

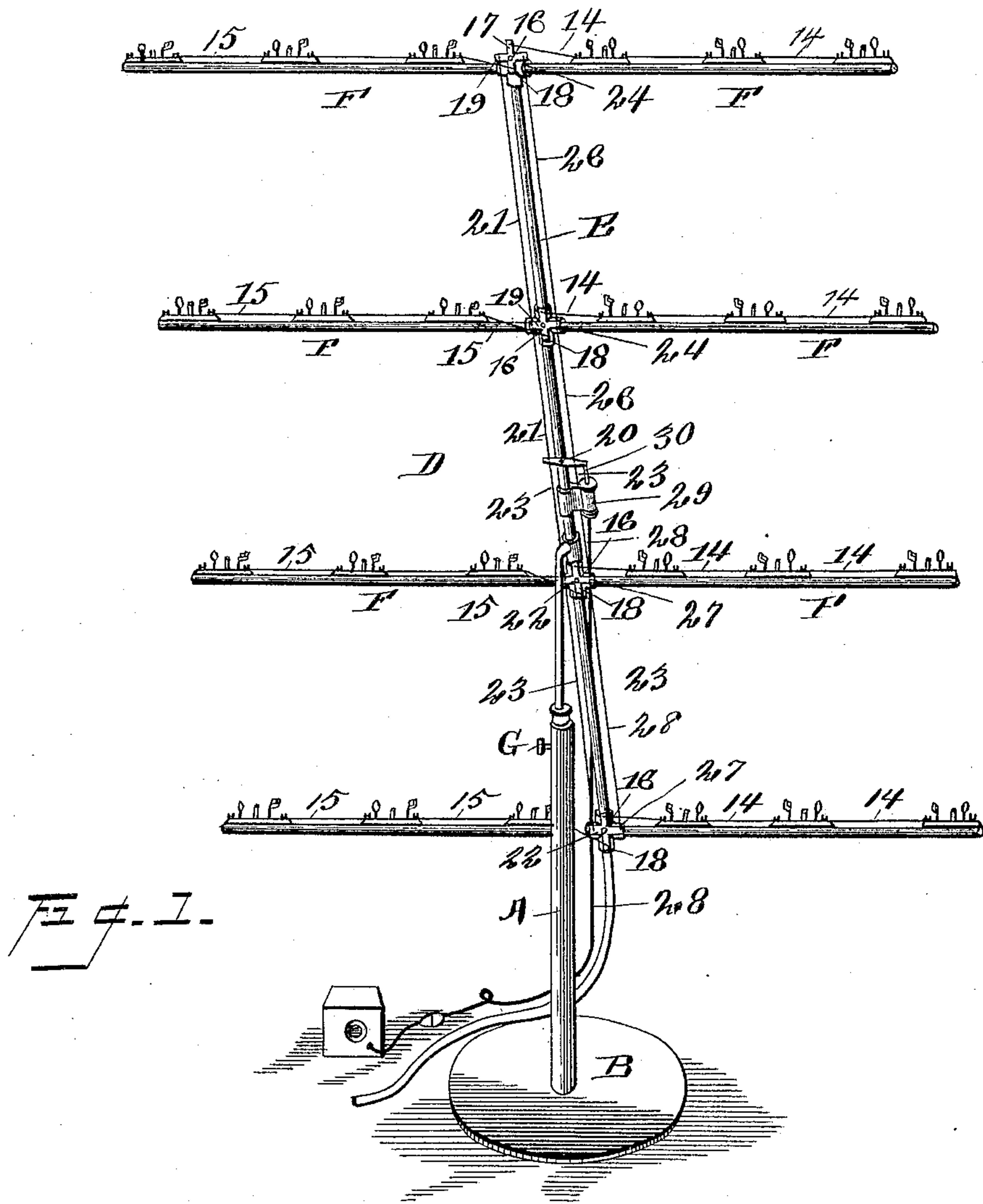
(No Model.)

2 Sheets—Sheet 1.

M. DE V. WESTCOTT.
FLASH LIGHT BURNER.

No. 526,662.

