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MACHINE FOR MAKING PHOTOGRAPHIC CONTACT PRINTS

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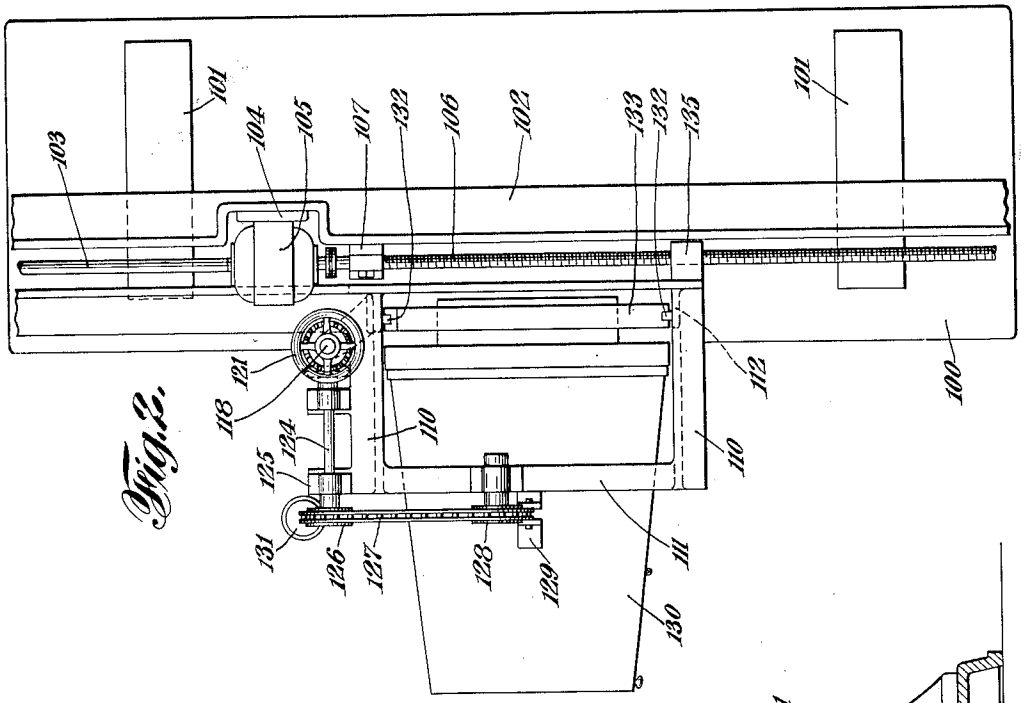


Fig. 2.

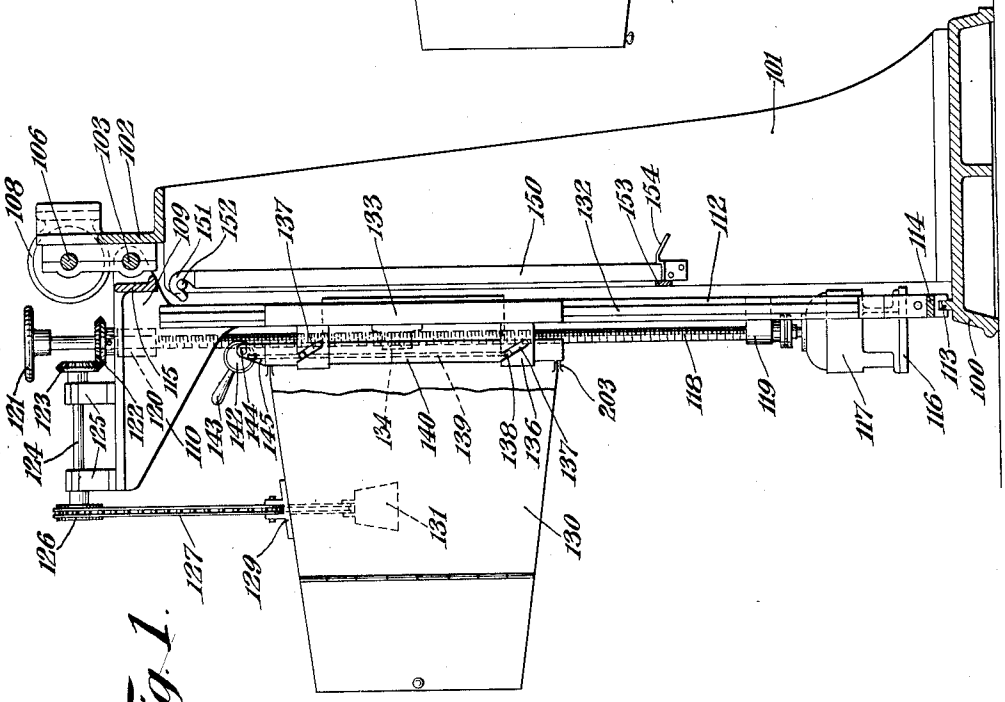


Fig. 1.

