

A. H. WYNKOOP.
 PHOTOGRAPHIC APPARATUS.
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1,208,071.

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Fig. 2.

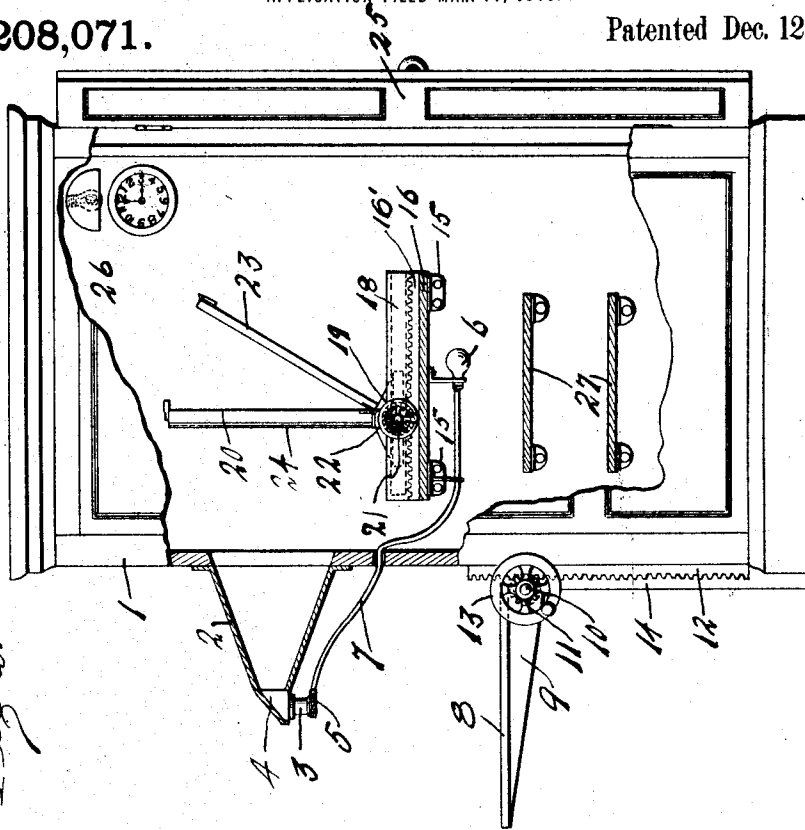
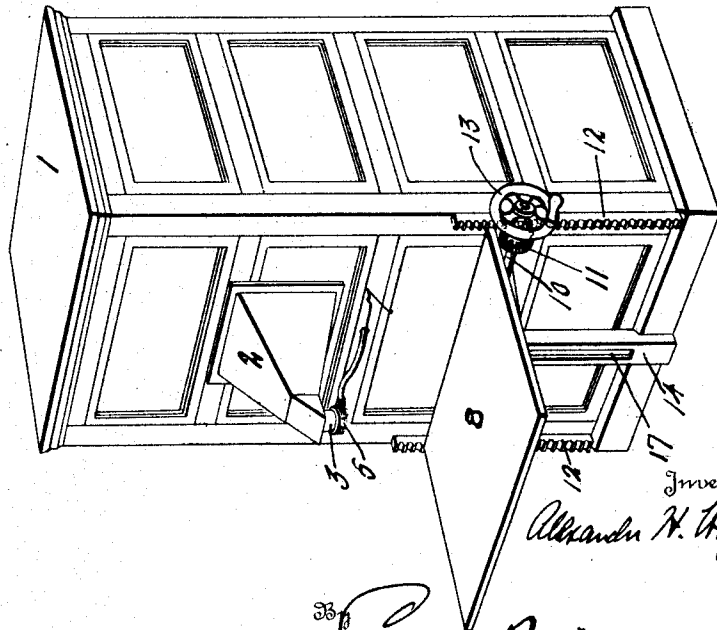


Fig. 1.



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UNITED STATES PATENT OFFICE.

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PHOTOGRAPHIC APPARATUS.

1,208,071.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALEXANDER H. WYNKOOP, citizen of the United States, residing at Washington, District of Columbia, have
5 invented certain new and useful Improvements in 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
10 to which it appertains to make and use the same.

This invention relates to a photographic apparatus, and has particular reference to an improved form of apparatus adapted for
15 use in commercial photography.

