

No. 696,402.

Patented Apr. 1, 1902.

L. G. BIGELOW.
PHOTOGRAPHIC FLASH LIGHT MACHINE.

(Application filed July 26, 1901.)

(No Model.)

Fig. 1.

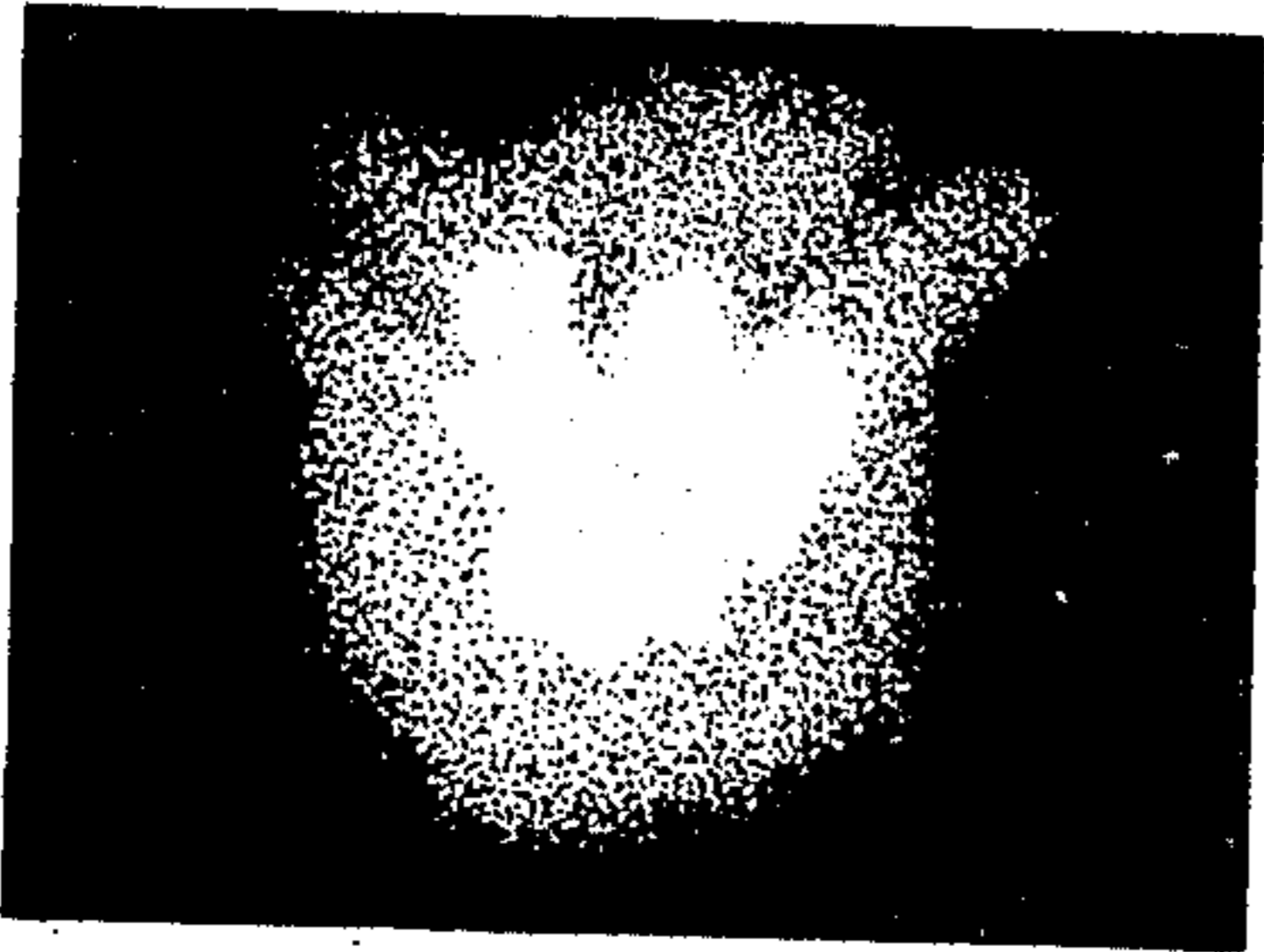


Fig. 2.

