

E. S. CAYWOOD.
FLASH LAMP.

APPLICATION FILED OCT. 28, 1907.

907,969.

Patented Dec. 29, 1908.

Fig. 1

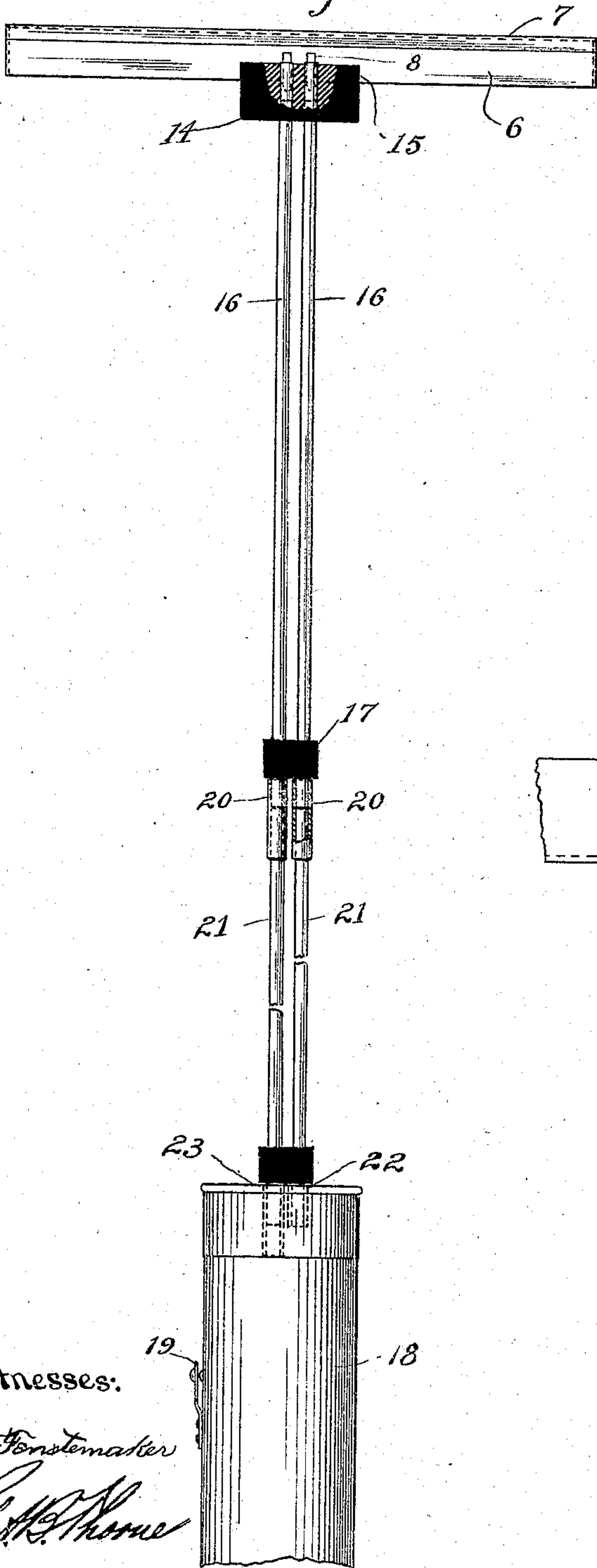


Fig. 2

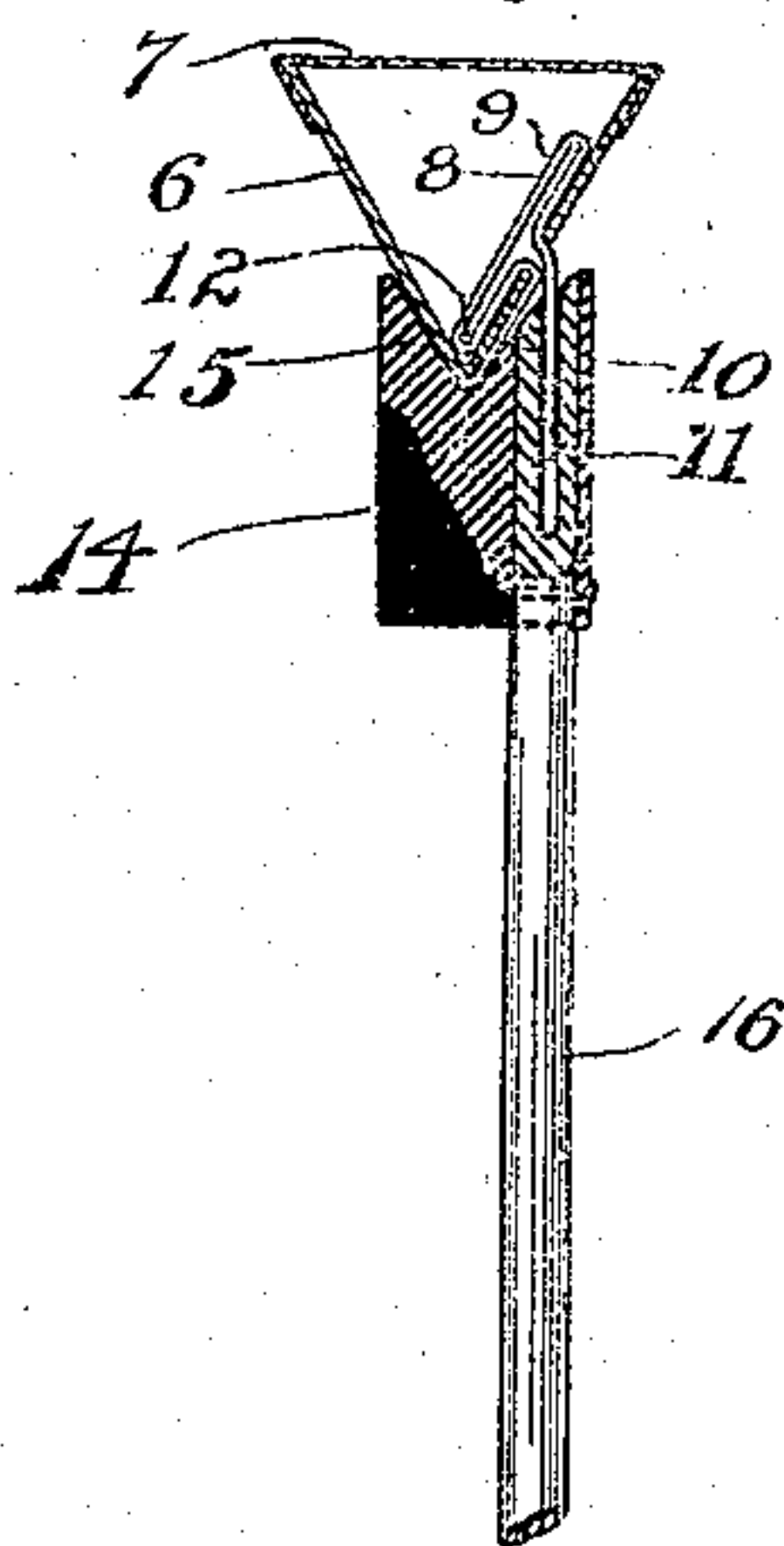


Fig. 3.

