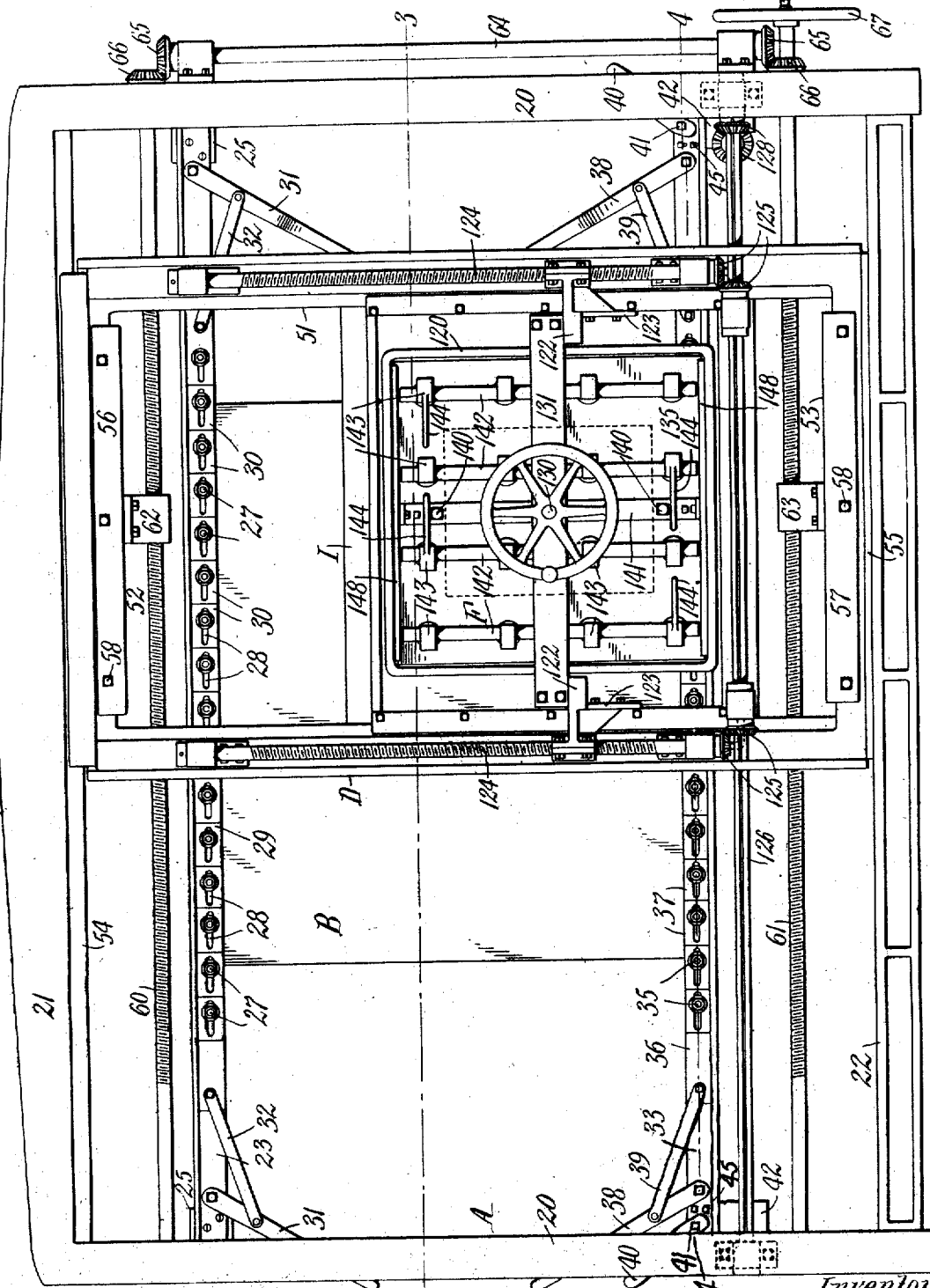


W. C. HUEBNER.
 PHOTOGRAPHIC PRINTING APPARATUS.
 APPLICATION FILED DEC. 27, 1907.

954,291.

Patented Apr. 5, 1910.

7 SHEETS—SHEET 1.



Witnesses:
 E. A. Volk.
 A. G. Diamond.

Fig. 1.

Inventor,
 W. C. Huebner,
 by Wilhelm, Parker & Hard,
 Attorneys.

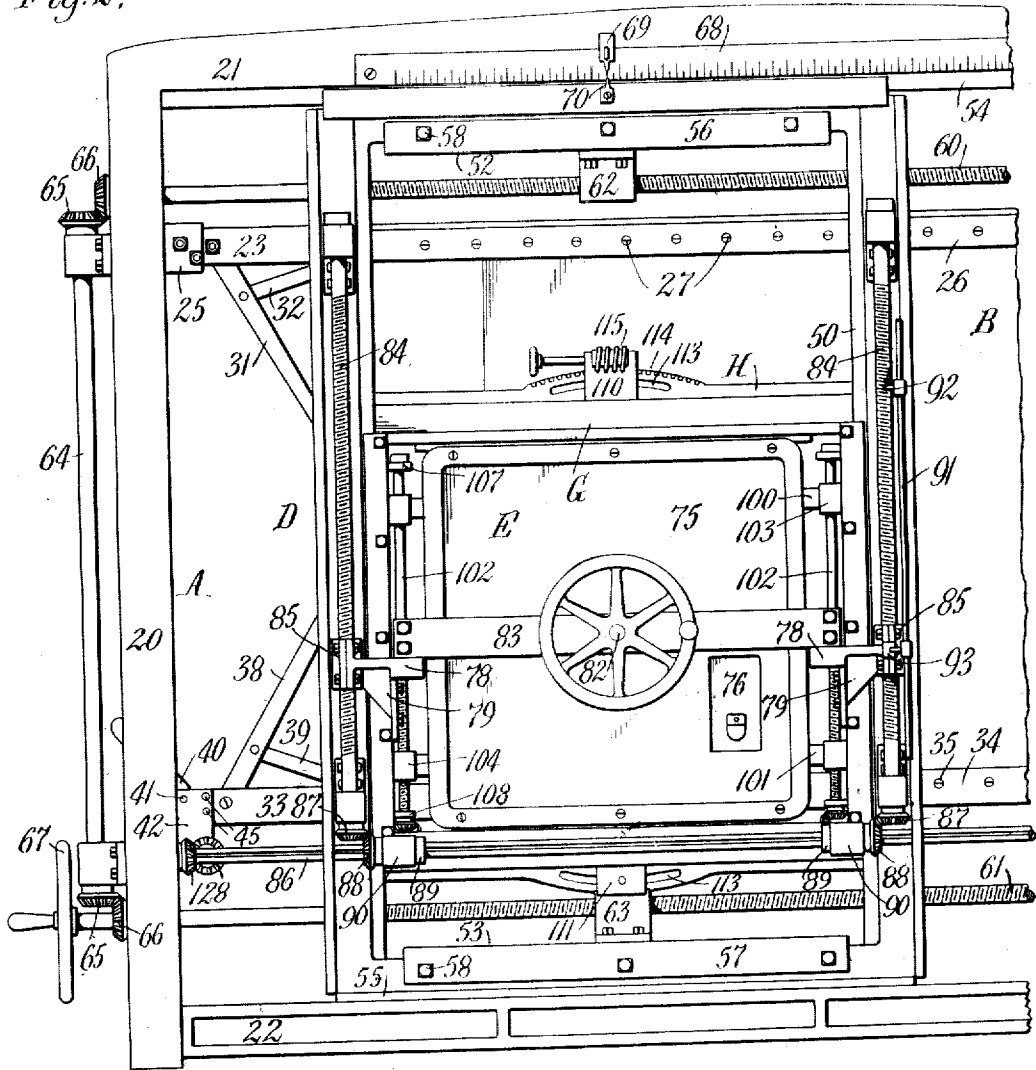
W. C. HUEBNER.
 PHOTOGRAPHIC PRINTING APPARATUS.
 APPLICATION FILED DEC. 27, 1907.

