Jan. 15, 1929. 1,698,839

A. DORSEY

MEANS FOR ILLUMINATING INDICIA AND THE LIKE

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Fig. 2.

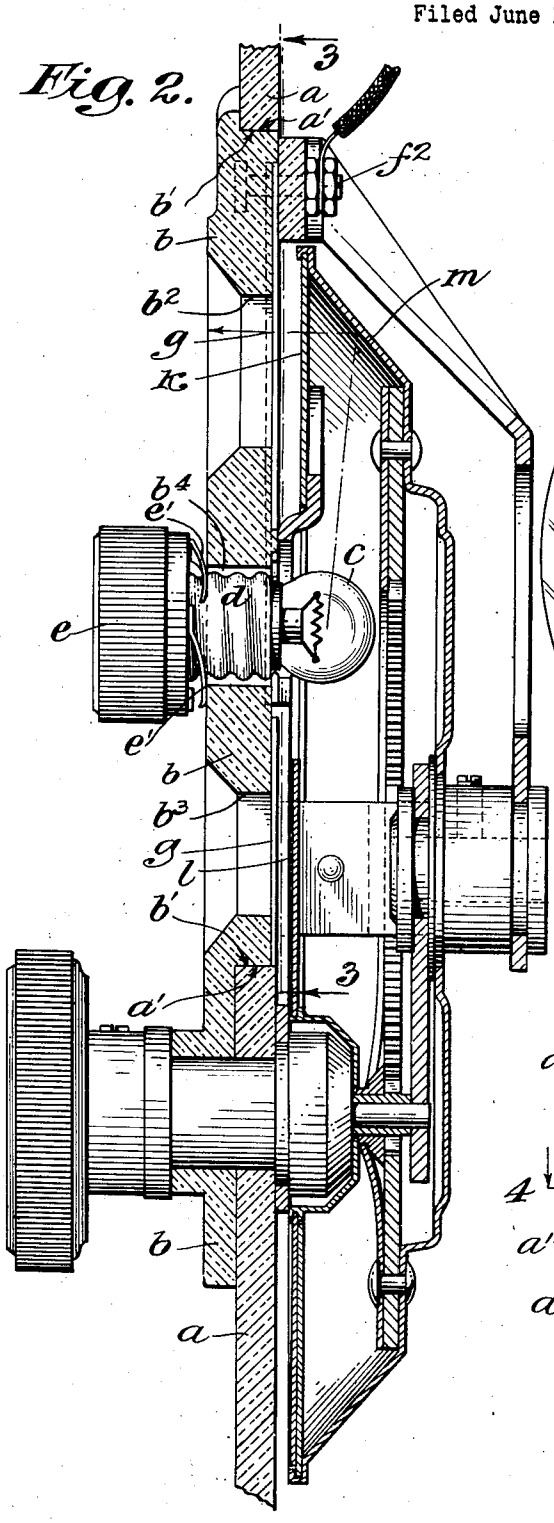


Fig. 1.

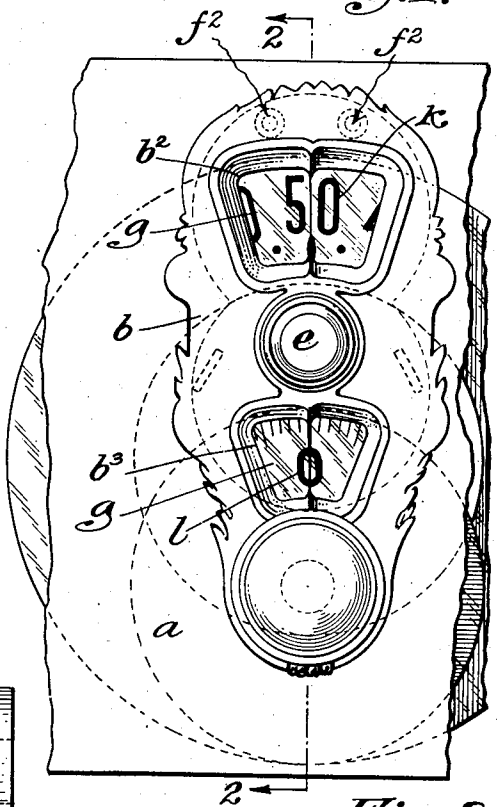
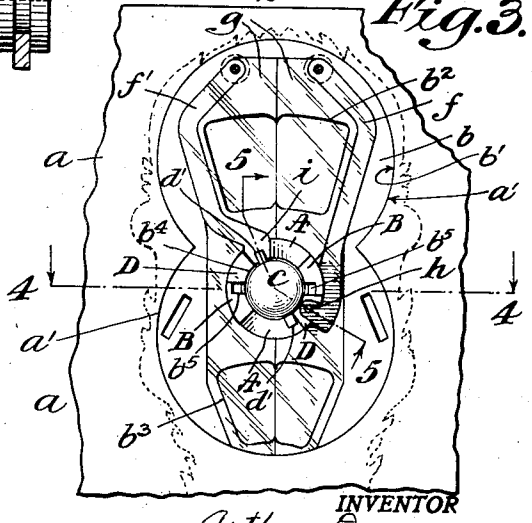


