

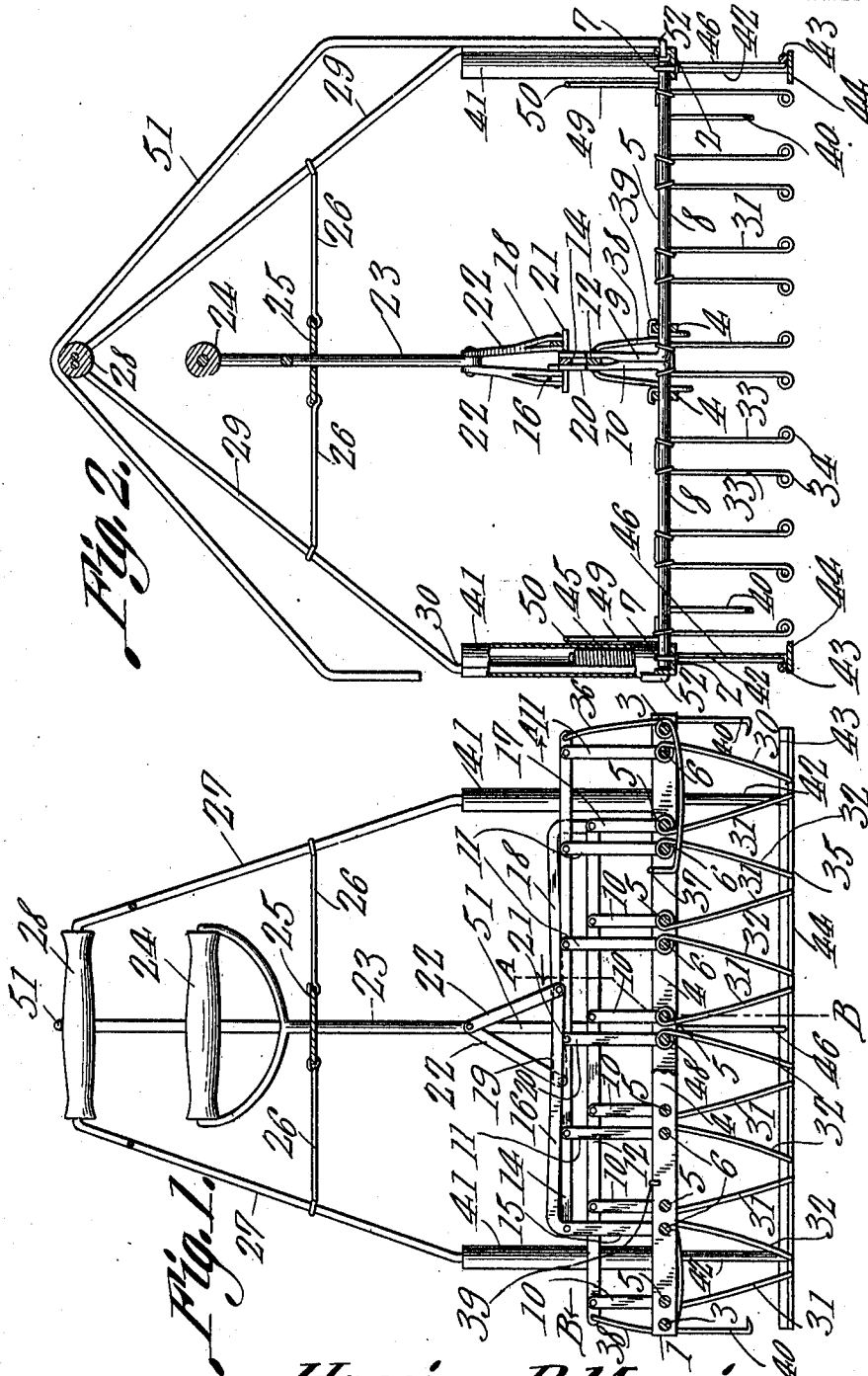
H. R. MORRIS.
EGG HANDLER.

APPLICATION FILED SEPT. 20, 1910.

Patented Dec. 6, 1910.

978,049.

