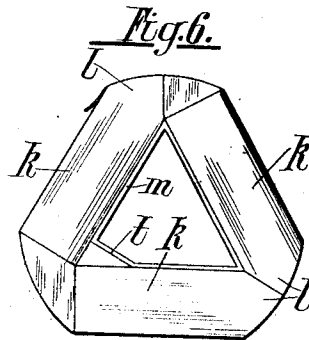
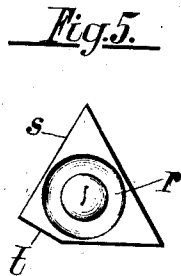
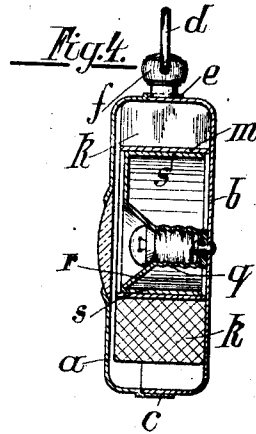
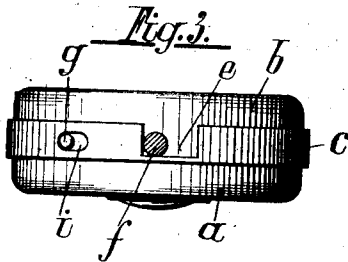
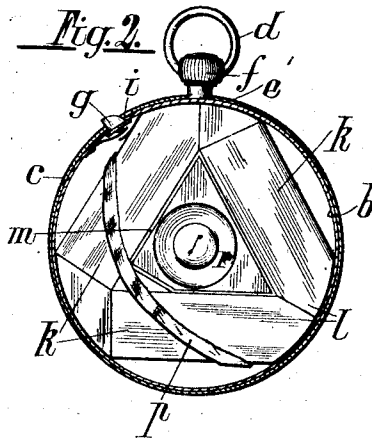
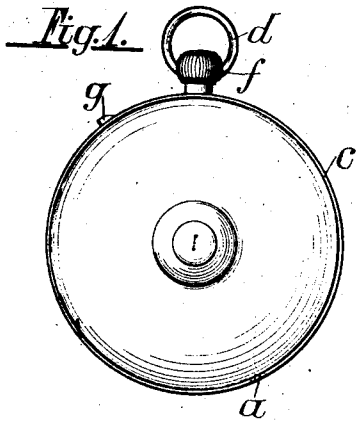


E. NEUDÖRFFER.
ELECTRIC POCKET LAMP.
APPLICATION FILED JULY 6, 1911.

1,074,376.

Patented Sept. 30, 1913.

3 SHEETS—SHEET 1.



Witnesses
Mary H. Farr
Grace C. Breton

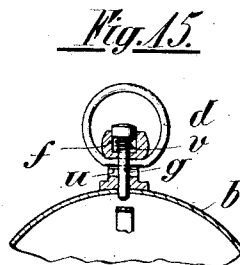
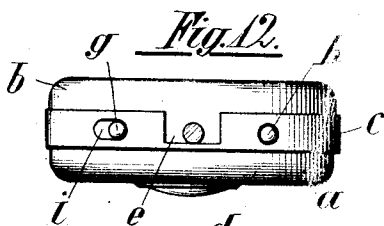
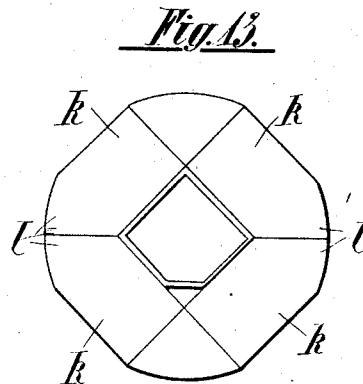
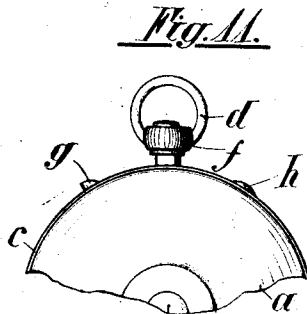
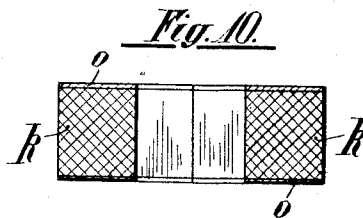
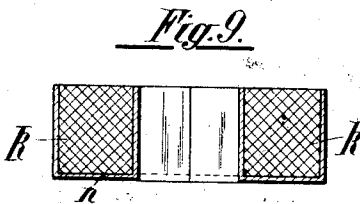
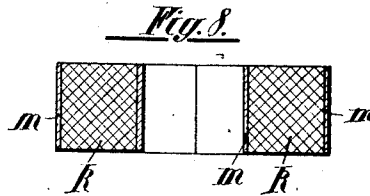
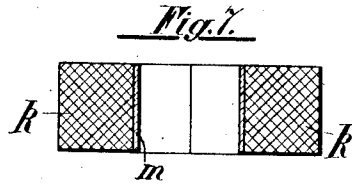
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E. NEUDÖRFFER.
ELECTRIC POCKET LAMP.
APPLICATION FILED JULY 8, 1911.