Fig. 3.



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Fig. 4.

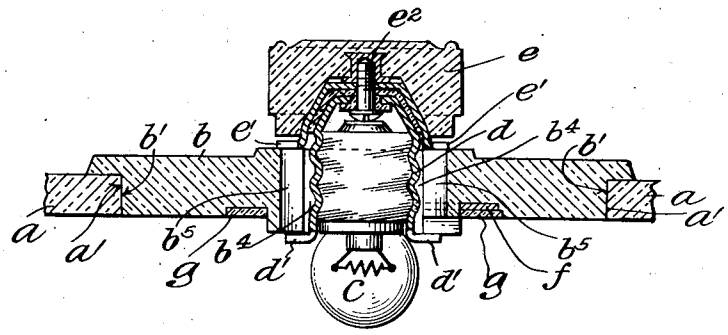


Fig. 6.

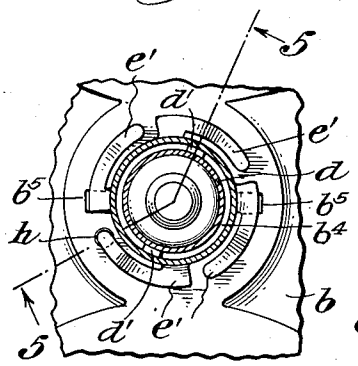


Fig. 5.

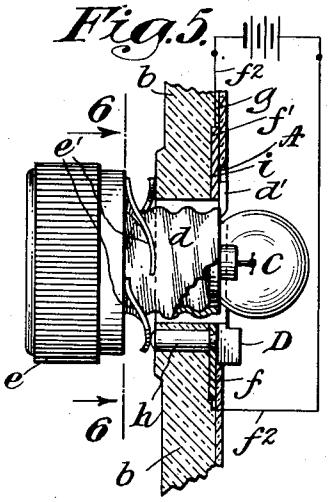


Fig. 7.

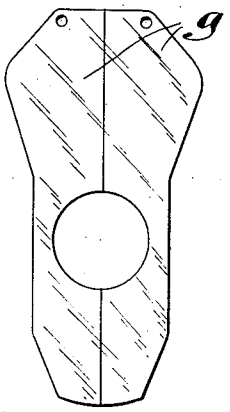
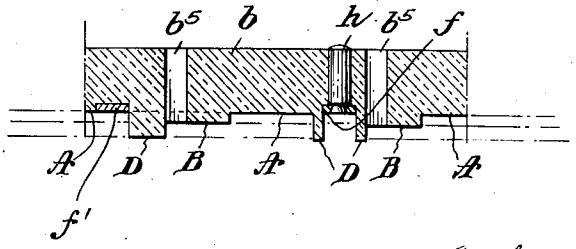


Fig. 8.



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MEANS FOR ILLUMINATING INDICIA AND THE LIKE

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Fig. 9.

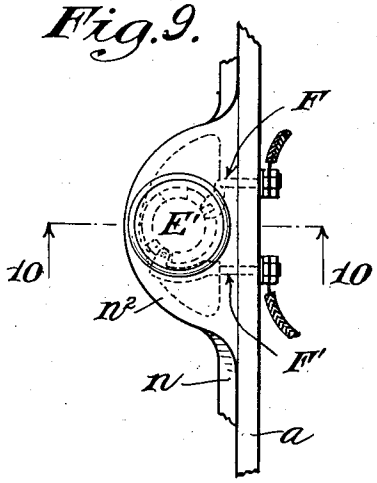


Fig. 11.

