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H. M. HAYS

COMBINED LIGHT AND STRUCTURE

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Fig. 1.

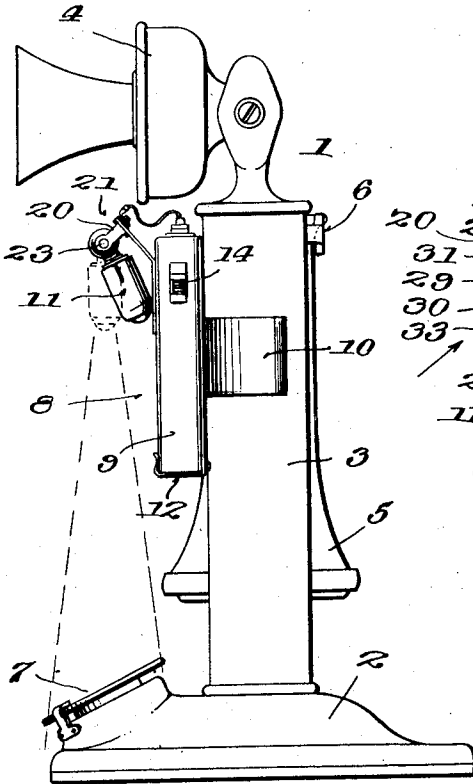


Fig. 2.

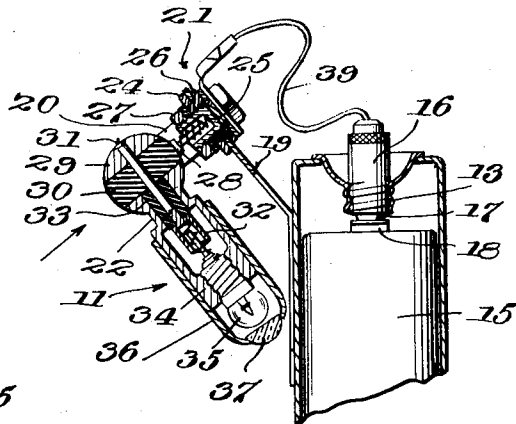


Fig. 3.

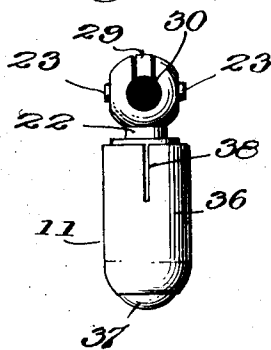
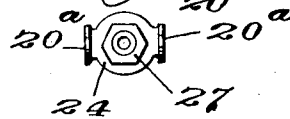


Fig. 4.



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COMBINED LIGHT AND STRUCTURE.

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My invention relates to combined light and structure devices and is particularly adapted for use in connection with a telephone. For convenience, the invention will be described and illustrated as so used, but it is to be understood that such use is only an example of how the invention may be used to advantage and that it is not limited to this particular use.

Subscribers' telephone sets of the desk set type with a substation dial mounted on the base are frequently used on desk or tables where the only source of light available is that furnished by the usual source of illumination for the room in which the set is situated, which source is not favorably disposed for most convenient use of the dial and the telephone directory, memorandum pad, etc., frequently used in conjunction therewith, due to remoteness of the light source and the shadowing of the instrument by the user or nearby objects. It is the main object of the present invention to overcome this inconvenience by the provision of an electric light and structure, preferably with a self contained source of current, arranged in such cooperative relation with the combined desk set and dial as to permit convenient use of the instrument independently of the usual source of light with maximum economy of current supply and maximum efficiency in the use of the instrument and associated directory, writing paper, etc.

A further object of the invention is to provide a device of the above type so constructed and arranged that the proper method of using the same will be readily apparent without special instruction.

Other objects of the invention will be apparent from a perusal of the following specification and the drawings accompanying the same.

In the drawings:

Fig. 1 is a side view of a telephone desk set and dial equipped with a device embodying one form of my invention,

Fig. 2 is a fragmentary side view of the device per se slightly enlarged and partly in section,

Fig. 3 is a front view of the upper portion of the lamp holder removed,

Fig. 4 is a front view of the pivoted movable bracket with lamp holder removed.

Referring to the drawings in detail, 1 indicates a telephone desk set comprising the

usual base 2, post 3, transmitter 4, receiver 5 supported on the switch-hook 6, and a substation dial 7 mounted on the base 2. Secured to the telephone post 3 by any suitable means is my novel illuminating device indicated in general by the numeral 8 and comprising, in the illustrated example, a battery casing 9, mounting clamp 10, and spot light 11 mounted on the casing by a universal joint connection permitting the spot light to be swung out from the position shown into the dotted line position and further in front or to either side of the telephone set. Clamp 10 in the present instance is a spring clamp fixed to the casing, enabling the same to be readily applied to or removed from the telephone post. The battery casing 9 may be a standard pocket flash-light casing as indicated in Figs. 1 and 2, having a latched door or cover 12 to permit the insertion or withdrawal of a battery, with a threaded socket 13 and a switch 14 for controlling the battery circuit. One terminal of the battery 15 is connected to the body of the casing and the threaded socket 13 in the usual manner not shown, while the other terminal 18 of the battery makes contact with the contact 17 of a single conductor attachment plug 16 engaging in the socket 13 of the casing.