The primary object of the invention is to simplify all of those forms of commercial photographing apparatuses which are known to me.

20 In the development of photographic apparatus for commercial uses from those reproducers which first require the production of a negative from which to make prints, to those machines which copy directly upon a
25 photographic paper, all of the machines of the latter type which are known to me are more or less complicated. That is, they are large and bulky, generally requiring a special room or floor-space of large dimensions
30 for their operation, and the developing apparatuses accompanying the machines are composed of automatic mechanisms for carrying the prints through the developing steps. Furthermore, the machines which are
35 most commonly in use, as known to me, are constructed in standard sizes, and in such standard form, are provided with quantities of paper in specially prepared rolls, from which the paper is fed across the light aperture, and thence to the developing apparatus. Being thus constructed, the machines are limited to the production of pictures in certain sizes, and in order to prevent the machines from becoming too cumbersome, these sizes are comparatively small, when it is considered that it is often desirable to reproduce large sheets, such as maps, factory tracings and similar matters.

In providing a simpler, more practical
50 machine for general use, and one requiring a minimum of labor in operation (the machines above mentioned often requiring the services of two and three operatives), I have avoided the objectionable features above
55 noted as pertaining to the machines of the

prior art, and have embodied in a single cabinet-like structure a complete photographing apparatus, which permits an operator to do, from a position inside the cabinet-like structure, substantially everything
60 that is necessary to make a complete reproduction.

By means of my improved apparatus, I am enabled to make reproductions of sheets of widely varying size, in actual size or in
65 reduced or enlarged form. Furthermore, the cabinet-like structure of my improved apparatus constitutes a combined camera and dark-room in which the operator confines himself and from the interior thereof performs all of the steps of the photographing
70 operations. The arrangement of parts is such that, while the various steps of photographing and developing are manually carried out, they are all performed from a single operator's stand within the cabinet, and the several steps can be manually accomplished with greater facility than is possible with the mechanical devices referred to as the
75 prior art. Also, the steps are carried out with photographic papers in standard commercial sizes, that is, in cut sheets purchasable in the open market and best adapted to the particular "job" on hand, instead of on
80 papers furnished in rolls made by manufacturers to fit the machine which they sell. It is to be noted hereinafter that by my improved apparatus, I am enabled to take photographic negatives as well as direct prints, and with the same facility, since the support for the photographically sensitive medium is adapted to receive either plates or
85 paper, and can, furthermore, be fitted with a ground glass for accurate focusing.

In further describing my invention, reference will be had to the accompanying drawings, which form a part of this specification, and in which,

Figure 1 is a perspective view of my complete apparatus, and Fig. 2 is a side elevation, with the side of the cabinet broken
100 away to disclose the inner parts, and having a part in section.

Referring more particularly to said drawings, 1 represents the cabinet or dark-room
105 structure which is built in any suitable size, and is dependent in size on the largest size picture which the machine will be required to take. In the present case, the cabinet is
110 disclosed as a booth of such vertical and

longitudinal dimensions as are necessary to permit the accommodation of an operator therein, together with the various parts of the machine.

5 Secured over a suitable light aperture in the front wall of the cabinet 1 is a cone or pyramid-like structure 2, whose front or small end is shaped to accommodate the lens 3 and a prism 4, said prism 4 being positioned to bend the axis of the lens 3 down-
10 wardly along the front wall of the cabinet 1, in substantially parallel relation thereto. The prism, may, however, if need be, direct the axis of the lens to either side of the
15 cone, or in a direction other than parallel to the wall of the cabinet. A shutter mechanism 5 is also suitably mounted in conjunction with the lens 3, and a bulb 6, located within the cabinet 1, is provided to
20 actuate the shutter mechanism. A tube 7, connects said bulb 6 with the lens mechanism 5, said tube 7 being of such length as is necessary to locate the bulb within easy reach of the operator in the cabinet.