1,074,376.

Patented Sept. 30, 1913.

3 SHEETS—SHEET 2.



Witnesses
Mary H. Farr
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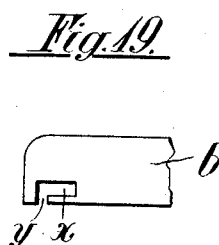
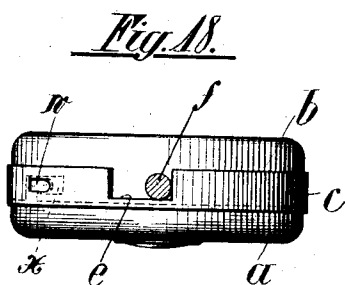
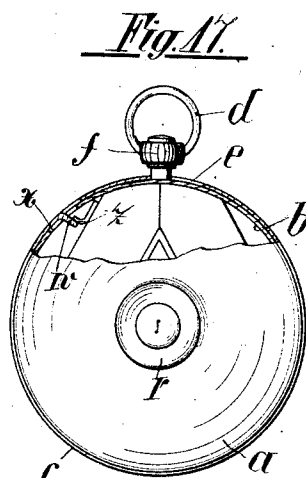
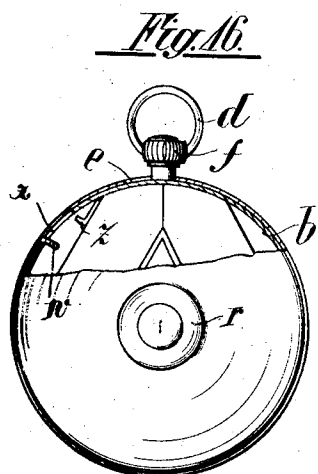
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E. NEUDÖRFFER.
ELECTRIC POCKET LAMP.
APPLICATION FILED JULY 6, 1911.

1,074,376.

Patented Sept. 30, 1913.

3 SHEETS—SHEET 3.



Witnesses
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UNITED STATES PATENT OFFICE.

EMIL NEUDÖRFFER, OF STUTTGART, GERMANY.

ELECTRIC POCKET-LAMP.

1,074,376.

Specification of Letters Patent.

Patented Sept. 30, 1913.

Application filed July 6, 1911. Serial No. 637,169.

To all whom it may concern:

Be it known that I, EMIL NEUDÖRFFER, a citizen of the German Empire, residing at Stuttgart, in the Kingdom of Württemberg, Germany, have invented certain new and useful Improvements in Electric Pocket-Lamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved electric pocket lamp; and the improvement consists substantially in case of the lamp being made of two dished parts, the edges of which engage one over the other and may be turned relatively to one another, whereby a contact is closed and opened.

By the use of two dished parts the manufacture of the case is greatly simplified, and by the edges being guided one upon the other, that is to say by engaging over one another, considerable strength or rigidity is obtained, and hinges are also entirely dispensed with. One dish or cup is provided with a ring and stem like those of a watch, while the other dish has a recess with which it engages around the stem of the ring, the recess also having a spring action and serving as an abutment or stop for limiting the turning movement of the dishes. One dish also carries a contact stud, which when the dish is turned depresses the contact stud and thereby permanently closes the circuit. The contact may also be arranged in the stem of the ring and be kept continuously engaged by means of an angular guide slot or the like. Several contacts may also be employed which, separately or together, make and break the circuit by turning the dishes separately or together, or a shifting device may be provided by which the turning to right or left may be effected more or less. The contact may also be disposed in such a way that it is not capable of being reached from the outside, so that any unauthorized burning of the pocket lamp, which is not impossible in the case of lamps with external contacts, is entirely prevented. This may be attained by one of the dishes having an inwardly directed tongue, stop or the like, which projects through a slot, recess or the like in the other dish and lies in the path of a contact piece, so that when