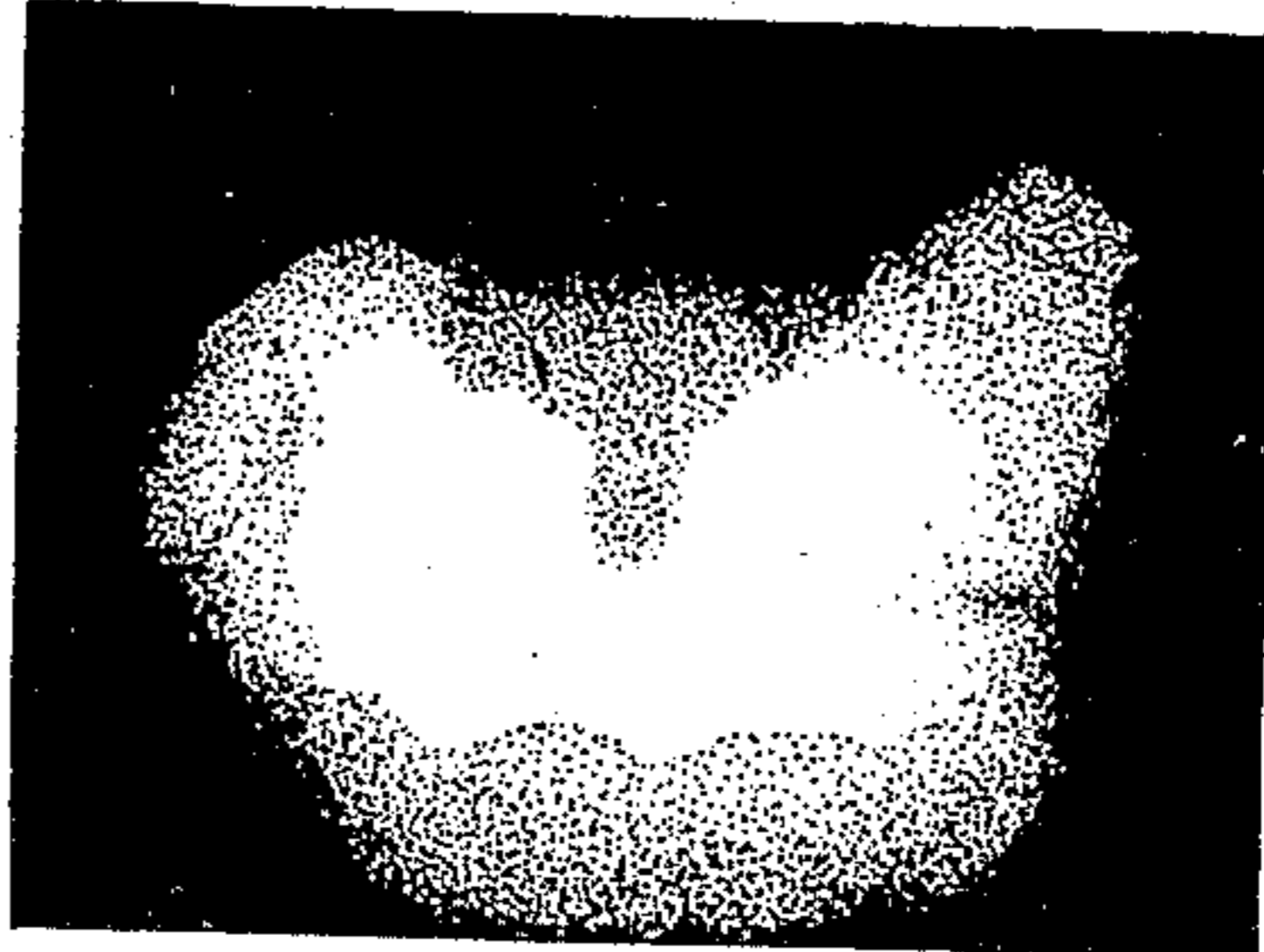


Fig. 3.



Fig. 4.

