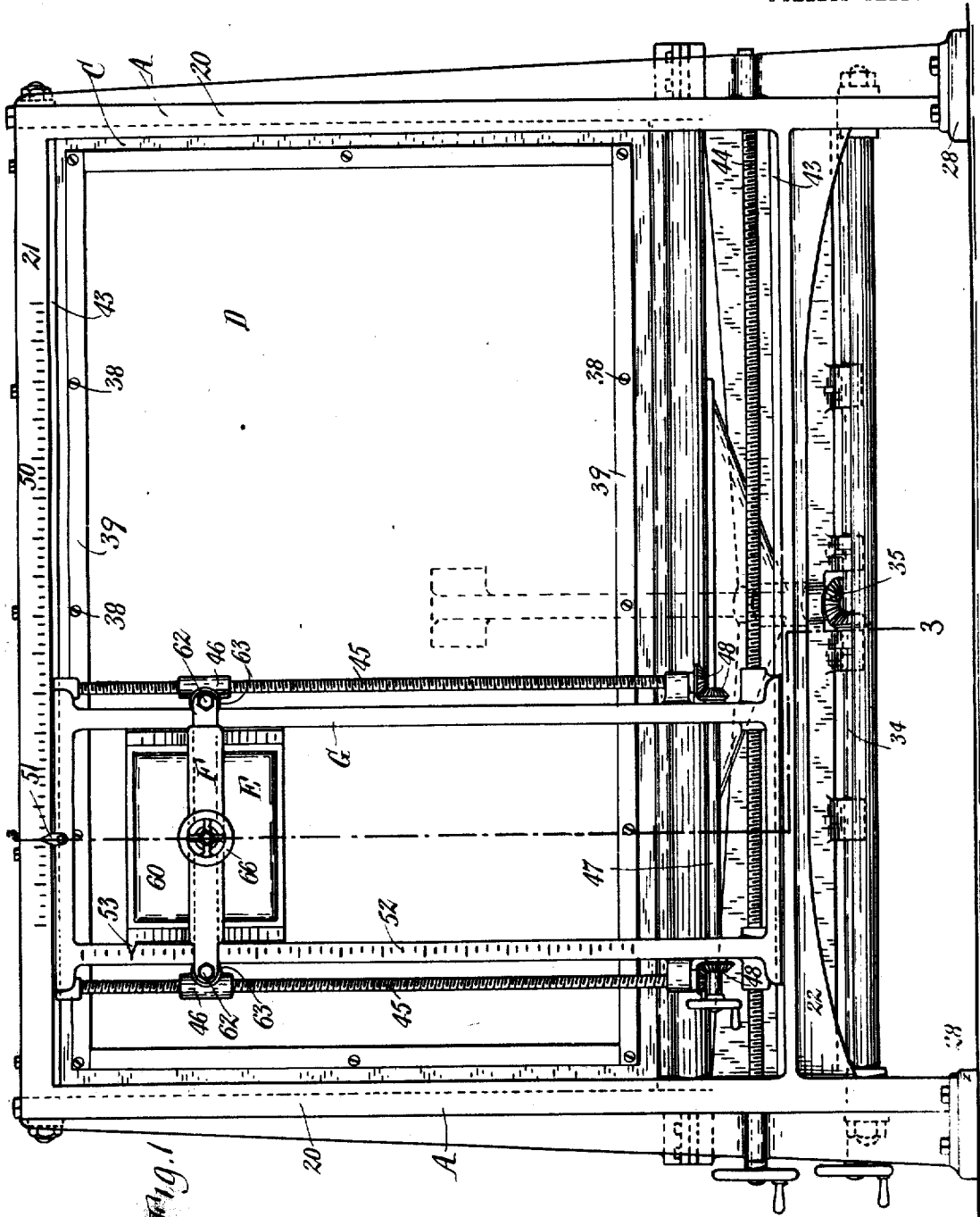


W. C. HUEBNER.
 PHOTOGRAPHIC PRINTING APPARATUS.
 APPLICATION FILED FEB. 19, 1907.

954,290.

Patented Apr. 5, 1910.

