(No Model.)

H. C. FAIRCHILD.

FLASH LIGHT BURNER.

No. 531,915. Patented Jan. 1, 1895.

Fig. 1.

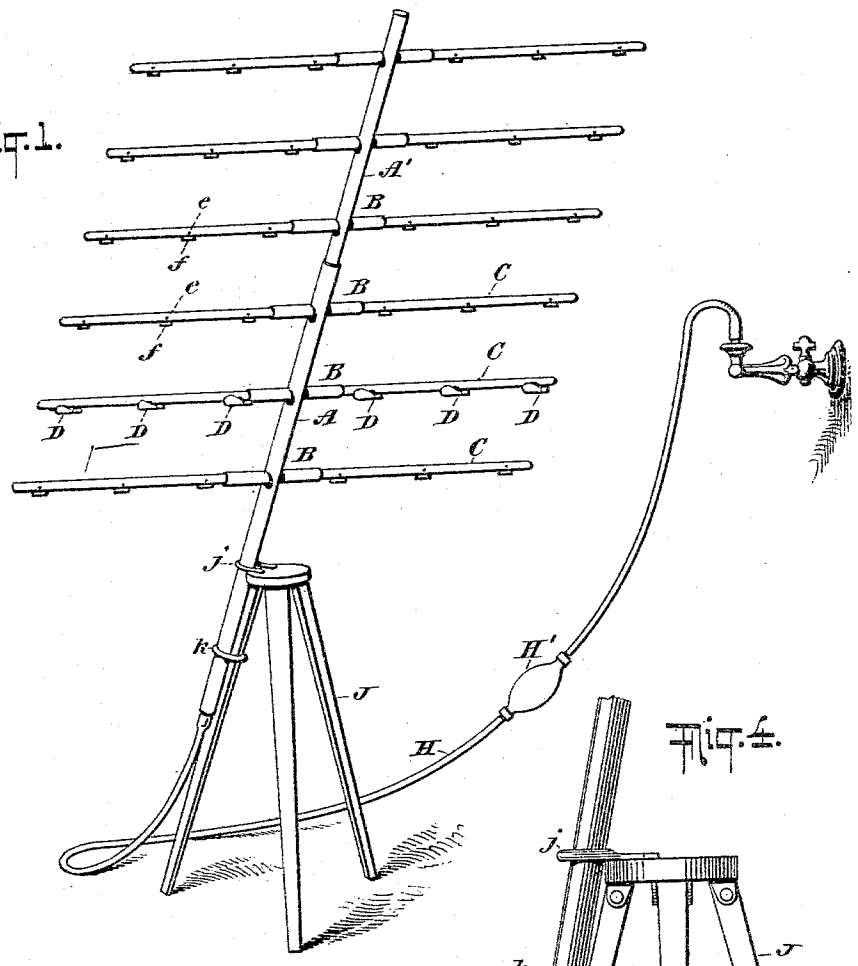


Fig. 4.

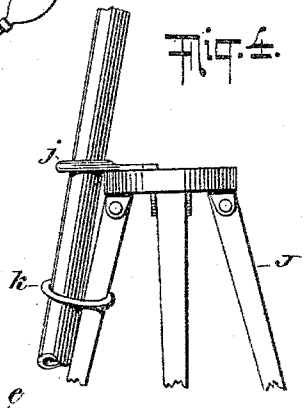


Fig. 2.

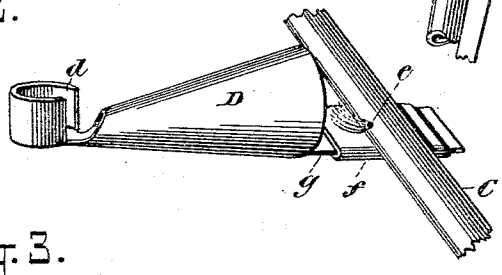
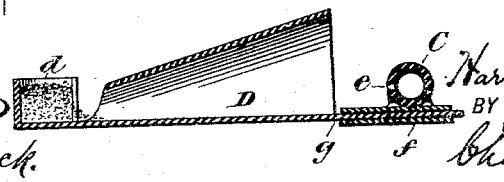


Fig. 3.



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FLASH-LIGHT BURNER.

SPECIFICATION forming part of Letters Patent No. 531,915, dated January 1, 1895.

Application filed April 5, 1894. Serial No. 506,464. (No model.)