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## MACHINE FOR MAKING PHOTOGRAPHIC CONTACT PRINTS

Original application filed February 26, 1927, Serial No. 171,126. Divided and this application filed May 31, 1930. Serial No. 458,788.

This invention relates to photo-composing machines using a sensitized press plate in connection with a negative carrying frame and a lamp, this application being divided from an application on photo-composing machines, filed February 26, 1927, Serial Number 171,126.

The term "negative", as used throughout this application, is to be understood as referring to any transparent or translucent substance, as glass, celluloid and analogous compounds, paper and textile fabrics treated to permit the passage of light, etc. etc., bearing images, scribed, written, drawn or deposited photographically, of any objects whatsoever, or having the objects attached in such manner as to be reproduced by photo-printing.

Such machines contain certain parts which must function with positive precision, accuracy, convenience and speed of operation.

An object is in the provision of a lamp support counterbalanced and entirely separate from the negative frame, but actuated in such manner as to move simultaneously with the frame and capable of being moved to a distance away from it without dismounting the lamp or straining the structure.

A further feature is to provide a movable, pendantly supported press plate bed and a negative frame adjustable in parallel toward and from the bed.

These and other important objects, which will become apparent as the description progresses, are accomplished by the novel and practical construction and combination of parts hereinafter described and shown in the accompanying drawing, forming a material part of this disclosure, and in which:—

Figure 1 is a partial side elevational, partial vertical sectional view of an embodiment of the machine.

Figure 2 is a fragmentary top plan view of the same.

In this embodiment a base 100 carries two spaced columns 101 connected at their tops by a beam 102 having bracket bearings at its ends in which is mounted a guide bar 103.

Fixed to the beam is a bracket 104 carrying a motor 105 driving a screw 106 journalled horizontally in bracket 107 and provided at its opposite end with a hand wheel 108.

Slidable on the guide bar 103 are a pair of spaced brackets 109 having rearward extensions 110 connected by a bar 111 and a pair of downwardly extending uprights 112, their lower ends straddling a raised rail 113 on the base 100, these brackets being connected by a cross bar 114 at the bottom and a similar but sturdier bar 115 at the top.

Fixed on the outer side of one of the uprights 112, near the bottom, is a bracket 116 on which is seated a motor 117 directly connected to a vertical shaft 118, screw threaded except at its bearings 119 and 120, fixed respectively on the adjacent upright and upper, main portion of the bracket, the shaft being provided with a hand-wheel 121 at its extreme upper end.

Secured on the shaft 118, just above the upper surface of the adjacent bracket 110, is a bevel gear 122 meshing with a mate 123 fixed on a horizontal spindle 124 carried in bearings 125 extending above and outwardly from the bracket 110.

At the outer end of the spindle 124 is a sprocket wheel 126 driving a chain 127, one end of which is carried over an idle sheave 128, mounted on a stud extending from the bar 111 and thence downwardly to become fixed to lugs 129 secured on the upper surface of a lamp housing 130, the other end of the chain engaging a counterweight 131.

On the proximate surfaces of the uprights 112 are inreaching longitudinal tracks 132 guiding between them a frame 133 having an arm terminating in a nut 134 engaging the screw-shaft 118 so as to be moved by it up and down when the shaft is rotated by the motor or by hand, and obviously, due to the bevel gears and chain connection, the lamp housing will be moved correspondingly.

As the motor 117 is carried by the uprights 112 depending from the brackets 109—110 movable transversely of the machine on the guide bar 103, these elements, together with the frame 133 and lamp housing, are actuated by the motor or hand driven screw 106, due to its engagement by a nut 135 carried on an arm extending from one of the bracket mem-

bers 110, at the opposite side from the vertical screw 118.

Extending rearwardly from the frame 133, on both sides, are pairs of spaced lugs 136 containing oblique angular slots 137 open at their upper ends to receive pins 138 fixed in bars 139 slidable vertically in guide-ways formed in the lateral edges of a carrier frame 140.