3 SHEETS—SHEET 1.



Witnesses:

E. A. Vock.

A. G. Diamond.

Inventor:
 William C. Huebner

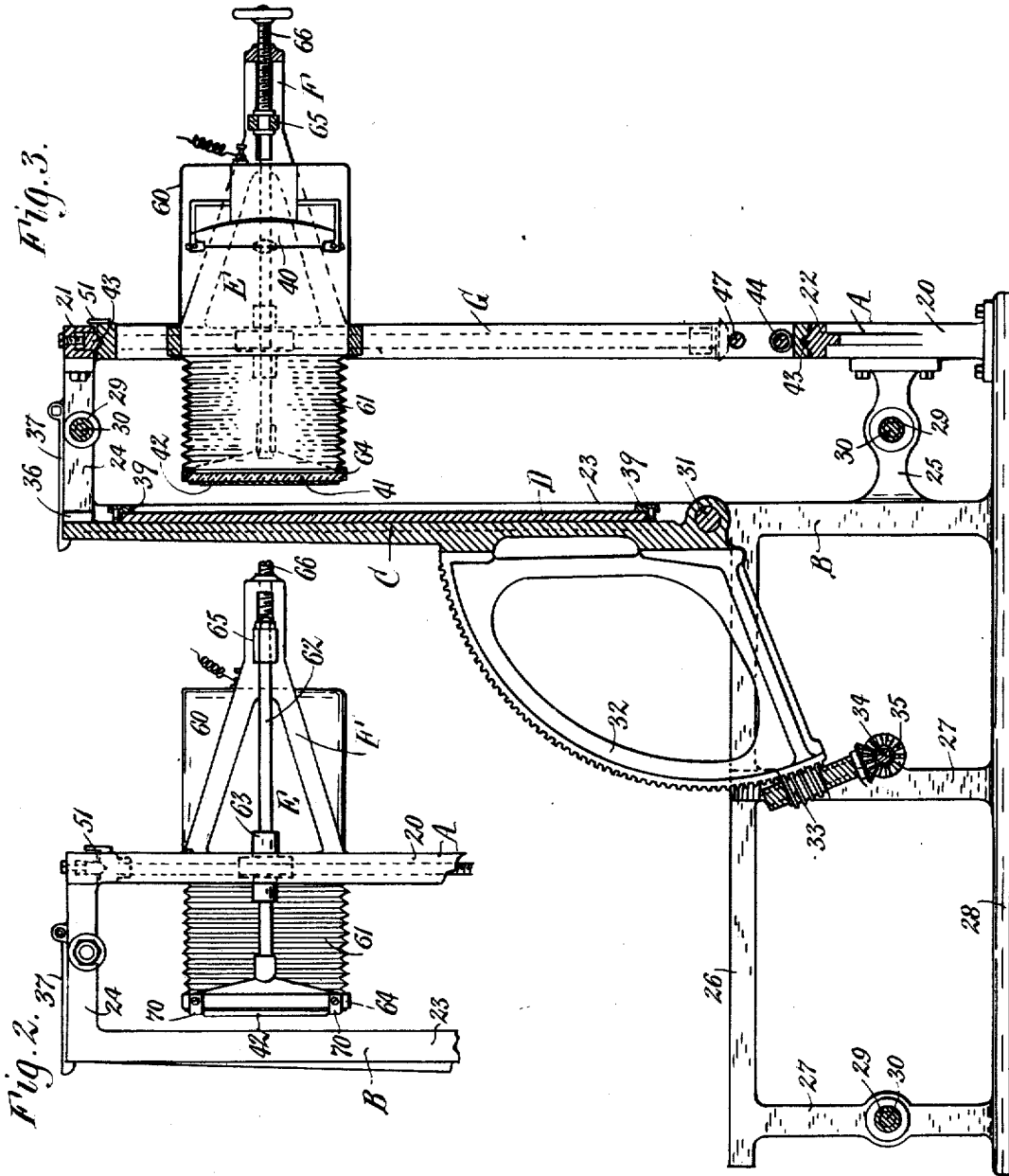
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3 SHEETS—SHEET 2.



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 3 SHEETS—SHEET 3.

Fig. 4.

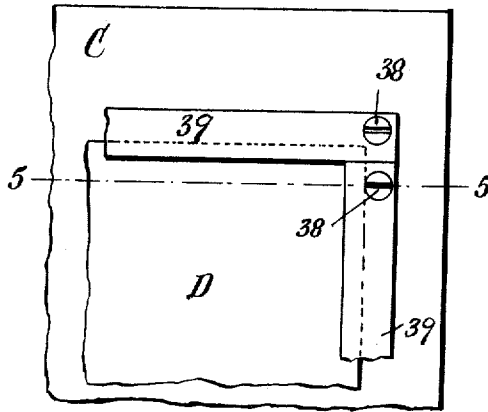


Fig. 5.