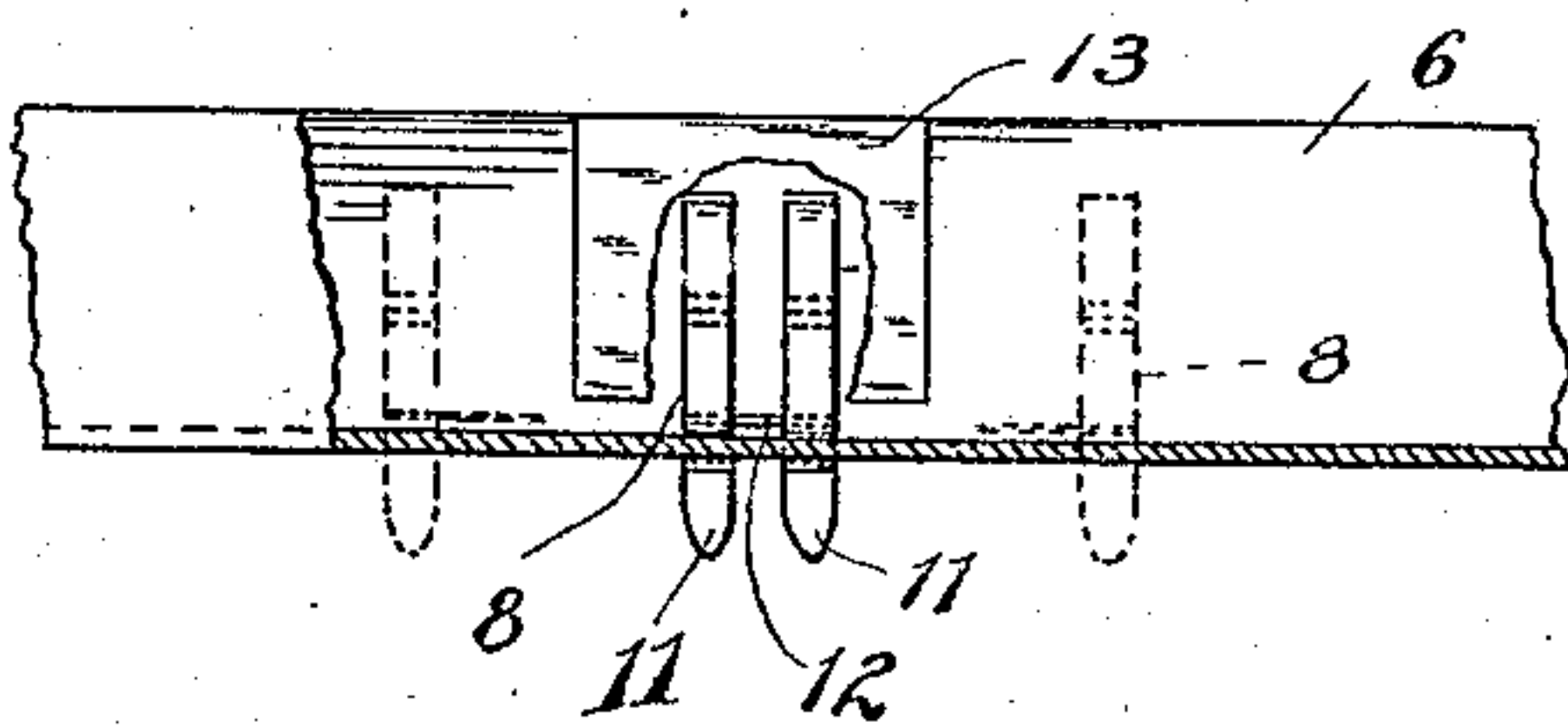
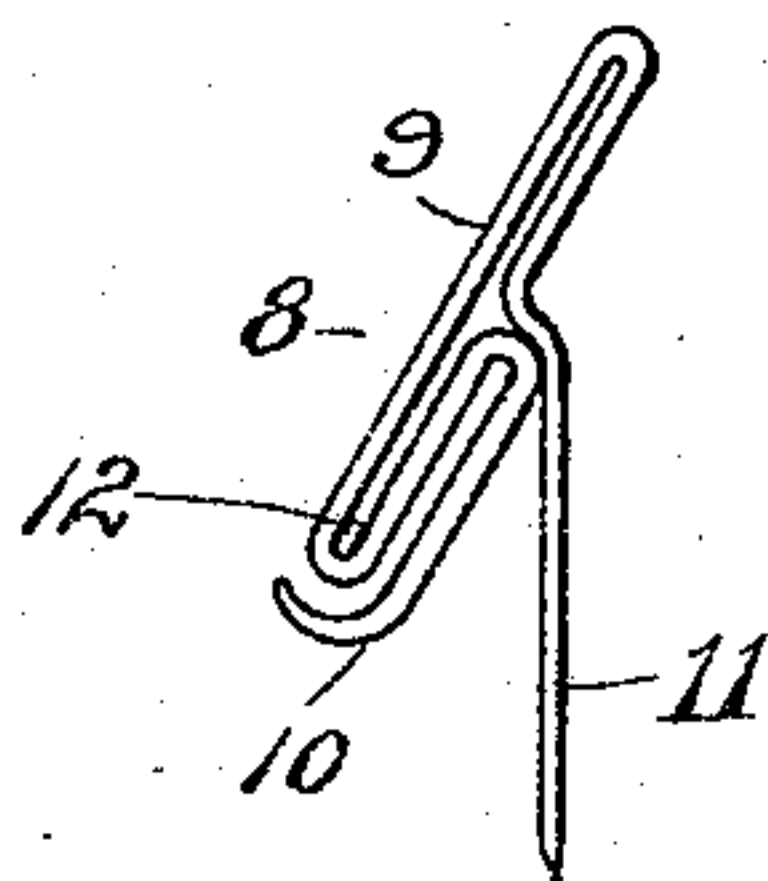


