

No. 617,335.

Patented Jan. 10, 1899.

F. R. HALL.
PHOTOGRAPHIC PLATE WASHER.

(Application filed Oct. 20, 1897.)

(No Model.)

2 Sheets—Sheet 1.

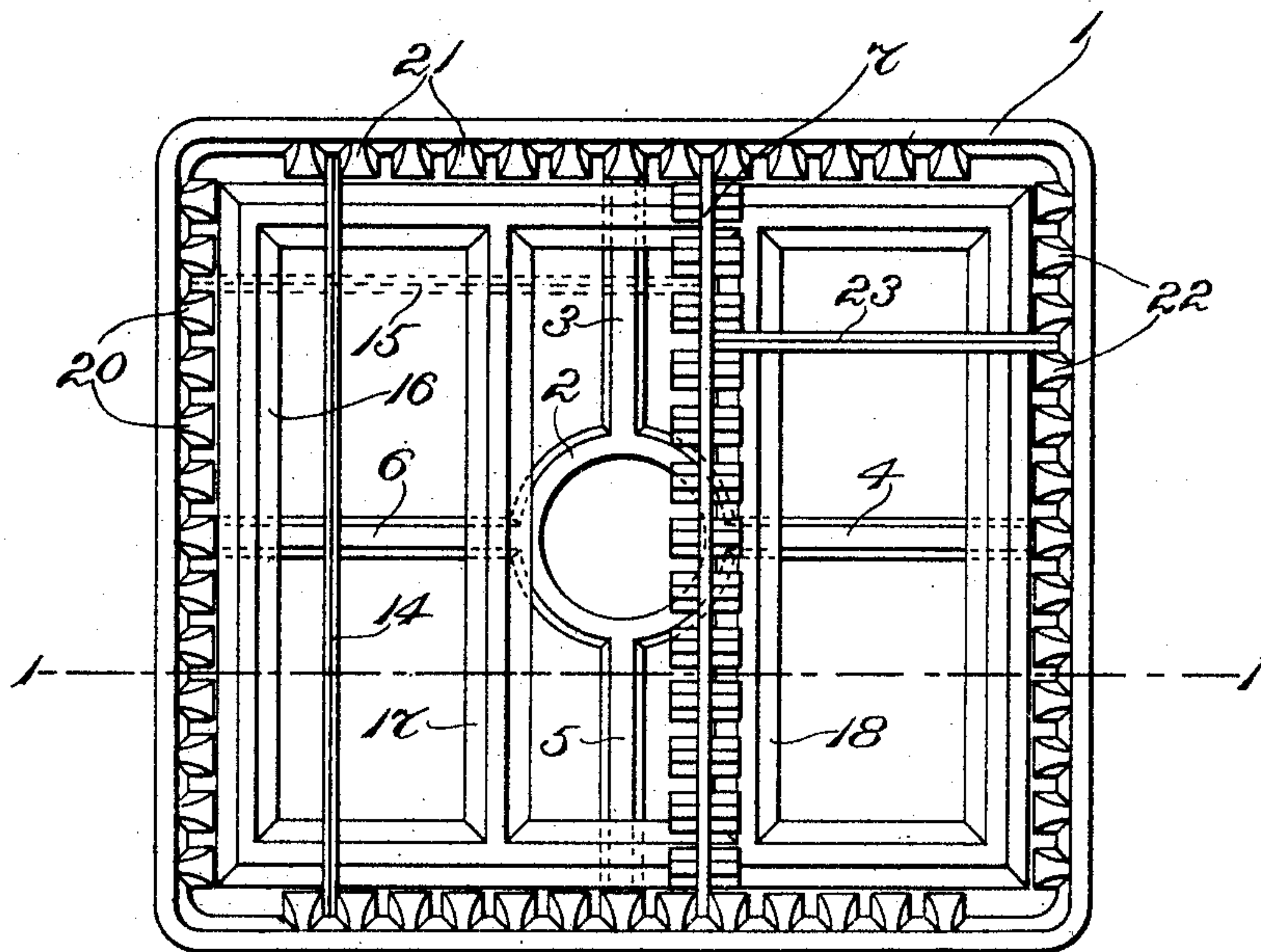
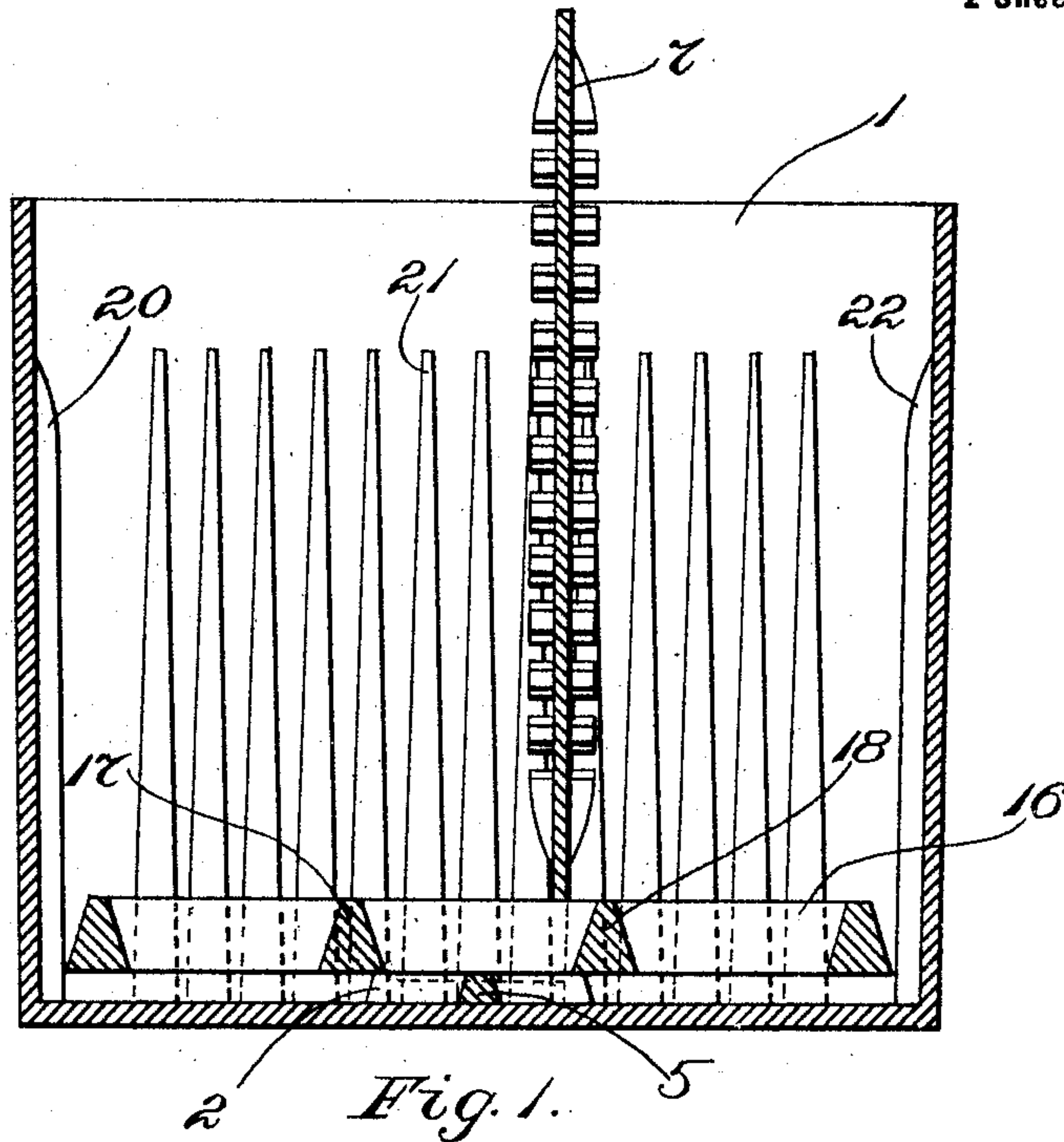