2 SHEETS-SHEET 1.



Witnesses

J. P. [Signature]
Mason B. Lawton

Harrison R. Morris,

Inventor

by

C. A. Snow & Co.

Attorneys

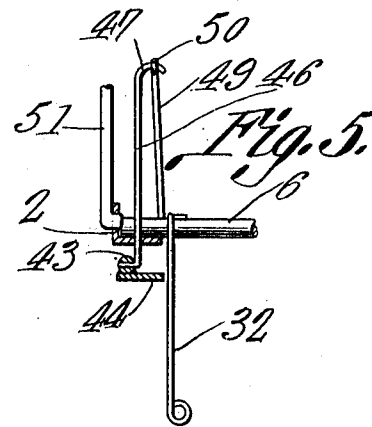
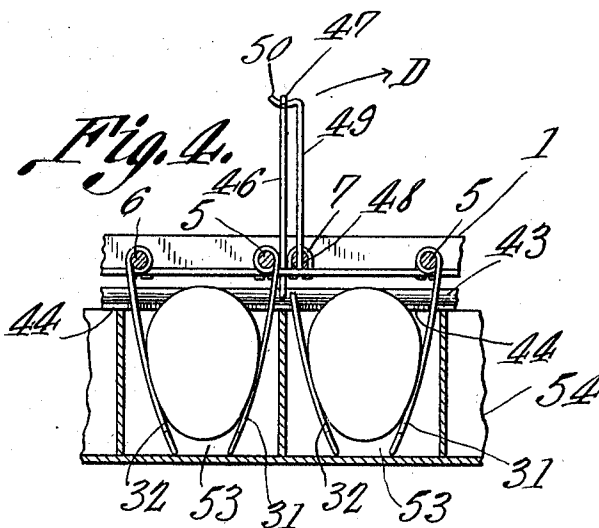
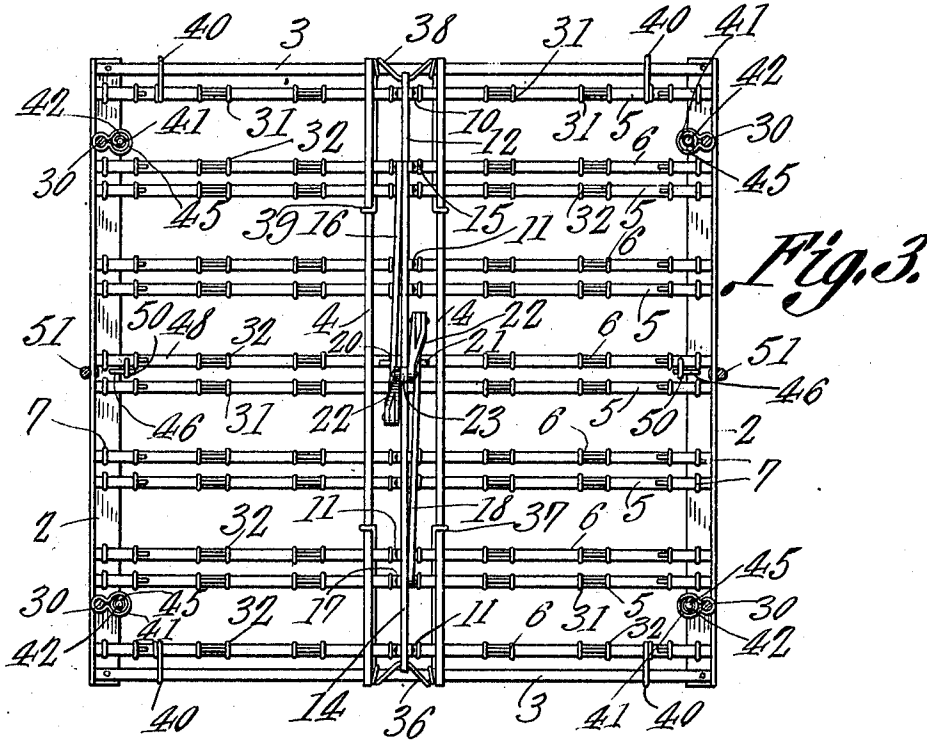
H. R. MORRIS.
EGG HANDLER.

APPLICATION FILED SEPT. 20, 1910.

Patented Dec. 6, 1910.

978,049.

2 SHEETS-SHEET 2.



Harrison B. Morris,

Inventor

Witnesses

Mason B. Lawton

by

Cash & Co.
Attorneys

UNITED STATES PATENT OFFICE.

HARRISON R. MORRIS, OF MAPLETON, KANSAS.

EGG-HANDLER.

978,049.

Specification of Letters Patent.

Patented Dec. 6, 1910.

Application filed September 20, 1910. Serial No. 582,902.

To all whom it may concern:

Be it known that I, HARRISON R. MORRIS, a citizen of the United States, residing at Mapleton, in the county of Bourbon and State of Kansas, have invented a new and useful Egg-Handler, of which the following is a specification.