Patented Apr. 5, 1910.

7 SHEETS—SHEET 2.

954,291.

Fig. 2.

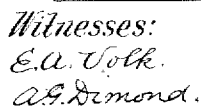


Witnesses:
 E. A. Volk.
 A. A. Dimond.

Inventor.
 William C. Huebner
 By Wilhelm, Ruckert & Co.,
 Attorneys.

954,291.

7 SHEETS—SHEET 3.



Inventor.
William C. Froeber.
By H. L. Allen, Boston & Frank
Attorneys.

W. C. HUEBNER.
 PHOTOGRAPHIC PRINTING APPARATUS.
 APPLICATION FILED DEC. 27, 1907.

954,291.

Patented Apr. 5, 1910.

7 SHEETS—SHEET 4.

Fig. 5.

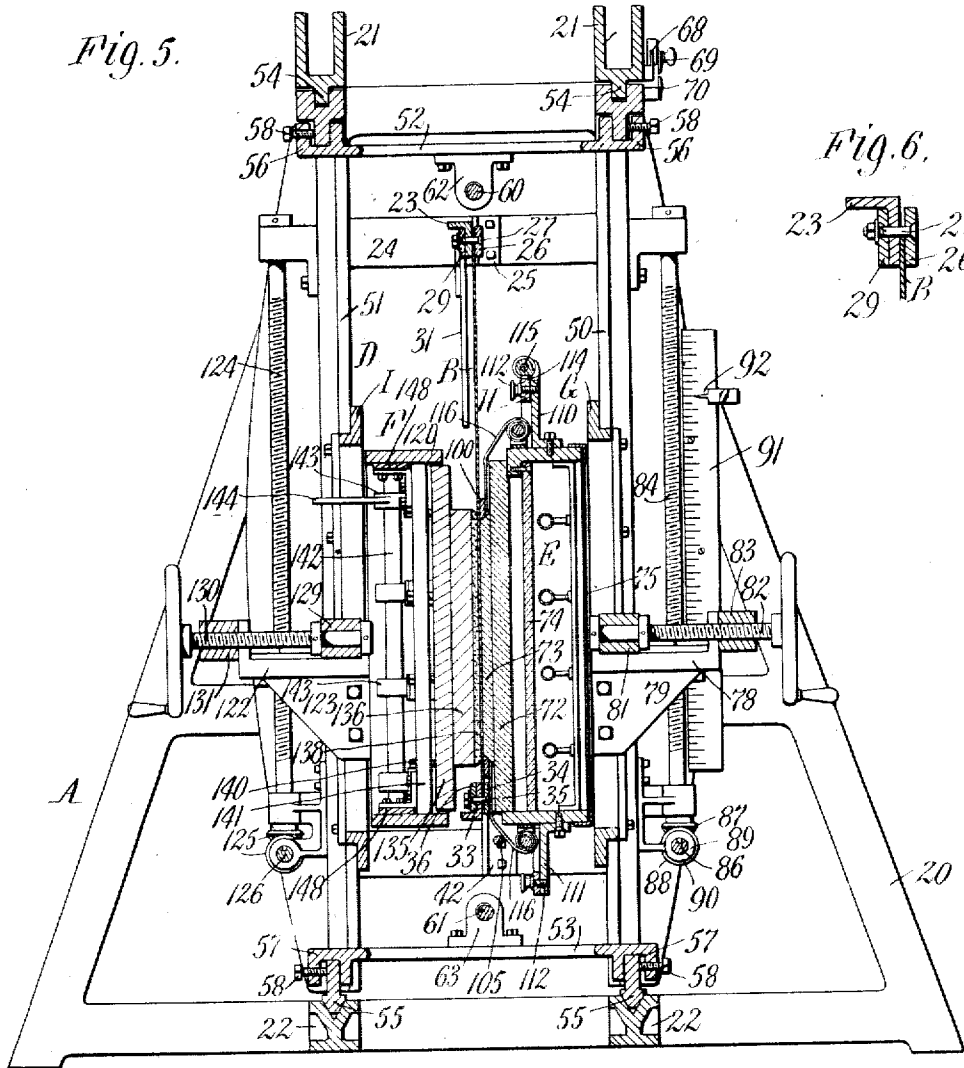


Fig. 6.

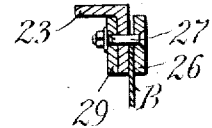


Fig. 7.