the dishes are turned the tongue moves in the slot and thus encounters the contact piece, whereby the circuit is closed. The inwardly directed tongue may also be provided, without a guide slot, in which case the tongue must be arranged on the inner dish. Finally, a battery is provided which is particularly characterized by its simple manufacture and its convenient and certain operation. This battery substantially consists of separate cells or elements preferably of rectangular form, the ends of which are roof-shaped. By having this form the cells adapt themselves exactly to the walls of the case whereby considerably larger metal surfaces are obtained than in the case of cells of the ordinary cylindrical form and are also much cheaper to make. Any suitable number of separate cells may of course be used and the cells may be arranged into one, two or more batteries, several contacts being also provided, so that either one or other of the batteries or several of them may be used together. The separate cells are held together by a frame or the like, so that they form a whole and the frame may be of suitable form, thus, for instance, it may consist of a holder or have a U-shaped form in which the cells lie, the open side of the U-shaped form being also adapted to be closed by a cover, or the holding frame may consist of a foundation or support and finally, the frame may have an angular form. The connection of the frame with the cells may be made by means of a wrapping or be any suitable one.

The incandescent lamp socket is shaped in such a way that a prolongation forms the reflector which has a flange which serves for holding the battery, and in order to always obtain the correct position of the battery the flange for holding the battery is provided at one or more places with a special beveling or with a projection, cam or the like, and the battery is shaped in such a way at a suitable place that the battery can only be inserted in the case in a given position, whereby a correct position of the poles is insured and the battery can also be inserted by a person who is not an expert.

In order to allow of the battery being removed if necessary, it is provided with means for lifting it, which preferably consists of a handle in the form of a band.

The invention will now be more particularly described in connection with some forms of construction by way of example in the accompanying drawings.

Figure 1 is a front view of the improved pocket lamp; and Fig. 2, a similar view with the cover removed; Fig. 3, a plan view, with the stem of the ring in section; Fig. 4, a side view in section; Fig. 5, a view of the holder for the incandestent bulb; and Fig. 6, a battery; Figs. 7 to 10 are sections of the battery showing various forms of construction; Fig. 11 is a partial front view; and Fig. 12, a plan view of the arrangement with several contacts; Fig. 13 is another form of construction of the battery; Fig. 14 is a partial side view; and Fig. 15, a partial sectional front view of the arrangement of the contact in the stem of the ring; Figs. 16 and 17 are front views partially in section of another arrangement of contact with the contact opened and closed; Fig. 18 is a plan view of Fig. 16 with the stem in section; Fig. 19, a view of a part of the dish provided with the guide slot.

The case consists substantially of two dishes or cups *a b* which engage one over the other and, for this purpose one of the dishes, for instance, *a*, is provided with a rim *c*, whereby the overlap of the dish *a* is limited, and the case is also rendered stronger or more rigid (Figs. 1-4). The dish *b* is provided with a ring *d*, while the dish *a* has a recess *e* in order to engage around the stem *f* and also to give a springy action to the dish *a*.

A contact stud *g* is provided for closing the circuit, which stud passes through the edges of the two dishes *a b*, so that when the contact *g* is depressed the circuit is closed. In order, however, automatically to keep the circuit continuously closed, it is only necessary to turn the dishes *a* and *b*, whereby the edge of the dish engages over the contact stud *g* and holds it thereby in a depressed condition. The turning movement is also limited by the slot *e*. Several contacts may also be provided, as shown, for instance, in Figs. 11 and 12, whereby, by turning the dishes *a* and *b*, the contacts *g* and *h* may be depressed separately or together, whereby the circuits are switched on or off or changed separately or together. One of the apertures in the rim *c* of the dish *a* is also elongated, so that a slot *i* is formed with the object of enabling the contacts *g* and *h* to operate correctly.

