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(54) **FLASH MECHANISM FOR PHOTOGRAPHIC APPARATUS**

(54) **MECANISME DE FEU A ECLAT POUR APPAREIL PHOTOGRAPHIQUE**

My invention relates to photographic apparatus, and more particularly to means for producing flash lights, my object being to provide a device by the use of which the powder or other flashing material may be ignited with little or no waste and the plate of the camera may be exposed to the proper moment, while a further object is to provide a construction which may be readily taken apart to permit of packing for transportation, etc. To this end my invention consists in the various matters hereinafter described and claimed.

In the accompanying drawings

Figure 1 is a perspective view of a device embodying my invention;

Figure 2 is a detail of one of the flashing members;

Figure 3 is a detail of the releasing mechanism;

Figure 4 is a sectional view of the cylinder forming a part of said releasing mechanism; and

Figure 5 shows a modification.

In these drawings, A represents a tripod or other supporting means to which is secured, as by the bolts a, a supporting plate B, from which extend the arms C bearing the flashing plates. These arms may be fastened in any suitable manner, but in order to provide for their ready removal, angle plates b are secured at suitable intervals upon the plate B, in which angle plates the arms are inserted, being securely fastened by an adjustable catch b' which may be held by the nuts upon the bolts by which the supporting plate is held against the tripod.

At suitable intervals along each arm, are fastened flashing members D for igniting the powder or other flashing material, and in the present instance these consist of a plate

d upon which the powder is to be deposited, and a lamp secured upon the rear of said plate. Extending along each arm is a rod R pivoted in suitable brackets c, and upon said rods at points corresponding with the lamps upon the arms C, are secured wires e so placed that normally they lie upon the flashing plates d. It will thus be seen that if the lamps are lit and powder placed upon the flashing plates, should the rods be turned to bring the wires into the flames, these wires will be heated to such an extent that when the rods are turned back, the wires will fall upon the powder and ignite it, thus producing the flash.

It is obvious that many means for operating the rods may be employed, but I prefer to use that herein illustrated. In this, each rod at the point at which it crosses the plate B, is bent to form the angular loop e', while extending in line with these loops is a bar F having along its side adjacent to the supporting plate B a series of spring clamps f for engaging the loops e'. Below the bottom arm is fastened a plate G which projects from the supporting plate and has hinged upon it so as to swing in a plane above it a support H provided with a lip h for supporting the end of the bar F, which end is provided with a shoulder f' to act as a stop by engaging with the projection G, said projection being in the path of movement of the bar. The bar being connected to the rods through the clamps f and the loops e', it will be seen that when said bar is raised and supported upon the lip h, the wires e will be held in the flames of the lamps, while as soon as the support is swung out of position the bar will fall and bring the wires upon the powder on the various flashing plates, the

movement of the bar being guided by suitable pins b<sup>2</sup>, and limited by the shoulder f' engaging with the plate G.

It is, of course, advantageous to so arrange the flashing mechanism and the shutter upon the camera, that the latter may be operated at the proper moment with respect to the operation of the former, and to this end is provided a cylinder K having therein an opening k from which projects a thimble k'. In this cylinder works a piston head L having connected therewith a rod l bearing against the hinged plate H. Connected with the cylinder is an air bulb M, while upon the thimble is a tube leading to the usual means for releasing the shutter of the camera. Thus, when the bulb is pressed, the air, through the piston L, swings the plate H out of position, and the piston head being suitably placed relative to the opening k in the cylinder, at the proper moment the further movement of the piston head uncovers said opening and the air passes through the tube upon the thimble k' and operates upon the shutter mechanism.

It is obvious that many changes may be made in the details of construction without departing from the spirit of my invention; for example, the arms C may be pipes conveying gas to the lamps, as shown in figure 5, said arms may be rigidly secured to the support, etc., and all such modifications I desire to protect.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is

1. A flash light mechanism comprising a support, flashing devices upon said support, said flashing devices comprising a member for supporting the flashing material and an igniting member, one of said members being movable to co-operate with the other to produce a flash, a connection between said movable members, a projection upon said support, and a plate hinged upon said projection and above the same, said plate being adapted to support the connection between the movable members; substantially as described.

2. A flash light mechanism comprising a support, flashing devices upon said support, said flashing devices comprising a member for supporting the flashing material and an igniting member, one of said members being movable to co-operate with the other to produce a flash, a bar connected with said movable members, a shoulder upon the lower end of said bar, a projection from the support below and in the path of said shoulder, and a plate hinged to said projection to swing above the same, said plate being adapted to support the end of the bar; substantially as described.

3. A flash light mechanism comprising a support, flashing devices upon said support, means for operating said flashing devices, a cylinder, a piston head in said cylinder, connection between said piston head and the operating means, a camera, shutter operating mechanism upon said camera, a passage from said cylinder to said shutter operating mechanism, and means for supplying a fluid under pressure against said piston head; substantially as described.