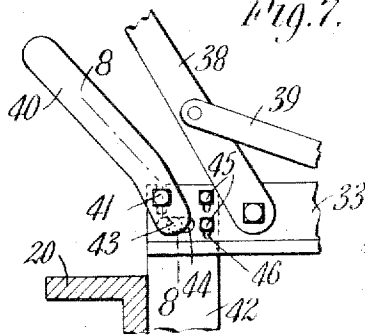
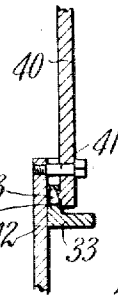


Fig. 8.



Witnesses:
 E. A. Volk.
 A. G. Diamond.

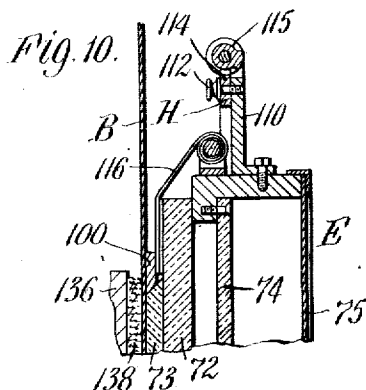
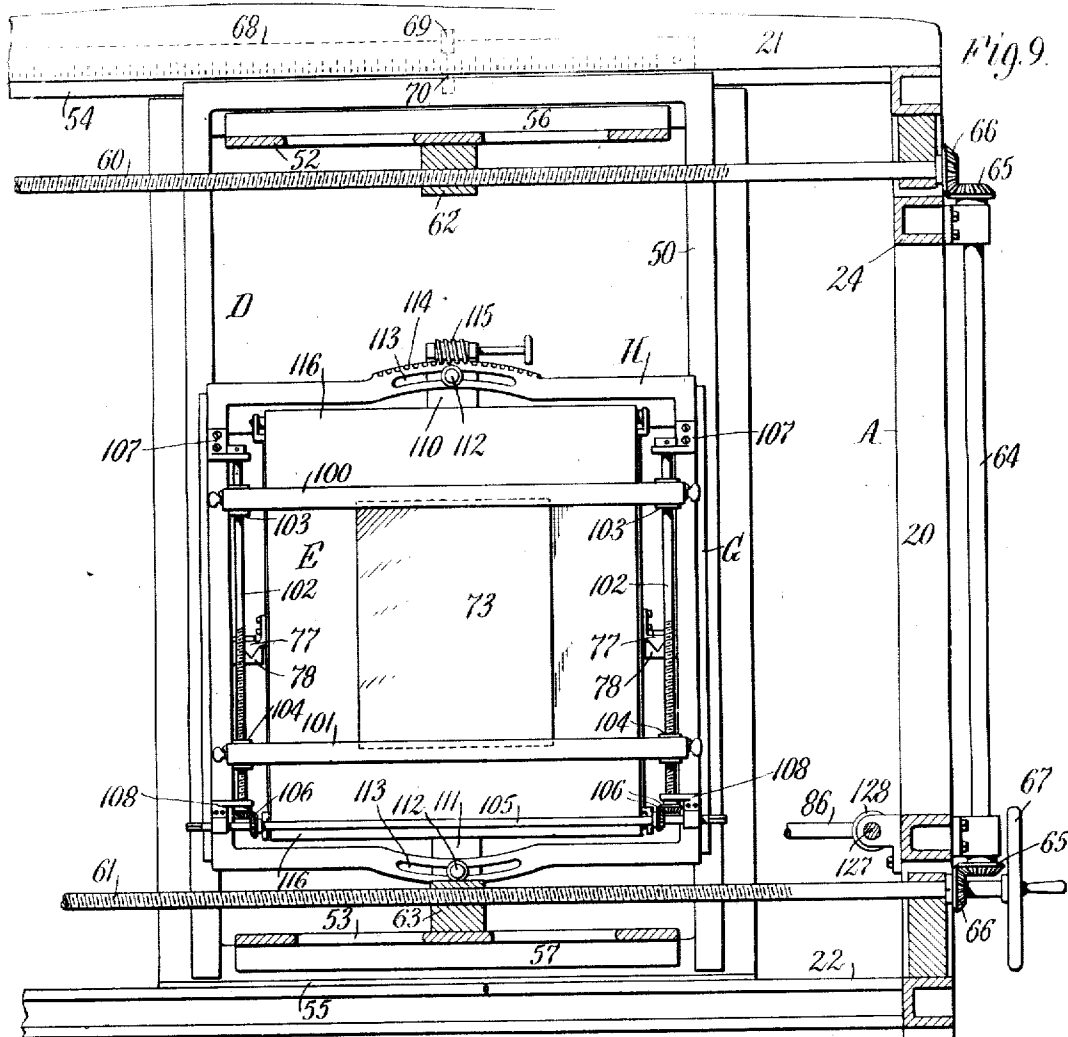
Inventor:
 William C. Huebner.
 By [Signature] Patent Attorneys.

W. C. HUEBNER.
 PHOTOGRAPHIC PRINTING APPARATUS.
 APPLICATION FILED DEC. 27, 1907

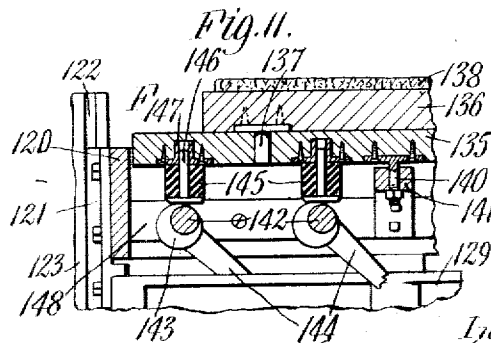
954,291.

Patented Apr. 5, 1910.

7 SHEETS—SHEET 6.



Witnesses:
 E. A. Volk.
 A. G. Dimona.



