

No. 613,021.

Patented Oct. 25, 1898.

Y. SCHWARTZ.
FLASH LIGHT COMPOSITION.

(Application filed Mar. 26, 1896.)

(No Model.)

Fig. 1.

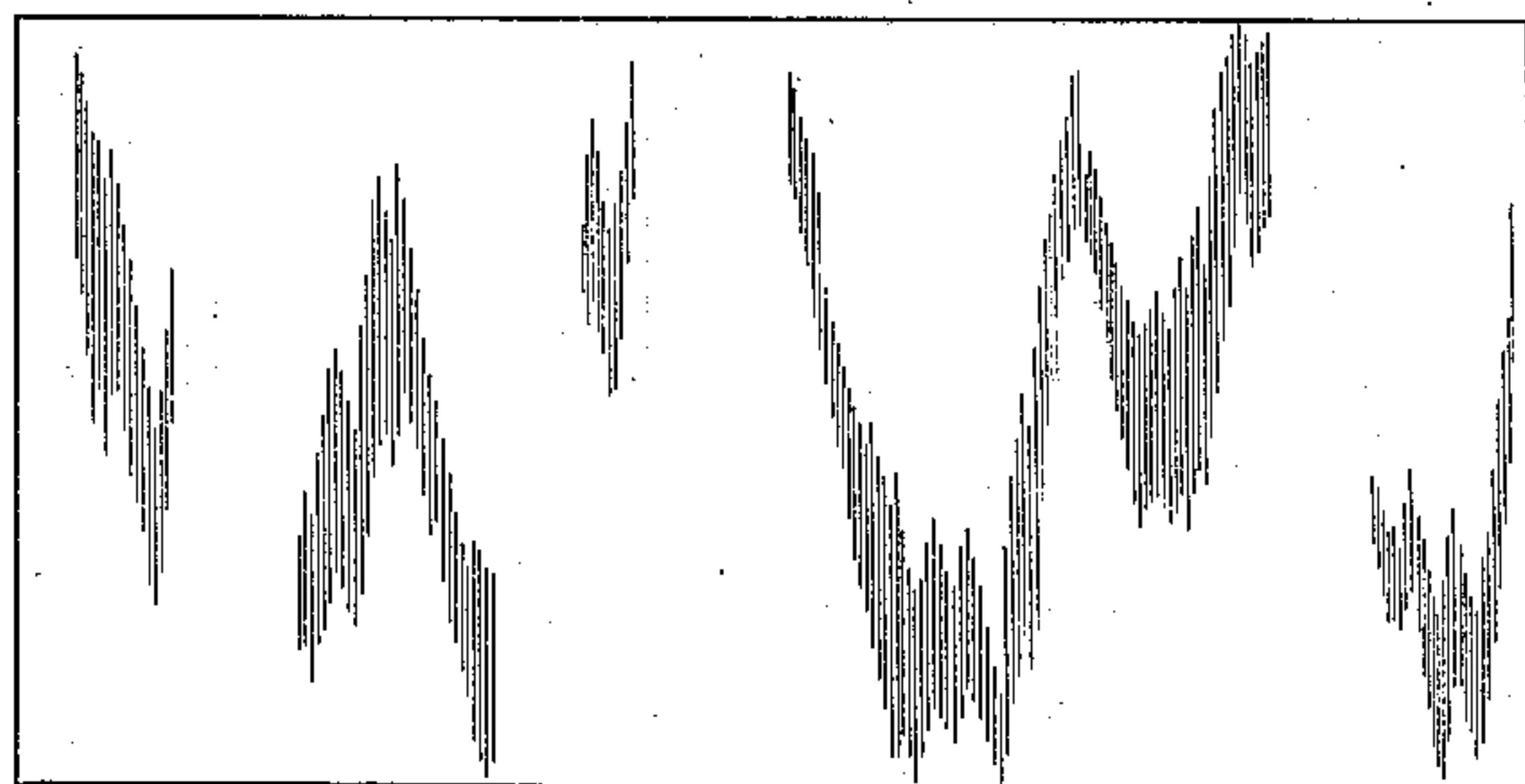


Fig. 1^a



Fig. 2.