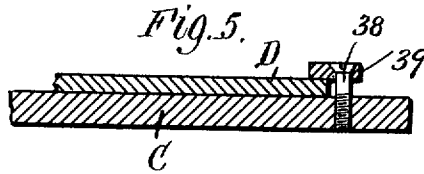


Fig. 6.

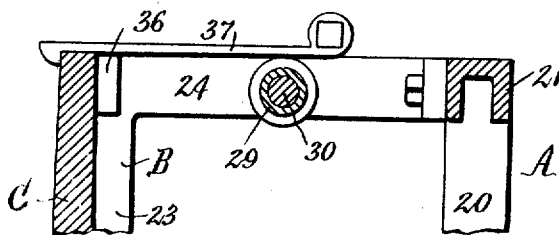


Fig. 7.

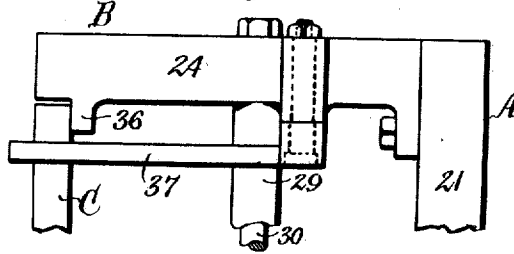


Fig. 8.

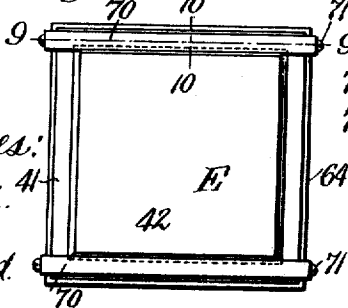
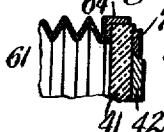


Fig. 9.



Fig. 10.



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UNITED STATES PATENT OFFICE.

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PHOTOGRAPHIC-PRINTING APPARATUS.

954,290.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed February 19, 1907. Serial No. 358,251.

To all whom it may concern:

Be it known that I, WILLIAM C. HUEBNER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Photographic-Printing Apparatus, of which the following is a specification.

This invention relates to the production of several photographic prints upon the same sensitized surface in predetermined positions.

A plurality of printing surfaces formed upon the same plate or stone would be desirable in a variety of cases. For instance, when a large edition is to be printed a plurality of printing surfaces upon the same stone or plate would permit the production of a corresponding number of impressions simultaneously and would correspondingly increase the output and shorten the time required for printing the edition. Or, when several multi-colored pictures or representations are to be printed upon the same sheet, for instance, in a newspaper, the employment of a corresponding number of printing surfaces on the same plate or stone would produce in a single impression all of the pictures or representations on the sheet in the same color. In all of these and similar cases it is however essential to success that the several printing surfaces on the plates or stones for the different colors should be in exact register, and the object of this invention is to produce a photographic printing apparatus by which a plurality of printing surfaces can be produced upon a sensitized surface in predetermined locations with great certainty and accuracy and in a very expeditious and inexpensive manner.

The apparatus comprises, briefly stated, a holder for the sensitized plate or stone, a hood or housing which contains the illuminating apparatus and the transparent printing plate, negative or positive, and which is movable over the sensitized plate or stone so that it can be adjusted to stand opposite any desired portion thereof upon which a photograph print is to be made, and scales or graduations by means of which the adjusted position of the printing hood or housing can be readily ascertained and regulated with certainty and exactness.

In the accompanying drawings, consisting of three sheets: Figure 1 is a front elevation

of this improved printing apparatus. Fig. 2 is a fragmentary end elevation thereof. Fig. 3 is a vertical section in line 3—3, Fig. 1. Fig. 4 is a fragmentary front view of one corner of the sensitized plate and its fastening devices. Fig. 5 is a horizontal section in line 5—5, Fig. 4. Fig. 6 is a sectional elevation in the same plane as Fig. 3, on an enlarged scale, of the upper portion of the frame and adjacent parts. Fig. 7 is a top plan view of the same parts. Fig. 8 is a face view of the inner end of the printing hood, on an enlarged scale. Fig. 9 is a horizontal section in line 9—9, Fig. 8, on an enlarged scale. Fig. 10 is a vertical section in line 10—10, Fig. 8, on an enlarged scale.

Like letters and numerals of reference refer to like parts in the several figures.

