

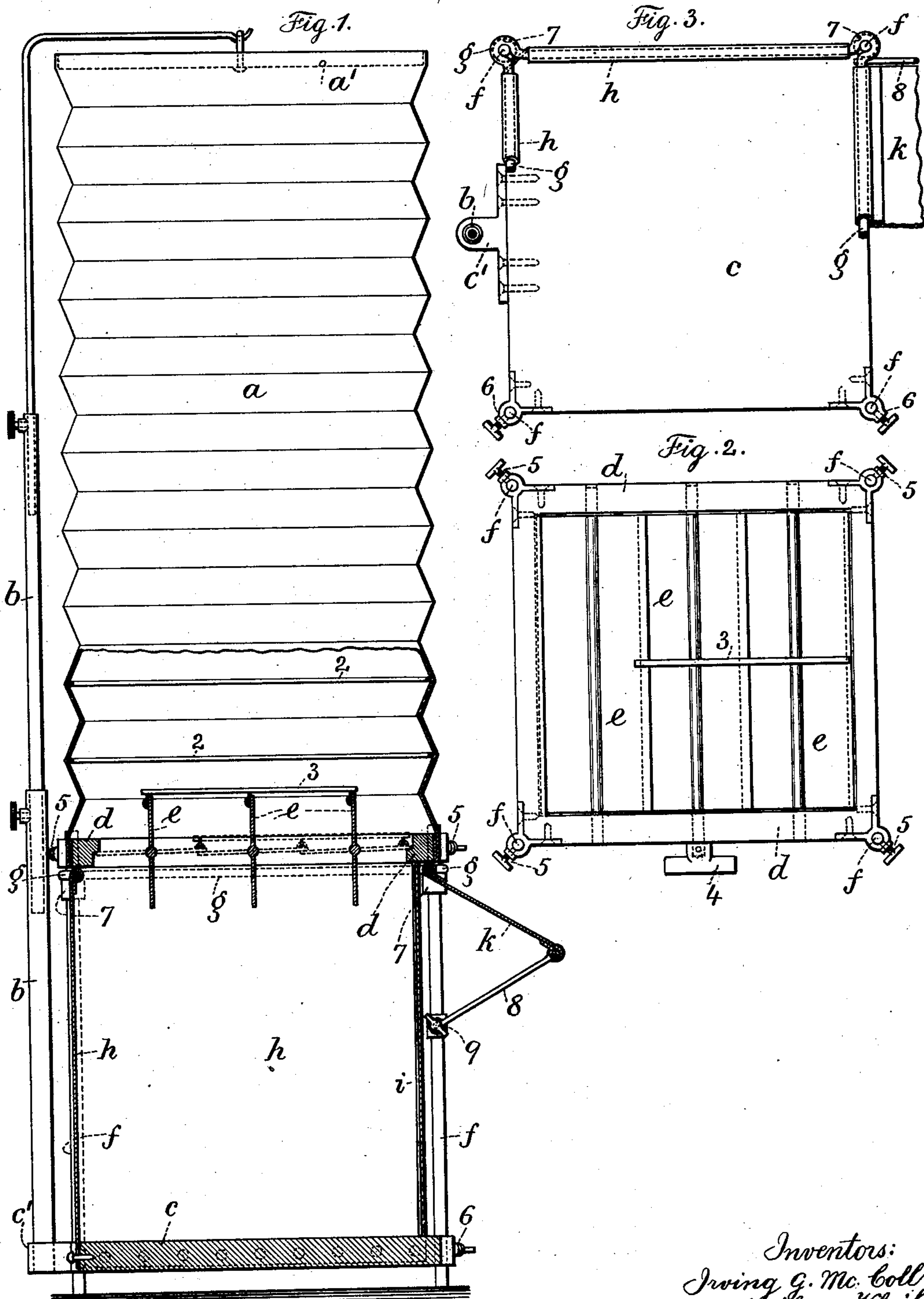
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I. G. McCOLL & M. KLAIBER.
PHOTOGRAPHIC FLASH LIGHT APPARATUS.

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NO MODEL.



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UNITED STATES PATENT OFFICE.

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PHOTOGRAPHIC FLASH-LIGHT APPARATUS.

SPECIFICATION forming part of Letters Patent No. 754,487, dated March 15, 1904.

Application filed July 7, 1903. Serial No. 164,518. (No model.)

To all whom it may concern:

Be it known that we, IRVING G. McCOLL, of the borough of Manhattan, county of New York, and MAXIMILIAN KLAIBER, of the borough of Brooklyn, county of Kings, city and State of New York, both citizens of the United States, have invented an Improvement in Photographic Flash-Light Apparatus, of which the following is a specification.

In the practice of flash-light photography difficulties have been experienced from the presence of the smoke resulting from the flash. This smoke is not only very objectionable, but its presence interferes with the operations of additional flashes and prolongs the necessary time of exposure.