25 On the front wall of the cabinet 1 is located a table or shelf 8. Said table or shelf 8 is a support for prints, drawings, books or other objects which it is desired to photograph, and is adjustable vertically along said
30 front wall of the cabinet 1. Brackets 9 secured below said table 8 are provided at their rear ends with bearings through which extends a shaft 10, and the ends of said shaft 10 are provided with pinions 11 which mesh
35 with rack-bars 12 mounted upon opposite vertical front edges of the cabinet. A hand-crank 13 carried by said shaft permits the rotation of said shaft to adjust the position of the table 8 toward and from the lens 3
40 for the purpose of varying the size of print which may be accommodated by the machine. In order to provide a steady support for said table 8, and insure its proper adjustment, a slide 14 is provided at an intermediate point between said rack-bars 12 in
45 which operates a guide extending rearwardly from the bottom of the table 8, said guide operating in the groove 17 formed in the front face of the slide 14.

50 The interior of the cabinet is preferably colored black or any other suitable light absorbing color, so that the cabinet constitutes substantially a camera-box. Upon opposite sides, the inner faces of the walls of
55 the box are provided with brackets 15 supporting a shelf 16, to which are secured longitudinally extended rack-bars 16', said rack-bars 16' being spaced at opposite sides of the shelf 16 and adjacent to longitudinal
60 guide-ways 18. In said guide-ways 18 is mounted a carriage 19, which supports a vertical frame 20, in which plates or sheets of paper are secured to receive the photographic impressions of objects mounted on
65 the table 8. Extending transversely through

said carriage 19 is a shaft 21 carrying at its opposite ends the pinions 22 which mesh with the rack-bars 16', for the purpose of adjusting the frame 20 toward and from the
70 lens 3, in order to focus the latter on the photographic material carried by the frame.

The frame is constructed substantially as a printing frame of ordinary commercial type, but has secured to its back a hinged
75 closure 23 against which the printing paper is secured or in front of which the plate is placed according to the particular photographic operation which is being carried out. If it is desired to bring the frame into
80 focus before placing the paper or plate in the frame, this is done by means of a ground glass 24 mounted on the front face of said frame 20.

In order to give the proper light within the cabinet when the operator has taken his
85 position therein and closed the door 25 behind him, a suitably colored light 26 is provided, and a clock for timing purposes is also mounted in the cabinet, preferably below the light 26.
90

Below the shelf 16 are secured, as to the side walls of the cabinet, a suitable number of shelves 27, upon which the operator places his developing apparatus, and finishes the
95 exposed papers or plates taken from the frame 20. The operation of my machine or apparatus has been brought out with sufficient clearness in the course of this description, and no further exposition thereof
100 is believed to be necessary.

What I claim as my invention is:—

1. A photographing apparatus, comprising in combination, a cabinet constituting a dark-room, a lens and shutter mechanism
105 arranged in the front of the cabinet, a table carried by the front of said cabinet and adjustable toward and from said lens, a prism for bending light rays from said table into said lens, a support for a light sensitive medium movable along the path of light within
110 said cabinet, and a means operative within said cabinet for opening and closing said shutter mechanism.

2. A photographing apparatus, comprising in combination, a cabinet constituting a
115 dark-room, a lens and shutter mechanism arranged in the front wall of said cabinet, a table vertically adjustable along the front of said cabinet, a prism interposed between the lens and said table to direct light from the latter into said lens, a support for a
120 light sensitive medium mounted within said cabinet and adjustable toward and from said lens in the path of the light therefrom, and a means operative within said cabinet
125 for opening and closing said shutter mechanism.

3. A photographing apparatus, comprising in combination, a cabinet, a lens and
130 shutter mechanism arranged in the front

wall of said cabinet, a table projecting from the front wall of the cabinet, a prism interposed between said table and said lens to direct light from the table into the latter,
5 means for adjusting said table toward and from said prism, a printing frame mounted in said cabinet transversely to the path of the light inside the latter means for adjusting said frame toward and from the lens,
10 and means for actuating said shutter mechanism from a point within said cabinet.

4. A photographing apparatus, comprising in combination, a dark-room cabinet having standing-room for an operator, a
15 lens and shutter mechanism fixed in the front wall of the cabinet, a prism associated

with said lens to direct rays into said lens, an exterior support carried by the cabinet, an interior support for a light sensitive medium, said supports being located in the path of the light rays from said lens, and
20 means for adjusting the positions of said supports relative to the lens to vary the size of the image thrown on the interior support and to focus the lens. 25

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

ALEXANDER H. WYNKOOP.

Witnesses:

EDWARD R. WITMAN,
A. M. PARKINS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."