

PATENT SPECIFICATION



Application Date: March 14, 1923. No. 7349/23. **217,316**

Complete Left: May 1, 1923.

Complete Accepted: June 16, 1924.

PROVISIONAL SPECIFICATION.

An Improvement in the Construction of Flash-light Apparatus and Method of Ignition of the Flash Powder Used in Connection with such Apparatus for Taking Photographs in the Dark.

I, WALTER BENJAMIN DRAKE, Engineer, of Bermondsey Place East, Prince's Road, Great Yarmouth, a British subject, do hereby declare the nature of this invention to be as follows:—

The apparatus shewn by accompanying drawings Figures 1 & 2, consists of a sheet steel trough A about 7 inches long with extension A¹ for increasing the powder charge and spreading and increasing the light. Through the floor of the trough A is affixed at right angles the $\frac{1}{2}$ inch steel tube B running downwards through holder C terminating immediately above the ratchet wheel H. Attached to holder C by screwed fasteners D and D¹ is the steel ratchet E kept at tension by the coil spring F. The lower screw D¹ is partly covered with the small piece of metal tubing D² between the ratchet and the holder to keep the ratchet at proper distance, sufficient room being allowed between D² and the screwhead for play of the ratchet when same is pressed for firing the flash.

The lower part of tube B is surrounded by a steel coil spring G, the upper end of which is securely fixed into holder C and the lower end secured into the ratchet wheel H, from which wheel passes upward along inside of tube B the steel driving spindle I, Fig. 1, to which is fixed at the top of the mushroom wheel K above the floor of the trough A. Such mushroom wheel K is milled or grooved on its underside. The removable metal cover L is fitted into the trough to protect the mushroom wheel from disturbing the flash powder when rotating. Each of the two tubes M, M penetrating floor of

trough, shewn in drawings in section, contains a flint drawn in solid black, and marked M¹ kept in position close up to the underside of the mushroom wheel K by the steel coil spring M² kept in the tube by the milled screws N, N, the tubes being threaded on the insides for a short distance to receive them. The screws N, N are capable of adjustment to keep the flints sufficiently tightly up to the underside of the mushroom wheel K.

The winged nut J is affixed at the bottom end of driving spindle I immediately below the ratchet wheel H for winding by hand the coil spring G. When fully wound, a tooth of the ratchet wheel H engages the aperture E¹ (Fig. 2) at the bottom end of the ratchet E (Fig. 2) the ratchet being curved to bring it into contact with such teeth.

The coil spring G being fully wound, the trough A is filled with flash powder and the operation of firing is accomplished by grasping holder C and pressing upper part of ratchet E, causing release of ratchet wheel H, which, with the driving spindle I and mushroom wheel K, rapidly rotates, and the latter being in close contact with the two flints M¹, projecting from within the tubes M, M, produces two sets of sparks which are ejected into the powder in the trough through the openings O and O, one at each end of the metal cover L, respectively opposite the flints, thus causing a perfect ignition under the powder from a central position, but in two opposite directions along the floor of the trough without prematurely disturbing the powder,

[Price 1/-]

The metal brace M³ is for binding the three tubes and keeping all strongly in position.

The operation of the preliminary winding of the driving spindle I has the advantage of causing the flints to auto-

atically clean the milled grooves of the mushroom wheel, and ensures a perfect contact, and certain sparking, & prevents misfiring.

Dated the 12th day of March, 1923.
W. B. DRAKE.

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COMPLETE SPECIFICATION.

An Improvement in the Construction of Flash-light Apparatus and Method of Ignition of the Flash Powder Used in Connection with such Apparatus for Taking Photographs in the Dark.

I, WALTER BENJAMIN DRAKE, Engineer, of Bermondsey Place East, Prince's Road, Great Yarmouth, a British subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The apparatus shewn by the drawings Figures 1 and 2 representing front & side elevations, accompanying the Provisional Specification No. 7349 dated 14th March 1923, consists of a sheet steel trough A about seven inches long with extension A¹ for increasing the powder charge and spreading and increasing the light. Through the floor of the trough A is affixed at right angles the quarter-inch steel tube B running downwards through holder C, terminating immediately above the ratchet wheel H. Attached to holder C by screwed fasteners D and D¹ is the steel ratchet E kept at tension by the coil spring F. The lower screw D² is partly covered with the small piece of metal tubing D² between the ratchet and the holder to keep the ratchet at proper distance, sufficient room being allowed between D² and the screwhead for play of the ratchet when same is pressed for firing the flash.