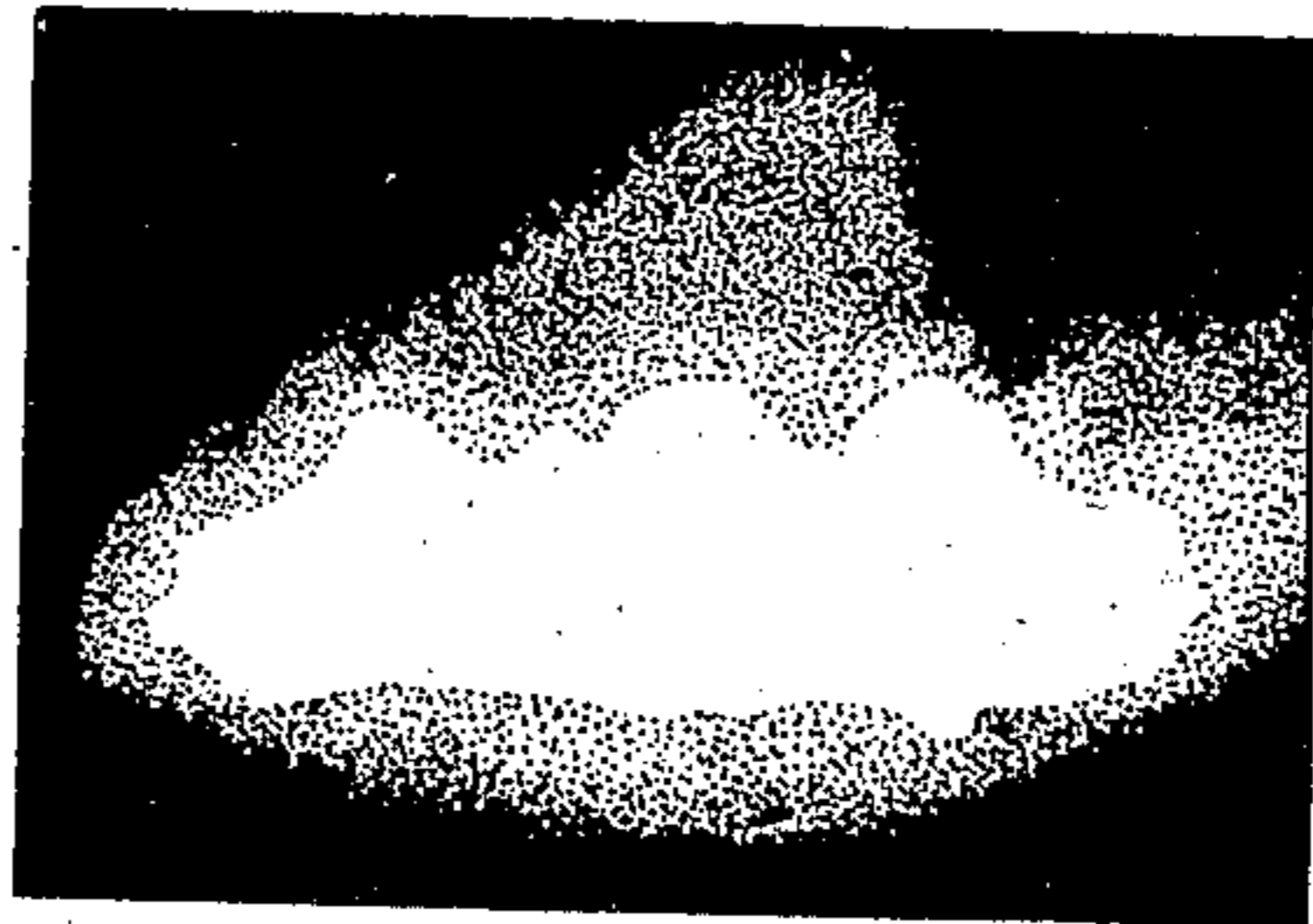


Fig. 5.