Fig. 2.

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Fig. 3.

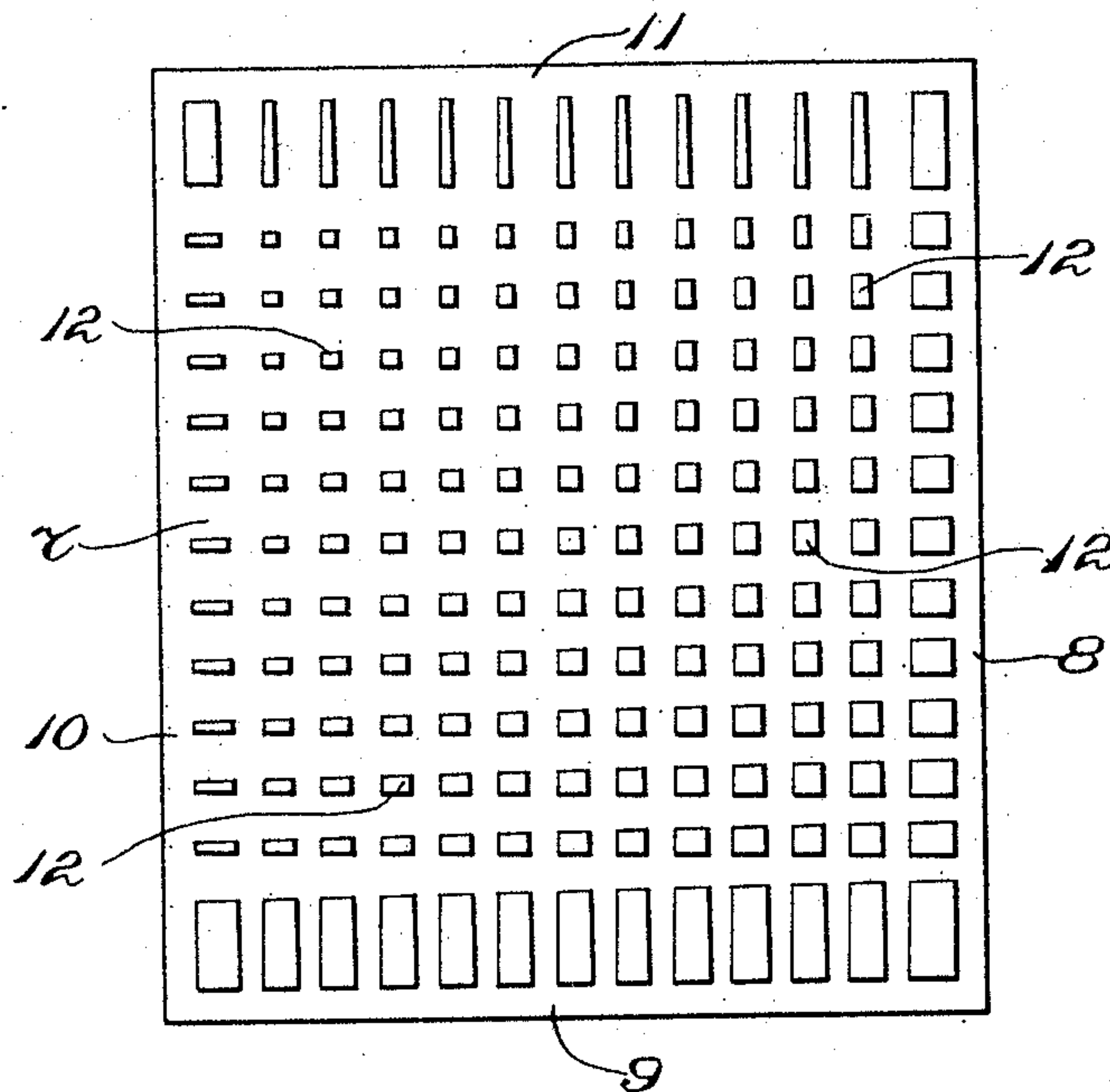


Fig. 4.