It is the object of this invention to provide, in a simple, merchantable, and inexpensive form, a device which may be employed for lifting a cellular egg rack, of the common and well known type, together with the contents of the rack, out of the receptacle in which the rack is mounted.

Another object of the invention is to provide a device of this character which may be employed to lift all of the eggs out of a cellular egg rack, without disturbing the rack itself.

Another object of the invention is to provide a device which includes means for gripping the eggs, means for holding the egg rack, and an ejector frame, whereby, at the will of the operator, the egg rack may be pushed downwardly, the eggs therein being withdrawn.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed and without departing from the spirit of the invention.

In the drawings: Figure 1 shows the invention in section, parts being in elevation; Fig. 2 is a section on the line A—B of Fig. 1; Fig. 3 is a top plan, parts being removed; Fig. 4 is a sectional detail designed to show, particularly, the interlocking elements whereby the ejector frame is upheld; and Fig. 5 is a sectional detail supplementing Fig. 4, the cutting plane being taken at right angles to the cutting plane of Fig. 4.

The invention includes, as a primary and fundamental element, a frame, denoted in Fig. 1 by the numeral 1. This frame 1 includes angle members 2, connected at their ends by cross bars 3. The cross bars 3 are connected, between the angle members 2, by rods 4, these rods 4 constituting bearings for the intermediate portions of primary shafts 5 and secondary shafts 6 and 48, there being

any desired number of these shafts. The ends of the shafts 5 and 6 extend upon the angle members 2, staple bearings 7, or the like, being introduced into the angle members 2, to receive the ends of the shafts 5 and 6 for rotation. Preferably, the shafts 5 and 6 are composed of sections 8, the adjacent ends of which are secured together at 9, and rectangularly disposed, to form arms 10 and 17, in the shafts 5. This construction is most clearly seen in Fig. 2, and is there applied specifically to one of the primary shafts 5. This construction applies with equal propriety to the secondary shafts 6 and 48, the arms of these secondary shafts 6 and 48 being denoted by numerals 11, 15 and 20, the numeral 11 denoting the arms generally, and the numerals 15 and 20, like the numeral 17, denoting certain arms which have the specific functions to be mentioned hereinafter. The upper ends of the rods 10 and 17 are pivotally connected to a rod 12. The upper ends of the arms 11, 15 and 20 are pivotally connected to a rod 14. By referring to Fig. 2, it will be seen that the arms 20 and 10, which, in the present case, may be taken as typical, are each bifurcated at their upper ends to receive their respective rods 14 and 12, the rod 12 being extended between the bifurcations of the arm 20, and being slidable therein. The arms 11 are longer than the arms 10, and the construction above described will be well understood by comparison of Figs. 1 and 2.

One of the arms which are secured to the rod 14, this particular arm being specifically denoted by the numeral 15, is provided with an extension 16, rectangularly disposed, and positioned above the arms 11 (see Fig. 1). One of the arms which are secured to the rod 12, this arm being denoted specifically by the numeral 17, is provided with an extension 18, likewise overhanging the arms 10 and 11, and rectangularly disposed. These extensions 16 and 18 act as levers in the operation of the structure, their adjacent ends overlapping, as denoted by the numeral 19. One of the arms which are connected to the rod 14, denoted specifically by the numeral 20, is provided with a transverse pin 21, upon which the adjacent ends of the extensions 16 and 18 are adapted to rest. To the ends of the extensions 16 and 18, links 22 are pivotally secured, these links converging, as they extend upwardly. The

upper ends of the links 22 are pivoted to a slidably mounted element, in the present instance shown in the form of a plunger rod 23, provided with a handle 24. This plunger rod 23 is slidable in a plate 25, sustained by ties 26, to a frame 27, composed of bail-shaped members 29 carrying a handle 28, located above the handle 24 and in a common plane therewith. The corner posts 30 of the bail-shaped members 29 are connected with the angle members 2 adjacent the corners of the frame 1 (see Fig. 3).

Each of the primary shafts 5 is provided with a plurality of spring fingers 31, each of the secondary shafts 6 being provided with a plurality of spring fingers 32. These fingers, in both shafts, are arranged in pairs, as denoted by the numeral 33 in Fig. 2. The ends of the spring fingers 31 and 32, are curved, or otherwise disposed, in order to form heads 34. The spring fingers 31 and 32 are normally held in downwardly converging relation, as shown at 35, by a mechanism which will be described hereinafter.