To all whom it may concern:

Be it known that I, HARRY C. FAIRCHILD, a citizen of the United States, residing at Sandy Hook, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Flash-Light Burners, of which the following is a specification.

My invention relates to a flash light burner for photographic purposes in which flames of gas-jets are arranged to be simultaneously projected into connection, at the required moment, with the flash powder or flash elements contained in charge-cones, in such manner as to ignite the flash powder or flash elements.

The objects of my invention are to provide, first, a flash light burner adapted to afford a large and well-distributed lighted area for taking flash light photographs; second, a flash light burner which shall be certain in its operation; third, a flash light burner which shall be economical in the use of the flash-powder or flash-element and also economical in the use of gas; fourth, a flash light burner which shall be readily portable; fifth, a flash light burner which may be easily and quickly adjusted for use; sixth, a flash light burner which shall be simple in construction and cheap in manufacture. I accomplish these objects by the mechanism illustrated in the accompanying drawings, in which similar letters are used to designate similar parts throughout.

Figure 1, is a perspective view of my flash light burner attached to an ordinary tripod and in connection with a gas-bracket, but without its full complement of charge cones. Fig. 2, is a detail perspective view of one of the charge-cones. Fig. 3, is a central longitudinal section of one of the charge-cones. Fig. 4, is a detail view of the attachment to the tripod.

My flash light burner, which is mainly constructed of metal tubing, is provided with a gas-conducting upright, A A′, preferably for portability in two portions, the upper portion A′ being arranged to be inserted for a short distance in the lower portion A, and being closed at its upper end. The upright, A A′, has fixedly attached thereto and connecting therewith at right angles to it, hollow branch arms, B, there being six of the branch arms, B, on each side shown in the drawings, three on the portion, A, and three on the portion, A′. Arranged to be inserted in the branch arms, B, are a similar number of hollow, cone-supporting arms, C, closed at their outermost ends. Each of the cone-supporting arms, C, is provided upon its front with flame apertures, *e*, and upon its under side with sleeves, *f*, the number of flame-apertures, *e*, and sleeves, *f*, corresponding to the number of charge cones, three apertures and three sleeves on each arm being shown in the drawings.

The charge-cones, D, are arranged to be inserted in the sleeves, *f*, of the cone-supporting arms, C, in proximity to the flame apertures, *e*.

Only one set of cone-supporting arms, C, is shown in the drawings with the charge-cones, D, attached thereto.

Each of the charge-cones, D, is a slightly truncated cone in form, having at its truncated end a charge receptacle, *d*, and at its other end an extension, *g*, adapted to be inserted in a sleeve, *f*, of a cone-supporting arm, C, but I do not restrict myself to the use of the sleeve, *f*, and extension, *g*, as any suitable removably attachable device might be used.

It is obvious that the charge-cones, D, might be fixedly attached to the cone supporting arms, C, but for purposes of loading with the flash element and for convenience in packing and carrying they are preferably made removable.

The essential feature of the charge-cones, D, is that they be capable of being placed in proximity to the flame apertures and that they provide a means of holding the flash-powder or flash element and of directing and guiding the igniting flames to the flash powder or flash element when the flames are projected forward.

To insure ignition of the flash powder I add thereto a small portion of gun-cotton.

A piece of rubber tubing, H, provided with a pressure bulb, H′, is removably attached at one of its ends to the gas-conducting upright, A A′, at the lower end of the upright, and at its other end to a gas-bracket, as shown in Fig. 1.

My flash light burner is attached to a suitable support, that shown in the drawings being an ordinary tripod, J, having upon its up-

per part fixed to it a bracket, *j*, and being connected with the gas-conducting upright, A A′, by a sliding ring *k*.

The operation of my flash light burner is as follows: The various parts described being in position for use, the gas is turned on and the gas at each of the flame apertures, *e*, lighted, the charge-cones, D, being in place upon the supporting arms, C, and having the flash powder or flash element in their receptacles, *d*. At the required moment pressure is applied to the pressure bulb, H′, which causes the gas-jets at each of the flame-apertures, *e*, to be projected forward through the charge-cones, D, instantaneously igniting the flash powder or flash-element in the receptacles, *d*, thereof. In order to prevent any back draft after the projection of the gas-flames through the action of the pressure-bulb, H′, extinguishing the gas-flames, a pressure-bulb with an open and shut valve therein is preferably used.