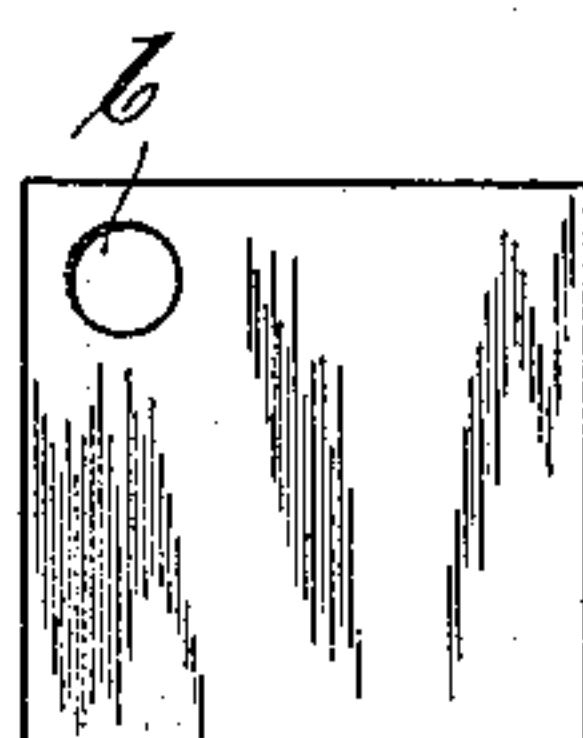


Fig. 2^a



Fig. 3.

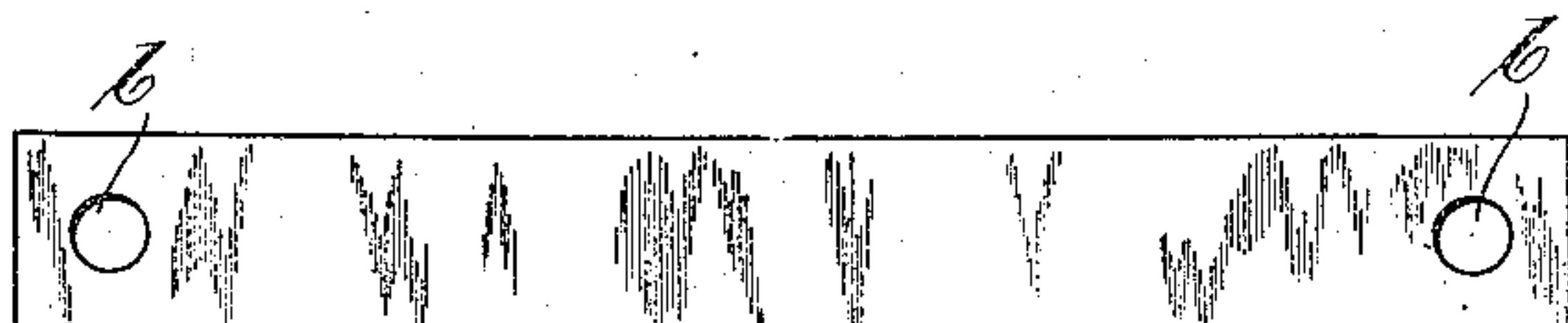


Fig. 3^a



Witnesses:

Carl Ruff.

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UNITED STATES PATENT OFFICE.

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FLASH-LIGHT COMPOSITION.

SPECIFICATION forming part of Letters Patent No. 613,021, dated October 25, 1898.

Application filed March 26, 1898. Serial No. 585,011. (No specimens.)

To all whom it may concern:

Be it known that I, YORK SCHWARTZ, a subject of the King of Prussia, German Emperor, and a resident of Hanover, in the Kingdom of Prussia, German Empire, have invented certain new and useful improvements in the means for suddenly lighting objects, especially such as are to be photographed, of which the following is an exact specification.

