

W. B. DAHL.
RING TRAY.

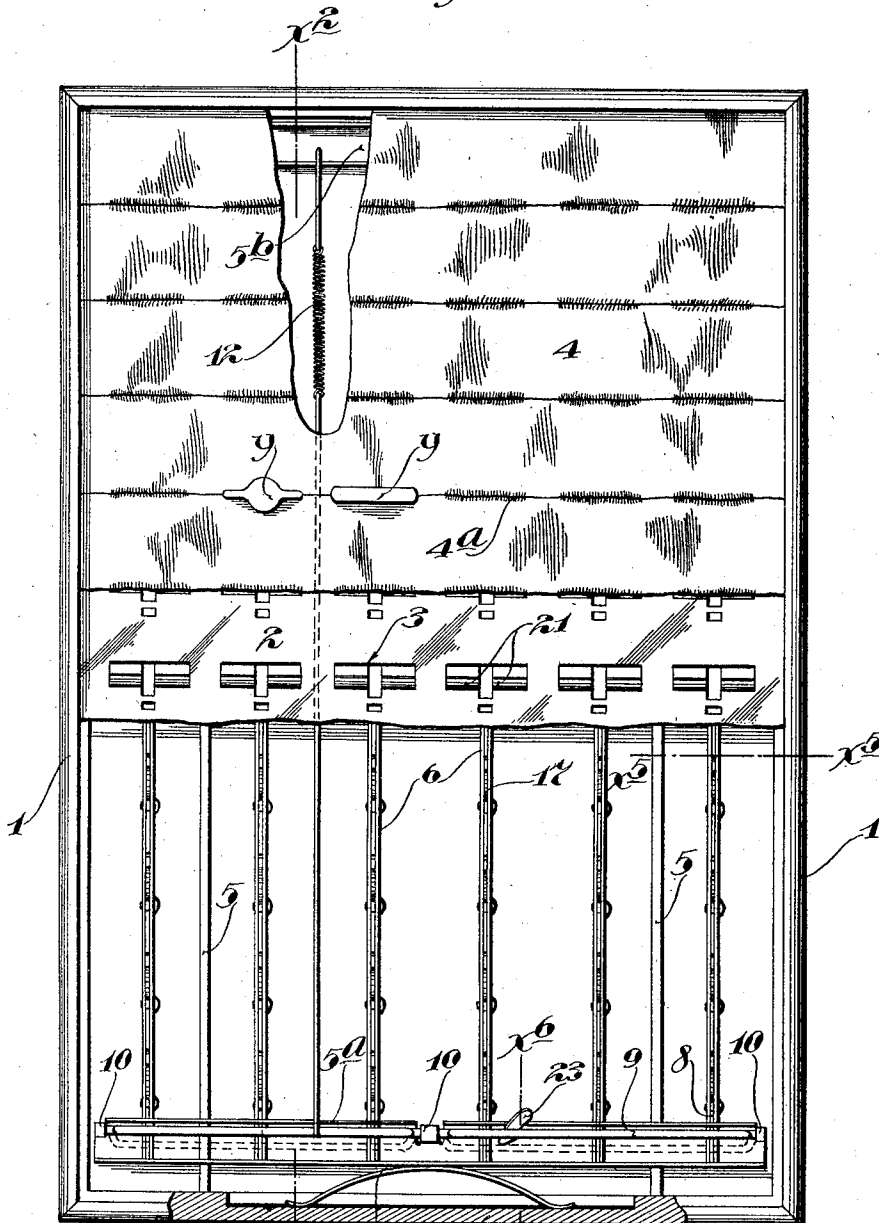
APPLICATION FILED NOV. 4, 1912.

1,063,662.

Patented June 3, 1913.