A main lamp bracket 19 is secured to the side of the battery casing in electrical connection therewith and at its upper off-set portion carries a movable bracket 20 mounted thereon by a pivotal mounting indicated generally by 21, bracket 20 in turn supporting a lamp holder 22 pivotally mounted thereon by pivotal bearings 23. It should be observed at this point that, within the broad scope of the invention, the bracket 20 can be supported directly by the telephone standard or similar support and that, although I have shown a self-contained source of current, this is not essential as any other source of current may be used. The pivotal axis of the lamp holder 22 and that of the movable bracket 20 are arranged at right angles to each other to form a set of gimbal bearings for the light holder to permit universal movement thereof. The arms 20^a of the movable U-shaped bracket 20 are joined by a disk or washer shaped yoke 24 (Figs. 1, 2 and 4) which moves about the hollow bolt 25 constantly in electrical contact with the bracket 19, while the shank of the bolt 25 is insulated from the members 19 and

24 by the insulating bushing 26 which for convenience in assembling may be built up as a collar and washers of insulating material as indicated in Fig. 2, the whole being clamped
 5 between the head of the bolt 25 and the nut 27. Nested in the hollow bolt 25 is a spring tensioned contact brush 28 arranged to contact with the spherical head of the lamp holder 22. The head of the lamp holder 22 is
 10 provided with an arc-shaped contact member 29 (Figs. 2 and 3) insulated from the body of the holder by the insulating block 30 and held in place and electrically connected through the conductor rod 31 to the center
 15 contact member 32, the conductor rod being secured in the holder and insulated therefrom by the bushing 33. The center contact member 32 is the usual form of spring-pressed contact member similar to the brush member
 20 28. The lower portion of the light holder 22 forms a threaded socket 34 for the reception of a lamp 35 whose base contacts make connection with the socket and central contact member 32 in the usual manner as indicated
 25 in Fig. 2. To complete the spot light structure a cylindrical lamp casing 36 provided with a lens 37 is arranged to telescope over the socket member 34, as clearly shown in Fig. 2, the casing 36 being split part way
 30 down from its upper or open end as indicated at 38, Fig. 3, to produce a resilient clamping engagement between the telescoping members. This adjustability of the casing and its lens enables the light from the lamp 35
 35 to be changed from a relatively wide beam to a narrow beam with consequent variation in intensity of illumination.

As the socket member 34 and lamp holder 22 are of metal and are in contact with the
 40 movable bracket 20 through the pivotal bearings 23, electrical connection is extended from the battery casing 9, which forms one terminal of the battery when switch 14 is closed, through the supports or brackets 19 and 20
 45 to the lamp holder and lamp socket. From the other terminal 18 of the battery, electrical connection is extended through the attachment plug 16, conductor 39 and hollow bolt 25 to the brush member 28 from which, when
 50 the contact member 29 is moved into engagement therewith by movement of the lamp holder, this connection is extended through contact 29, and rod 31 to the lamp-engaging contact 32.

55 In operation, with the several parts in the position shown in Figs. 1 and 2, the lamp circuit is open because the brush contact member 28 is resting against the insulation block 30 out of contact with the arcuate contact 29. When the spot light is moved forward for use, the lamp holder 28 is rocked
 60 about its pivotal bearing 23 which moves the arc-shaped contact member 29 into engagement with the stationary contact brush 28, completing the energizing circuit of the lamp

35 which may be traced from the battery terminal plug 16 through conductor 39, hollow bolt 25, brush 28, contact 29, rod 31, contact 32, lamp 35, socket member 34 lamp holder 22, brackets 20 and 19, and through the bat-
 70 tery casing 9 and switch 14 to the other terminal of the battery. The lamp will remain lighted through a predetermined angular movement about the bearing 23 and will not be extinguished by movement about the piv-
 75 otal bearing 21. With the lamp 35 thus energized, the width of the beam may be adjusted according to the object to be examined by sliding the lamp casing on the lamp socket while its direction may be adjusted to any
 80 desired angle by virtue of the universal joint or gimbal bearing support formed by the different pivotal connections. After use, the operator, by moving the spot light back to the position shown in Figs. 1 and 2, or to the
 85 opposite of this position, causes the contact member 29 to again move out of engagement with the brush 28, opening the energizing circuit of the lamp 35. Switch 14, it will be
 90 observed, provides additional means for making and breaking the lighting circuit and in some cases it may be desirable to control lighting of the lamp with this switch, either
 95 alone or in conjunction with the other switch.

An advantage of the ability to focus the
 100 light from a wide beam to a narrow intense beam is that for careful examination of small objects or characters the intensity of light may be increased by reducing the area of illumination to an amount commensurate
 105 with the magnitude of the object examined, thus affording means for increasing the degree of illumination without an increase in energy supply which is a marked advantage where the energy supply is limited, as in a
 110 battery lamp of the portable type.

It is to be understood that various changes in the device above described may be made without departing from the broad scope of the invention.

What I claim is:

An adjustable lamp mounting and switch comprising a main bracket, a movable bracket pivotally mounted on and in electrical contact with the main bracket, an electric light holder pivotally mounted on and in
 115 electrical contact with said movable bracket with its pivotal axis at substantially right angles to the pivotal axis of said movable bracket, an arc-shaped contact member carried by and insulated from said holder and arranged concentric with the pivotal axis of
 120 said holder, a stationary brush member mounted on said main bracket substantially concentrically with the pivotal axis of the movable bracket and extending therethrough into engagement with said arc-shaped contact member, said brush member being insulated from both said brackets, an electric light carried by the electric light holder hav-
 125 130

ing one terminal in electrical connection with said arc-shaped contact member and the other terminal in electrical connection with the holder, and a source of current connected
5 with said main bracket and brush member, said arc-shaped contact member being proportioned to permit engagement with the brush member throughout a predetermined extent of movement of the lamp holder about its pivot.¹⁰

In testimony whereof I hereunto affix my signature.

HAROLD M. HAYS.