The upper ends of the bars 139 are provided with means for engaging the periphery of disc cams 142 having operating handles 143 and being mounted eccentrically on pins 144 carried in brackets 145 fixed on the upper edge of the carrier frame 140.

From the foregoing it will be understood that the carrier frame is so mounted as to move limitedly back and forth at the will of an operator, irrespective of the positional height that the carrier frame and lamp housing may be.

A bed 150, to carry the sensitized plate to be printed, is provided at its upper edge, near the sides, with hooks 151 removably engageable with pins 152 set in the columns 101 at their proximate sides, nearly at the top, permitting the bed to be removed and replaced at will, the same normally hanging parallel with the face of the columns.

A strip 153 is secured to extend between the columns, against which the lower edge of the bed makes contact, the bed being maintained thereagainst by spring catches 154.

The negative frame carrier, which may be of any appropriate size, is placed on a carrier frame 140, provided with adjusting means for the negative frame and having at its edges a raised, rearwardly extending marginal rim provided at its outer edge with light obscuring, spring clamp, marginal cushions 203 between which the corresponding base edge of the lamp housing seats, making tight contact and preventing rays from the lamp from passing outward other than through the negative to strike a sensitized plate carried on the bed 150.

The operation of these machines is very simple, merely placing a negative under the sealing rubber, or in case of a glass negative, clamping it to a suitable negative frame and extracting the air by a vacuum hose connected with a pump.

Means, not shown, are provided for adjusting the registration of the frames, both vertically and horizontally, and to firmly clamp the frames in adjustment.

A sensitized plate is secured on the press bed which is then raised and held in a vertical position, parallel with the negative frame and the bed and frame mutually adjusted.

Separate controls for each adjustment are provided, all being conveniently accessible to an operator, making final or complete adjustments by the hand-wheels.

As changes of construction could be made within the scope of the invention, it is intended that all matter contained in the foregoing description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

Having thus described the invention, what is claimed as new and desired to secure by Letters Patent, is:—

1. In a machine for making photographic contact prints, the combination of an upright body frame, a negative holder, means for shifting said holder horizontally and vertically with respect to the body frame, a sensitized plate supporting bed, support pins on said frame, and hooks on said bed to maintain it in a position parallel with said negative holder.

2. In a machine for making protographic contact prints, the combination of an upright supporting structure, a negative holder mounted on the supporting structure to move at right angles thereto, a lamp in register with said holder, independent means for flexibly supporting said lamp on said structure. said means including a counterbalance means for shifting said holder, and means actuated by said shifting means to move said lamp in synchronism with said holder.

3. In a machine for making photographic contact prints, the combination with a supporting structure composed of upright elements, a carriage movable horizontally on said structure at the front thereof, a slide movable vertically on said carriage to any point thereon, means for independently actuating said carriage and slide, a negative holder carried by said slide, a pair of pins extending in alinement from the uprights of said structure, a sensitized plate bed disposable in a plane parallel with said holder, hooks on said bed engageable with said pins thereby to be supported, and spring clips on said uprights to retain said bed in operative position.

4. In a machine for making photographic contact prints, the combination with an upright supporting structure, a transverse support rail at the top, a guide rail at the bottom, a carriage movable on said rails, motive means for actuating said carriage, a slide movable vertically on said carriage, motive means for actuating said slide, a negative holder carried by said slide, and a counterbalanced lamp to normally register with said holder.

5. In a machine for making photographic contact prints the combination of an upright body frame, a negative holder, means for shifting said holder vertically with respect to the body frame, a sensitized plate supporting bed, pins extending in register from opposite sides of said frame, hooks on the upper edge of said bed for detachably engaging said bed in a position parallel with said negative

holder and spring clips to retain said bed in a suspended position.

6. In a machine for making photographic contact prints, the combination of an upright body frame, a negative holder, means for shifting said holder horizontally with respect to the body frame, a sensitized plate supporting bed, means for securing said bed in a position pendantly parallel with said negative holder, and means for moving said holder towards and from said bed while in a plane parallel therewith.

7. In a machine for making photographic contact prints, the combination of a supporting structure, a photographic negative holder mounted on the supporting structure to move in a horizontal and in a vertical plane, a lamp in register with said holder, independent flexible, counterbalancing means for supporting said lamp on said structure, means for shifting said holder, and means actuated by said shifting means to move said lamp in synchronism with said holder.