2 SHEETS—SHEET 1.

Fig. 1



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E. C. Skinkle
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Inventor:
Walter B. Dahl
By his Attorneys:
William M. Muck

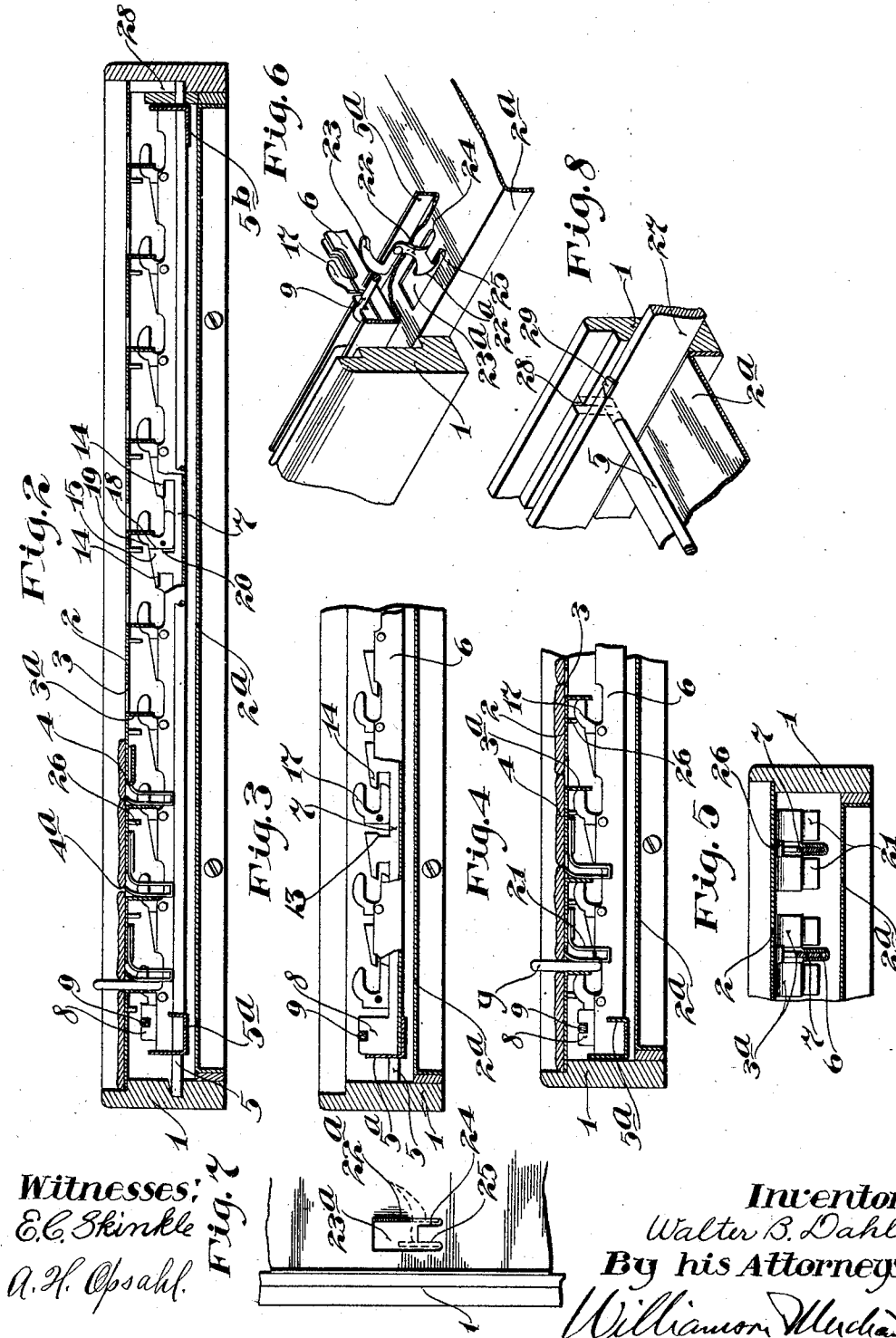
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UNITED STATES PATENT OFFICE.

WALTER B. DAHL, OF MINNEAPOLIS, MINNESOTA.

RING-TRAY.

1,063,662.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed November 4, 1912. Serial No. 729,302.

To all whom it may concern:

Be it known that I, WALTER B. DAHL, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Ring-Trays; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an improved ring tray, and is in the nature of an improvement on the ring tray disclosed and broadly claimed in my prior Patent 989,571, of date, April 18th, 1911.