Patented Sept. 25, 1894.



WITNESSES-

C. Johnson
E. D. Viles

INVENTOR

M. De Ver Westcott

By J. R. Nottingham
Atty

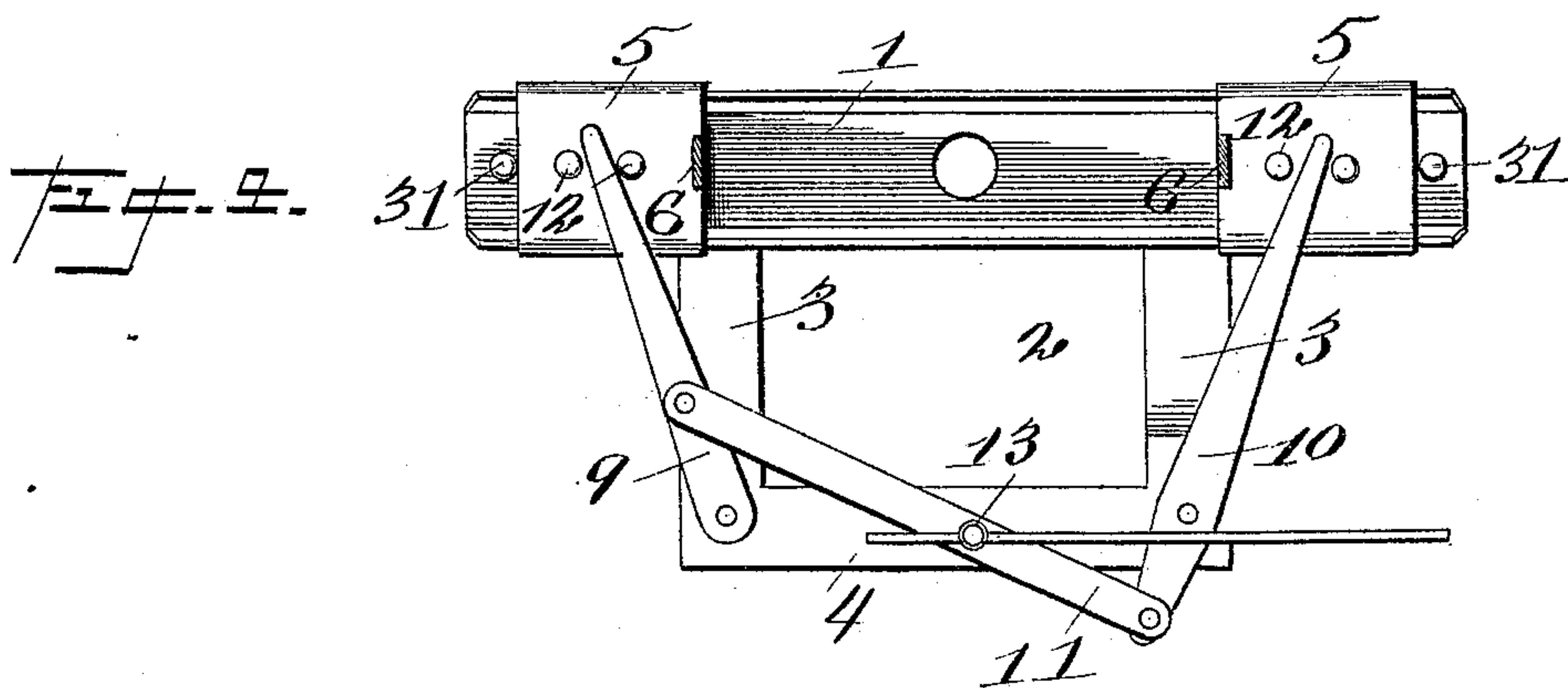
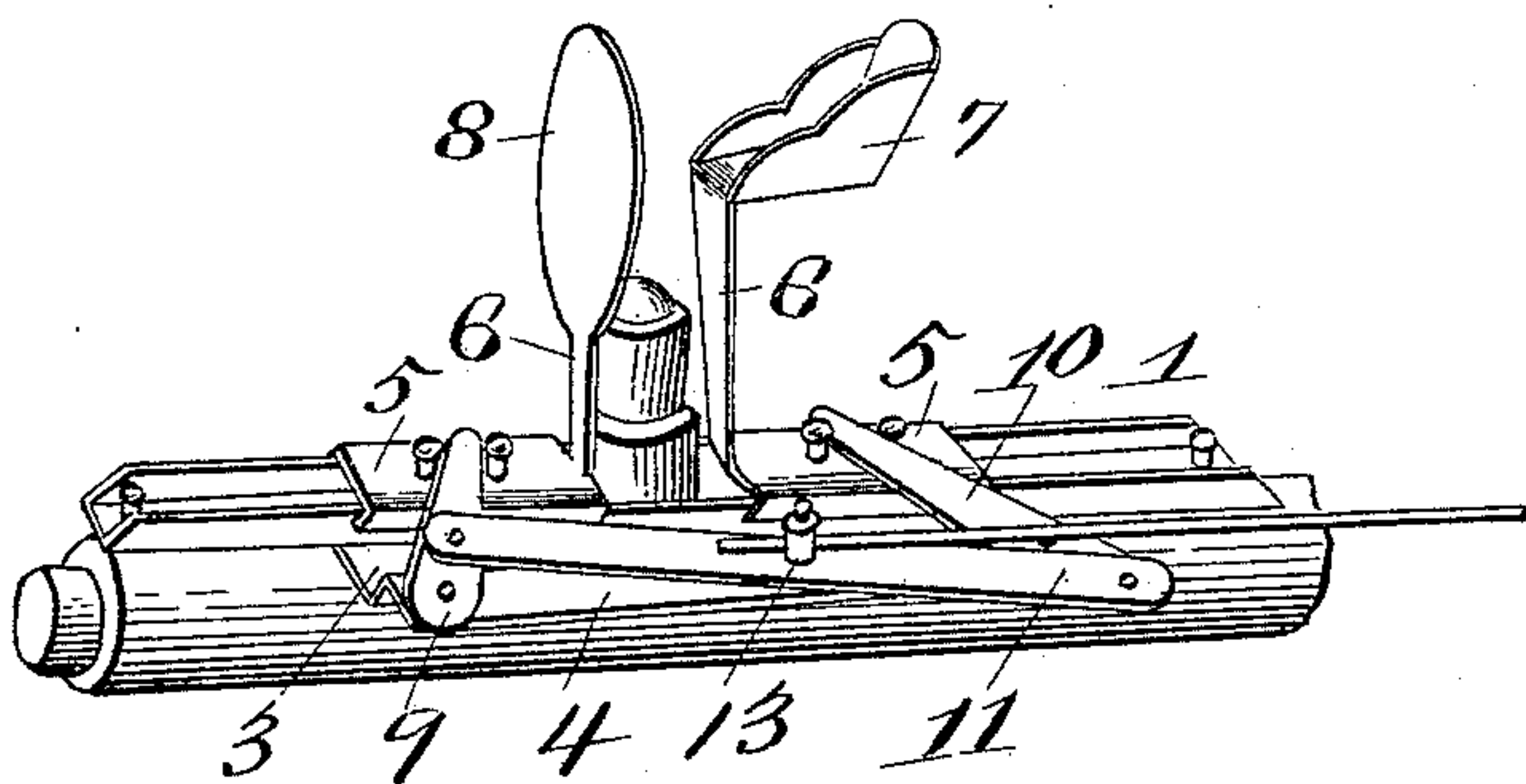