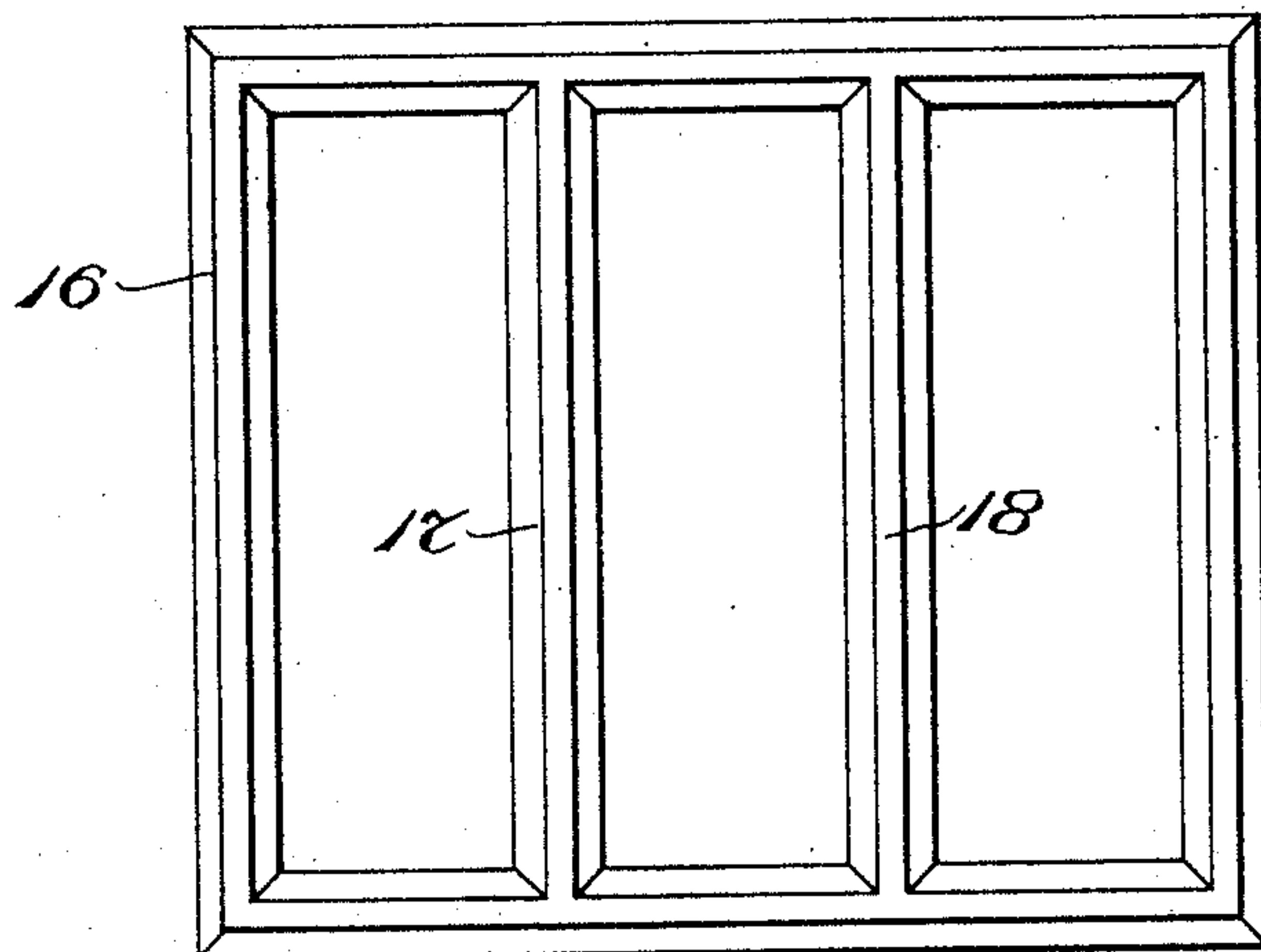
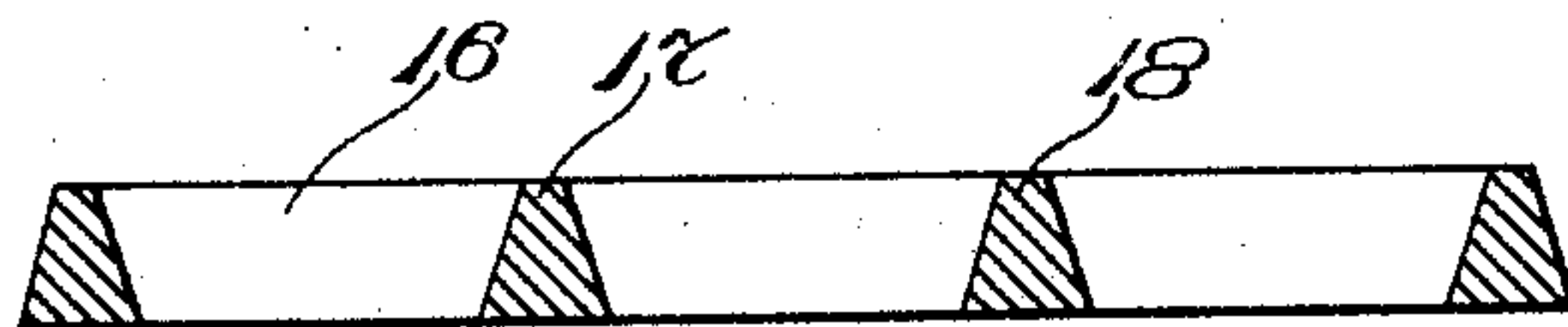


Fig. 5.



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UNITED STATES PATENT OFFICE.

FRANK ROCKWOOD HALL, OF BOSTON, MASSACHUSETTS.

