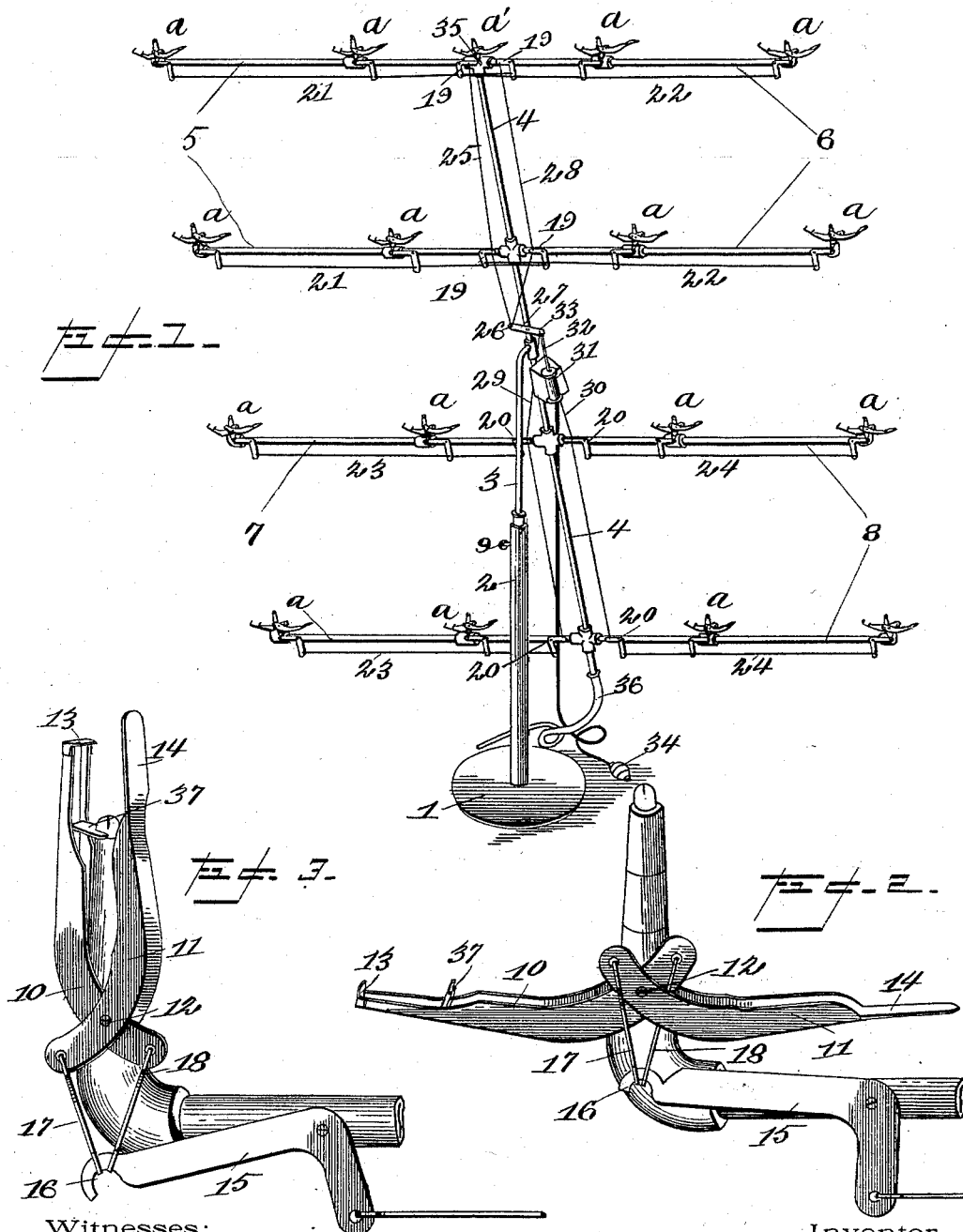


(No Model.)

M. DE V. WESTCOTT.
FLASH LIGHT BURNER.

No. 526,661.