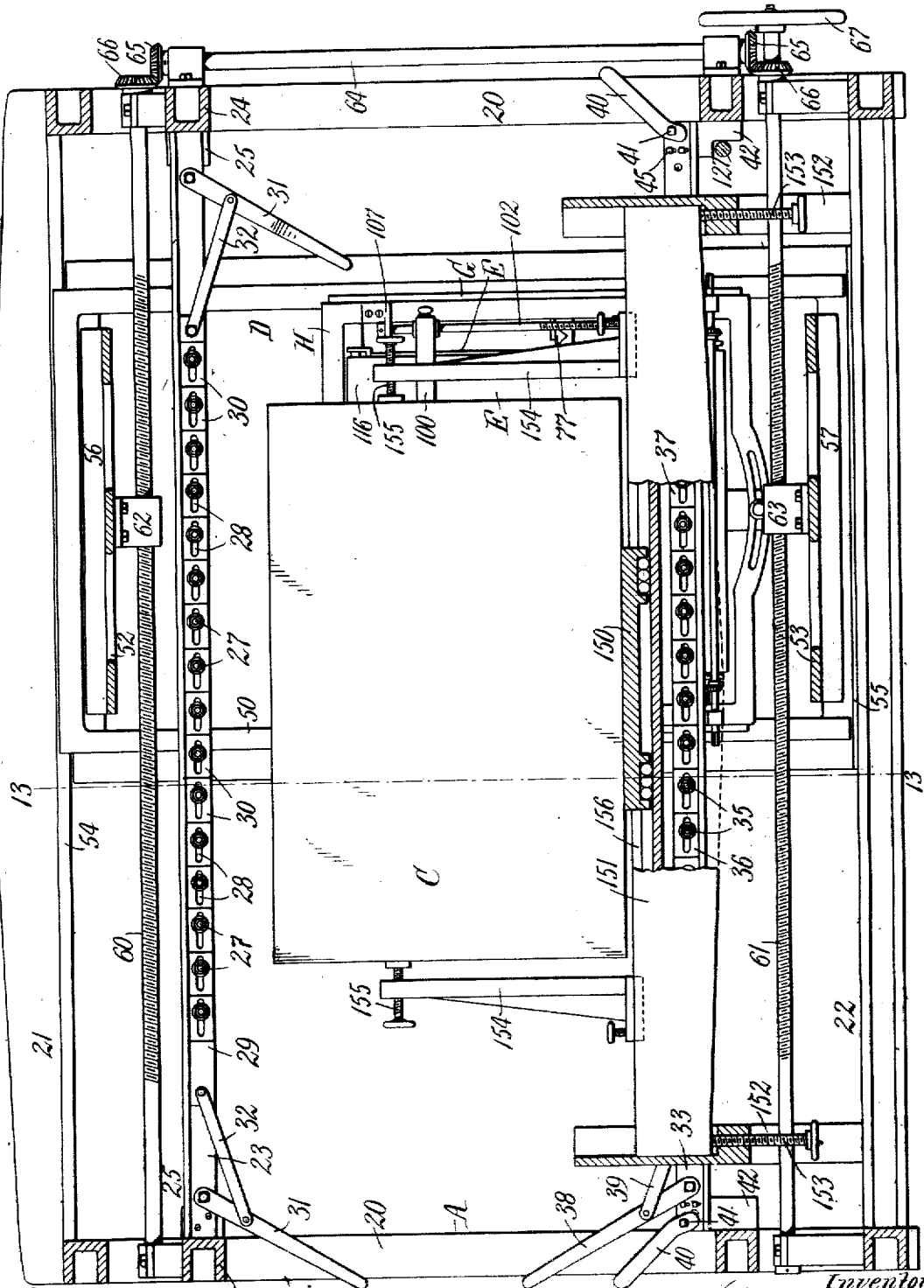
Inventor:
 William C. Huebner
 By William R. Foster & Hard
 Attorneys

W. C. HUEBNER.
 PHOTOGRAPHIC PRINTING APPARATUS.
 APPLICATION FILED DEC. 27, 1907.

Patented Apr. 5, 1910.

7 SHEETS—SHEET 6.

954,291.



Witnesses:
 E. A. Volk.
 C. G. Dimond.

Fig. 12.

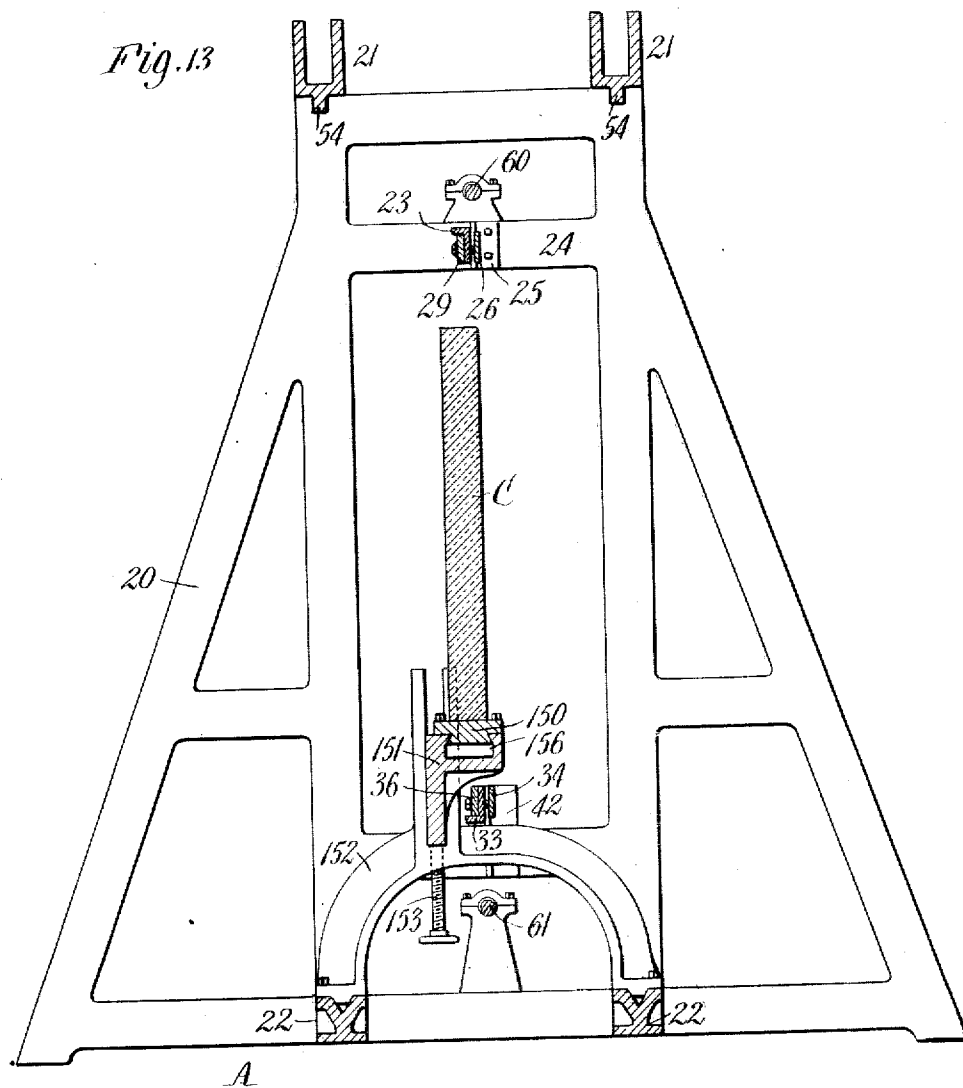
Inventor.
 W. C. Huebner,
 By Wilhelm, Rastner & Knecht
 Attorneys.