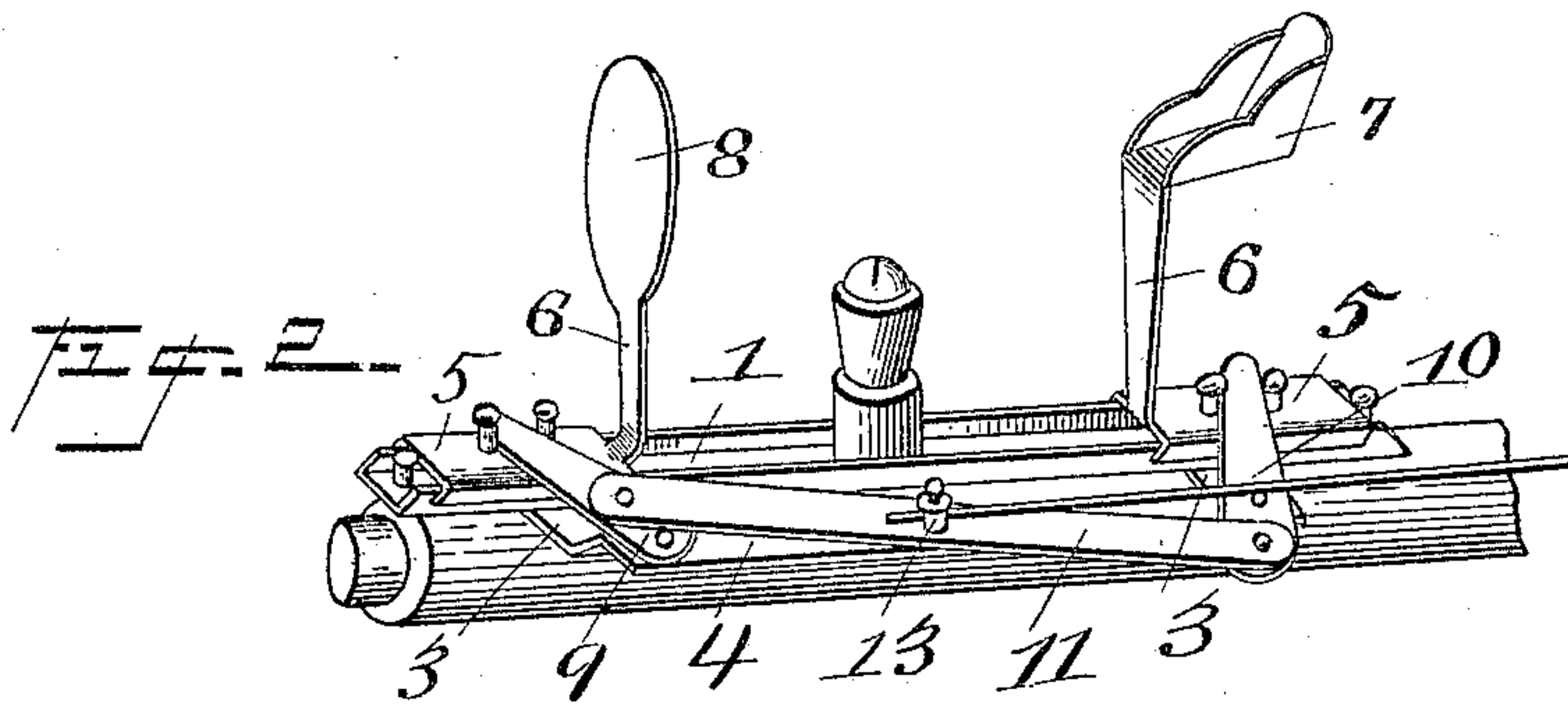
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UNITED STATES PATENT OFFICE.