Patented Sept. 25, 1894.



Witnesses:
James E. Jester
W. Nelson

Inventor.
Melvin DeVer Westcott,
By *J.R. Nottingham*
Attorney.

UNITED STATES PATENT OFFICE.

MELVIN DE VER WESTCOTT, OF CORTLAND, NEW YORK, ASSIGNOR OF
ONE-HALF TO LYNN R. LEWIS, OF SAME PLACE.

FLASH-LIGHT BURNER.

SPECIFICATION forming part of Letters Patent No. 526,661, dated September 25, 1894.

Application filed March 7, 1894. Serial No. 502,754. (No model.)

To all whom it may concern:

Be it known that I, MELVIN DE VER WESTCOTT, a citizen of the United States, residing at Cortland, in the county of Cortland and State of New York, have invented certain new and useful Improvements in Flash-Light Burners; 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 certain improvements in attachments to gas or other burners, whereby an illuminating powder is caused to be thrown or projected into the flame to produce an artificial light, or "flash-light" as it is commonly called for photographic purposes; and it consists in providing the burner with a pair of pivoted arms, which carry, respectively, a powder-charge pan and a shield or target and are operated, through a suitable connection, by air-pressure acting upon a piston, as will be hereinafter more fully described and specifically set forth in the claims.

The principal object of the invention is to produce a flash-light burner, which shall be of sufficient capacity to give an intense and brilliant light for the requisite exposure, and which shall be simple in construction and effective in operation. This object is accomplished by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a perspective view of my improved device; Fig. 2, a side elevation of an ordinary gas-burner, showing the wings or arms, slightly in perspective, and the angle-lever attached thereto, and in position to be operated, and Fig. 3, a similar view, showing the position of the wings or arms after the operation of throwing or projecting the illuminating-powder has been performed.

Referring to the drawings—the numeral 1 indicates the base, which is provided with a hollow vertical standard, 2, in which operates a sliding arm, 3, carrying at its upper end, in a slightly inclined position, a vertical gas-pipe, 4, which is provided with two sets of horizontally extending branch-pipes, one set 5 and 6, being secured above the point of attachment with the arm 3 and the other set 7 and 8, below said point of attachment. Each of said branch pipes is provided with two burn-

ers *a a*, of the ordinary pattern, the upper end of the pipe 4 being also provided with a like burner *a'*, and the entire series of burners is vertically adjustable by means of a binding-screw, 9, which holds the sliding-arm 3 at any desired height.

Each burner is provided with two bifurcated wings or arms 10 and 11, the legs of which straddle the burner and are pivoted, one upon the other, to the sides of said burner by means of pivots 12. The wing or arm 10 carries at its outer end a pan, 13, and the wing or arm 11 carries a shield or target, 14, the purpose of which will be made apparent.

Pivoted to the branch pipes, near each burner, is a right angled lever 15, which has the end of its horizontal arm provided with a hook, 16, to which is attached one end each of two links, 17 and 18, the other end of each link being secured, respectively, to one of the legs of each bifurcated wing or arm 10 and 11, as clearly shown in Figs. 2 and 3. On each branch-pipe of the upper set, at opposite sides of the vertical pipe 4, is pivoted a right-angled lever, 19, and on each branch-pipe of the lower set, at opposite sides of said vertical pipe, is pivoted a similar lever 20, the purpose of which will presently appear.

As one of the objects of the invention is to throw the illuminating-powder into the flame of each burner simultaneously, it will be seen that the whole number of levers should be so connected, one with the other, as to render this object of easy and instantaneous accomplishment. These connections are made in the following manner: The vertical arms of the levers 15, pivoted on the branch-pipes of set 5, are connected by a wire, 21, to the vertical arm of lever 19, which is pivoted on the branch-pipes of set 6, and the vertical arms of the levers 15, pivoted on the branch-pipes of set 6, are connected by a wire, 22, with the vertical arm of the lever 19, which is pivoted on the branch-pipes of set 5. In the lower set 7, the vertical arms of the levers 15 are connected by a wire 23, with the vertical arm of the lever 20, which is in the same set, and in set 8, the vertical arms of the levers are similarly connected by a wire, 24. A wire, 25, having one end connected to the horizontal arm of the lever 19, which is pivoted on the upper branch-pipe of set 5, extends down-