Our invention relates to a device for catching and temporarily confining the smoke, so as to prevent its visible presence in a room or apartment, and which device can be operated to discharge the smoke into the open air.

In carrying out our invention we provide a flexible bellows-like structure of flexible material closed at one end and at the other end connected to a frame having swinging slats. This latter frame is adapted to be connected to the uprights or posts of an inclosure in which the flash is made. A suitable base supports this inclosure, one side of which is to be surfaced with transparent material, while the other sides thereof are opaque and preferably reflective to direct the light through the transparent side. The latter parts are separable from the former, and some of the latter parts are separable from one another, so that the parts may be brought into a compact relation where they will occupy only a minimum amount of space for transportation or storage.

In the drawings, Figure 1 is a vertical section and partial elevation representing our invention. Fig. 2 is a plan of the frame having swinging slats; and Fig. 3 is a plan and partial section of the base and parts connected therewith below said frame, Fig. 2.

a represents a collapsible bellows, preferably constructed of light-weight flexible material, having the upper end a' closed and provided with a suspending-eye, and we prefer to employ wire frames 2 within the series of

most distended portions of the bellows, so as to assist in keeping the bellows in shape and supporting the same, so as to prevent the bellows collapsing.

b represents a telescoping rod-support, the upper free end of which is adapted to engage the supporting-eye at the top of the bellows and the lower end of which telescoping rod-support is received in a bracket c' , connected to the base c .

d represents a frame, preferably of wood, at the lower end of the bellows a , secured to said bellows, which preferably extends around the outside of said frame and is secured to the outer surface thereof in any desired manner. The opening in this frame d is occupied by swinging slats e , which are connected together by a bar 3, causing the said slats to move together. The several slats are provided with axes pivotally mounted in opposite sides of the frame d , and the axis of the central slat passes through the frame at one side and is provided with a knob 4, by which the center slat and through the intervention of the bar 3 all of the slats turn together to throw open the center of the frame or close the same up. The respective corners of the frame d are provided with clamps 5, and the respective corners of the frame c are provided with similar corner-clamps 6. Each of these clamps consists of a tubular portion through which passes a thumb-screw and parts at right angles to one another to fit the recessed corners of the parts d and c and perforated for screws which pass through the parts of said clamps into the frame d and base c . These corner-clamps receive corner-posts f , the ends of the posts passing into these sleeves and being held thereto by the set-screws. These posts near their upper ends are provided with sleeves 7, which preferably are fixed to the posts.

A wire frame g , conforming in outline to the base c and frame d , is provided with corner eyes or loops to set over the upper ends of the posts f above the sleeves 7. The sides h are formed of flexible material and occupy three sides of the base c , the lower portions of said sides being preferably nailed to the edges of the base c , and the upper part or edge

passes as a loop over the wire frame *g*. Thus three sides of the space between the frame *d* and the base *c* are inclosed or occupied by this flexible material. This material is not only
 5 flexible, but preferably opaque and of light color, at least on the inside, so as to be reflective. The fourth side is to be occupied by transparent material *i*, which may be glass, mica, transparent celluloid, or other similar suitable
 10 material extending between two corner-posts and the base *c* and frame *d* and may be secured in position in any desired manner, such securing means, however, forming no necessary part of our present invention. On the
 15 side occupied by the transparent material *i* we prefer to employ a hood *k*, formed of flexible material similar to that employed for the sides *h*, and which flexible-material hood *k* extends from one side of the wire frame *g* to a
 20 part of a bracket 8, the ends of which are preferably pivotally connected to clamping-sleeves 9 upon two of the corner-posts *f*. This hood may be raised or lowered and adjusted for the amount of light to be flashed from the
 25 apparatus. We have not shown in connection with our improvement any lamp or pneumatic apparatus for producing the flash, as this forms no necessary part of our present invention, because any form of such apparatus suitable for the purpose may be employed and
 30 should be placed upon and supported by the base *c* within the sides *h* and transparent material or front of the apparatus.

In the operation of the device the bellows *a*
 35 is to be in a collapsed condition at the start, with the slats *e* closed in relation to the frame *d*. At the moment the flash is made the bellows is to be raised, and so extended, and the slats *e* swung into the position, Fig. 1. It will
 40 be apparent that this action will create a partial vacuum in the bellows, so as to draw therein either a body of air or smoke that may be at the opening in the frame. Consequently the smoke of the flash will at once be drawn
 45 into the bellows, and when the bellows is fully extended it is to be supported upon the rod *b*, and as soon as the flash is over and the smoke drawn into the bellows the slats *e* are to be closed, retaining the same within the bellows.
 50 The screws of the corner-clamps 5 of the frame *d* are now to be loosened, so that the frame *d* and bellows *a* may be lifted off the corner-posts and removed to the open air, where it is preferable to invert the bellows and frame,
 55 open the slats *e*, and collapse the bellows, which action will force the smoke out of the bellows into the open air, where the same will be discharged instead of, as heretofore, being discharged into the room where the flash is made.

