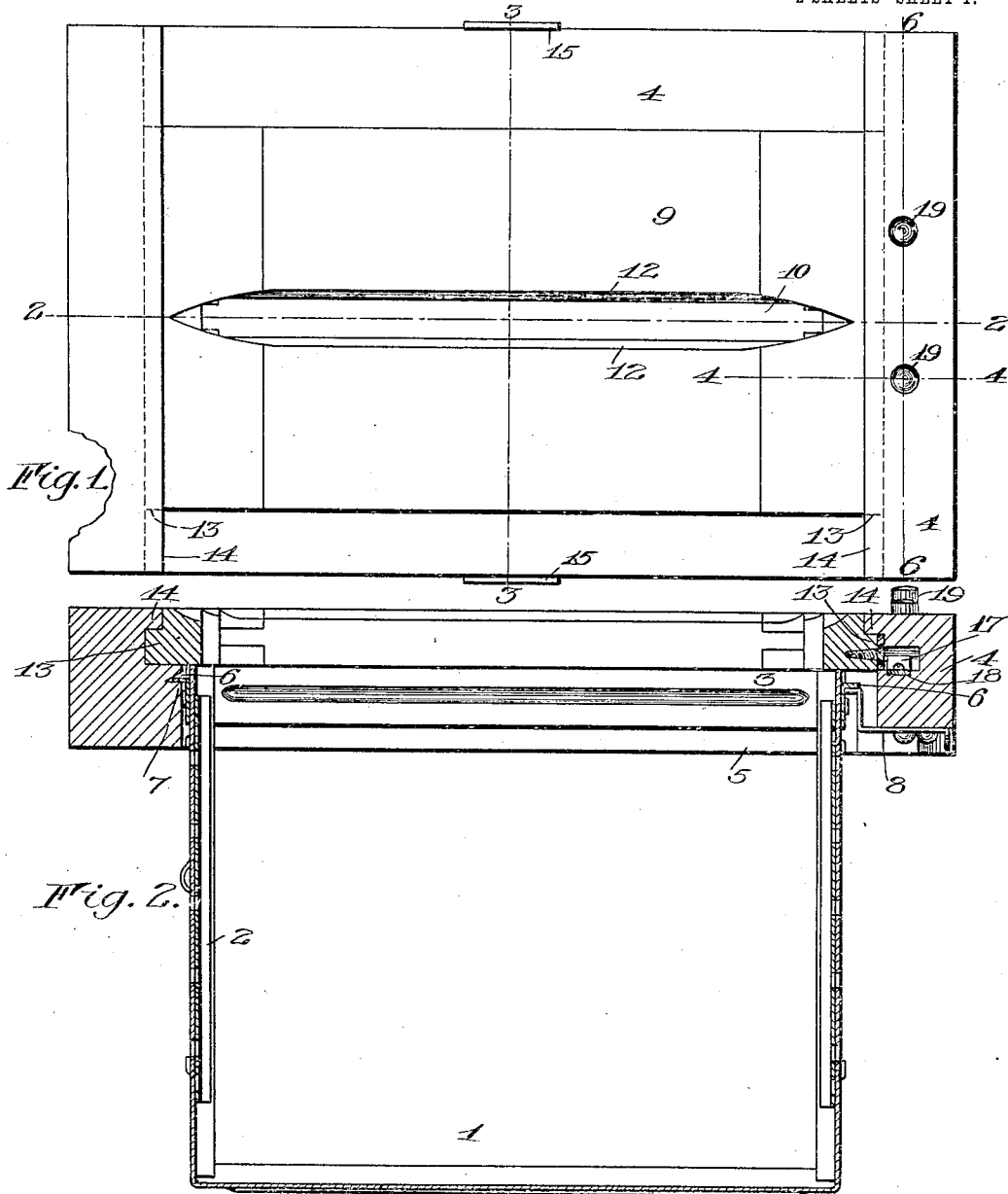


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LOADING DEVICE FOR PLATE RACKS.  
APPLICATION FILED APR. 9, 1908.

932,091.

Patented Aug. 24, 1909.

