheets to the board, that is, the furcations 21 reach forwardly beyond the bracket 23 to engage the material to be clamped onto the board.

The upper portion of the bracket 23 is pressed into shape to form a reflector 27 which focuses forwardly and slightly downwardly toward the upper surface of the board 10. A hole in the rear center of the reflector contains one end of

a threaded socket 28. This socket is an electrical conductor in electrical connection with the metal reflector and receives the base 29a of an incandescent lamp or bulb 29. The bulb base includes the usual center contact 30 and a flange contact 30a which is held in electrical contact with the socket 28 by a tubular screw plug 30b of insulating material.

A battery carrier in the form of an elongated casing or housing 31 is secured to the underside of the board 10. Casing 31 is U-shaped in cross section and is disposed with the open side of the U facing the under surface of the board. The interior of the casing includes an insulating liner 32 and such casing is adapted to carry a plurality of batteries or battery cells 33 in series. A metallic end wall 34 forms one end of the casing. A coil spring 35 establishes an electrical connection between this end wall and the opposed end of the adjacent battery 33. The upper portion of the end wall 34 includes an integral electrical conductor lip 36 (Fig. 3) which is hooked over a mounting element or member comprising a strip of insulating material 37 and a coextensive metallic strip 38. The lip 36 is electrically connected to the metallic strip 38 by hooking engagement therewith. Said strips 37 and 38 are secured to the under surface of the board preferably by means of a pair of rivets 39 (Figs. 1 and 3). Insulating strip 37 is engaged by the proximate battery 33 to provide means contributing to the snug support of the batteries in the battery casing.

The board 10 contains a slot 41 through which extends a headed switch-button 42 secured at the under surface of the board to a contact member 43 which is slidable in electrical contact with the conductor strip 38. There is sufficient gripping of the slidable contact between the under surface of the board 10 and the metallic strip 38 to maintain such contact in any set position and to maintain a firm electrical connection with the strip 38 which is in turn electrically connected to the end wall 34, and the electrical circuit extends through the coil spring 35 to the proximate battery 33.

The under surface of the board 10 carries within the confines of the battery casing 31 a fixed contact 44 electrically connected by means of the rivet 26 to the metal strap 24b (Fig. 3). When the button 42 is moved to the left in the slot 41 as viewed in Fig. 3, the switch 43—44 will be closed for extending the electrical potential of the right-most battery shell through the rivet 26, strap 24b, bracket 23 and socket 28 to the flange terminal 30a of the bulb 29.

The other end of the battery casing 31 includes an end wall 45 of insulating material rigidly connected to the semi-cylindrical wall of such casing by ears 46 formed on the latter and rivets 47 passing through such ears. A metal strip 48 constituting an electric circuit conductor is mounted on the end wall 45 in position for engagement by the center electrode of the left-most battery 33. An end portion 49 of this strip is hooked over the upper edge of the end wall and apertured in alinement with a threaded vertical bore 50 in such end wall. This portion 49 of the strip 48 is in contact with an electrical conductor strip 51 extending therefrom lengthwise of the battery casing along the under surface of the board 10 to a point substantially in vertical alinement with the base of the lamp 29. The portion of the conductor 51 proximate to the end wall 45 is apertured in alinement with the

bore 50 in said wall and the proximate portion of the board 10 is likewise apertured. A cap screw 52 having a knurled head is passed through the apertures just described and is threaded into the bore 50 in the end wall 45. Removal of the cap screw 52 permits the battery casing 31 to be dropped slightly downwardly and to be moved to the right (as viewed in Fig. 3) for the purpose of unhooking the lip 36 of the opposite end wall 34 from the strip 38, so that the casing may be removed from the board for replacement of batteries. A supporting member in the form of a tubular post 53 of insulating material extends upwardly from the upper surface of the board 10 to a point substantially directly below the base of the lamp 29. A spring metal clip 55 is mounted on the upper end of such post for electrically contacting the center contact 30 of the lamp, and includes a bent bottom portion apertured to receive a slender bolt 56 which passes downwardly through the post 53, through an opening 57 in the board 10 and through the apertured proximate end of the electrical conductor 51. Said bolt and a nut 58 thereon secure the parts together. An opening 59 in the paper clamping member 15 accommodates the post 53. The electrical circuit from the center electrode of the left-most battery through the conductor 48 and through the conductor 51 continues through the bolt 56 and the spring contact 55 to the base contact 30 of the lamp. When the switch 43—44 is closed both circuit legs from respective ends of the battery to the respective terminals 30 and 30a of the electric lamp will be complete and cause energization of such lamp.