Objects to be photographed are, as is known, oftentimes lighted—i. e., suddenly—or lighting-like lighted by aid of an easily-inflammable and quickly-combustible mixture that contains magnesium, aluminium, or an equivalent substance. This mixture is generally employed in the form of a conical heap. The free surface of the latter is very small in comparison to the volume of the material, and the intensity of the light does not correspond to the quantity of that material, the more as the light produced by the inner portion of the mixture is greatly absorbed by the flame resulting from the combustion of the outer one. To obviate this drawback, the mixture has already been used not in the form of conical heaps, but in that of long ones; but then the generation of the light is distributed over or through a longer period of time, which again is very disadvantageous for the photographing of some kinds of objects.

I now propose to mix the lighting material with an easily-inflammable and quickly-combustible cementing medium—for instance, with a solution of pyroxylin in ether and alcohol—and to bring this mixture into the shape of a foil of suitable size. After the foil has become dry it may be hung up by means of a wire and then used as usual. The surface of the foil is very great in proportion to the volume of the latter, and there is practically no absorption of light at all by the flame. The material combusts with very great quickness, and the full intensity of the light is at once attained. I am therefore enabled to use less material than has been requisite up to now to get a certain definite volume of light.

Instead of mixing the lighting material directly with a solution of the cementing medium I may as well mix it first with the dry cementing medium and then add the solvent for the latter to that mixture, or I may form foils of the cementing medium and in-

close a layer of the lighting material between two of said foils or provide one such foil on either side with a layer of said lighting material.

As an instance of the mixture which I employ in the production of my improved foils I mention the following as examples: dry finely-powdered chlorate of potassium, six hundred grams; dry finely-powdered magnesium, five hundred grams. I may, however, substitute for the chlorate of potassium in the example above given "nitrate of potassium," so that in such a case the composition would, for instance, be: dry finely-powdered nitrate of potassium, five hundred grams; dry finely-powdered magnesium, five hundred grams.

In fact, a great many variations may take place with regard to the manner of combining the lighting material with the cementing medium, and I wish it to be understood that I do not confine myself to the examples above given.

Other advantages afforded by my novel method reside in the facilitation of, first, the handling of the material, and, second, the proportioning or adjusting of the quantity that is requisite or sufficient for one act of photographing or the like.

Figure 1 shows a foil or thin plate of rectangular form, this being a convenient shape in which the flash-light mixture or flash-light foil may be supplied, though it is clear that, if desired, I may bring the mixture to a foil or plate embodying any other shape. Fig. 2 represents a square or rectangular piece cut to any required size and ready for use; Fig. 3, a longitudinal strip ready for use, said piece or strip having also been cut or otherwise detached from a larger plate or foil, the size and shape of the detached pieces being proportioned either on the assumption that a square inch of foil would contain six grains of lighting material or the said pieces may be proportioned according to the option or experience on the part of the operator as to the effect of flash-light mixture. Figs. 1^a, 2^a, and 3^a are side or end views of Figs. 1, 2, and 3.

The plate or foils may be provided with a hole or holes *b* (shown in the drawings) for the purpose of attachment of a wire.

The size and shape of the lighting-foils may

greatly vary and is, as a matter of course, dependent on the volume of light demanded and the purpose for which the light is required.

Having thus fully described the nature of this invention, what I desire to secure by Letters Patent of the United States is—

1. As a new article of manufacture, the mixture of a light metal with a cementing medium, said mixture being brought into the form of a foil, for the purpose as set forth.
2. As a new article of manufacture, the com-

bination of a quickly-combustible magnesium mixture, with a cementing medium, said mixture being brought into the form of a foil, for the purpose as set forth.

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

YORK SCHWARTZ.

Witnesses:

GEO. F. BENSON,
LOUISA GRIMPE.