The stationary frame of the apparatus may be of any suitable construction and comprises, as shown, an upright front frame A and side frames B B to which the front frame is secured. The front frame A consists of upright side pieces 20, a transverse top bar 21 and a lower transverse bar 22. Each side frame B comprises front uprights 23, arranged in rear of the uprights 20 of the front frame, longitudinal top pieces 24 extending forwardly therefrom to the uprights 20 of the front frame, lower longitudinal pieces 25 extending forwardly from the uprights 23 to the uprights 20, longitudinal bars 26, uprights 27, and longitudinal base pieces 28. The side frames are connected by transverse stays consisting of tubes 29 and rods 30 passing through the same.

C represents the holder for the sensitized plate or stone D movably mounted in the stationary frame so that it can be placed in the proper position for applying the sensitizing material and otherwise treating the plate or stone, or in the proper position for exposing it to the action of the movable printing device. As shown, this holder is attached at its lower end to the stationary frame by a horizontal transverse pivot 31 and is swung on the same by means of a gear segment 32, secured to the rear side of the holder, and a worm 33 meshing therewith and journaled in the stationary frame. This worm is conveniently operated by a horizontal shaft 34 provided at one end with a hand crank and geared with the

shaft of the worm by bevel gears 35. The holder is placed in a horizontal position for applying the sensitizing material and in an upright position for exposing the sensitized surface. When the holder has reached the upright position it bears against stops 36 on the top pieces 24 of the side frames B and is preferably held by catches 37. The sensitized plate or stone is secured to the holder by any suitable means, for instance, as shown, by strips 39 fastened to the holder by screws 38 and bearing against the marginal portions of the plate. The holder is provided with various sets of screw-threaded openings for adjusting the holding strips to plates or stones of various sizes.

E represents the printing hood which contains an electric illuminating apparatus 40 of any suitable kind and at its inner end a glass plate 41 to which the negative or other transparent printing plate 42 is attached. This hood is attached to a frame F which is movable up and down in a vertical carriage G, which latter is movable transversely between horizontal guides 43 on the upper and lower transverse bars 21 and 22 of the front frame A. By adjusting the hood frame up or down in the carriage and by adjusting the latter transversely in the stationary frame the hood can be adjusted to stand opposite any desired portion of the sensitized surface. The carriage is preferably adjusted by means of a transverse screw 44 journaled in the front frame. The hood frame is preferably adjusted by two upright screws 45 journaled in the carriage and working in nuts 46 on the sides of the hood frame. The two screws 45 are simultaneously actuated by a horizontal shaft 47 geared with the screws by bevel wheels 48. Suitable scales or graduations are provided by means of which the carriage and the hood frame can be accurately adjusted. For instance, as shown, the top bar 21 of the front frame A can be provided with a scale 50 on which the position of the carriage is indicated by a pointer 51, and the carriage can be provided with a scale 52 on which the position of the hood frame is indicated by a pointer 53.

The hood E and its frame or carrier F may be of any suitable construction. As shown, the hood comprises an outer rigid portion 60 in which the illuminating apparatus 40 is arranged and an inner extensible portion 61 which carries at its inner end the glass plate 41. The rigid portion 60 of the hood is secured to the movable frame F, while the inner extensible portion 61 is movable toward and from the holder C and the sensitized plate or stone thereon, so that the negative can be pressed closely against the sensitized surface. For that purpose, the hood is provided on both sides with longitudinal guide rods 62 which are

slidably arranged in sockets 63 on the hood frame F and secured at their inner ends to the frame 64 at the inner end of the extensible portion 61, and at their outer ends to a cross head 65 connected to an adjusting screw 66 which works in the outer portion of the hood frame.

The glass plate 41 is seated in the frame 64 at the inner end of the extensible portion of the hood and is secured therein, as represented in Figs. 8, 9 and 10, by cross bars 70 and set screws 71. The cross bars are beveled on their sides and bear against the adjacent beveled edges of the negative or printing plate 42, thereby securing the latter to the glass plate in such a position that the face or inner surface of the printing plate projects inwardly beyond these holding bars and can be closely pressed against the sensitized surface.