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. 526,662, dated September 25, 1894.

Application filed April 21, 1894. Serial No. 508,500. (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 "flash-light" apparatus for photographic purposes; and it consists in providing a burner, at opposite sides thereof, with a pair of sliding arms or standards, one of said arms or standards carrying a powder-pan and the other carrying a shield or target; said arms or standards being caused to move, toward or from the burner, by a system of pivoted levers connected to a piston actuated by air-pressure, as will be hereinafter more fully described and specifically pointed out in the claims.

The principal object of the invention is to provide an attachment, which can be readily applied to a gas or other burner, whereby an illuminating powder may be caused to be thrown or projected into the flame to produce an artificial, or "flash," light, of sufficient intensity for the requisite exposure, and a further object, is to so construct such attachment that its operation will be instantaneous and highly effective. These objects are attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a perspective view of my improved flash-light apparatus; Fig. 2, a section of gas-pipe provided with a burner, showing my powder-projecting attachment, slightly in perspective, applied thereto in position to project the powder; Fig. 3, a similar view, showing the position of the parts after the operation of projecting the powder has been performed, and Fig. 4, a perspective view of said attachment detached.

Referring to the drawings:—the letter A indicates a hollow standard provided with a suitable base B. Within the hollow standard operates a vertically adjustable rod C, which carries, at its upper end, a slightly inclined burner frame, D, composed of gas-pipes. Said

frame consists of a vertical pipe, E, having a series of oppositely-extending branch-pipes, F, each branch-pipe being provided with three burners, which may be of any desired pattern. The burner-frame may be adjusted to the desired height and there held by means of the binding-screw G.

The numeral 1 indicates a guide-rail, which may consist of a plate having upturned side edges, as shown in the drawings. Projecting from one side of said guide-rail is a lever-supporting frame, 2, which consists of two arms 3, connected at their outer ends by a cross-bar 4, said frame being preferably cut or stamped out in one piece of metal. The guide-rail is centrally perforated to slip over the burner, and when in position is secured to the branch-pipe in any suitable manner. Mounted on the guide-rail, at opposite sides of said burner, is a slide, 5, provided with a vertical arm, 6, one of said arms carrying a powder-discharge cup or pan, 7, and the other a shield or target 8.

Pivoted at one corner of the frame 2, is a lever, 9, and fulcrumed at the opposite corner of said frame is a lever 10, to the outer end of which is pivoted one end of a link, 11, the other end of said link being fulcrumed on the lever 9. The free end of each of these levers is loosely confined between studs 12, 12, secured upon or to the respective slides. In the center of the link 11 is loosely pivoted a binding-post, 13, the purpose of which will be hereinafter explained.

Each burner is provided with one of the devices just above described, and as one of the objects of the invention is to project the illuminating-powder into the flame of each burner simultaneously, it will be necessary to so connect each device together as to render this object of easy and rapid accomplishment. These connections consist of small wire rods, 14 and 15, and are made in the following manner, viz: At the intersection of each set of branch pipes with the vertical pipe, centrally pivoted is a four-arm lever, 16, and to the arm 17 of each lever is attached one end of the rod 14, which passes through the perforation in each loosely-pivoted binding-post, carried by the link 11 of the devices, at the right of the vertical pipe, and is securely fastened to each post by a binding-

screw. To the arm 18 of each lever is connected one end of the rod 15, which passes through the perforated and loosely-pivoted binding-posts carried by the links of those devices at the left of said vertical pipe, and is securely fastened to said posts by binding-screws. The arms 19 of the two upper levers are connected together and with one end of a lever 20, centrally pivoted on the vertical pipe, by rods 21, and the arms 22 of the two lower levers are connected together and with the same end of the lever 20, by rods 23. The arms 24 of the two upper levers are connected together and with the right hand end of lever 20, by rods 26, and the arms 27 of the two lower levers are connected together and with the said end of lever 20, by rods 28.

The numeral 29 indicates an air-cylinder, which is secured to the vertical pipe, of the burner-frame, at a point above its attachment with the adjustable rod. The air-cylinder is provided with a piston 20, which has its free end connected to the end of the lever 20, as shown in Fig. 1. The lower end of the cylinder is provided with an opening to which is fitted one end of a flexible tube—provided with an air-bulb attachment. The other end of said tube may be attached to the camera-shutter, in any well known manner.

The operation of the apparatus is as follows: Assuming that the cups or pans are properly charged, and the parts in the position shown in Fig. 1, the manipulation of the air-bulb will force air into the cylinder. The pressure of air coming against the piston-head will cause the piston to move upward, and as said piston is connected to the lowest end of the lever 20, that end of said lever will be caused to rise and its opposite end fall, which operation will exert a downward pulling force on rods 21 and a downward pushing force on rods 23. At the same time rods 26 will be pushed upward and rods 28 pulled upward, which will turn the levers 16 on their pivots and cause their arms 17 and 18 to exert a pulling force on all of the rods 14 and 15, which force will cause the ends of the levers 9 and 10 to instantaneously move each sliding powder-cup or pan and shield or target toward its particular burner, and project the powder into the flame and against the shield or target opposite. It will be obvious, that a target or shield plays an important part in aiding to secure perfect combustion and thereby produce an intense and brilliant light, as it serves to prevent any waste of the powder, that invariably occurs when the shield or target is not used, but it is not my intention to claim, broadly, said shield or target in the present application, as such claim is made in an application filed by me March 7, 1894, Serial No. 502,754.