The unit may be used in either a vertical or horizontal position or may be carried about, as desired. When the unit is used in its vertical position it may be hung on a hook by means of the opening 19 in the extension 18 on the clamping device 11. When the unit is used in its horizontal position one end of the board may rest on a table or the like and the other end of the board will be supported by means of the battery casing 31, in which instance the board will be in a convenient inclined position. When carrying the unit about it will be found that the location of the batteries at one end of and at the under surface of the board diminishes unbalance of the unit in comparison to an installation where the casing is mounted outwardly beyond the end of the board.

Portability of the unit is further enhanced by detaching the reflector bracket. This can be done quickly by simply moving such bracket forwardly between the clamp furcations 21 incident to sliding the base flange 24 from its frictionally gripped position between the mounting strap 24a and the upper surface of the board. When this super-structure is detached, the unit can be more readily accommodated in a brief case or in a package. Since the bulb 29 is removed with the reflector, the contingency of the fragile support for its center contact 30 being ruptured by bumping against objects in a brief case is averted.

It is of primary importance that the invention enables a conventional writing board to be but slightly altered to provide an illuminated unit. As previously stated, it is necessary only to cut out the forward portion of the upper clamping member 15 as at 20 to accommodate the reflector bracket 23. The ordinary clamp usually includes the opening 59 which accommodates the post 53.

It will be noted that the battery casing 31 is conveniently and removably carried on the base by means of the cap screw 52 at one end and by means of the hooked portion 36 of the end wall 34 at the other end, this latter portion simply engaging the mounting member comprising the strips 37 and 38. These strips serve also to carry the movable contact 43 of the electrical switch 43—44. The construction is thus compact and featured by unusual simplicity. Another compact and economical aspect of the construction resides in the manner of connecting the clip 55, post 53 and electrical conductor 51 to the board 10 by means of the bolt 56 and nut 58.

The embodiment of the invention chosen for the purposes of illustration and description herein is that preferred as the result of selective tests based upon requirements for achieving the objects of the invention and developing the utility thereof in the most desirable manner, due regard being had to existing factors of economy, simplicity of design and construction, production methods and the improvements sought to be effected. It will be appreciated, therefore, that the particular structural and functional aspects emphasized here are not intended to exclude, but rather to suggest, such other adaptations and modifications of the invention as fall within the spirit and scope thereof.

What is claimed is:

1. An illuminated writing unit, comprising: a base having an upper surface adapted to carry a sheet of paper or like material; an attaching device mounted on the base and including a movable bifurcated element for securing a sheet of paper or like material to the upper surface of the base; a bracket, including electric conductor means, mounted on the base and extending upwardly between the furcations of the securing element; a reflector carried on the bracket above the securing element including means for supporting an incandescent light bulb in electrical contact with the bracket conductor means and in position for such bulb to illuminate the sheet on the upper surface of the base; said securing element having an opening; a mounting post carried by the base and extending upwardly through said opening and behind the bracket to a point adjacent such bulb; electrical energy source accommodating means associated with the base; an electric conductor connecting the bracket conductor means and the energy source accommodating means; and an electric conductor carried by the post and connecting the bulb and energy source accommodating means.

2. An illuminated writing unit, comprising: a base having an upper surface adapted to carry a sheet of paper or like material; an attaching device mounted on the base and including a movable secured element for securing a sheet of paper or like material to the upper surface of the base; said element having a pair of openings; a bracket, including electrical conductor means, mounted on the base and extending upwardly through one of said openings; a light bulb carried by the bracket above the securing element and positioned to illuminate the sheet on the upper surface of the base; means electrically connecting the bulb and bracket conductor means; a source of electric energy associated with the base; an electric conductor connecting said source and the bracket conductor means; a mounting element carried by the base and extending upwardly through the other of the openings in the securing element to a point adjacent the light bulb; and an electric conductor carried by said mounting element and connected at one portion to the bulb and at another portion to the source of electrical energy.

3. An illuminated writing unit, comprising: a base having upper and under surfaces; means for carrying a sheet of paper or like material on the upper surface; electric light means carried by the base for illuminating such sheet; a battery carrier positioned under the base and including a casing U-shaped in cross section with the U opening to the under surface of the base; a first metallic end wall in the casing adapted to electrically contact a battery in the casing and including a lip in proximity to the under surface of the base; a mounting member carried by the under surface of the base and including a portion onto which the lip hooks to detachably secure the carrier at one end to the base; a movable electric contact member carried by the mounting member; means electrically connecting said contact member to the lip; a fixed contact carried by the base and electrically connected to the light means; an electric conductor carried by the under surface of the base within the confines of the casing and connected at one end to the light means and having its other end proximate to the opposite end of the casing; a second end wall at said opposite end of the casing; means detachably securing said second end wall to the base; and electric conductor means carried by said second end wall and connected to the aforesaid electric conductor and extending within the casing to electrically contact a battery in the casing.