The flame apertures, *e*, are of sufficient size to allow the flames, under pressure from the bulb, H′, and guided by the cone-shaped portions of the charge cones, D, to reach the flash powder or flash element, the flames at the flame apertures, *e*, at other times being reduced to the smallest size consistent with their keeping lighted.

When it is desired to carry my flash light burner from one place to another, the rubber tubing, H, is detached, the charge-cones, D, removed from the cone-supporting arms, C, the cone-supporting arms, C, pulled out of the branch arms, B, the portion, A′, of the gas-conducting upright, A A′, withdrawn from the portion, A, the portion, A, detached from the tripod, J, by merely sliding down the ring, *k*, and withdrawing the portion, A, from the bracket, *j*; the whole, exclusive of the charge-cones, D, the tripod, J, and rubber tubing, H, being comprised in a compact bundle about three feet long.

Having fully described my invention, what I claim, and desire to protect by Letters Patent, is—

1. A flash light burner composed of a gas-conducting upright closed at its upper end, having hollow branch arms fixedly attached at right angles thereto and connecting therewith, hollow, cone-supporting arms, closed at their outermost ends, removably inserted in said branch arms, corresponding in number thereto and having flame-apertures, charge-cones removably attached to the cone-supporting arms in proximity to said flame apertures and having charge-receptacles, and a gas connection and pressure device whereby the flames from said flame apertures may be simultaneously brought when desired into contact with the charge-receptacles of the charge-cones, all substantially as herein described and set forth.

2. The combination of a gas-conducting upright closed at its upper end, detachably joined to a support, hollow, branch-arms fixedly attached to and connecting with the gas-conducting upright at right angles thereto, hollow, cone-supporting arms closed at their outermost ends, removably inserted in said branch-arms, corresponding in number thereto, and having flame apertures, charge-cones removably attached to the cone-supporting arms in proximity to said flame apertures and having charge receptacles, and a gas connection and pressure device whereby the flames from said flame apertures may be simultaneously brought when desired into contact with the charge receptacles of the charge cones, all substantially as herein described and set forth.

3. The combination of a gas-conducting upright closed at its upper end, detachably joined to a support, said gas-conducting upright consisting of an upper and a lower portion detachably connected with each other, hollow branch arms fixedly attached to and connecting with said gas-conducting upright upon both of its portions at right angles thereto, hollow cone-supporting arms removably inserted in said branch arms, closed at their outermost ends, corresponding in number to said branch arms and having flame apertures, charge cones removably attached to the cone-supporting arms in proximity to said flame apertures and having charge receptacles, and a gas connection and pressure device whereby the flames from said flame apertures may be simultaneously brought when desired into contact with the charge receptacles of the charge-cones, all substantially as herein described and set forth.

4. The combination of a gas-conducting upright closed at its upper end, detachably joined to a support, said gas-conducting upright consisting of an upper and a lower portion detachably connected with each other, hollow branch arms fixedly attached to and connecting with said gas-conducting upright upon both its portions at right angles thereto, hollow cone-supporting arms removably inserted in said branch arms, closed at their outermost ends, corresponding in number to said branch arms and having flame apertures and sleeves in proximity to each other, charge cones having charge receptacles and having extensions whereby said charge cones may be removably attached to the sleeves on the cone-supporting arms, and a gas connection consisting of a tube and pressure bulb whereby the flames from said flame apertures may be simultaneously brought when desired into contact with the charge receptacles of the charge cones, all substantially as herein described and set forth.

5. The combination, with a gas-conducting upright, branch arms and a gas connection and pressure device substantially as described, of hollow cone-supporting arms, closed at their outermost ends, having flame apertures, and charge cones having charge receptacles, said charge cones being adapted to be removably attached to the cone-supporting arms in prox-

imity to said flame apertures, all substantially as herein described and as and for the purposes set forth.

6. The combination, with a gas conducting upright, branch arms and a gas connection and pressure device substantially as described, of hollow cone-supporting arms, closed at their outermost ends, having flame-apertures and sleeves in proximity to each other, and charge cones having charge receptacles and being adapted to be removably attached to said cone-supporting arms by extensions engaging with the sleeves on said cone-supporting arms, all substantially as herein described and as and for the purposes set forth.

7. In a flash light burner having a gas-conducting upright, branch arms, cone-supporting arms provided with flame apertures, and a gas connection and pressure device substantially as described, a charge cone having a charge receptacle and being adapted to be removably attached to a cone-supporting arm in proximity to a flame aperture thereof, substantially as herein described and as and for the purposes set forth.

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