

(No Model.)

D. S. COLE.

PHOTOGRAPHIC CAMERA MULTIPLYING ATTACHMENT.

No. 520,034.

Patented May 22, 1894.

FIG-1-

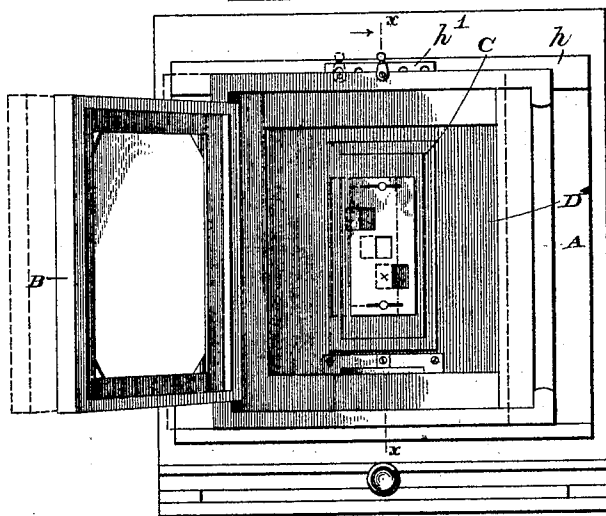


FIG-2-

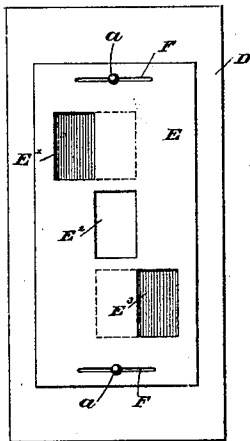
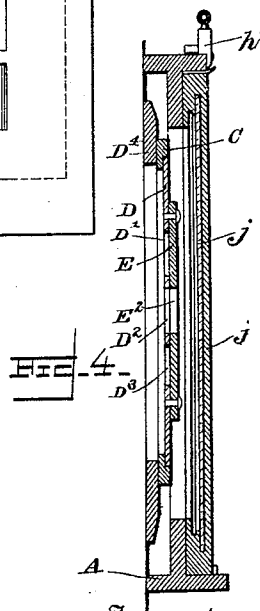
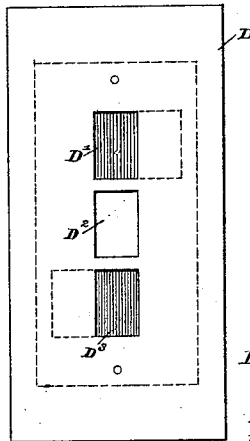


FIG-3-



Witnesses
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UNITED STATES PATENT OFFICE.

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PHOTOGRAPHIC-CAMERA MULTIPLYING ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 520,034, dated May 22, 1894.

Application filed November 25, 1892. Serial No. 453,078. (No model.)

To all whom it may concern:

Be it known that I, DAVID S. COLE, a citizen of the United States, residing at Washington, in the county of Washington and State of Iowa, have invented certain new and useful Improvements in Multiplying Attachments for Photographic 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.

This invention relates to an improvement in a multiplying attachment for photographic apparatus, the object thereof being to provide a simple and readily-manipulated device which can be applied to any ordinary photographic apparatus whenever it is desired to take numerous negatives upon the same plate for the purpose of simultaneously printing several photographs, and the invention therefore consists in the construction, arrangement and combination of the several parts substantially as will be hereinafter described and then more particularly pointed out in the appended claims.

In the annexed drawings illustrating my invention: Figure 1 is a front elevation of a photographic apparatus showing my improved multiplying attachment arranged operatively therein. Fig. 2 is a detail front elevation of the attachment. Fig. 3 is a rear elevation of the same. Fig. 4 is a view representing a modification in the construction of the device. Fig. 5 is a sectional view on the line $x x$ of Fig. 1.

Similar letters of reference designate corresponding parts in the several views.

A denotes any ordinary photographic apparatus having any common or desired structure and provided with the usual parts, including the sliding gage ordinarily employed for the purpose of sliding the sensitive plate across the field of vision in order to permit several impressions to be taken thereon.

h denotes the slideways, h' the slide gage, D^4 the rectangular frame in the rear of the camera, J the sensitive plate holder and j the sensitive plate.

My improved multiplying attachment consists essentially of two plates, made of any suitable material and placed one against the other, or flat-wise in contact in a vertical po-

sition. D denotes one of these plates; E the other. Plate E is preferably smaller in size than plate D. One of these plates as E is provided with a diagonal row or series of holes or openings, having any suitable shape or form, preferably rectangular and of any number, as $E'E^2E^3$. The other, as D, is provided with a vertical series of holes or openings, also of any suitable shape, preferably rectangular, and of any number, as $D'D^2D^3$. The plate E slides upon the face of the plate D so as to bring the hole in one plate into coincidence with a hole in the other plate, it being noted that only two holes will be in coincidence at the same time. In order that the plate E may slide easily upon the plate D, I provide plate E at top and bottom with horizontal slots F F which receive headed pins $a a$ which are fixedly secured upon the plate D. Thus it will be seen that by moving these two plates, one upon the other or relatively to each other, I am enabled at one time to provide a single opening located near the upper end of the plates and at another time a single opening located near the middle of the plates and at another time a single opening located near the bottom of the plates, or in other words, three successive openings in a vertical line or whenever the plates are provided with more than three openings, of course a longer series of apertures open singly, may be provided.

I will now explain how this device is used for the purpose of enabling a large number of negatives to be taken upon the same plate. First, the multiplying attachment is placed firmly in a rectangular frame C in the rear end of the camera and in front of the ground glass. The sensitive plate is then placed in the camera in the usual manner and the upper left hand corner thereof is brought into focus with the upper opening in the multiplying attachment which opening is uncovered, the plates having been relatively adjusted to permit this. One impression can now be taken. Then by means of the sliding gage with which the photographic apparatus is provided, the sensitive plate may be adjusted to the left for instance and another impression taken. This adjustment of the sensitive plate will be continued until the entire field has been crossed and until a horizontal series of nega-

tives has been prepared, all of them being made simply by the use of the upper opening in the multiplying attachment, said opening being uncovered, while all the other apertures therein are covered or closed so as to prevent the passage of any light through the multiplying attachment except at the single open point. Next the camera is depressed and the plates of the multiplying device are adjusted so as to close the upper opening and open the one next below, that is to say in the present example, the middle one, bringing E^2 and D^2 into coincidence with each other. Then the field will be crossed again in like manner, the operator causing the sensitive plate to be adjusted step by step across the field of vision and the consequence will be that another row of impressions will be taken upon the sensitive plate. The camera is then further depressed and the second or middle openings are closed and the third opening made, by bringing the apertures E^3 and D^3 into coincidence. The same operation is then carried on as before. This operation may be continued as long as any apertures in the multiplying attachment can be provided. The sensitive plate will then be found to have as

many horizontal rows of negatives as there are apertures in the multiplying attachment.

Numerous slight changes may be made in the details of my invention without departing therefrom.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a multiplying attachment for photographic apparatus, two plates adjustable one upon the other, one being provided with a diagonal series of apertures and the other with a straight series.

2. The herein described photographic camera attachment consisting of plates D and E, said plate E being provided with the diagonally arranged openings E' E^2 E^3 and plate D being provided with the straight series of openings D' D^2 D^3 , together with the guide pins a a on the plate D which enter the guide slots FF in plate E, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID S. COLE.

Witnesses:

A. S. FOLGER,
A. R. MILLER.