The guide rails are provided with stops 31, which limit the outward movement of the sliding cups and shields, which movement occurs as soon as the air-cylinder is exhausted. After the operation of projecting the powder

has been accomplished the air escapes from the cylinder, and the lever 20, assumes its normal position. In returning to this position, all of the rods move in a direction opposite that above described, causing the levers 16, to turn in a direction opposite to their former movement and push outward all of the rods 14 and 15, which will cause the levers 9 and 10 to move the sliding cups and shields away from their respective burners, thus setting them for another operation.

Various modifications and alterations may be made in my invention, without changing the spirit or sacrificing the principle thereof, such, for instance, as substituting for the studs, which loosely confine the ends of the levers 9 and 10, any loose connection which will answer the required purpose, or the stops 31 may be made adjustable to vary the stroke of the levers 9 and 10.

It will be observed that when the shield and powder-cup have been moved forward to throw the powder into the flame, they assume a position so close to the burner as to partially encircle the flame, thereby creating a draft, which will intensify the heat of the flame, and as the shield serves to hold, or rather to prevent the powder from being thrown through the flame and lost, it will be seen that perfect combustion takes place.

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, with means for throwing or depositing an illuminating-powder into the flame of the burners, of a sliding-shield or target, adapted to be moved toward said burner to receive against its face the charge of powder, and thereby insure perfect combustion, substantially as specified.

2. The combination, with a flame-burner, of a sliding powder-discharge pan or cup, a sliding-shield or target, and means for moving said pan and shield simultaneously, substantially as specified.

3. The combination, with a flame-burner, of a sliding powder-discharge cup, a sliding-shield, and a system of levers for moving said cup and shield simultaneously, substantially as specified.

4. The combination, with a flame-burner, of a sliding powder-discharge cup, a sliding-shield, a system of levers for moving said cup and shield, and means for operating the levers, substantially as specified.

5. The combination, with a burner, of a sliding powder-discharge cup, a sliding-shield, a pair of pivoted levers connected together by a link, and means attached to said link for operating the levers to move said cup and shield in unison, substantially as specified.

6. The combination, with a burner, of a guide rail extending on opposite sides of said burner, a powder-discharge cup adapted to slide upon the rail on one side of the burner, and a shield adapted to slide on the rail on

the other side of said burner, a pair of pivoted levers connected together by a link and adapted to move said cup and shield, and a wire rod loosely attached to said link, whereby said levers are operated to move the cup and shield, substantially as specified.

7. The combination, with the burner-frame, of a series of sliding powder-discharge cups and shields, a system of levers, for each cup and shield, a series of four-arm levers, connections between each system of levers and the three-arm levers, and means for operating the latter levers to operate the series of cups and shields simultaneously, substantially as specified.

8. The combination, with a burner, a guide-rail on each side of said burner and provided with a lever-supporting frame, of a sliding powder-discharge cup and a sliding-shield, a lever pivoted on said frame and having one end loosely connected with the powder-dis-

charge cup, a lever pivoted on said frame and having its free end loosely connected with the shield, a link connecting the two levers together and adapted to cause said levers to move said cup and shield in unison, substantially as described.

9. The combination, with a burner, of a powder-discharge pan or cup and a shield or target adapted to be moved in unison with said pan toward said burner and to partially encircle the latter, whereby when the illuminating powder is thrown or projected into the flame, complete combustion will take place, substantially as specified.

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

MELVIN DE VER WESTCOTT.

Witnesses:

JOHN W. SUGGETT,
L. R. LEWIS.