Fig. 4



Witnesses:

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FLASH-LAMP.

No. 907,969.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed October 28, 1907. Serial No. 399,507.

To all whom it may concern:

Be it known that I, JELLY S. CAYWOOD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Flash-Lamps, of which the following is a specification.

This invention relates more particularly to apparatus or devices adapted for use in connection with photography, or wherever it is desired to secure a bright light by means of flash powder. Its objects are to produce a simple and convenient form of flash lamp which may be readily held in the hand and discharged by means of electricity, but which, if desired, may also be used in connection with a stationary support; and also to provide a convenient cartridge or receptacle for the flash powder, which may be used repeatedly or which may be used as a temporary receptacle and discarded after the charge has been exploded; and such other advantages as will appear from the following description.

I have illustrated my invention in the accompanying drawings in which:

Figure 1 represents a front view of a preferred form of embodiment of my invention; Fig. 2 is a sectional view showing the method of connecting the cartridge with the support; Fig. 3 is a detail view showing the clips for holding the igniter wire and also for connecting the cartridge with the support; and Fig. 4 is an enlarged detail of one of said clips.

As shown in the drawings, 6 represents a cartridge or receptacle, preferably of substantially V-shape in cross-section and of any desired length, which is adapted to receive the flash powder; this cartridge may be made of any suitable material but preferably of paper, insulating fiber, or the like. The particular shape of the cartridge serves to give the desired spread to the flame and, furthermore, insures the proper contact or proximity of the powder to the igniter wire which is arranged at the bottom of the receptacle. This receptacle may be used without any cover, the powder being spread or distributed therein at the time it is to be ignited; but I prefer to load the cartridges with the powder and then cover the top with a piece of paper or light material, as indicated at 7. In this way, the powder may be sold in the cartridges, which are always ready for operation.

In order to discharge the powder or ignite the same, I provide a combined electric

igniter and holder which will now be described. Flat wires or clips 8—8 are arranged adjacent to each other in the sides of the cartridge 6. While the shape of these clips may be varied, I prefer to make them substantially as shown in Fig. 4. The elongated folded portion 9 lies against one of the walls of the cartridge or receptacle 6, and the two prongs 10 and 11 pass out through the side of the wall, one of said prongs, 10, being folded back against the outer side of the wall and down and around the bottom of the receptacle, thereby holding the clip or metal strip firmly in position and also strengthening the receptacle 6. At the lowermost end of the folded portion 9 is inserted an igniter wire 12 which consists of a small wire which will be of such high resistance that it will glow or fuse under the action of an electric current. The ends of the wire 12 are pinched in between the folds of the metal strip so that a good contact is provided and soldering or other means of fastening is dispensed with. It will be noted that this igniter wire 12, being at the bottom of the receptacle, insures the ignition of the powder which naturally settles or gathers at the bottom of said receptacle. In order to prevent short-circuiting between the portions of the metallic strips by any powder which might collect between these strips above the wire 12, such powder being in some instances a fairly good conductor, the strips may be lacquered, or painted, or may be covered by means of a strip of paper, as indicated at 13, in Fig. 3, this paper being merely pasted over the strips so as to leave only the bottom ends and the wire 12 exposed. Such short-circuiting should be prevented, as otherwise the wire 12 might not secure a sufficient amount of current for fusing or for igniting the powder. However, when a strong current or a current of high voltage is to be used, I separate these strips or clips, as indicated by dotted lines in Fig. 3, a sufficient distance so that there will be no arcing between said clips after the wire 12 has been fused.