Ring trays, as is well known, are extensively used to contain a large number of rings to be displayed in show cases and to be exhibited to purchasers. My said prior patent provided an extremely efficient device which would permit the rings to be removed, one at a time, but would prevent removal of a second ring until the first removed ring had been replaced in the tray. My present invention operates in the same way under normal or ordinary conditions, but has various auxiliary or ancillary devices which adapt the tray to be set when desired, so that in one instance, all of the rings will be locked in the tray, in another instance, all of the rings of the tray will be released, and in another instance, by certain manipulation, a lock hook which has been opened by the removal of a ring, may easily be restored to normal position without requiring a ring which has been removed and probably sold, to be placed back in its seat in the tray. While this latter feature could be accomplished in my said prior patent, it was a matter of much greater difficulty than in the present construction. In the said prior patent, however, there was no provision made for locking all of the rings in the tray or for releasing all of the rings in the tray, at will. In addition to the above noted novel features of improvement over my prior patent, the present invention involves other minor, but important features, all of which will be hereinafter described and defined in the claims.

In the accompanying drawings which illustrate the improved tray, like characters

indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a plan view with some parts broken away and some parts removed, showing the improved ring tray; Fig. 2 is a vertical section taken approximately on the line $x^2 x^2$ on Fig. 1; Figs. 3 and 4 are fragmentary views in section taken approximately on the same line as Fig. 2, with certain parts removed from Fig. 3, and with certain of the parts shown in Fig. 4 moved from normal position; Fig. 5 is a fragmentary section on the line $x^5 x^5$ on Fig. 1; Fig. 6 is a fragmentary perspective view with some parts sectioned approximately on the line $x^6 x^6$ on Fig. 1; Fig. 7 is a bottom plan view of the parts shown in Fig. 6; and Fig. 8 is a fragmentary perspective view with some parts sectioned, showing the manner in which the ends of the frame guiding rods are connected to the rim of the tray casing or body.

The casing or body of the tray is made up of a rectangular marginal frame 1 provided with a top plate 2 and preferably also with a bottom plate 2^a. The top plate 2 is provided with a plurality of rows of elongated perforations or slots 3 affording ring seats, and preferably the said top plate 2 is provided with heavy velvet, felt, or similar material 4, which is slit at 4^a immediately above the slots 3. Normally, the slits 4^a are approximately closed but the loose edges thereof are flexible so that the rings y may be easily forced therethrough and through the seats 3.

Extended longitudinally of the marginal body frame 1 and secured at its ends to the front and rear bars thereof, is a plurality of guide rods 5, two being shown in the drawings. Extending transversely of the tray and mounted to slide on the guide rods 5 are front and rear channel bars 5^a and 5^b.

Located immediately under and vertically alined with each longitudinal row of ring seats 3 is a U-shaped bar 6. These U-shaped bars 6, at their ends, are rigidly secured to the angle bars 5^a and 5^b, and therewith form a sliding frame having limited longitudinal movement within the marginal frame of the tray and upon the guide rods 5.

Mounted for limited sliding movements within the U-shaped bars 6, are lock bars 7.

At their front ends, the several lock bars 7 are provided with notched heads 8 that are engaged with a bail-like portion of a crank shaft 9 mounted in suitable bearings 10. A bowed spring 11 (see Fig. 1) re-acts against the front end of the marginal frame 1 and against the angle bar 5^a and exerts a force which yieldingly holds the sliding frame 5—5^a and 5^b, in its rearmost position shown in Figs. 1 and 2. A spring connection 12 attached at one end to the rear angle bar 5^b and at its other end to the upper bail-like portion of the crank shaft 9, yieldingly holds all of the lock bars 7 normally in their extreme rearmost positions, or in other words, toward the right, in respect to Fig. 2.

Immediately under each ring seat 3, the underlying lock bar 7 is provided with a hook seat 13, a hook locking lug 14, and an abutment 15. Just below each ring seat 3, is an approximately C-shaped ring locking hook 17 which is pivotally connected to the flanges of cooperating U-shaped bar 6 and has an approximately straight lower prong. Normally, the lower prongs of the several lock hooks 17 are free from the lock lugs 14 on the lock bars 7, and the abutments 15 engage flat back surfaces 18 of the said hooks 17 and hold the same in normal positions with their upper prongs projecting just below and across the ring seats 3 and through the rings which may be applied in the said seats.