60 We do not herein limit ourselves to the precise form of the apparatus shown nor to the precise details of the construction, as both of these may be modified without departing from the essential features of the invention.

65 We prefer to make the bar 3, that connects

the slats *e*, heavy, so that the same will act automatically to close or open the slats except when positively opened by the hand on the knob 4, because by so doing the bar 3 will hold the slats closed after the smoke has been
 70 drawn into the bellows *a* and while the same is being removed out of doors, and when the bellows is overturned to expel the smoke the slats will be opened by the weight of this bar. The hood *k* is especially useful when there is
 75 no transparent medium in the front to direct the smoke into the bellows, the hood and bellows acting as a chimney. The material *i* in the front may be transparent or translucent. It acts to diffuse the light. 80

We claim as our invention—

1. In a flash-light apparatus, the combination with an inclosure in which the flash is made, of a device connected thereto, separable therefrom and progressively extensible so as
 85 to draw therein the smoke from the combustion of the flash-powder, means for closing said device and retaining the smoke therein and which means may after the separation of the parts be opened to permit the exit of the
 90 smoke.

2. The combination in a flash-light apparatus with an inclosure in which the flash is made, of an apertured device adapted to be connected therewith, means connected with
 95 said device for closing said aperture, and a bellows structure connected with the apertured device whereby when the flash is made in the inclosure the bellows may be distended and the closing means in the aperture operated to draw the smoke into the bellows and retain the same therein by again closing off the aperture, said bellows and apertured device being removable from the inclosure so that the smoke may be discharged into the
 105 open air.

3. In a flash-light apparatus, the combination with an inclosure in which the flash is made, of an apertured frame and means for removably connecting the frame to the inclosure, swinging slats in the frame for closing off the aperture therein, a bellows structure connected to the frame, and means for holding the same in a distended condition.

4. A flash-light apparatus comprising a supporting-base, corner-posts, means for connecting the corner-posts to the base, a flexible device inclosing three sides and a transparent device inclosing the fourth side, a removable apertured frame adapted to fit upon and be
 120 connected to the corner-posts, means for closing the aperture in said frame and an extensible device connected to said frame, substantially as set forth.

5. A flash-light apparatus, comprising a supporting-base, corner-posts, means for connecting the corner-posts to the base, a flexible device inclosing three sides, and a transparent device inclosing the fourth side, a removable apertured frame adapted to fit upon and be
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connected to the corner-posts, swinging slats adapted to close off or open up the space within said frame, a bellows device connected at its edges to said frame and adapted to be distended above the said frame and the base, substantially as and for the purposes set forth.

6. A flash-light apparatus, comprising a supporting-base, corner-posts, corner-clamps connected to the base and adapted to receive and engage the posts, sleeves upon the corner-posts near their upper ends, a wire frame having corner-eyes adapted to rest upon said sleeves and be received over said corner-posts, flexible material connected to said wire frame and to said supporting-base around three sides, transparent material forming the fourth side of the inclosure above the base, an apertured frame, corner-clamps on said frame adapted to receive and fit over the upper ends of the corner-posts and to rest down upon said wire frame, swinging slats within and extending across said frames and adapted to open up or close off the space within the same, and a bellows structure closed at one end and at the other end connected to said frame.

7. A flash-light apparatus, comprising a supporting-base, corner-posts, corner-clamps connected to the base and adapted to receive and engage the posts, sleeves upon the corner-posts near their upper ends, a wire frame having corner-eyes adapted to rest upon said sleeves and be received over said corner-posts, flexible material connected to said wire frame and to said supporting-base around three sides, transparent material forming the fourth side of the inclosure above the base, an apertured frame, corner-clamps on said frame adapted to receive and fit over the upper ends of the

corner-posts and to rest down upon said wire frame, swinging slats within and extending across said frame and adapted to open up or close off the space within the same, a bellows structure closed at one end and at the other end connected to said frame, and a telescoping rod-support connected to the base and adapted to engage the free closed end of the bellows device.

8. A flash-light apparatus comprising a supporting-base, corner-posts, corner-clamps connected to the base and adapted to receive and engage the posts, sleeves upon the corner-posts near their upper ends, a wire frame having corner-eyes adapted to rest upon said sleeves and be received over said corner-posts, flexible material connected to said wire frame and to said supporting-base around three sides, transparent material forming the fourth side of the inclosure above the base, an apertured frame, corner-clamps on said frame adapted to receive and fit over the upper ends of the corner-posts and to rest down upon said wire frame, swinging slats within and extending across said frame and adapted to open up or close off the space within the same, a bellows structure closed at one end and at the other end connected to said frame, and an adjustable hood device between the base and said frame and at the side having the transparent material.

Signed by us this 1st day of July, 1903.

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Witnesses:

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