ward and is connected with the horizontal arm of the lever 19, which is pivoted on the lower branch-pipe of said set 5, and has its other end connected to an end 26, of a lever 27, pivoted centrally on the vertical pipe 4. A wire 28, has one end connected to the horizontal arm of the lever 19, which is pivoted on the upper branch-pipe of set 6, and passing downward connects with the horizontal arm of the lever 19, which is pivoted on the lower branch-pipe of said set 6, and has its other end connected to the end 26 of lever 27. Between the pivoted point of the lever 27 and its end opposite to end 26, are attached two wires 29 and 30, the former of which is connected with the horizontal arm of the lever 20, which is pivoted on the upper branch-pipe of set 7, and passing downward has its end connected to the horizontal arm of the lever 20, which is pivoted on the lower branch-pipe of said set 7, and the wire 30 is connected with the horizontal arm of the lever 20, which is pivoted on the upper branch-pipe of set 8, and passing downward has its end connected to the horizontal arm of the lever 20, which is pivoted on the lower branch-pipe of said set 8.

Attached to the vertical pipe 4, at a point just below its connection with the sliding arm, is an air-cylinder, 31, provided with a piston, 32, which has its free end connected to the end 33 of the lever 27. The lower end of the cylinder is provided with an opening to which is fitted a flexible tube, which is provided with an air-bulb 34, to be manipulated by the operative.

The horizontal arm of the lever 19, which is pivoted on the upper branch-pipe of set 5, is provided with a hook-end, 35, to which is attached one end of each of two wires, the other end of one wire being connected to one leg of the pivoted wing, 10, and the other end of the other wire connected to the leg of the wing 11.

The lower end of the vertical pipe 4 is fitted with a flexible tube, 36, which may be connected with the burner of a chandelier to supply gas to the burners of my improved device.

The operation of the device is as follows:—As shown in Fig. 1, the wings or arms are in operative position. A small quantity of illuminating powder is placed in each pan. The gas is turned on and lighted, and the camera adjusted. The operator then takes the bulb in his hand and by pressing it forces air into the cylinder against the piston, which is caused, by the air-pressure, to move upward. The end 33 of the lever 27 being connected to the end of the piston, it will be seen that when said piston is forced upward the lever 27 will be caused to turn on its pivot. The end 33 rising and pulling on the wires 29 and 30 causes the wings or arms pivoted on the burners of the branch-pipes of sets 7 and 8 to be instantly swung toward each other, which action causes the illuminating-powder in each

pan to be projected into the flame and against the shield or target opposite. At the same time the end 33 of said lever 27 is being raised the end 26 is being depressed, and the pull on the wires 25 and 28 causes the wings or arms on the branch-pipes of sets 5 and 6 and the wings or arms pivoted on the burner α' to be also swung toward each other, which action causes the powder in each pan to be thrown into the flame and against the shield or target opposite. Thus it will be seen that the powder in every pan is instantly and simultaneously thrown into the flame of its respective burner, and an intense and brilliant light is produced for a duration of time sufficient to make the requisite exposure.

The shields or targets form an important element in the construction of my improved device, as they serve to insure the perfect combustion of the illuminating-powder. But for these shields or targets perfect combustion would not take place, as much of the powder, in the act of being thrown, would pass through the flame without igniting and be wasted. By the use of the shield or target that portion of the powder which would pass through the flame, when thrown from the cup or pan, is received against said target or shield and perfect combustion is effected.

The wings 10 are provided with a stop 37, which strikes against the burner and limits its forward movement, but the wing 11 is permitted to rest close to the flame at the end of its forward movement, so as to receive the powder at the nearest possible point to the flame in order to insure complete combustion. The shield or target, when moved to its vertical position, together with the pan or cup, encircles the flame (and the burning powder) in such a manner as to create a draft, which produces an intensely hot flame, so that all of the powder is burned.