The top plate 2, at one side of each ring seat 3 is preferably provided with a downturned lip 3^a which forms an extended wall of corresponding ring seats. For the normal position of the parts see Figs. 1 and 2. In this normal position of the parts, the hooks 17 are all free from the lock lugs 14 of the lock bar 7, and hence, any ring may be removed from the tray simply by pulling it out of its seat, but under this action of pulling the ring out of its seat, the removed hook operates on the engaging abutment 15 of that lock bar 7, moves the said lock bar far enough to carry its lock lugs 14 over the lower prongs of all of the lock hooks which are in normal position. Furthermore, the movement of any one lock bar 7, operating through the crank shaft or bail 9, produces a lock movement of all of the said lock bars, so that the removal of any one ring from the tray will cause all of the other rings in the tray to be locked.

To prevent the spring 12 from forcing the lock bars 7 back to their normal positions, as soon as the removed ring has been thrown upward out of engagement of the upper prong of the cooperating lock hook 17, each lock hook is provided on its back edge, at the upper extremity of its flat surface 18, with a retaining or lock shoulder 19, which is arranged to be engaged with a cooperating

retaining shoulder 20 of the corresponding abutment 15. Obviously, when the tilted hook has been returned to its normal position by replacing a ring therein, a spring 12 will throw all of the lock bars back to their normal positions, so that any one of the rings may then be removed from the tray.

As best shown in Figs. 2 and 4, I provide alining springs 21 of approximately U-shaped form having one prong secured to the bottom of the top plate 3 and having their loose prongs arranged to press the lower portion of the ring against the cooperating downturned lip or flange 3^a. These springs and the cooperating lips 3^a serve to hold the rings in proper normal relation to the hooks 17.

To arrange for locking all of the hooks 17 in normal position, to thereby lock all of the rings to the tray, I provide a device which, when set, will hold the crank shaft or bail 9 in its forwardly pressed position with the lock lugs 14 of all of the bars 7 overlapping the lower prongs of the hooks 17, as shown in Fig. 3. As a simple and efficient device for thus locking the bail 9, I provide a small lever 22 which is intermediately pivoted to the front end bar 5^a of the sliding frame, and has an oblique segmental cam 23 (see particularly Figs. 1 and 6), which cam, when thrown upward, presses the upper portion of the said bail 9 forward and accomplishes the result just above stated. The lower end 22^a of the lever 22 projects downward through a slot 23^a in the bottom plate 2^a and when the lever is set, as above stated, to lock all of the ring hooks, is in the position shown at the right by dotted lines in Fig. 7. This end 22^a of the said lever is adapted, however, to be engaged with either of two notches 24—25 extended from the said slot 23. When the lever end 22^a is in the position indicated by full lines in Fig. 7, the sliding frame and the lock bars 7 are free for sliding movements. When the said lever end 22^a is moved into the notch 24, the sliding frame will be locked in its normal position and the bail 9 will be set in the position shown in Fig. 3, thereby locking all of the hooks 17. When the sliding frame is moved forward and the lever end 22^a is then moved into the notch 25, the sliding frame will be secured in its most forward position shown in Fig. 4, in which position, the upper prongs of the hooks 17 are thrown out of alinement with the rings in the seats 3, thereby releasing all of the said rings.

When a ring has been removed from the tray and sold, or if for other reasons, it is not desired to replace that ring or another in the seat from which it was just removed, the raised hook may be easily restored to normal position, simply by putting the fin-

ger on the lever end 22^a and giving the sliding frame a forward movement, and then allowing the said frame to return to normal position, under the action of the spring 11.

5 Under this forward movement of the sliding frame, the raised hook, regardless of which hook it may happen to be, will be thrown against a depending lug 26 on the top plate 1, and thereby cammed downward.
10 There is, of course, one lug 26 for each hook 17.