PHOTOGRAPHIC-PLATE WASHER.

SPECIFICATION forming part of Letters Patent No. 617,335, dated January 10, 1899.

Application filed October 20, 1897. Serial No. 655,758. (No model.)

To all whom it may concern:

Be it known that I, FRANK ROCKWOOD HALL, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Receptacles for Photographic Plates, of which the following is a specification, reference being had therein to the accompanying drawings.

10 In the process of developing a photographic plate the plate first is subjected to the action of the developer proper, which brings out the image, and subsequently is placed in a bath of a solution of sodium thiosulfate, (commonly termed the "hypo,") which fixes the image, all as well known to photographers. The receptacle in which the hypo is contained is commonly a rectangular box, made of rubber or other suitable material or composition, 20 having a breadth equal to one dimension of the plates to be received by it and a length corresponding with the number of plates which it is intended to take and provided with vertical ribs upon the two faces between which the plates are to be held. The said 25 ribbed faces are slightly farther apart than one of the dimensions of the plates in order that the plates may fit easily in the grooves between the ribs. As the plates successively 30 come from the developer they are slipped into the grooves between the said ribs of the hypo-box, where they are held and completely exposed to the fixing action of the hypo. Such a hypo-box is subject to the serious disadvantage of accommodating only one size 35 of plate. Professional photographers commonly handle large sizes of plates; but they are likely to receive smaller plates from amateurs who lack the time or skill for doing 40 their own developing. Then, again, the amateur himself, as he progresses in skill, buys a more elaborate camera and uses larger plates, while he may still keep his small camera for occasional or tourist work. Consequently both the professional and the amateur 45 are likely to have various sizes of plates, both large and small, to develop at the same time; but to provide as many hypo-boxes as would be required to accommodate so many 50 sizes of plates would not only be a matter of

large expense, but would cumber up the working portion of the dark room.

It is the object of my invention to produce a hypo-box of simple and durable construction, capable of ready adjustment to accommodate various sizes of plates, and fitted to receive different sizes at the same time. 55

The invention first will be described with reference to the accompanying drawings, which represent the best embodiment thereof of which I have yet contrived, after which the distinguishing characteristics thereof will be particularly pointed out and distinctly defined in the claims at the close of this specification. 60 65

In the drawings, Figure 1 is a vertical section of my hypo-box on the line 1 1 of Fig. 2. Fig. 2 is a plan of the box with the partition and rack inserted and several plates in place. Fig. 3 is a face view of the partition. Fig. 4 70 is a face view of the rack. Fig. 5 is a cross-section of the rack.

In designing a box particularly for the use of amateurs, who commonly use a smaller box than professionals use, I give it a width of 75 eight inches (and a trifle over) on the bottom inside, this being correct for the accommodation of the ordinary five-by-eight plate. I provide the two sides, which are eight inches apart, with ribs, as in the usual construction. 80 Instead, however, of making the box of a length sufficient to accommodate a dozen or so plates I introduce a new principle by making its length depend not upon the number of plates which may be accommodated, but 85 upon the dimensions of plates of another size than five by eight. Preferably the size will be five by seven, inasmuch as five by seven is a very common size of plate. Furthermore, I form ribs upon the end faces. It will now 90 be perceived that the value of the box has become doubled, for it is capable of accommodating either five by eight or five by seven plates at the option of the operator and therefore takes the place of the two boxes formerly 95 necessary to those photographers who use both of the said sizes of plate. The box 1, as I have thus described it and as it is shown in the drawings, has the following dimensions: It is a trifle over seven by eight inches 100

inside on the bottom and is about seven inches high. Thus it will take five-by-eight plates arranged its long way or five-by-seven plates arranged its short way. The walls of the box
 5 are shown as flaring from the bottom upward to facilitate its withdrawal from the mold in which it is formed. On the inside of the bottom are formed ridges, on which the lower edge of each plate may rest, the plate being
 10 therefore held clear from any sediment or undissolved hypo which may be in the bottom of the box, and in addition a circulation of the hypo among the plates is thereby effected. I find a satisfactory form of ridges to com-
 15 prise an annular part 2 in the middle of the box and four radial parts 3, 4, 5, and 6, extending from the said annular part to the middle of the respective sides of the box.