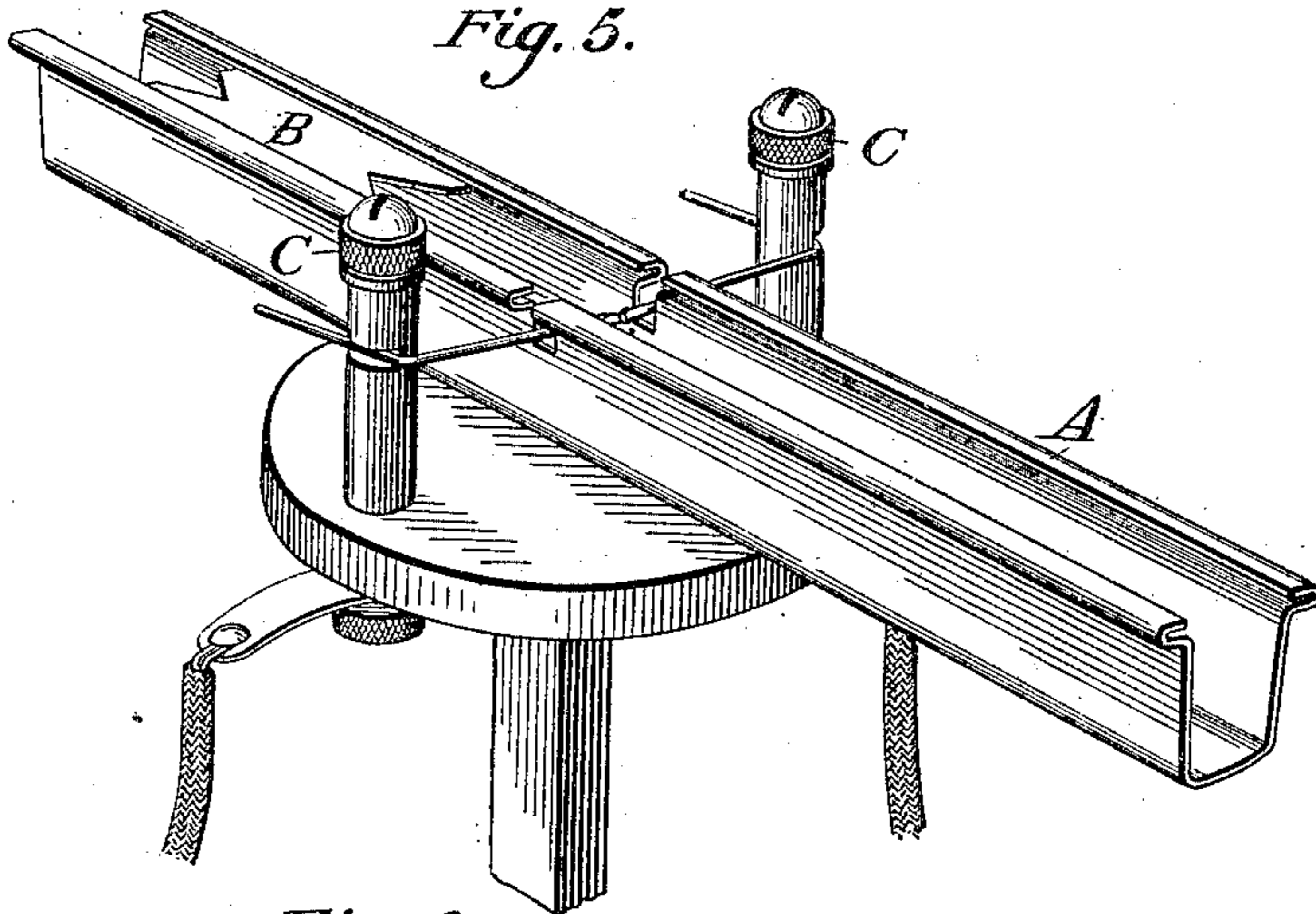
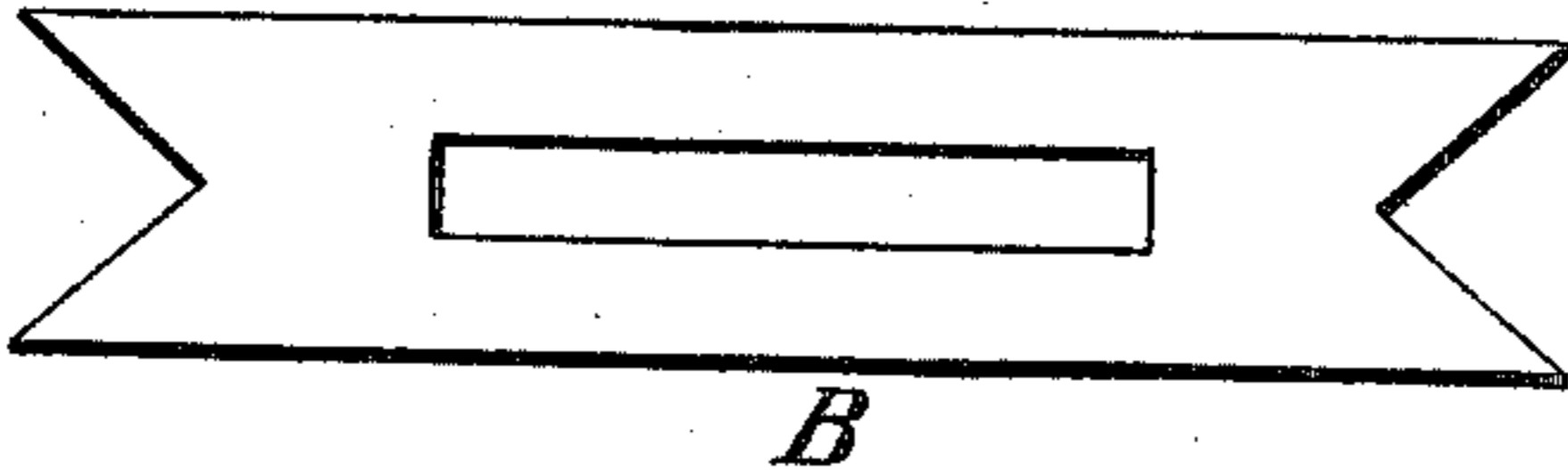