4. In combination with a writing board having upper and under surfaces: a movable clamp having a forward edge for securing a sheet of paper or like material to the upper surface of the board, said forward edge of the clamp having a cut-out portion, a bracket, including electrical conductor means, mounted on the upper surface of the board and extending upwardly beyond the clamp through the cut out portion and rearwardly of the forward edge thereof; a reflector mounted on and electrically connected to the bracket conductor means facing generally toward the upper surface of the board; an incandescent lamp carried by the reflector and electrically connected thereto; a battery carrier comprising a casing positioned below the board and secured to the under surface thereof; an electric conductor connected to the bracket conductor means and entering the casing for contact with a battery therein; a second electric conductor entering the casing for contact with a battery therein and including a portion extending across the board in proximity to the clamp; and a vertical conductor member carried by the board and extending upwardly therefrom and forming an electrical connection between said second conductor and the incandescent lamp.

5. In combination with a writing board having upper and under surfaces and means at one edge thereof for securing a sheet of paper or like material to the upper surface of the board: a bracket, including electrical conductor means, secured to the upper surface of the board adjacent the clamp; an incandescent lamp carried by and electrically connected to the bracket and conductor means for illuminating the upper surface of the board and a sheet carried thereon; a battery carrier mounted on the under surface of the board substantially directly beneath the bracket; electric switch means including a fixed

contact connected to the bracket conductor means and a movable contact associated with the carrier so as to contact a battery carried therein; an electrical conductor running along the under surface of the board adjacent the carrier and having a first portion positioned to contact a battery in the carrier and a second portion substantially directly below the incandescent lamp; a hollow post of insulating material extending upwardly from the upper surface of the board in vertical alinement with the second portion of said conductor and with a portion of the lamp; a contact member at the upper end of the post in electrical contact with the lamp; and a metallic securing member passing through said contact member, the post, the board and the second portion of the electrical conductor for securing said parts together.

6. In combination with a writing board having upper and under surfaces, the upper surface being adapted to carry a sheet of paper or like material: a bracket, including electrical conductor means, secured to the upper surface of the board; an incandescent lamp carried by and electrically connected to the bracket and conductor means for illuminating the upper surface of the board and a sheet carried thereon; a battery carrier mounted on the under surface of the board; electric switch means including a fixed contact connected to the bracket conductor means and a movable contact associated with the carrier so as to contact a battery carried therein; an electrical conductor running along the under surface of the board and having a first portion positioned to contact a battery in the carrier and a second portion substantially directly below the incandescent lamp; a hollow post extending upwardly from the upper surface of the board in vertical alinement with the second portion of said conductor and with a portion of the lamp; a contact member at the upper end of the post in electrical contact with the lamp; and a metallic securing member passing through said contact member, the post, the board and the second portion of the electrical conductor for securing said parts together.

7. In combination with a writing board having upper and under surfaces: a movable clamp for securing a sheet of paper or like material to the upper surface of the board, said clamp having a cut-out portion; a bracket, including electrical conductor means, mounted on the upper surface of the board and extending upwardly beyond the clamp through the cut out portion; an incandescent lamp mounted on and electrically connected to the bracket conductor means for illuminating the upper surface of the board; a battery carrier comprising a casing positioned below the board and secured to the under surface thereof; an electrical conductor connected to the bracket conductor means and entering the casing for contact with a battery therein; a second electric conductor entering the casing for contact with a battery therein and including a portion in proximity to the clamp; and a conductor member carried by the board and forming an electrical connection between said second conductor and the incandescent lamp.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
853,352	Gibbs Jr.	May 14, 1907
1,211,759	Robins	Jan. 9, 1917
2,029,425	Kaylor et al.	Feb. 4, 1936
2,120,238	Brush	June 14, 1938
2,161,872	Kostal	June 13, 1939
2,261,000	Muldoon	Oct. 28, 1941
2,307,468	Raabe	Jan. 5, 1943
2,329,556	Raabe	Sept. 14, 1943
2,395,760	Quan	Feb. 26, 1946

FOREIGN PATENTS

Number	Country	Date
150,924	Australia	Oct. 11, 1937