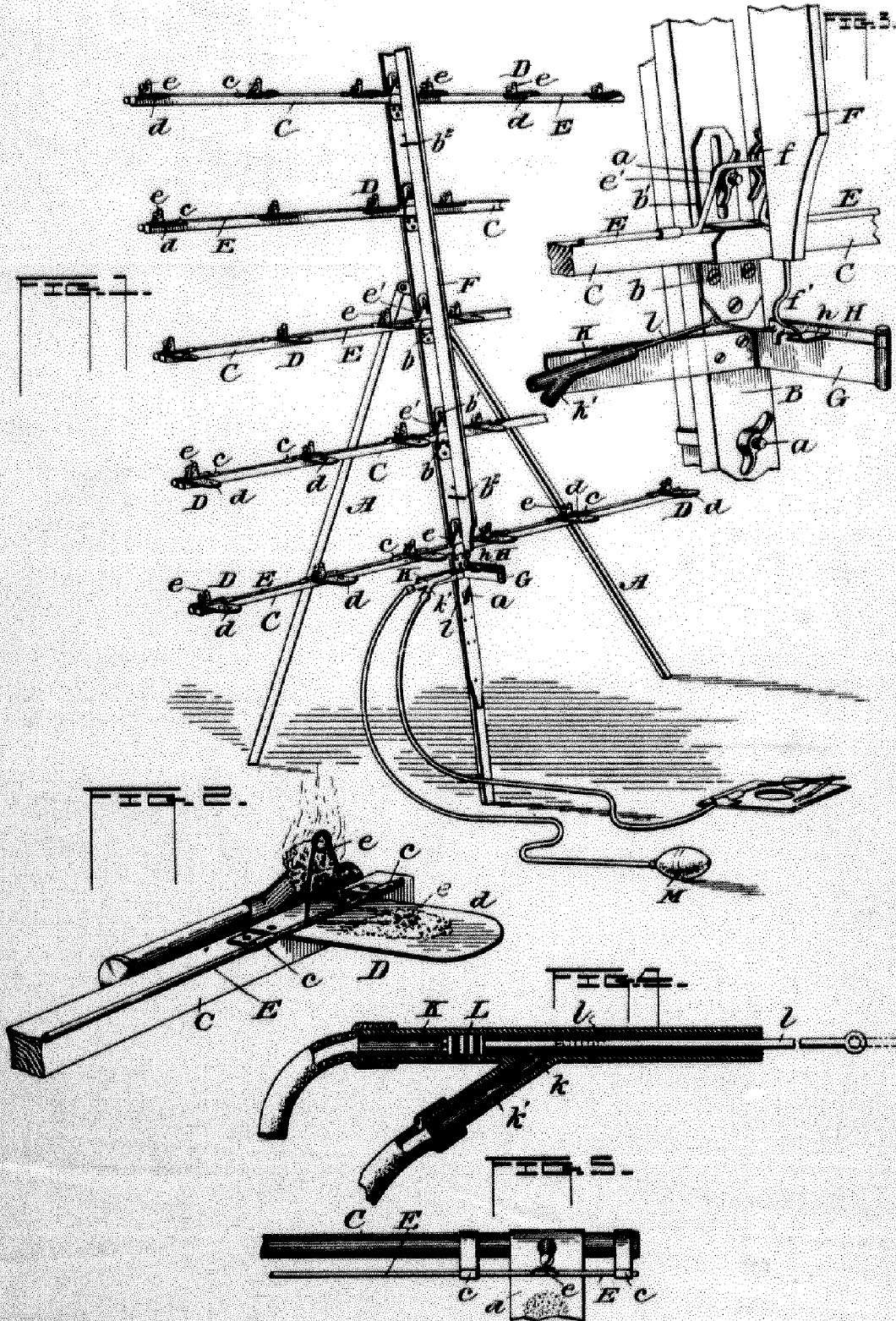
4. A flash light mechanism comprising a support, a supporting plate, bolts passing through said support and the supporting plate, angle plates upon said supporting plate, arms detachably fitting in said angle plates, angle plates fitting over said bolts and bearing upon the arms thus serving to hold them in place, nuts upon said bolts bearing upon said last mentioned angle plates, and flashing devices upon said arms; substantially as described.

5. A flash light mechanism comprising a supporting plate, arms removably held upon said plate, flashing devices upon said arms, said flashing devices comprising a member for supporting the flashing material and an igniting member, rods pivoted upon said arms and having attached thereto one of the members of the flashing devices, said rods having loops formed therein, a bar, and spring clamps upon said bar connecting the same with said loops; substantially as described.

6. A flash light mechanism comprising a support, a central supporting plate thereon, arms extending from said plate, receptacles for the flashing material upon said arms, heating devices also upon said arms, rods pivoted upon said arms, said rods having loops therein at the points at which they cross the central supporting plate, wires upon said rods so placed that they may be swung from a position in which they are subjected to the influence of the heating devices to a position upon the receptacles for the flashing material, a bar connected with said loops, a shoulder upon the bottom of said bar, a projection from the central support below said bar in the path of said shoulder, a plate hinged below and above said projection, said plate being adapted to support said bar in a position to hold the wires out of operative connection with the flashing material, a cylinder, a piston

head in said cylinder, connection between said piston head and the hinged plate, and means for forcing a fluid under pressure against the piston head; substantially as described.

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Certified to be the drawing referred to in the specification hereunto annexed.

*Witness*  
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*...*

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