2 SHEETS—SHEET 1.



Witnesses

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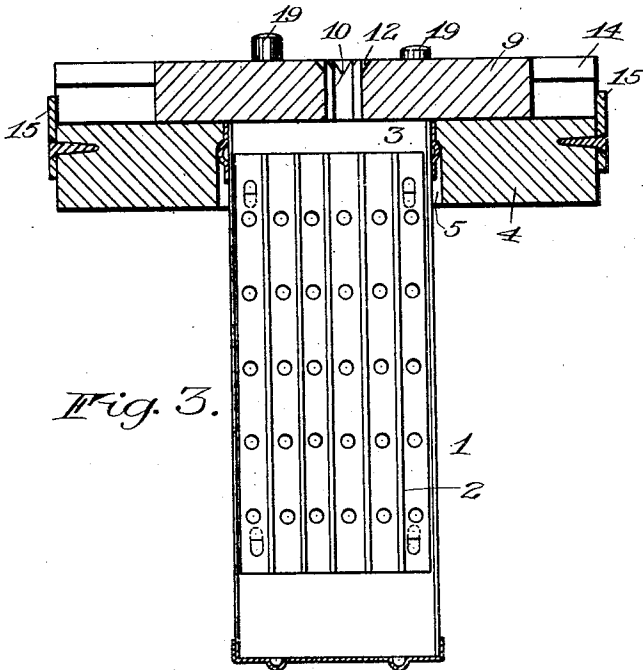


Fig. 3.

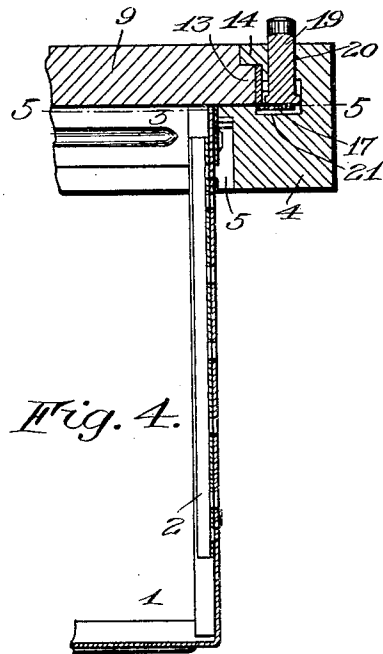


Fig. 4.

Fig. 5.

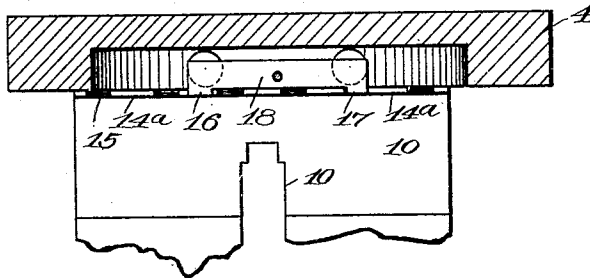
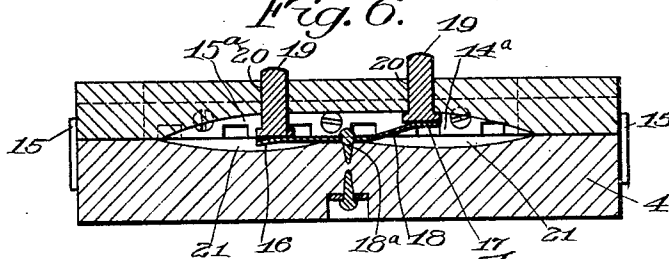


Fig. 6.



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# UNITED STATES PATENT OFFICE.

FREDERICK W. BARNES, OF ROCHESTER, NEW YORK, ASSIGNOR TO EASTMAN KODAK CO., OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

## LOADING DEVICE FOR PLATE-RACKS.

932,091.

Specification of Letters Patent.

Patented Aug. 24, 1909.

Application filed April 9, 1908. Serial No. 425,933.

*To all whom it may concern:*

Be it known that I, FREDERICK W. BARNES, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Loading Devices for Plate-Racks; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of the specification, and to the reference-numerals marked thereon.

My present invention relates to devices for positioning plates in racks, and it has for its object to provide a device which will be of service to photographers in loading racks or holders such, for instance, as are employed in developing or treating simultaneously a plurality of plates, and will aid in properly disposing the plates in spaced relation within the rack when, owing to the dim light of the dark room, or through other causes, a free manipulation thereof is rendered difficult.

To these and other ends the invention consists in certain improvements and combinations of parts all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings: Figure 1 is a top plan view of a loading device constructed in accordance with and illustrating one embodiment of my invention. Fig. 2 is a central longitudinal sectional view thereof on the line 2—2 of Fig. 1 and showing a plate rack arranged in coöperative relation therewith. Fig. 3 is a transverse section on the line 3—3 of Fig. 1. Fig. 4 is a fragmentary sectional view on the line 4—4 of Fig. 1. Fig. 5 is a fragmentary horizontal section substantially on the line 5—5 of Fig. 4. Fig. 6 is a vertical transverse section through the escapement mechanism taken on the line 6—6 of Fig. 1.