In order to support the cartridge and to furnish electricity for discharging the same, I provide a block or holder 14 of insulating material, having a groove 15 in the top corresponding with the shape of the bottom of the receptacle 6. Two metallic rods 16 extend through said block 14 and are slotted at the upper ends to receive the prongs 11 of

the two strips 8—8. When these prongs are inserted in the ends of the rods 16 and the bottom of the receptacle 6 engages with the groove in the top of the block 14, the receptacle will be firmly held in position and a good electrical contact furnished between the clips and the rods. These rods may be of any desired length and may be held apart by means of insulating blocks or separators 17 and are adapted to make connection with an electric battery, such as indicated at 18, this battery may be arranged in a holder in any well known way and the circuit opened and closed by means of a switch 19 on the side of the holder.

In order to make the device convenient for carrying, I prefer to make the connecting rods between the holder 18 and the receptacle 6 in sections, as indicated in Fig. 1; that is, the ends of the rods 16—16 engage with sockets 20 at the ends of corresponding rods 21—21, and these rods in turn engage with the sockets 22—23 in the end of the battery holder 18, the arrangement being such that one of said sockets is in connection with the positive side of the battery, and the other socket in connection with the negative side, or so connected that the circuit from the battery through the rods and the igniter wire 12 may be closed by means of the switch 19.

It will readily be seen that this arrangement forms a light and convenient device for photographic purposes, and one which may be packed in a small space and then readily connected, so that it can be held in the hand with the cartridge at any desired height above the head, or other position, depending upon the length of the rods 16 and 21 or the number of sections used. When the switch 19 is closed this will close the circuit from the battery through the rods and clips to the igniter wire 12 which becomes heated or fused and ignites the powder in the cartridge; the igniting powder in the cartridge will burst or burn away the cover 7, so that this cover does not need to be removed.

Having thus described my invention, which I do not wish to limit to the precise form of construction shown, what I claim and desire to secure by Letters Patent is:

1. In combination, an electric battery holder, rods detachably connected with said holder and insulated from each other, a cartridge holder secured to the ends of said rods, a powder cartridge adapted to engage with said cartridge holder, an igniting wire in said cartridge and means for connecting said cartridge with said cartridge holder, said means also providing for electric connection be-

tween said rods and the igniting wire in said cartridge.

2. The combination with a powder cartridge, of metallic strips engaging with said cartridge and adapted to stiffen or reinforce the same, said strips also furnishing means for connecting an igniting wire, and means for fastening said cartridge in a suitable holder.

3. The combination with a powder cartridge, of pronged metallic strips folded to engage with one side of said cartridge, said strips having one prong extending out through the side of said cartridge and bent down and around the bottom of the same and a second prong also extending out through the side of said cartridge and serving as a fastening device for said cartridge, and an igniting wire secured between the folded portions of said strips lying within said cartridge.

4. The combination with a powder cartridge of substantially V-shape in cross-section, of folded metallic strips engaging with one side of said cartridge, said strips being provided with prongs extending out through the side of said cartridge, two of said prongs serving to engage with, and reinforce the cartridge and the other two prongs serving to connect the cartridge with a suitable support, an igniting wire pinched between the folded portions of said strips, and means for covering or insulating the exposed portions of said strips within said cartridge.

5. A holder for a flash powder cartridge, comprising a grooved insulating block, rods connected with said block, said rods being slotted for receiving contacts of removable cartridges, and separators for holding said rods sufficiently apart to prevent contact between the same.

6. In a flash lamp, the combination of an elongated cartridge for flash powder, an igniting wire arranged in the central bottom portion of said cartridge, an electric battery, solid rods arranged adjacent to each other and connecting between said battery and said cartridge, means for holding said rods apart and insulating them from each other, and means for making connection between said rods and said cartridge for supporting said cartridge and also making electrical connection with said igniting wire, said rods furnishing a portion of the electric circuit from the battery to said igniting wire.

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Witnesses:

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