It will be understood that the flame may be produced by a taper, gasoline-oil, or other means as well as by gas, and that the bulb can be made to operate the camera-shutter, simultaneously, with the flashing of the light, by connecting the opposite end of the bulb with said shutter by a flexible tube.

One of the principal advantages to be derived by constructing the pivoted-cup and shield or target to be thrown forward and backward, is that they will be normally away from the flame, so that all danger of melting, or being injured by the heat of said flame, is obviated, it being observed that immediately after each throw of the powder both the cup and shield are caused to move away from the flame, as hereinbefore stated.

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

1. In a flash-light burner, the combination, of a shield or target, held normally away from the burner but adapted to be brought close to said burner, when the powder is thrown, and means for throwing or depositing an illumi-

nating powder into the flame, substantially as specified.

2. In a flash-light burner, the combination, with a moving powder-discharge pan, of a moving shield or target, and means for moving said pan and shield in unison toward and encircling the flame of the burner, whereby an increased heat is produced to act upon the illuminating powder.

3. The combination, with a flame-burner of a moving powder-discharge pan or cup a shield or target for the same and mechanism for moving the discharge pan or cup toward the shield or target, substantially as specified.

4. The combination, with a flame-burner, of a powder discharge pan or cup, a shield or target, and mechanism for moving said pan and shield toward each other, as and for the purpose specified.

5. The combination, with a flame-burner, of a pivoted powder-discharge pan or cup, a pivoted shield or target, a pivoted angle lever, a connection between the horizontal arm of said lever and the inner end of said pan and shield, and means for moving the pan and shield simultaneously toward each other, substantially as specified.

6. In a flash-light burner, the combination, with a flame-burner, of a wing or arm pivoted on said flame-burner and carrying a powder-pan or cup, an angle lever pivoted on the pipe carrying the flame-burner and having one of its arms connected with the inner end of said wing or arm, and a wire connected to the upper arm of said lever, whereby the wing or arm is moved to project the powder contained in said pan into the flame, substantially as specified.

7. In a flash-light burner, the combination, with a base supporting a vertical hollow-standard, and a sliding-rod vertically adjustable in said standard and carrying a pipe provided with a series of branch-pipes, which are provided with a series of flame-burners, of a pivoted wing or arm carrying a powder pan, a pivoted wing or arm carrying a shield

or target, and means for swinging said pan and shield toward each other, as and for the purpose specified.

8. In a flash-light burner, the combination, with a suitable base carrying a vertically adjustable pipe-frame provided with upper and lower sets of flame-burners, of a powder-discharge pan and a shield pivoted near each burner, an angle lever 15 pivoted near each burner and having one arm connected with an end each of said pan and target, two sets of angle levers 19, the upper set connected with the vertical arms of the angle levers 15 in the upper set of flame-burners, and the lower set of levers 19 connected with the levers 15 in the lower set of flame-burners, a centrally pivoted lever having one end connected with the upper set of levers 19 and its other end connected with the lower set of levers 19, and a piston connected to one end of the centrally pivoted lever and operated by air-pressure to swing all of the discharge-pans and shields simultaneously, substantially as specified.

9. In a flash-light burner, the combination, with a suitable base carrying a pipe-frame provided with a series of flame-burners, a series of pivoted powder-discharge pans and shields or targets, one discharge-pan and shield for each burner, a series of angle levers connected with each pan and shield, a second series of angle levers connected with the first mentioned series of levers, a centrally pivoted lever having its respective ends connected with the second series of levers, a piston connected with one end of the centrally pivoted lever, and a bulb for forcing air against the piston to operate the discharge-pans and shields simultaneously, substantially as specified.

In testimony whereof I affix my signature in the presence of two witnesses.

MELVIN DE VER WESTCOTT.

Witnesses:

JOHN W. SUGGETT,
EDWIN DUFFEY.