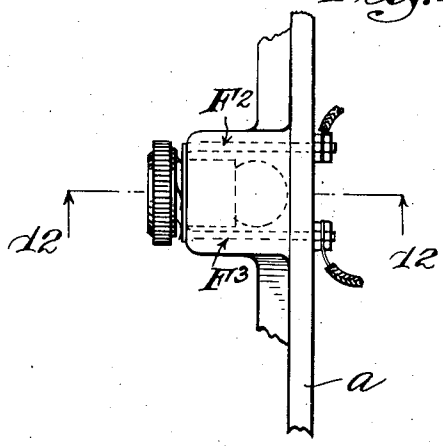


Fig. 10.

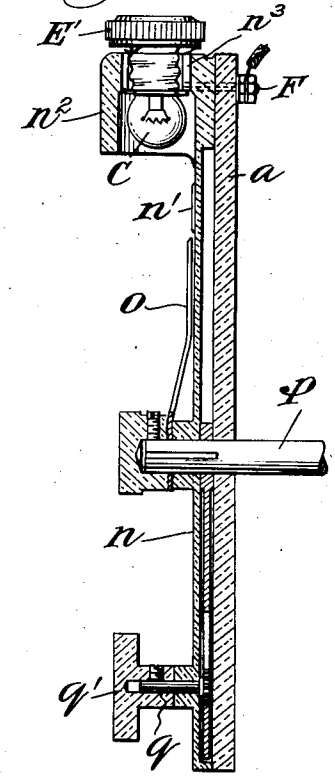
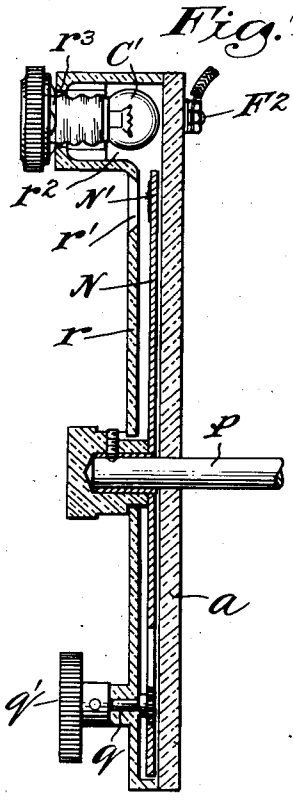


Fig. 12.



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Patented Jan. 15, 1929. 1,698,839

UNITED STATES PATENT OFFICE.

ARTHUR DORSEY, OF NEW YORK, N. Y.

MEANS FOR ILLUMINATING INDICIA AND THE LIKE.

Application filed June 18, 1927. Serial No. 199,668.

This invention relates to means for illuminating radio indicia and the like and has particular utility where a light is to be removably mounted either in front of or behind a panel and remain readily accessible for mounting and demounting. The principal object of the invention is to provide means for the purpose described which shall be simple in construction, certain in operation, well protected electrically and mechanically against derangement and which will permit the light source to be readily mounted in or removed from the panel and from the front side thereof and will permit it to be lighted and extinguished by simple manipulation without liability of displacement.

In accordance with the invention there is provided a light socket carried with a hand-knob and in which the light bulb may be screwed in conventional manner which socket with the light bulb may be mounted in the panel or cover plate by passing it through an opening therein and secured in place by the simple manipulation which is incident to engagement of parts through a type of bayonet joint. The lugs on the socket by which this connection is effected constitute electrical terminals and by manipulation of the socket these terminals may be brought into engagement with contacts mounted fixedly on the panel or cover plate or moved out of engagement therewith to interrupt the circuit but all without danger of inadvertently removing the socket since limit stops are provided which determine the possible degree of the possible range of operation of the socket unless it is intentionally pressed rearwardly against the action of restraining springs to enable the said lugs to be moved over said limit stops and brought into registry with grooves in the sides of the opening.

The contacts themselves are connected electrically with bus bars which terminate in binding posts to which wires of an electric circuit may be connected. The panel or cover plate which is, in the preferred form, of moulded composition has recesses to admit the bus bars and insulation thereof may be effectively provided by celluloid or other transparent material laid over the bus bars.

The improvements will be described at greater length in connection with the illustrated embodiment shown in the drawings, in which:

Figure 1 is a view in front elevation showing the window plate set in an opening in a panel and having associated therewith radio adjusting mechanism and with which the improved illuminating means may be associated.

Figure 2 is a view in vertical section through the adjusting mechanism shown in Figure 1 and taken on the plane indicated by the line 2—2 of Figure 1 and looking in the direction of the arrows and showing particularly the relation of the light source to the other parts.