The intermediate portion of a U-shaped spring 36 is engaged in one end of the bar 14. This spring 36 is given a turn or two around one of the cross bars 3, and is terminally hooked over the bearing rods 4, as denoted by the numeral 37. A U-shaped spring 38 is engaged in its intermediate portion in the bar 12, this spring 38 being passed about the other cross bar 3, and hooked over the bearing spring rods 4, as denoted by the numeral 39. The spring 36 tends to pull the bar 14 in the direction of the arrow A in Fig. 1, while the spring 38 tends to pull the bar 12 in the direction of the arrow B in Fig. 1. Spring fingers 40 depend from the frame 1, adjacent the four corners thereof, these spring fingers 40, as seen in Fig. 3, being preferably extended over the cross bars 3 and terminally connected with those shafts 5 and 6 which are disposed adjacent the ends of the device. These spring fingers as will be explained hereinafter, constitute a means for lifting the egg rack out of the case, at the same time that the eggs are removed therefrom.

Upright casings 41 are connected with the corner posts 30. In these casings 41 rods 42 reciprocate vertically. The lower ends of the rods 42 are connected by bars 43, from these bars 43, flanges 44 project inwardly. The rods 42, the bars 43, and the flanges 44 constitute what, for convenience, will be denominated hereinafter the ejector frame. Retractable springs 45 are located in the casings 41, these springs 45 being connected at their upper ends with the rods 42, and at their lower ends connected with the casings 41. It will be seen that when the ejector frames are slid upwardly, the springs 45 will be put under tension, the springs 45 acting normally to force the ejector frames

downwardly. There are two of these ejector frames, as Fig. 2 will show, the ejector frames being slidable at the sides of the frame or supporting member 1.

The lower ends of the spring fingers 46 are mounted in the bars 43. These spring fingers 46 extend through, and are slidable in, the angle members 2 of the frame 1. Referring to Fig. 4, it will be seen that the spring fingers 46 terminate at their upper ends in hooks 47. One of the secondary shafts, denoted specifically by the numeral 48, is provided with an upstanding finger 49, located in the vicinity of the finger 46. This finger 49 is provided with a laterally projecting, recessed head 50, disposed at right angles to the hook 47.

An auxiliary bail 51 is provided, disposed at right angles to the handle 28 and engaging the same frictionally, the lower extremities of the auxiliary bail 51 being mounted, as denoted by the numeral 52 in Fig. 2, in the angle members 2 of the frame or supporting member 1.

The operation of the device is as follows: It is to be understood that the interlocking elements represented by the spring fingers 46 and 49, are normally in engagement, as shown in Fig. 4, so that the flanges 44 of the ejector frame are normally maintained uplifted, and in close relation to the frame 1. The handle 28 is grasped, and the device is lowered until the spring fingers 31 and 32 enter the cells 53 of the egg rack 54, the egg rack being of common and well known construction, and being shown in Fig. 4. While the spring fingers 32 and 31 are being lowered into the cells of the egg rack, the spring fingers 40 will engage the egg rack, these fingers 40 constituting holders for the egg rack. If the handle 24 be grasped, together with the handle 28, pulling the plunger rod 23 upwardly, the links 22 will tilt the levers 16 and 18, moving the rods 12 and 14 against the action of the springs 38 and 36 respectively, the rods 12 tilting the arms 10, and the rods 14 tilting the arms 11, these arms actuating their respective shafts 5 and 6, causing them to rotate, and securing a separation of the spring fingers 31 and 32, so that the eggs which are in the cells 53, may pass between the fingers. If the handle 24 be now released, the springs 36 and 38 will act upon the rods 12 and 14, causing the fingers 31 and 32 to grip the eggs. It being recalled that the egg tray proper is engaged by the holders 40, it will be seen that the egg tray, together with its contents, may be lifted out of the crate or other receptacle in which the egg trays are commonly shipped.

By reason of the fact that the interlocking elements represented by the spring fingers 46 and 49 (see Fig. 4), are resilient, these fingers will yield, during the rocking of the shafts 5 and 6, the engagement between the

