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No. 769,343.

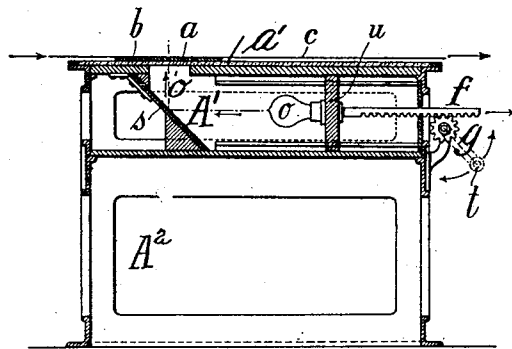
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J. HINNE.

PHOTOGRAPHIC PRINTING APPARATUS.

APPLICATION FILED APR. 3, 1903.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOBST HINNE, OF BERLIN, GERMANY.

PHOTOGRAPHIC-PRINTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 769,343, dated September 6, 1904.

Application filed April 3, 1903. Serial No. 150,938. (No model.)

To all whom it may concern:

Be it known that I, JOBST HINNE, merchant, a subject of the Emperor of Germany, and a resident of 55 Wilhelmstrasse, Berlin W., in the county of Brandenburg, Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Photographic-Printing Apparatus; 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, reference being had to the accompanying drawing, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to an apparatus for obtaining photographic prints from negatives, and more particularly to that class of photographic-printing machines in which artificial light is used for the purpose of printing.

It has been found that the photosensitiveness of the photographic paper upon which the prints are made varies greatly in different rolls or batches of paper and also that the heat-rays from the light often injuriously affect this paper.

The object of my invention is to provide an apparatus wherein the source of light is so adjustable that the intensity of the light may be nicely regulated to the sensitiveness of the paper, and the injurious heat-rays upon the sensitized paper.

The accompanying drawing is a sectional elevation of a photographic-printing machine embodying my invention.

A' represents the closed lighting-chamber, mounted upon a frame A² and having in its opaque top a printing-opening or light-slot *a*, through which the rays of light pass to the negative *b*. *a'* is a glass plate which extends over this opening and the top of the lighting-chamber. The negative is placed over the opening *a*, and the photographic or sensitized paper *c* is placed over the negative in any suitable manner.

Within the lighting-chamber A' is arranged the lamp *o*, of which several may be employed. The opaque top of the lighting-chamber protects the negative from the main body of the direct rays of light, and the volume of light

which is effective in printing falls primarily upon an oblique reflecting-plate *s* and is reflected by the latter through the light-slot *a* upon the negative. This reflecting-plate absorbs or intercepts to a large extent the heat-rays which are emitted by the lamp, and so prevents the heat-rays from reaching the paper in such volume as to affect the same injuriously.

Various devices may be employed for adjusting the lamp support toward or from the light-slot. In the construction shown the lamp is supported by a vertical plate *u*, which is horizontally movable and carries a rack-bar *f*. The latter extends outside the casing and meshes with a gear-wheel *g*, having its shaft provided with a crank *t*. By turning this crank the lamp-support *u* may be moved back and forth in the lighting-chamber for adjusting the lamp toward or from the reflecting-plate *s* and light-slot *a* as may be necessary to produce the desired light effect upon the negative and properly intercept the heat-rays.

In operating the apparatus the negative *b* and the photographic paper *c* are brought over the light-opening *a* in any suitable or well-known manner. Before the apparatus is used for printing a test is made of the roll or batch of photographic paper upon which the prints are to be made to determine its sensitiveness. The position of the lamp in the lighting-chamber is then adjusted so that the intensity of the light which passes through the opening *a* and falls upon the negative and photographic paper is exactly such as is requisite for proper printing. For a very sensitive paper the light is placed farther from the slot than for a less sensitive paper.

I claim as my invention—

1. In a photographic-printing apparatus, the combination of a lighting-chamber provided with an opening in which the negative is exposed, a lamp, a reflecting-plate situated between said lamp and said opening and adapted to reflect the rays of light from said lamp into said opening, and means for regulating the distance between said lamp and said reflecting-plate, substantially as set forth.

2. In a photographic-printing apparatus, the combination of a lighting-chamber provided

in its top with an opening in which the negative is exposed, a horizontally-adjustable support arranged at one end of said chamber, a lamp within said chamber secured to said adjustable support, an oblique reflecting-plate arranged at the opposite end of said chamber and adapted to reflect the light from said lamp into said opening, and means for adjusting said support horizontally toward and from

said oblique reflecting-plate, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JOBST HINNE.

Witnesses:

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