Figure 3 is a fragmentary detailed view of the electrical parts constituting the circuit at the back of the window plate.

Figure 4 is a view in horizontal section taken through the parts shown in Figure 3 and looking in the direction of the arrows.

Figure 5 is a view in section through the parts shown in Figures 3, 4 and 6 and taken on the planes indicated by the lines 5—5 of Figures 3 and 6 and looking in the direction of the arrows.

Figure 6 is a sectional view taken on the plane indicated by the line 6—6 of Figure 5 and looking in the direction of the arrows.

Figure 7 is a view of the transparent insulator for the conductors and which extends over the windows.

Figure 8 is a detailed sectional view through the window plate.

Figure 9 is a view in plan showing a light mounted over a different type of valve in front of the panel.

Figure 10 is a view in section taken on the plane indicated by the line 10—10 of Figure 9 and looking in the direction of the arrows.

Figure 11 is a view in plan of another construction in which the light is mounted in the cover plate.

Figure 12 is a view in section showing the parts of Figure 11 and taken on the plane indicated by the line 12—12 of Figure 11 and looking in the direction of the arrows.

In the drawings the front panel a of a radio cabinet is shown as having an opening a' to receive a window plate b which may be shouldered at b' to conform generally to the configuration of the opening and yet present an ornamental or pleasing exterior to view. In the window plate are openings b^2, b^3, through which indicia of tuning mechanism are visible at all times, the present invention not being concerned with the details of such indicia or tuning mechanism. The principal object of the present invention is to provide simple illuminating means for such indicia which shall be mounted re-

movably within the window plate and disposed at the rear thereof to serve its purpose most effectively. To this end, there is provided an opening b^4 through the window plate preferably between the upper and lower openings b^2, b^3. Through this opening may be inserted a light bulb c screwed into a socket d which is carried within an insulated hand-knob e of pleasing appearance, this hand-knob only being visible when the parts are assembled. The knob e carries at its outer end several springs e' which press against the front of the window plate when the parts are assembled for the purpose which will later appear, these springs being insulated from the socket d but adapted through a binding screw e^2 to be placed in electrical connection with the filament within the bulb c when the parts are brought together. The front end of the socket d carries two diametrically extending lugs or keys d' which may be moved through diametrically disposed key-ways b^5 in the window plate along the opening b^4. The lugs d' constitute an electric terminal for the bulb and cooperate with terminal plates when the parts are assembled in a manner which will now be described.

In the rear face of the window plate, which is of insulating material, are set in two bus bars f, f', or electrical conductors connected electrically to a source of power as through binding posts f^2. Over these bars is laid a flat sheet g of transparent insulating material such as celluloid but serves the dual function of a window glass for the windows b^2, b^3, and an insulator for the electrical conductors. This sheet is preferably set in flush with the back wall of the window plate and is so formed as to accommodate the bulb c when it is moved through into position. One of the bus bars f is connected at its end with a stud h which extends through the window plate b and has its end exposed for contact with any one of the several spring conductors e' when the parts are assembled. The other bus bar f' is connected at its end with an arcuate contact plate i adjacent the periphery of the opening b^4. There is shown in Figure 8 a sectional view somewhat projected of the cross sectional form of the moulded composition at the rear face of the window plate b by which provision is made for conveniently enclosing the circuit of the bulb c or interrupting it by simple but positive manipulation and yet prevent its accidental displacement or removal and the accidental establishing of some other condition than that for which the bulb has been set. It is important in devices of this character to permit the insertion and removal of the bulb, to guard against its accidental withdrawal without some intentional manipulation thereof for its disengagement, to maintain the circuit of the bulb in the condition established and protect the bulb against the accidental establishing of a different condition in its circuit without intentional and positive manipulation. All of these desirable ends are accomplished by the improved construction. Considering for the moment only the cross sectional contour of the window b as illustrated in Figure 8 the insulation immediately surrounding the opening b^4 is moulded with relatively high and low points, A illustrating what will be termed, low sections, B slightly higher sections and D the highest sections. When the bulb is inserted by fastening the lugs d', d', through the key-ways b^5 engagement can be effected thereafter only by rotating the hand-knob e in a clockwise direction to bring the lugs out of alignment with their respective key-ways and in engagement with the rear face of the window plate. Rotation of the lugs in a counterclockwise direction is positively prevented because the high section D is disposed in the illustrated embodiment immediately adjacent to one of the key-ways b^5. Immediately adjacent the opposite side of the key-way is the section B of intermediate height and the lugs can be moved over such sections by pressing the springs e' against the front face of the window plate b. Continued rotation of the lugs in a clockwise direction will bring them off of the intermediate sections B and onto lower sections A in one of which is the contact plate i of the conductor f'. When the lugs ride in these lower sections A the light is lit if one lug is brought into engagement with the contact plate i. A slight reverse movement may carry the lug out of engagement with the plate i and onto insulating material thereby interrupting the circuit. In either of these conditons, however, there is no danger of the light being accidentally withdrawn from its mounting because before that can be done it has to be pushed in against the action of the springs e' and the lugs revolved in a counterclockwise direction to move over the shoulders of the low sections A onto the higher sections B, continued rotation bringing the lugs into line with their respective key-ways. The springs e' when the parts are assembled maintain such tension as to hold the lugs d' in frictional contact with the rear face of the window plate with sufficient force to prevent their accidental disengagement therewith.