As shown in Fig. 16, the contact is placed internally, so that it is fully protected. The contact here consists of an inwardly directed tongue *w* which is preferably cut out of the dish *a* and the tongue *w* which passes through a slot *x* of the other dish *b* serving as guide and abutment. The slot *x* is bent at an angle and has an entrance *y*, in order

to enable the tongue *w* to be inserted (Figs. 18 and 19). When the dishes are turned, the tongue *w* encounters the contact piece *z*, and the circuit is closed. By the use of an open slot, the dish also has a spring action, whereby a more certain holding together of the two dishes is obtained. Instead of passing the tongue *w* through the slot *x*, the tongue may also be arranged on the inner dish, so that the slot is dispensed with, the turning being then limited by the recess *e*.

Cells *k* are employed as batteries, which cells have a rectangular form and which are shaped at one end *l* like a roof. In order to hold the elements or cells *k* together, a frame *m* is employed, which, for instance, rests on the inner faces of the cells *k* (Figs. 6 and 7) or several frames *m* may be employed, which embrace the inner and outer faces of the cells *k* (Fig. 8).

As shown in Fig. 9, the battery lies in a U-shaped frame *n* which may be covered above, while Fig. 10 shows another form of construction of the frame. In this the frames *o* are arranged above and beneath the cells *k*. The frames *n*, *m* and *o* are connected in any suitable way with the battery, for instance by wrapping a band or the like around them. The battery is preferably provided with a means for lifting it *p*, for instance a band serving as a handle, in order to enable the battery to be easily removed (Fig. 2). The incandescent lamp holder *q* is also formed as a reflector *r*, and also has a flanged edge *s* which serves as holder for the battery, and, in order to insert this latter in a correct position in the case, the flanged edge *s* is beveled or provided with a projection at one or more places *t*, while the battery has a corresponding form which only allows of the battery being inserted when it is in a correct position, whereby the poles always lie in the right position. Any suitable number of cells *k* may be employed and they may be arranged relatively to one another in such a way that several batteries are formed (Fig. 13), which are necessary when several contacts *g* and *h* are used. It will be noted that the cups *a* and *b* constitute flanged disks, and that the contacts are respectively mounted on said disks. The disks are capable of a limited oscillatory movement to control said contacts.

Instead of arranging the contact as shown in Figs. 1 to 3, the contact knob *g* may also be arranged in the ring stem (Figs. 14 and 15). If in this case, for instance, the contact is to be kept continuously in action, it is only necessary to turn the ring *d* connected with the contact *g* after the latter has been depressed, whereby the ring passes into a guide slot *u* and is there retained. In order to break the circuit it is only necessary to turn back the ring *d*, and the contact *g* and ring *d* are raised by means of a spring *v*.

I declare that what I claim is:

1. In a portable pocket lamp having a battery, two opposed members forming a battery casing and connected with each other for relative rotary movements, and battery contacts respectively mounted eccentrically on said members and adapted to be engaged and disengaged by movements of said members.
2. In a portable pocket lamp having an electric battery, two flanged disks forming a battery casing and being connected with each other for a relatively rotary movement, and battery contacts respectively mounted eccentrically on said disks and controlled by said rotary movement.
3. In a portable pocket lamp having an electric battery, two flanged disks forming a battery casing and being connected with each other for a limited relative oscillatory movement, and battery contacts controlled by the said movement.
4. In a portable pocket lamp having an electric battery, two flanged disks having a relative oscillatory movement and constituting a battery casing, and being in frictional engagement with their adjoining flanges, and battery contacts controlled by the said rotary movement.
5. In a portable pocket lamp having an electric battery, a battery casing comprising two flanged disks being in frictional engagement with their adjoining flanges, and capable of a liquid relative oscillatory movement, and battery contacts respectively mounted eccentrically on and controlled by said oscillatory movement.
6. In a portable pocket lamp having an electric battery, two peripherally flanged relatively oscillatory members constituting a battery casing, and being in frictional engagement with their adjoining flanges, a recess on one member, and a stem on the other member constituting means for limiting the movements of the said members, and battery contacts controlled by the said movements.
7. In a portable pocket lamp having an electric battery, two peripherally flanged relatively rotary members constituting a battery-casing, and being in frictional engagement with their flanges, a battery contact on one member projecting through the flange of the other member, a slot in the said other flange surrounding the said contact, and a second contact adapted to be brought into engagement with the first contact by the rotary movement of said members.
8. In a portable pocket lamp having an electric battery, two peripherally flanged relatively rotary members constituting a battery casing, and being in frictional engagement with their adjoining flanges, a battery contact on one member projecting through the other flange, a laterally open slot in the said other flange surrounding the said contact, and a second contact adapted to be brought into engagement with the first contact by the said rotary movement.
9. In a portable pocket lamp having an electric battery, two peripherally flanged relatively rotary members constituting a battery casing and being in frictional contact with their adjoining flanges, a battery contact on one member projecting through the other flange, a slot in the said other flange surrounding the said contact, a recess on one flange, and a stem on the other flange constituting means for limiting the said rotary movement, and a second contact adapted to cooperate with the first contact at the end of the said rotary movement.
10. In a portable pocket lamp having an electric battery, two peripherally flanged relatively rotary members constituting a battery-casing and being in frictional engagement with their adjoining flanges, a battery contact adapted to be moved into and maintained in its operative position by the said rotary movement, and a second contact adapted to cooperate with the first contact.
11. In a portable pocket lamp having an electric battery, two peripherally flanged relatively rotary members constituting a casing for the said battery, and being in frictional engagement with their adjoining flanges, a manually operable battery contact projecting through both flanges, and adapted to be moved into and maintained in its operative position by the one flange at the said rotary movement, and a second contact adapted to cooperate with the first contact.
12. In a portable pocket lamp having an electric battery, two peripherally flanged relatively rotary members constituting a casing for the said battery and being in frictional engagement with their adjoining flanges, means for limiting the said rotary movement, a manually operable battery contact projecting through both flanges and adapted to be moved into and maintained in its operative position by the one flange at the end of the said rotary movement, and a second contact adapted to cooperate with the first contact.
13. In a portable pocket lamp having an electric battery, two peripherally flanged relatively rotary members constituting a casing for the said battery and being in frictional engagement with their adjoining flanges, a battery contact adapted to be moved into and maintained in its operative position by a rotary movement in one direction, and a second contact adapted to be moved into and maintained in its operative position by a rotary movement in either direction.
14. In a portable pocket lamp, the combination with a casing comprising two periph-