hooks 47 and the projections 50 being maintained. Thus, the fingers 31 and 32 may be opened to receive the eggs, without causing the ejector frame to descend. The eggs and
 5 the egg rack in which they are contained may now be placed in another crate, deposited in a candler, or otherwise disposed of. By swinging the auxiliary bail 51 out of engagement with the handle 28, the entire
 10 device may be inverted, and held suspended by means of the auxiliary bail, to permit the removal of rotten or cracked eggs. Let it be supposed however, that it is desired to remove all of the eggs, but to leave the egg
 15 rack in the crate or other receptacle. In such instance, the spring fingers 31 and 32 are disposed in the cells 53 of the egg rack 54 as hereinbefore described. The flanges 44 of the ejector frame are then brought into
 20 engagement with the upper edges of the egg rack 54. Slight pressure is then brought to bear upon the handle 28, thrusting the flanges 44 of the ejector frames against the upper edge of the egg rack 54, and causing
 25 the fingers 46 of the ejector frame to slide in the angle members 2 of the supporting frame 1, until the hooks 47 of the fingers 46 are lifted sufficiently so that they will be above, and clear of, the projections 50 of
 30 the fingers 49 which are mounted upon the shaft 48. If the shafts are now rotated, slightly, by elevating the handle 24 a trifle, it will be seen that the projections 50 will move in the direction of the arrow D in
 35 Fig. 4, withdrawing the said projections 50 from the hooks 47. If the pressure upon the handle 28 be now released, the handle 24 being likewise released, so that the fingers 31 and 32 may grip the eggs, the ejector frames
 40 will move downwardly, under the action of the springs 45, the flanges 44 engaging the upper edges of the egg rack 54, and holding the same in place within the crate, the entire contents of the egg rack 54 being removed.
 45 In order to position the ejector frame in close relation to the supporting frame 1, as shown in Fig. 4, it is necessary merely to press down upon the handle 28, the flanges 44 of the ejector frames being in contact
 50 with the upper edges of an egg rack, or the like. The fingers 46 and 49 being resilient, the elements 47 and 50 will yield, as the fingers 46 slide upwardly, and subsequently position themselves in the interlocked relation shown in Fig. 4.

Having described the invention what is claimed is:

1. In a device of the class described, a supporting member; a shaft journaled for
 60 rotation therein; a gripping element upon the shaft; a depressible ejector frame slidable in the supporting member; and interlocking elements upon the shaft and the frame to hold the frame normally in elevated position during the rotation of the
 65

shaft, the shaft being movable to break the engagement between the interlocking elements, thereby to permit the shaft to rotate and the frame to descend, independently of each other.

2. In a device of the class described, a supporting member; a shaft journaled therein; a gripping element upon the shaft; a depressible ejector frame slidable in the supporting member; cooperating fingers
 70 upon the frame and the shaft interlocking to hold the frame normally in elevated position, one of the fingers being resilient to permit the shaft to rotate without breaking the engagement between the fingers; the
 75 frame being movable to break the engagement between the fingers.

3. In a device of the class described, a supporting member; a shaft journaled therein, a gripping element upon the shaft; a depressible ejector frame slidable in the supporting member; resilient means for depressing the frame; and interlocking elements upon the shaft and the frame to hold the frame normally in elevated position,
 85 against the action of the resilient means, the frame being movable to break the engagement between the interlocking elements.

4. In a device of the class described, a supporting member; spaced holding means
 95 upon the supporting member adapted for engagement with an egg rack; an ejector frame slidable in the supporting member and constituting a means for removing the egg rack from the holding means; a shaft
 100 journaled for rotation in the supporting member; egg gripping means upon the shaft; and interlocking elements upon the shaft and the ejector frame to hold the frame normally inoperative to remove the
 105 egg rack from the holding means during the rotation of the shaft; the frame being movable to break the engagement between the interlocking elements.

5. In a device of the class described, a supporting member; primary and secondary shafts journaled therein and provided with upstanding arms; rods pivotally connected with each set of arms, the rods and the arms constituting operating means for the shafts;
 115 there being levers rigidly connected at their remote ends with the operating means and having their adjacent ends overlapping; a slidably mounted element; links pivotally connecting said element with the adjacent
 120 ends of the levers; and cooperating gripping members upon the shafts.

6. In a device of the class described, a supporting member; primary and secondary shafts journaled therein and provided with
 125 bifurcated arms of different lengths; rods pivotally mounted in the bifurcations of each set of arms, the rod which is pivoted to the shorter set of arms being slidable between the bifurcations of the longer set of
 130

arms; cooperating gripping elements upon
the shafts; resilient means for sliding the
rods in opposite directions to rotate the
shafts and to move the gripping elements
5 toward each other; and means for sliding
the rods against the action of the resilient
means to space the gripping elements apart.

In testimony that I claim the foregoing
as my own, I have hereto affixed my signa-
ture in the presence of two witnesses.

HARRISON R. MORRIS.

Witnesses:

MILLCENT K. MORRIS,
JNO. W. LINDSAY.