W. C. HUEBNER.
 PHOTOGRAPHIC PRINTING APPARATUS.
 APPLICATION FILED DEC. 27, 1907.

Patented Apr. 5, 1910.

7 SHEETS—SHEET 7.

954,291.



Witnesses:

E. A. Volk.

A. G. Dimond.

Inventor.

William C. Huebner,
 By W. H. H. Parker & Co.,
 Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM C. HUEBNER, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF TO GEORGE BLEISTEIN, OF BUFFALO, NEW YORK.

PHOTOGRAPHIC-PRINTING APPARATUS.

954,291.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed December 27, 1907. Serial No. 408,307.

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 an apparatus for producing photographic prints upon sensitized surfaces, for instance, those of metal plates or stones.

A plurality of printing surfaces formed upon the same plate or stone is 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 permits the production of a corresponding number of impressions simultaneously and correspondingly increases the output and shortens 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 produces 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 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 perfect printing surfaces can be produced upon sensitized surfaces in predetermined locations with great certainty and accuracy and in a very expeditious and inexpensive manner.

The apparatus comprises, briefly stated, a frame or other support for holding the sensitized plate or stone, a carrier, box or case having a transparent face plate to which the transparent printing plate is applied, such plate carrier containing suitable illuminating apparatus and being mounted in such manner that it can be adjusted to apply the printing plate to the desired portion of the sensitized surface upon which a photographic print is to be made, and a back support or pressure device arranged to bear against the

sensitized plate or stone on the rear side thereof, thereby producing a close and uniform contact of the printing plate with the sensitized surface and a corresponding perfect and uniform printing effect over the entire exposed portion of the sensitized surface.

In the accompanying drawings, consisting of seven sheets: Figure 1 is a side elevation of the apparatus viewed from the pressure or rear side. Fig. 2 is a fragmentary side elevation of the apparatus viewed from the opposite or front side. Fig. 3 is a horizontal section in line 3—3, Fig. 1. Fig. 4 is a horizontal section through the bottom holding bar in line 4—4, Fig. 1. Fig. 5 is a vertical transverse section in line 5—5, Fig. 3. Fig. 6 is a cross section, on an enlarged scale, through the top holding bar and connecting parts. Fig. 7 is a side elevation, on an enlarged scale, of one end of the bottom holding bar. Fig. 8 is a vertical section in line 8—8, Fig. 7. Fig. 9 is a longitudinal vertical section in line 9—9, Fig. 3, viewed in the direction of the arrow. Fig. 10 is a fragmentary vertical section of the upper portion of the plate carrier, on an enlarged scale. Fig. 11 is a fragmentary horizontal section through the back support, on an enlarged scale. Fig. 12 is a longitudinal sectional elevation showing a sensitized stone supported in the apparatus. Fig. 13 is a vertical transverse section in line 13—13, Fig. 12.

Like reference characters refer to like parts in the several figures.

The stationary main frame A of the apparatus may be of any suitable construction and comprises, as shown, upright end frames 20 which are connected at the top and bottom by longitudinal bars 21 22, respectively. The sensitized plate or stone is supported in this stationary frame or holder in any suitable manner. In Figs. 1—6 and 10, a metal plate B, usually of zinc or aluminum, is shown supported in this frame or holder, while in Figs. 12 and 13 a stone C is shown.

When a metallic plate is operated upon it is preferably fastened in the stationary frame in such manner that it can be stretched in order to obliterate as far as possible all bends, bulges or irregularities of surface. Convenient devices for fastening

the plate in this manner are represented in Figs. 1-8, where 23 represents a longitudinal top holding bar for the upper edge portion of the plate, secured to cross pieces 24 of the end frames 20 by angle pieces 25. This holding bar is preferably of angle form and the upper edge portion of the plate B is clamped against the flat side of the bar by a clamping bar 26. The latter is provided with screw bolts 27 which pass through horizontal slots 28 in a sliding bar 29 having inclined or wedge faces 30 which engage against the nuts of the bolts and tighten or release the clamping bar 26 according to the direction in which the sliding bar is moved. A lever 31 pivoted to the holding bar 23 and connected with the sliding bar by a link 32 is provided at each end of the holding bar for shifting the sliding wedge bar.

The lower edge portion of the plate B is fastened to a similar holding bar 33 by a clamping bar 34 having bolts 35 which are engaged by a sliding bar 36 having inclined or wedge faces 37 and operated by levers 38 and links 39. The bottom holding bar 33 is movable up and down in the stationary frame or holder and is pressed down for stretching the plate by any suitable mechanism, for instance, by levers 40 which are pivoted by bolts 41 to posts 42 on the end frames 20 and engage the ends of the holding bar 33 by studs 43 entering slots 44 in the holding bar, Figs. 7 and 8. The bottom holding bar 33 is movably attached at its ends to the posts 42 by bolts 45 passing through upright slots 46 in the bar.

The upper edge portion of the sensitized plate B is clamped to the top holding bar 23 and the lower edge portion to the bottom holding bar 33. The latter is then depressed by means of the stretching levers 40 whereby the plate is stretched.