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erally flanged members connected with each other for a relative rotary movement, of a lamp-carrier, and a plurality of electric cells forming a seat for said lamp carrier and
5 having contacts controlled by the said members.

15. In a portable pocket lamp, the combination with a casing comprising two peripherally flanged members connected with each
10 other for a relative rotary movement, of a lamp carrier, a plurality of electric cells inclosing the said lamp-carrier, a frame for the said cells, and contacts connected to the said cells and controlled by the said members.
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16. In a portable pocket lamp, the combination with a casing comprising two peripherally flanged members connected with each other for a relative rotary movement, of a
20 lamp carrier having a polygonal periphery, a plurality of electric cells engaging the sides of said periphery, and fitting the said casing with their outer ends, and contacts on the said cells controlled by the said members.
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17. In a portable pocket lamp, the combination with a casing comprising two peripherally flanged members connected with each other for a relative rotary movement, of a
30 lamp carrier having a polygonal periphery, a plurality of cells engaging the sides of and forming a seat for the said lamp carrier, circular ends on the said cells fitting the said casing, and contacts on the said cells controlled by the said members.
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18. In a portable pocket lamp, the combination with a casing comprising two peripherally flanged members connected with each other for a relative rotary movement, of a

lamp carrier having a polygonal periphery, a plurality of electric cells engaging the
40 sides of and forming a seat for the said lamp-carrier, circular ends on the said cells fitting the said casing, a carrying frame for the said cells, and contacts on the said cells controlled by the said members.

19. A portable pocket lamp comprising a casing, a lamp-carrier having an irregular
45 polygonal periphery, an electric battery fitting the casing with its outer periphery, and a central aperture in the said battery conforming to the shape of the said lamp-carrier, to properly position said carrier relative to said battery.
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20. A portable pocket lamp comprising a casing, a lamp-carrier having an irregular
55 polygonal periphery, an electric battery fitting the casing with its outer periphery, and a corresponding polygonal central aperture in the said battery, forming a seat for the said lamp-carrier, to properly position said
60 carrier relative to said battery.

21. A portable pocket lamp, comprising a circular casing, a lamp carrier having an irregular polygonal periphery, an electric battery circularly shaped on its outer edge, and
65 fitting the said casing, and a corresponding polygonal central aperture in the said battery forming a seat for the said carrier, to properly position said carrier relative to said battery.
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In testimony whereof I affix my signature, in presence of two witnesses.

EMIL NEUDÖRFFER.

Witnesses:

KARL THEADOR JASPER,
GEORG JOSEPH HANSELMANN.