Fig. 6.

Witnesses:

Chas. W. Henderson
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Inventor:

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UNITED STATES PATENT OFFICE.

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PHOTOGRAPHIC FLASH-LIGHT MACHINE.

SPECIFICATION forming part of Letters Patent No. 696,402, dated April 1, 1902.

Application filed July 26, 1901. Serial No. 69,866. (No model.)

To all whom it may concern:

Be it known that I, LYMAN G. BIGELOW, a citizen of the United States, residing at St. Joseph, in the county of Buchanan and State of Missouri, have invented a new and useful Improvement in Photographic Flash-Light Machines, of which the following is a specification.

My invention relates to flash-light machines in which explosive or quick-burning powder is used.

The flash-pan of my invention adds greatly to the illuminating value of the powder and at the same time causes the flash to be instantaneous.

It is well known that the illuminating power of a flame is in proportion to its area or flatness. Remove the tip of an ordinary gas-burner and the flame is like a candle in shape and illuminating power. Replace the tip and the flame is spread out flat, thus producing great illuminating energy. It is on this principle that the flame from the burning powder is spread by using the flash-pan of my construction.

By reference to the drawings, Nos. 1, 2, 3, and 4, which are made from photographs of the flashing of sixty grains of powder in each instance, it will be seen that my flash-pan accomplishes what I claim for it.

Figure 1 represents the flame from sixty grains of powder as heretofore burned.

Figs. 2, 3, and 4 show the flame of sixty grains of powder when burned in my flash-pan. The shape of the flame is under control by means of a cover which forces the flame from either end of the flash-pan. The longer the cover the longer the flame produced. The notch at the ends of the cover produces the wide flat flame. The slight confining of the powder by the cover also insures an instantaneous flash. By this cover intense heat is generated, which makes it possible to use a powder containing a much larger proportion of the metals, magnesium or aluminium, and still make the flash instantaneous and of greater intensity. Smokeless gunpowder, if burned openly, is consumed very slowly, but when confined is the quick-

est powder known. It is so with the flash-powder in common use.

Fig. 5 represents a perspective view of my flash-pan. A represents a metal pan or trough in which the powder is placed for exploding. B is a sliding or adjustable cover. When the pan is loaded for firing, the adjustable cover is placed over the firing-fuse to confine and spread the flame. C C represent the binding-poles for the firing-fuse. At the other extremity of these poles the electrical connection is attached for firing the powder, which is accomplished by a battery or any other method in common use.

In Fig. 6 I have shown another form of cover having the notched ends and a longitudinal slot between said ends. By the use of this form of cover I produce a complete fan-shaped flame. It is of course to be understood that the different covers are to be used interchangeably to produce the style of flame required.

Having now described my improved flash-pan, I claim as my invention and desire to secure by Letters Patent—

1. A flash-light pan provided with a cover retained in position over the powder during the explosion to spread and cause a flat flame.
2. A flash-pan and a cover therefor having notched ends as and for the purpose specified.
3. A flash-pan, and a cover therefor having notched ends and an intermediate slot, as shown and described.
4. A flash-pan and covers of different length and form fitted to said pan for use interchangeably to produce different styles of flame, as set forth.
5. A flash-pan and a rigid cover therefor slidable therein to cover the powder and remain rigid during the explosion to spread the flame, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LYMAN G. BIGELOW.

Witnesses:

EMMA HECKEL,
J. M. HELLER.