8. In a machine for making photographic contact prints, the combination with a supporting structure, a carriage movable horizontally on said structure, a slide movable vertically in said carriage, a photographic negative holder carried by said slide, a sensitized plate bed disposable in a plane parallel with said holder, and means including pairs of opposed cams for adjusting the holder towards and away from said bed.

9. In a machine for making photographic contact prints, the combination of a frame work having two independent tracks disposed transversely one to the other, a support for a printing member holder mounted to reciprocate on one of said tracks, said holder being mounted to reciprocate on the other of said tracks, and two distinct driving mechanisms mounted independently one of the other on said framework, associated each with one of said tracks and arranged to drive the device thereon, each of said driving mechanisms comprising two operating means arranged to operate its associated device in either of two directions.

10. In a machine for making photographic contact prints, the combination of a frame work having two independent tracks disposed transversely one to the other, a support for a printing member holder mounted to reciprocate on one of said tracks, said holder being mounted to reciprocate on the other of said tracks, and two distinct driving mechanisms mounted independently one of the other on said framework, associated each with one of said tracks and arranged to drive said support thereon in either of two directions, a plate bed pendantly supported from said frame work, means to retain said bed when in an operative position, and means to vary the distance between said support and bed.

11. In a machine for making photographic contact prints, the combination of a framework having a trackway, a carriage movable thereon, a second trackway on said carriage transverse to the first, a printing member holder movable on the second trackway, a lamp house combined with said holder, means for counterbalancing said lamp house, screw means for independently actuating said carriage and holder, a blank bed plate having hook engagement at its upper edge with said frame-work, and cam means for moving said holder towards and away from said bed plate.

12. A machine for making photographic contact prints comprising an upright supporting structure, a transverse rail at the top and a guide rail at the bottom thereof, a carriage movable on said rails, manual and motive means to actuate said carriage, a slide movable vertically on said carriage, manual and motive means to actuate said slide, a negative holder carried by said slide, and a counterbalanced lamp to register with said holder.

13. A machine for making photographic contact prints comprising an upright body frame, a negative holder, means to move said holder in horizontal positions relative to said body frame, a bed to support sensitized plates, means to secure said bed in a position parallel with said negative holder, controlling means to adjust the bed and negative holder, and means to move said holder toward and from said bed while parallel therewith.

14. A machine for making photographic contact prints comprising a frame having a plurality of independent tracks transversely disposed of each other, a support for a printing member holder reciprocally mounted on one set of said tracks, driving means on the frame, a printing member holder mounted on the other set of tracks, a lamp house attached to said holder, means to counterbalance said lamp house, means to operate said support and holder simultaneously or intermittently, a bed plate having a hook to engage the frame work, and cam means to actuate the holder toward and from said bed plate.

15. A machine for making photographic contact prints comprising a frame having a set of longitudinal tracks and a set of transverse tracks, a lamp housing flexibly mounted in the frame, means to actuate the lamp housing manually or by motive power, a carrier frame arranged to move backward and forward on one set of tracks, and means to actuate the carrier frame independently of the lamp housing.

16. In a machine for making photographic contact prints, comprising in combination with a holder for a sensitized plate, and a negative frame movable in a vertical plane, of a counterweighted lamp supported in independent relation to the negative frame, means for moving said lamp while preserving its correct relation to the negative frame, and

means for moving the negative frame and lamp, said moving means being common to both.

17. In a machine for making photographic contact prints, comprising in combination with a holder for a sensitized plate and a negative frame, of a lamp housing supported in relation to the negative frame independently thereof, said lamp housing support being flexible to permit movement of the housing away from the negative frame to obtain access thereto and to return the lamp housing to its operative relation with respect to the negative frame, and spring clamps on the negative frame to engage the edge of the lamp housing when moved thereagainst.

18. In a machine for making photographic contact prints, the combination of an upright body frame, a negative holder, means for shifting said holder with respect to the body frame both horizontally and vertically each movement being independent, a sensitized plate supporting bed having hooks at its upper edge, means for engaging said hooks whereby said bed is held in a position parallel with said negative holder, means to secure the lower edge of said bed, and means to move said holder towards and away from said bed.

19. A machine for making photographic contact prints, the combination of an upright body frame, a negative holder, means for independently adjusting said holder horizontally and vertically with respect to the body frame, a sensitized plate supporting bed provided with hooks, means in said frame to engage said hooks, means for securing said bed when in a position parallel with said negative holder, and cam actuated means for producing relative movement between said bed and holder in parallel planes.

In testimony whereof I affix my signature.

HARRY C. JONES.