It will be evident from the aforegoing description that normally the hand-knob e is exposed to view to the front of the window plate but being of an ornamental character and all other parts hidden thereby the effect is very pleasing. By slight rotation of the finger knob one lug d' will be brought into engagement with the contact plate i to close the circuit of the bulb and illuminate the indicia at the rear of the windows b^2, b^3. The indicia are indicated at k, l, and it will be observed that the bulb is generally at the

rear of the plate in which they rest. A reflector m serves to reflect the rays of light through the indicia effectively to give high visibility thereof. The light may be extinguished when not needed by rotating the hand-knob e as previously explained. Unless it is desired to remove the bulb c for the purpose of inspecting or replacing it no attention to the parts is needed.

Figures 9–12 show embodiments of the invention for illuminating dials which are mounted in front of panels. In Figures 9 and 10, for instance, there is shown a fixed dial n on the face of which are indicia indicated, for convenience, at n' and which may move a pointer o carried with condenser shaft p which in turn is driven in a manner well known through the vernier drive shaft q and hand-wheel q'. In this embodiment the dial n may have moulded or stamped therewith a sort of hood n^2 above the indicia n', this hood being provided with an opening n^3 through which may be inserted removably a bulb C of the same character as that heretofore described and having a hand-knob E on its base to facilitate manipulation. Bus bars F, F′, may be connected, respectively, in an electric circuit and terminate in terminals precisely in accordance with the construction heretofore described. Manipulation of the light incidental to its introduction and subsequent thereto will result in its secure mounting and convenient connection and disconnection with the circuit.

In Figures 11–12 there is illustrated a cover plate r which may overlie the dial N which is mounted in front of the panel and has indicia N′ thereon observable through a window r' in the cover plate. With the cover plate may be moulded or stamped above the window r' a recess r^2 in the front wall of which is an opening r^3 through which may be introduced a bulb C′ of the same character as that heretofore described. Bus bars F^2, F^3, connect the terminals for the bulb with a source of electrical energy as heretofore described.

In the embodiments illustrated in Figures 9–12 it will be clear that the bulb is mounted in such relation to the indicia as to illuminate it most effectively while direct rays of the bulb are shielded from the observer's eyes. The base of the bulb for manual manipulation is always presented in convenient and accessible position. The construction is compact, simple and sightly.

Changes in details of construction may be made and elements of known character may be substituted for some of those conventionally illustrated without departing from the scope of the invention.

What I claim is:

1. Supporting means for a light source comprising a fixed element having an opening therein and a slot along the opening, electric conductors adjacent to the opening, electric conductors carried on the light source, one of said conductors being movable through said slot and both of said conductors being engageable, respectively, with the first named electric conductors when the light source is inserted in the opening, the last named electric conductor on the light source being disengageable from its co-operating conductor on the fixed element while engageable with the fixed element to support the light source on the fixed element with its circuit open.

2. Illuminating means for radio indicia and the like including in combination with a panel and indicia mounted in back thereof, a light source, said panel being provided with a window through which the indicia may be observed and an opening through which the light source may be introduced, electric conductors mounted at the rear of the panel and terminating adjacent to said opening and an electric conductor carried with the light source and engageable with said first named conductors to close the circuit and secure the light source upon the panel.

This specification signed this 17th day of June A. D. 1927.

ARTHUR DORSEY.