D represents a movable carriage which is mounted between the longitudinal members, rails or bars 21 and 22 of the stationary frame or holder so as to be capable of sliding lengthwise between these rails of the holder. This carriage may be composed, as shown, of two rectangular upright side frames 50 51 and connecting horizontal top and bottom frames or plates 52 53. Each of the upright frames 50 and 51 is arranged between corresponding upper and lower horizontal members 21 22 of the stationary frame and the contiguous faces of these parts are provided with suitable guiding devices, for instance, the top bars 21 with tongues 54 which engage in grooves in the top members of the carriage D, and the bottom bars 22 with V-shaped grooves which receive corresponding shoes 55 on the bottom members of the carriage. The horizontal connecting frames 52 53 are provided at their ends with grooved heads 56 57, respectively, which

engage the top and bottom members of the frames 50 and 51 and are secured thereto by set screws 58 or other suitable means.

The carriage D is adjusted on the longitudinal ways in the stationary main frame or holder by horizontal screws 60 61, journaled, respectively, in the upper and lower portions of the end frames 20 and engaging in threaded boxes or blocks 62 63 secured, respectively, to the connecting frames 52 53. The adjusting screws 60 61 are connected by an upright shaft 64 and bevel gears 65 66, so that by operating the hand wheel 67 on the lower screw both screws are turned simultaneously and the carriage D is adjusted lengthwise in the stationary frame. The stationary frame A and the carriage D are provided with devices of any suitable construction for indicating the position of the carriage in the stationary frame, for instance, as shown in Figs. 2, 5 and 9, a horizontal scale 68 on the stationary frame, a pointer 69 which is adjustably mounted on that scale and can be set to indicate the desired position of the carriage D, and a pointer 70 secured to the latter.

E represents the plate carrier, consisting of a light chamber case or box which contains electric illuminating devices of any suitable kind and is mounted in the upright frame 50 of the carriage. F represents the back support or pressure device which is arranged in the upright frame 51 of the carriage. The plate carrier and the back support are each adjustable toward and from the sensitized plate or stone so as to produce a close contact between the printing plate and the sensitized surface, and they are also adjustable parallel with the surface of the plate or stone so that they can be placed opposite any portion of the sensitized surface upon which a print is to be made. The adjustment of the carrier and the back support parallel with the surface of the plate or stone is preferably effected simultaneously.

The carrier E is provided on its inner or face side with a transparent face plate 72 of heavy glass on which the transparent printing plate 73 is arranged, and also preferably with a ground glass plate 74 between the illuminating devices and the face plate for diffusing the light. 75 represents the back of the light box, preferably of sheet metal and provided with a hand hole closed by a cover 76.

The plate carrier is provided on both sides with shoes 77 which slide upon horizontal guides 78 formed on brackets 79 secured to an upright rectangular carrier frame G which is vertically adjustable in the upright side frame 50 of the carriage. The guides 77 are arranged at right angles to the plane of the side frame 50 so that the carrier is

adjustable on these guides toward and from the sensitized plate. For effecting this adjustment the carrier is provided on its outer side with a cross piece 81 and an adjusting screw 82 connected therewith and working in a bridge piece 83 secured to the brackets 79, Figs. 2, 3 and 5.

The carrier frame G is adjusted vertically in the side frame 50 of the carriage D by upright screws 84 which are journaled on the upright side pieces of the frame 50 and engage nuts 85 on the brackets 79. Both screws are turned simultaneously from a longitudinal shaft 86 by bevel wheels 87, 88 the latter secured to sleeves 89 which are journaled in bearings 90 on the lower portion of the side frame 50. The horizontal shaft is provided with a longitudinal groove and the sleeves with keys for maintaining the driving engagement of the shaft with the screws throughout the range of longitudinal adjustment of the carriage D in the stationary frame or holder A. By turning the shaft 86 the carrier frame G and the carrier mounted therein are raised or lowered in the side frame 50 of the carriage D. The latter and the carrier frame are provided with suitable devices for indicating the position of the carrier frame in the carriage, for instance, a vertical scale 91 on the carriage D, an adjustable pointer 92 on that scale, and a pointer 93 secured to the carrier frame, Figs. 2, 3 and 5.

By adjusting the carriage D lengthwise in the stationary main frame or holder A, the carrier frame G and the carrier E are adjusted horizontally over the sensitized surface, and by adjusting the carrier frame G vertically in the carriage D the carrier is adjusted vertically over the sensitized surface. These two adjustments enable the carrier and its printing plate to be placed opposite any portion of the sensitized surface upon which a print is to be produced. The desired adjustment of the carrier and printing plate is readily and accurately effected by the aid of the described indicating devices. After the desired position of the carrier has been secured, the latter is adjusted on the guides 78 of the carrier frame G by means of the screw 82 and the printing plate is pressed against the sensitized surface.

The transparent printing plate 73 may be secured to the face plate 72 of the carrier by any suitable means, preferably, as shown, by transverse beveled bars 100 101, Figs. 3, 5, 9 and 10, which overlap the beveled upper and lower edges of the plate. These bars are adjustably connected with two vertical screws 102 for tightening the bars against the plate. The upper bar is preferably secured to sleeves 103 which can be raised or lowered on the upper, unthreaded portions of the screws, and the lower bar to

threaded sleeves 104 in which the screws work. Both screws are turned simultaneously by a horizontal shaft 105 which is geared with the lower ends of the screws by bevel wheels 106. The screws and their connecting shaft are journaled in brackets 70 107 108 secured to a rectangular frame II which is somewhat larger than the carrier and is adjustably secured thereto in such manner that this frame can be given a partial rotation with reference to the carrier, thereby giving the printing plate 73 a partial rotation on the face plate 72. This rotary or tilting adjustment of the printing plate is desirable for registering the register marks on the printing plate accurately with the corresponding marks on the face plate.

The rotary connection of the printing plate frame with the carrier may be established, as shown, by arms 110 111 secured to the top and bottom of the carrier and carrying screws 112 which engage in slots 113 in the frame II curved concentric with the axial line of the carrier. The upper portion of the frame H may be provided with a concentric gear segment 114 with which engages an adjusting worm 115 journaled on the arm 110.

The upper and lower edge portions of the face plate 72 are preferably covered by opaque curtains 116.

The back support or pressure device F is mounted in the side frame 51 of the carriage D in the same manner in which the carrier is mounted in the companion frame 50, so that the back support and the carrier are capable of similar adjustments.