Similar reference numerals in the several figures indicate similar parts.

In the present embodiment I have shown a device adapted for use in connection with a photographic plate rack of the type employed in the plate developing apparatus upon which an application for patent Serial No. 395,991, was filed October 5, 1907, by myself and another as joint inventors and which apparatus may be taken as an instance of the useful application of my pres-

ent device. These racks or holders indicated generally by reference numeral 1 in the accompanying drawings are usually provided with a plurality of plate seats 2 accessible for the insertion and removal of their intended contents through an open side 3. When loading the rack, however, particularly in the dark room, it is sometimes difficult to properly guide the plates inserted to their seats and to distinguish between those seats which are occupied and those that are not, resulting in preliminary contacts apt to disfigure the delicate coatings of the plates. I, therefore, provide a device through the use of which each plate is accurately guided to its proper position in a simple and convenient manner.

Referring more particularly to the drawings, 4 indicates a supporting member having a preferably central opening 5 therein adapted to receive the open end 3 of the plate rack which latter may be detachably secured in such coöperative relation by means of lips 6 at either end, one engaging a shoulder 7 on the supporting member and the other being engaged by a sliding latch 8. The openings in the supporting member and rack are thus coincident, and arranged to move across the openings and relatively to the supporting member is a guiding member 9 provided with a slot 10, the preferably flared walls 12 of which form guides for directing a plate inserted therein within the openings in the rack and support. The ends of the guiding member are in the present instance provided with tongues 13 which slide beneath flanges 14 at the ends of the supporting member to guide the relative movement of the two members between the limiting stops 15 carried by one of them.

The slot 10 in the guiding member 9 is of approximately the cross sectional area of the plates to be accommodated and also approaches in size the seats 2 within the rack as best shown in Fig. 3. In operation, so far as described, the supporting member is held by the operator in one hand and the guiding member advanced thereon by the pressure of a finger of the same hand and as the plate guides 12 pass across the openings 3 and 5, the plates are inserted one at a time through the slot and directed successively within the several seats 3 of the rack 1.

In order to halt the guides during the insertion of each plate and bring them in

exact register with the seat next to be filled, I provide a manually operated escapement mechanism between the members which comprises in the present instance a series of abutments 14<sup>a</sup> formed by a rack 15<sup>a</sup> secured to one of the tongues 13 of the guiding member and a pair of resilient stops 16 and 17 formed by the ends of a centrally secured spring plate 18 arranged beneath one of the flanges 14 of the supporting member. These stops are at such distances from each other relatively to the distances between abutments 14 as to operatively and respectively engage one of the latter only in alternation allowing a predetermined relative movement of the members 4 and 9 after one stop is released before the other engages. Each stop is capable of independent release by the engagement of a push button 19 projecting through apertures 20 in the flange 14, which buttons, when operated, depress their respective stops to a point below the rack and within depressions 21.

The movement of the guiding member 9 between the engagements of the stops 16 and 17 is equal to the distances between the seats 3 of the rack so it will be readily seen that when the guiding member 9 is advanced to the first engagement, the guides 12 will be halted in register with the first seat. The first plate can be then quickly inserted, the stop released by depressing one of the buttons or operating members 19 and a further advance made until the other stop halts the guide in register with the next and so on until all the seats are filled. The parts may be run in the opposite direction in filling the next rack, rather than returning the guiding member to its initial position.

The guides 12 can always be readily located by feeling rather than by sight, and are much easier to discern (being the only opening in the member 9) than the particular seat in the rack alone next to be filled, as these look much alike, particularly in a dim light, and it is difficult to distinguish between those that are filled and those that are not.

My invention is not necessarily limited to the particular application herein described, as it would suggest itself in other connections involving similar principles of operation and the manipulation of plates of other kinds.

I claim as my invention.

1. The combination with two relatively movable members, one being provided with an opening, of guides on the other arranged to pass across the opening in the first for directing a plate inserted therein within the said opening and means for halting the relative movement of the members at predetermined points to deposit the plates inserted in the guides at the several halts in spaced relation within the opening compris-

ing a series of abutments on one of said members, a pair of movable stops fixed with relation to the other arranged to alternately engage the abutments as the members are moved relatively, and means for releasing the engaging stop.

2. The combination with a supporting member having an opening therein adapted to receive a plate rack disposed on one side thereof, of a member movable relatively to the support to travel across the opening in the latter on the opposite side thereof and having guides for directing a plate inserted therein within the opening in the support and means for halting the relative movement of the guiding member at predetermined points to deposit the plates inserted at the several halts in spaced relation within the opening.