Preferably, I provide a simple arrangement whereby the guide rods 5 and consequently the sliding frame made up of elements 7, 5^a and 5^b, may be removed from the marginal frame of the tray, the top plate, of course, being first removed. With this in view, the rods 5, at one end, are loosely inserted in seats in the front bar of the frame
15 1, as shown at the left in Fig. 2, and the other ends of the said rods are passed through a wooden bar 27 and into open notches 28 formed in the rear bar of the said marginal frame 1. After the bar 27 is
20 forced down into position, one or more pins or wedges 29 are driven into the adjacent bar of the marginal frame, as shown in Fig. 8, to hold the said bar 27 down or in working position.

30 What I claim is:

1. A ring holding device having ring holding elements and cooperating lock mechanism therefor, normally permitting the rings to be removed, one at a time, but
35 permitting the removal of a second ring until the removed ring has been replaced, and means for changing the relation of the said parts so that all of the rings will be locked.

2. A ring holding device having ring holding elements and cooperating lock mechanism therefor, normally permitting the rings to be removed, one at a time, but preventing the removal of a second ring until the removed ring has been replaced, and
40 means for changing the relation of the said parts so that any one or all of the said rings may be removed.

3. A ring holding device comprising a tray having ring seats, a frame mounted to slide on said tray, a plurality of ring locking elements and cooperating devices on said sliding frame, operative in the normal position of the said sliding frame to permit the removal of one ring at a time, but preventing the removal of another ring until the removed ring has been replaced, a movement of said sliding frame from normal position serving to throw all of the ring locking elements into inoperative positions,
50 so that any one or all of the rings may be removed from the tray.

4. A ring holding tray provided with a plurality of ring seats, ring engaging lock hooks cooperating with said seats to hold

rings therein, spring-pressed lock bars cooperating with said lock hooks and provided with lock lugs and abutments, said hooks being operative on said abutments when moved into releasing position, to force said bars into positions in which their lock lugs
65 lock all of the other hooks in normal or operative positions, and means independent of the abutments on said lock hooks, for simultaneously moving all of said lock bars, to thereby set the same in position to lock all
70 of the rings in said tray.

5. A ring holding tray provided with a plurality of ring seats, ring engaging lock hooks cooperating with said seats to hold rings therein, spring-pressed lock bars cooperating with said lock hooks and provided with lock lugs and abutments, said hooks being operative on said abutments when moved into releasing position, to force said bars into positions in which their lock lugs
80 lock all of the other hooks in normal or operative positions, and means independent of the abutments on said lock hooks, for simultaneously moving all of said lock bars, to thereby set the same in position to lock
85 all of the rings in said tray, the said means comprising an oscillatory bail connecting said lock bars, and a finger operated member operative on said bail to set the latter in abnormal position.

6. A ring holding tray provided with a plurality of rows of ring seats, a hook supporting frame slidably mounted on said tray, ring engaging lock hooks mounted on said sliding frame and cooperating with
100 said ring seats, spring-pressed lock bars cooperating with each row of lock hooks, means connecting said lock bars for simultaneous movements, the said lock bars having abutments and lock lugs, and which
105 hooks are operative on said abutments when moved into releasing positions, to thereby force said bars into positions into which their lock lugs will lock all of the other hooks in normal or operative positions, and
110 a finger actuated device operative independently of the engagement between said hooks and lock bars, to set said lock bars in position to lock all of the said hooks in normal positions, and a sliding movement of
115 said frame serving to set said lock hooks in inoperative positions, thereby releasing all of the rings in the tray.

7. A ring holding tray having a plurality of rows of ring seats, a frame slidably mounted on said tray, ring engaging lock hooks pivoted to said sliding frame and cooperating with said ring seats, spring-pressed lock bars cooperating with the several rows of the lock hooks, means connecting said lock bars for simultaneous movements, the said lock bars having abutments and lock lugs, and which hooks are operative

on said abutments when moved into releasing position, to thereby force said bars into positions in which the lock lugs lock all of the other hooks in normal or operative positions, and hook engaging projections on said tray against which a raised hook will be projected and by which, such hook will be restored to normal position, when said frame

is given a sliding movement to and from normal position.

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

WALTER B. DAHL.

Witnesses:

F. D. MERCHANT,

HARRY D. KILGORE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."