120 represents the rectangular frame of the back support which is provided on both sides with shoes 121 by which it is slidably mounted on guides 122 arranged at right angles to the plane of the frame 120 and formed on the brackets 123 of the carrier frame I. The latter is vertically adjustable in the side frame 51 of the carriage D and is adjusted by vertical screws 124 which are journaled on the frame 51 and geared at their lower ends by bevel wheels 125 with a longitudinal shaft 126 in the same manner in which the upright screws 84 are geared with the longitudinal shaft 86. The latter and the shaft 126 are connected by a transverse shaft 127 and bevel wheels 128 so that both longitudinal shafts are rotated simultaneously, thereby simultaneously rotating the screws 84 which raise or lower the carrier frame G of the carrier and the screws 124 which raise or lower the carrier frame of the back support. As both carrier frames G and I are mounted in the carriage D, they both partake of the longitudinal adjustment of the latter in the stationary main frame. By this means the carrier and the back support are adjusted simultaneously both lon-

gitudinally and vertically and both are placed by the same adjusting operation opposite that portion of the sensitized plate or stone on which the print is to be made, the plate carrier opposite the face or sensitized surface of the plate or stone and the back support opposite the rear side thereof.

The frame 120 of the back support is provided on its outer side with a cross piece 129 with which connects a horizontal screw 130 which works in a bridge piece 131 secured to the brackets 123 of the carrier frame I. The frame 120 of the back support can be moved by this screw toward and from the back of the sensitized plate or stone and can be pressed forwardly or toward the sensitized plate or stone in order to press the back support against the same.

In order to produce a very close or intimate contact of the sensitized surface with the printing plate over the entire surface of the latter, the back support is constructed in such manner that pressure can be applied at various places over the surface of the back support, as may be necessary to produce the desired contact.

135 represents the main pressure plate which is arranged within the frame I so as to be movable toward and from the back of the sensitized plate or stone. This plate preferably carries on its inner or face side an auxiliary pressure plate 136 which is of about the same size as the printing plate and loosely attached to the main pressure plate 135 by pins 137, or otherwise, so that it can be replaced by a larger or smaller plate when a change in the printing plate renders this desirable. The auxiliary plate 136 is provided with a facing 138 of felt or other yielding material to make close contact with the back of the plate or stone. The main pressure plate is flexibly connected with the frame 120, for instance, by bolts 140 fitted loosely into an upright bar 141 in the frame 120, so that the pressure plate can tilt to a certain extent with reference to the frame 120.

142 represents upright shafts arranged within the frame 120 and each provided with several cams or eccentrics 143 by which pressure in a forward direction can be exerted upon various portions of the main pressure plate. Each shaft is provided with a hand lever 144 for turning the shaft, thereby tightening or releasing the eccentrics thereon. The latter engage slightly yielding projections on the main pressure plate, each projection consisting preferably of a stiff rubber sleeve or spring 145 and a headed bolt 146 arranged in the same and guided in a socket 147 in the plate. The eccentric shafts are preferably mounted in the frame 120 so as to be removable therefrom, a convenient construction for this pur-

pose consisting of bars or blocks 148 in which the shafts are journaled and which are removably secured to the inner side of the frame.

In adjusting the apparatus for producing a print upon a sensitized plate or stone, the plate carrier E and the back support F are first adjusted as described, to stand opposite that portion of the sensitized surface upon which the print is to be made. The carrier is then adjusted toward the sensitized surface by means of the screw 82 until the printing plate is pressed closely against the sensitized surface. The back support is next adjusted against the back of the plate or stone by means of the adjusting screw 130 until the auxiliary pressure plate bears closely against the plate or stone. The supplemental pressure appliances, consisting of the cams or eccentrics, are then resorted to, as far as may be necessary, to apply additional pressure where needed in order to produce an intimate and uniform contact of the sensitized surface with the printing plate.

If it is desired to provide the sensitized surface with a plurality of like printing surfaces, this is readily done by shifting the plate carrier from place to place over said surface. If it is desired to provide several plates or stones with a similar number of printing surfaces for printing in several colors, the exact position of the carrier in each place is noted 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 carrier 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 printing plates are applied to the carrier 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 provided with a number of negative prints by using one or more transparent positives on the carrier instead of one or more negatives. The negative plate 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.

10 Convenient means for supporting a sensitized stone in the apparatus are represented in Figs. 12 and 13. In these figures the stone C rests upon a longitudinally movable carriage 150 which is mounted upon a longitudinal beam 151 supported at its ends by yokes 152 resting on the longitudinal bottom bars 22 of the stationary main frame. The beam is adjustably supported in the yokes upon vertical screws 153 and provided with standards 154 carrying at their upper ends horizontal screws 155 between which the stone is clamped endwise. The beam is provided in its upper portion with a dovetail groove 156 in which the carriage 150 and the bases of the standards 154 are arranged.

It is obvious that the mechanical features of this apparatus may be modified in various ways without departing from the spirit of the invention.

I do not wish to claim anything in this application which is claimed in my pending applications Serial No. 358,251, filed Feb. 19, 1907, and Serial No. 416,643, filed Feb. 19, 1908.

I claim as my invention:

1. The combination of a stationary frame provided with a holder for a print-receiving part having a sensitized surface, a carrier for a photographic printing plate adapted to receive said plate on its face side and having means for illuminating said plate, means for adjusting said carrier in said frame toward and from said sensitized surface and pressing the printing plate against said surface, and means for adjusting said carrier in said frame in a plane parallel with said sensitized surface when said printing plate has been withdrawn therefrom, substantially as set forth.

2. The combination of a stationary frame provided with a holder for a print-receiving part having a sensitized surface, a carrier for a photographic printing plate adapted to receive said plate on its face side and having means for illuminating said plate, means for adjusting said carrier in said frame toward and from said sensitized surface and pressing the printing plate against said surface, a back support for said print-receiving part, and means for pressing said support against the same, substantially as set forth.

3. The combination with a stationary

frame provided with a holder for a sensitized part, guiding means on said stationary frame arranged parallel with the sensitized surface, a carriage adjustable on said guiding means, a carrier for a photographic printing plate adapted to press said plate against the sensitized surface and having means for illuminating said plate, said carrier being movable on said carriage at right angles to said guiding means and in a plane parallel thereto, and means for adjusting said carrier in said carriage toward and from the sensitized surface, substantially as set forth.