3. The combination with two relatively movable members one comprising a plate rack having a plurality of seats, and the other a plate guide adapted to pass transversely across the rack, of means for halting the relative movement of the members to bring the guides in register with each seat of the rack, successively comprising a series of abutments on one of said members, a pair of movable stops fixed with relation to the other arranged to alternately engage the abutments as the members are moved relatively, and means for releasing the engaging stop.

4. The combination with a supporting member having an opening extending there-through adapted to receive a plate rack disposed on one side of the member and provided with guides on the opposite side and means for securing a plate rack within the opening, of a member movable relatively thereto on the guides and having a slot therein adapted to travel across the opening in the supporting member and means for halting the movement of the slotted member at predetermined points to deposit plates inserted through the slot at the several halts in spaced relation within the opening.

5. The combination with two relatively movable members one being adapted to cooperate with a plate rack and the other being provided with guides arranged to travel across a rack disposed in coöperative relation with the first for directing a plate inserted in the guides within the rack, of a manually controlled escapement mechanism arranged between the members for halting the movable member at predetermined points and depositing the plates inserted in the guides at the several halts in spaced relation within the rack comprising two stops on one of the members engaging the other, one of said stops being adapted to assume an engaging position at the time the other is released.

6. The combination with two relatively

movable members one being adapted to co-operate with a plate rack and the other being provided with guides arranged to travel across a rack disposed in cooperative relation with the first for directing a plate inserted in the guides within the rack, of means for halting the guides at predetermined intervals to deposit plates inserted therein in spaced relation within the rack comprising a series of abutments on one of said members, a pair of movable stops on the other arranged to alternately engage the abutments as the members are moved relatively and means for releasing the engaging stop.

7. The combination with a supporting member having an opening therein and provided with guiding flanges having openings therein, of a member movable relatively thereto with its ends guided beneath the flanges, said member being provided with a plate guide adapted to travel across the opening in the support, of means for halting the movable member at predetermined intervals to deposit plates inserted in the plate guide in spaced relation within the opening comprising a series of abutments on the movable member, stops on the supporting member arranged beneath the guiding flanges and adapted to alternately engage the abutments as the members are moved relatively and operating members arranged in the guiding flanges for releasing the movable stops.

8. The combination with two relatively movable members, one comprising a plate rack having a plurality of seats and the other a single plate guide arranged to pass transversely across the seats in the rack, of a plurality of spaced abutments fixed relatively to one of said members and a pair of movable stops carried with the other and adapted to alternately engage the abutments to halt the relative movement of the members, the stops being so spaced apart relatively to the spacing of the abutments as to arrest the relative movement of the members with the single guide coincident with a seat in the rack.

9. The combination with two relatively movable members, one comprising a plate rack having an opening therein for the reception of plates and the other a plate guide arranged to pass transversely across the opening in the rack, of a plurality of spaced abutments fixed relatively to one of said

members and a pair of movable stops carried with the other and adapted to automatically engage the abutments to halt the relative movement of the members, the stops being so spaced apart relatively to the spacing of the abutments as to simultaneously arrange themselves one in operative engagement with an abutment and the other out of operative engagement and between two abutments, and means for manually releasing the engaging stop to permit relative movement of the members until the engagement of the other stop.

10. The combination with two relatively movable members, one comprising a plate rack having a plurality of spaced seats, therein for the reception of plates and the other a plate guide arranged to pass transversely across the rack, of a plurality of abutments fixed relatively to one of the members and spaced to correspond with the spacing of the seats in the rack and a pair of movable stops carried with the other and adapted to alternately engage the abutments to halt the relative movement of the members, the stops being so spaced apart relatively to the spacing of the abutments as to simultaneously arrange themselves one in operative engagement with an abutment and the other between two abutments.

11. The combination with two relatively movable members, one comprising a plate rack having a plurality of spaced seats, therein for the reception of plates and the other a plate guide arranged to pass transversely across the rack, of a plurality of abutments fixed relatively to one of the members and spaced to correspond with the spacing of the seats in the rack and a pair of movable stops carried with the other and adapted to automatically engage the abutments in alternation and halt the relative movement of the members, the stops being so spaced apart relatively to the spacing of the abutments as to simultaneously arrange themselves, one in operative engagement with an abutment and the other between two abutments and means for manually releasing the engaging stop to permit relative movement of the members.

FREDERICK W. BARNES.

Witnesses:

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