If it is desired to provide the sensitized surface with a plurality of like printing surfaces, this is readily done by shifting the hood from place to place over said surface and noting the exact position of the hood in each place by reference to the two scales. Then, upon removing the plate or stone which has been so exposed and applying the sensitized plate or stone for the next color to the holder, the hood can be again placed into each of the former positions by reference to the scales, and the prints for the second color can be made upon the second sensitized surface in exactly the same positions in which they were made upon the first sensitized surface, so that they will accurately register with those previously made on the plate or stone for the first color. Each additional plate or stone is treated in the same way and the resulting set of plates or stones contains on each plate or stone a plurality of printing surfaces for one color, with the corresponding surfaces on the several plates or stones in exactly the same relative position so that they will register correctly. If it is desired to provide the sensitized plate with a plurality of printing surfaces which differ from each other the operation is carried on in the same way but different negatives are inserted into the hood for producing the different prints, as may be necessary. Although the prints on the same plate or stone are different in this case, the corresponding prints on the several stones or plates are alike and in correct register.

The sensitized plate may be a negative upon which a number of prints are made as described, but by using one or more transparent positives in the hood instead of one or more negatives. The negative so produced contains a plurality of prints and is used for producing positives and further negatives, each containing a plurality of similar prints and all in correct register.

I do not wish to claim anything in this application which is claimed in my pending applications Serial No. 408,307, filed Dec. 27, 1907, and Serial No. 416,643, filed Feb. 19, 1908.

I claim as my invention:

1. The combination of a stationary frame, holder for the sensitized surface attached thereto and movable therein toward and from the printing position, a carrier for a photographic plate which is adjustably mounted in said frame and movable therein over said surface when in the printing position, and means for adjusting said carrier to stand opposite any desired portion of said surface, substantially as set forth.

2. The combination of a stationary frame, a holder for the sensitized surface attached thereto and movable therein toward and from the printing position, a carrier for a photographic plate, and a carriage in which said carrier is adjustable in one direction and which is adjustable at right angles to said direction, both adjustments taking place in planes parallel with the sensitized surface when in the printing position, substantially as set forth.

3. The combination of a stationary frame, a holder for the sensitized surface attached thereto and movable therein toward and from the printing position, guiding means on said frame arranged in a plane parallel to the said surface when in the printing position, a carriage adjustable on said guiding means, and a carrier for a photographic plate which is movable in said carriage at right angles to said guiding means, in a plane parallel thereto, substantially as set forth.

4. The combination of a holder for the sensitized surface, a photographic printing hood, and a frame which is movable over said surface and in which said hood is movable toward and from said surface, substantially as set forth.

5. The combination of a holder for the sensitized surface, a photographic printing hood comprising an outer rigid portion and an inner extensible portion, a movable frame to which said rigid portion is secured, and means for adjusting said extensible portion toward and from the sensitized surface, substantially as set forth.

6. The combination of a holder for the sensitized surface, a photographic printing hood comprising an outer rigid portion and an inner extensible portion, a movable frame to which said outer rigid portion is secured, longitudinal rods guided in said frame and

attached at their inner ends to said extensible portion, and an adjusting device arranged in said frame and connected with the outer ends of said rods, substantially as set forth.

7. The combination of a stationary frame, a holder for the sensitized surface pivoted at its lower end to the frame on a horizontal axis, means for swinging the holder into a horizontal or vertical position, and a photographic printing hood arranged horizontally in front of said holder and having its inner portion movable toward and from the same, substantially as set forth.

8. The combination of a stationary frame, a holder for the sensitized surface pivoted at its lower end to the frame on a horizontal axis, means for swinging the holder to or from a vertical position, a photographic printing hood arranged horizontally in front of the holder, a frame in which said hood is mounted, and an upright carriage in which said hood is vertically adjustable and which is transversely adjustable in front of said holder in said stationary frame, substantially as set forth.

9. The combination of a stationary frame, a holder for the sensitized surface pivoted at its lower end to the frame on a horizontal axis, means for swinging the holder to or from a vertical position, a stop against which the holder rests in its vertical position, and a photographic printing device facing said holder, substantially as set forth.

10. The combination of a stationary frame, a holder for the sensitized surface pivoted at its lower end to the frame on a horizontal axis, means for swinging the holder to or from a vertical position, a stop against which the holder rests in its vertical position, a catch for securing the holder in said position, and a photographic printing device facing said holder, substantially as set forth.

11. The combination of a photographic printing hood having a frame at its end, a glass plate arranged in said frame, a transparent printing plate having beveled edges and arranged against said glass plate, and beveled holding bars secured to said frame and bearing against the edges of said printing plate, substantially as set forth.

Witness my hand in the presence of two subscribing witnesses.

WILLIAM C. HUEBNER.

Witnesses:

EDWARD WILHELM,
C. B. HORNBECK.