4. The combination with a stationary frame provided with a holder for a sensitized part, guiding means arranged in planes at right angles to said sensitized surface, and a carrier for a photographic printing plate and a back support, both adjustable on said guiding means toward and from the sensitized part, substantially as set forth.

5. The combination with a stationary frame provided with a holder for a sensitized part, a carriage movable in said frame parallel with said surface, and a carrier for a photographic printing plate and a back support, both arranged in said carriage and adjustable therein toward and from the part provided with the sensitized surface, substantially as set forth.

6. The combination with a stationary frame provided with a holder for a sensitized part, of a carrier for a photographic printing plate and a back support arranged respectively opposite the front and rear sides of the sensitized part and each adjustable in a plane parallel with the sensitized part and also toward and from the same, substantially as set forth.

7. The combination with a stationary frame provided with a holder for a sensitized part, of a carrier for a photographic printing plate and a back support arranged respectively opposite the front and rear sides of the sensitized part, and means for adjusting said carrier and said back support simultaneously in planes parallel with said surface, substantially as set forth.

8. The combination with a stationary frame provided with a holder for a sensitized part, of a carrier for a photographic printing plate and a back support arranged respectively opposite the front and rear sides of the sensitized part, means for adjusting said carrier and said back support simultaneously in planes parallel with said surface, and means for adjusting said carrier and back support independently toward and from said surface, substantially as set forth.

9. The combination of a stationary frame having means for holding a part provided with a sensitized surface, guiding means on said frame arranged parallel with said sur-

- face, a carriage adjustable on said guiding means, carrier frames arranged in said carriage on opposite sides of said sensitized part and adjustable in planes parallel therewith and at right angles to said guiding means, and a carrier for a photographic printing plate and a back support, both arranged in said carrier frames and adjustable toward and from said sensitized part, substantially as set forth.
- 10 10. The combination of a stationary frame having clamping devices for holding a sensitized plate, one of said devices being movable away from the other for stretching the plate, an adjustable plate carrier, and an adjustable back support, substantially as set forth.
- 15 11. The combination of a stationary frame having bars for holding a sensitized plate, clamping bars adapted to press said plate against said bars, wedge bars by which said clamping bars are tightened, an adjustable plate carrier, and an adjustable back support, substantially as set forth.
- 20 12. The combination of a stationary frame having a fixed bar for holding a sensitized plate and a holding bar which is movable toward and from said fixed bar, clamping bars adapted to press said plate against said bars, wedge bars by which said clamping bars are tightened, an adjustable plate carrier, and an adjustable back support, substantially as set forth.
- 25 13. The combination of a stationary frame having means for holding a sensitized part, longitudinal guides on said frame, a carriage adjustable lengthwise on said guides and having upright guides on opposite sides of said sensitized part, carrier frames adjustable on said upright guides and having horizontal guides in planes at right angles to the planes of said upright and longitudinal guides, a carrier for a photographic printing plate and a back support, both adjustable on said horizontal guides toward and from said sensitized part, and means for pressing said plate and said back support against opposite sides of said sensitized part, substantially as set forth.
- 30 14. The combination of a carrier for a photographic printing plate having a transparent face plate on which the photographic plate is arranged, a frame having means for holding said printing plate on said face plate, and means for giving said frame a rotary adjustment in a plane parallel with said face plate, substantially as set forth.
- 35 15. The combination of a plate carrier having a transparent face plate, holding bars adapted to engage and hold a transparent printing plate arranged thereon, means for adjusting said bars toward and from each other, a frame on which said bars are mounted and which is connected with said carrier, and means for giving said frame a rotary adjustment in a plane parallel with said face plate, substantially as set forth.
- 40 16. The combination of a plate carrier having a transparent face plate, holding bars adapted to engage and hold a transparent printing plate arranged thereon, rods on which said bars are adjustable toward and from each other, a frame to which said rods are secured and which is connected with said carrier, and means for adjusting said frame relative to said carrier, substantially as set forth.
- 45 17. The combination of a holder for a sensitized part, a carrier for a photographic printing plate facing the sensitized surface, a back support facing the rear side of the sensitized part, means for adjusting said back support toward and from said sensitized part, and means for adjusting said back support in a plane parallel with said sensitized part, substantially as set forth.
- 50 18. The combination of a stationary frame having means for holding a sensitized part, a carrier for a photographic printing plate adjustably mounted in said frame, a back support facing the rear side of said sensitized part, means for adjusting said back support toward and from said sensitized part, and two guiding means for said back support, arranged in a plane parallel with said sensitized part and at right angles to each other, substantially as set forth.
- 55 19. The combination of a stationary frame having means for holding a sensitized part, a carrier for a photographic printing plate facing the sensitized surface, a back support facing the rear side of said sensitized part, a carriage which is longitudinally adjustable in said stationary frame, a carrier frame which is adjustable in said carriage and in which said back support is arranged, and means for adjusting said back support in said carrier frame toward and from said sensitized part, substantially as set forth.
- 60 20. The combination of a holder for a sensitized part, a printing plate carrier, and a back support comprising a movable frame, a pressure plate movably attached thereto, means for adjusting said frame toward and from the sensitized part, and means for adjusting said plate in said frame toward and from the sensitized part, substantially as set forth.
- 65 21. The combination of a holder for a sensitized part, a printing plate carrier, and a back support comprising a movable frame, a pressure plate movably attached thereto, pressure cams mounted in said frame and bearing against said pressure plate, and
- 70
- 75
- 80
- 85
- 90
- 95
- 100
- 105
- 110
- 115
- 120
- 125

means for adjusting said frame toward and from the sensitized part, substantially as set forth.

22. The combination of a holder for a sensitized part, a printing plate carrier, and a back support comprising a movable frame, a main pressure plate attached to said frame, and a supplemental pressure plate detachably secured to the main pressure plate, substantially as set forth.

23. The combination of a holder for a sensitized part, a printing plate carrier, and a back support comprising a movable frame,

means for adjusting said frame toward and from the sensitized part, a pressure plate movably arranged in said frame, and pressure devices engaging said pressure plate and removably mounted in said frame, substantially as set forth.

Witness my hand in the presence of two subscribing witnesses.

WILLIAM C. HUEBNER.

Witnesses:

EDWARD WILHELM,
C. B. HORNBECK.