The lower part of tube B is surrounded by a steel coil spring G, the upper end of which is securely fixed into holder C and the lower end secured into the ratchet wheel H, from which wheel passes upward along inside of tube B the steel driving spindle I, Fig. 1, to which is fixed at the top of the mushroom wheel K above the floor of the trough A. Such mushroom wheel K is grooved or milled on its underside. The removable metal cover L is fitted into the trough to protect the mushroom wheel from disturbing the flash powder when rotating. Each of the two tubes M, M penetrating floor of trough, shewn in drawings in section, contains a flint drawn in solid black, and

marked M¹ kept in position close up to the underside of the mushroom wheel K by the steel coil spring M² kept in the tube by the milled-headed screws N, N, the tubes being threaded on the insides for a short distance to receive them. The screws N, N are capable of adjustment to keep the flints sufficiently tightly up to the underside of the mushroom wheel K.

The winged nut J is affixed at the bottom end of the driving spindle I immediately below the ratchet wheel H for winding by hand the coil spring G. When fully wound, a tooth of the ratchet wheel H engages the aperture E¹ (Fig. 2) at the bottom end of the ratchet E (Fig. 2) the ratchet being curved to bring it into contact with such teeth.

The coil spring G being fully wound, the trough A is filled with flash powder and the operation of firing is accomplished by grasping holder C and pressing upper part of ratchet E, causing release of ratchet wheel H, which, with the driving spindle I and the mushroom wheel K, rapidly rotates, and the latter being in close contact with the two flints M¹, projecting from within the tubes M, M, produces two sets of sparks which are ejected into the powder in the trough through the openings O and O, one at each end of the metal cover L, respectively opposite the flints, thus causing a perfect ignition under the powder from a central position, but in two opposite directions along the floor of the trough without prematurely disturbing the powder.

The metal brace M³ is for binding the three tubes and keeping all strongly in position.

The operation of the preliminary winding of the driving spindle I has the advantage of causing the flints to automatically clean the milled grooves of the mushroom wheel, and ensures a perfect

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contact, and certain sparking, & prevents misfiring.

I am aware that for lighting gas burners and for other similar purposes, it has previously been proposed to use igniting means consisting of spring-pressed flints engaging the grooves of a serrated wheel secured to a spindle which is rotated through the medium of a coiled spring adapted to be wound up from time to time and to be released by means of a spring pressed trigger or ratchet.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A photographic flashlamp comprising a trough for receiving the flash

powder charge, and, attached to the trough an igniting means, consisting of spring-pressed flints engaging the grooves of a serrated wheel secured to a spindle which is rotated through the medium of a coiled spring adapted to be wound up from time to time and to be released by means of a spring-pressed trigger or ratchet.

2. In a photographic flashlamp, as claimed in Claim 1, the provision of a removable cover, to prevent the wheel disturbing the powder when rotating.

3. A photographic flashlamp with igniting means substantially as described and shewn on the accompanying drawings.

Dated the 29th day of May, 1924.

WALTER BENJAMIN DRAKE.

[This Drawing is a reproduction of the Original on a reduced scale]

FIG. 1

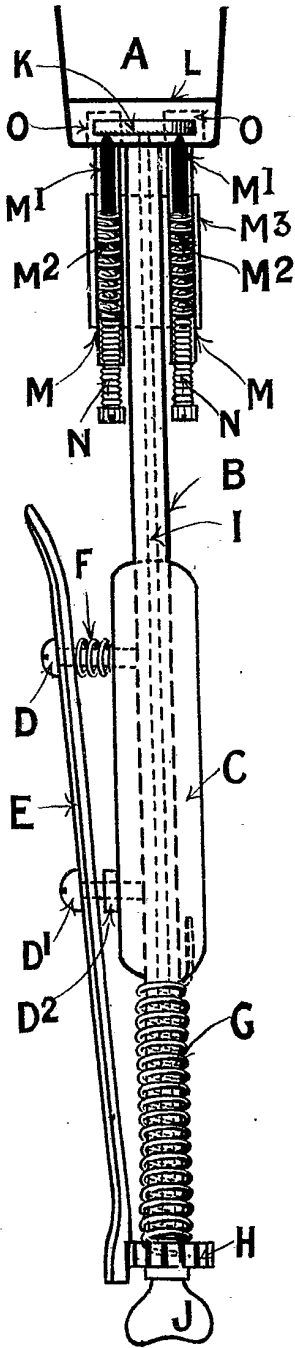


FIG. 2