As before described, I form ribs on all four
 20 sides of the box, as at 20 21 22. The said ribs taper from the bottom upward, thus leaving the grooves between them wider at the top than at the bottom. This extra width at the top not only facilitates the introduction
 25 of single plates, but permits a novel arrangement of plates in the hypo. In using small plates, the bottom edges of which will be supported some distance above the bottom of the box, (by the rack hereinafter described,) the
 30 edges of said plates will rest wholly in the wide upper portion of the grooves. The said wide upper portion is specially designed to receive two plates back to back, as shown at 23, Fig. 2. The fixing action of the hypo takes
 35 place wholly on the face of each plate, and therefore the contact of the backs of each pair of plates does not retard the fixation. On the other hand, it saves half the space heretofore thought necessary to be left be-
 40 tween the plates and permits the introduction of twice the number of plates into a single box, doubling its capacity.

The partition 7, Figs. 2 and 3, which is designed to fit into the grooves on the inner
 45 faces of the hypo-box in preparing the box for the reception of plates smaller than five by eight or five by seven measures eight inches on the side 8, seven inches on the side 9, and a little over eight and seven inches,
 50 respectively, on the sides 10 and 11—that is to say, it widens both from the eight-inch side and from the seven-inch side, the widening corresponding with the inside taper of the walls of the box 1 and causing the partition
 55 to fit snug when introduced into the grooves on the walls. Thus the partition may be introduced with its seven-inch side down crosswise of the box or with its eight-inch side down lengthwise of the box. Both faces of
 60 the partition are formed (see Fig. 3) with a set of grooves perpendicular to the eight-inch side and with a set of grooves perpendicular to the seven-inch side, the said sets of grooves intersecting each other at (approximately)
 65 right angles. Each two grooves of either set will therefore be separated not by a continuous ridge, but by a line of quadrilateral studs

12 12. The grooves all match the grooves on the interior faces of the box and cooperate therewith. When the partition is inserted
 70 in the box, no matter whether crosswise or lengthwise thereof, it will present a set of vertical grooves on each face, as shown in Fig. 2, which represents it as introduced crosswise of the box and supporting (to the
 75 right) small plates back to back in pairs. It will be particularly observed that the remaining portion of the box (to the left) is still available for holding either five-by-seven plates, as at 14, or smaller plates, as in dotted
 80 lines at 15. *Mutatis mutandis*, the same arrangements are possible when the partition is placed lengthwise of the box. In either case the photographer need not interrupt the
 85 fixation of his five-by-seven or five-by-eight plates to fix smaller plates, but merely need insert or adjust the partition.

In accommodating two sets of small plates, one set on each side of the partition, it is desirable, as before intimated, to raise all the
 90 plates into an accessible position, and this result I accomplish by introducing into the bottom of the box the rack 16, Figs. 2, 4, and 5. This rack I preferably form rectangular or of
 95 a size to cover the entire bottom of the box and with two cross-bars 17 18. Each bar of the rack is wedge-shaped in cross-section. When inserted, the rack rests on the ridges
 3 4 5 6, and upon it in turn rest the partition 7 and the plates the partition supports. 100

The leading advantages of my improved hypo-box are found in the provisions for accommodating different sizes of plates without adjustment, in those for effecting immediate adjustment to accommodate other sizes
 105 in conjunction with either of such sizes, (and this without disturbing the plates already contained,) for compacting the inserted plates by arrangement in pairs and for rendering a single partition capable of bridging different
 110 dimensions of the box, so as to afford in either position a support for plates, for supporting small plates in the most favorable position, and for simplifying the equipment and facilitating the manipulation requisite in the dark
 115 room.

What I claim is—

1. A receptacle for plates of a length adapted to accommodate one size of plate and of a width adapted to accommodate another size
 120 of plate, and provided interiorly with grooves, the said grooves being wider at the top of the box than at the bottom thereof, for the purposes and substantially as set forth.

2. In a receptacle for plates, the combination with an interiorly-grooved box, the width of which is different from the length thereof, of a movable partition having dimensions corresponding respectively with the said length and width respectively of the box, and
 130 grooved in two directions, whereby said partition may be placed either widthwise or lengthwise of the box and in either position will have grooves to receive and support a plate

corresponding with the grooves on the opposite interior face of the box, substantially as set forth.

3. The combination with a box having a
5 plurality of grooves on all its interior walls to receive the edges of plates, of a movable partition correspondingly grooved, and a separate rack adapted to be placed in the bottom of said grooved box to elevate small-sized
10 plates and to be removed from within the in-

closure of the grooved walls when large plates are to be accommodated, substantially as described.

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

FRANK ROCKWOOD HALL.

Witnesses:

LEPINE HALL RICE,

WILLIAM A. COPELAND.