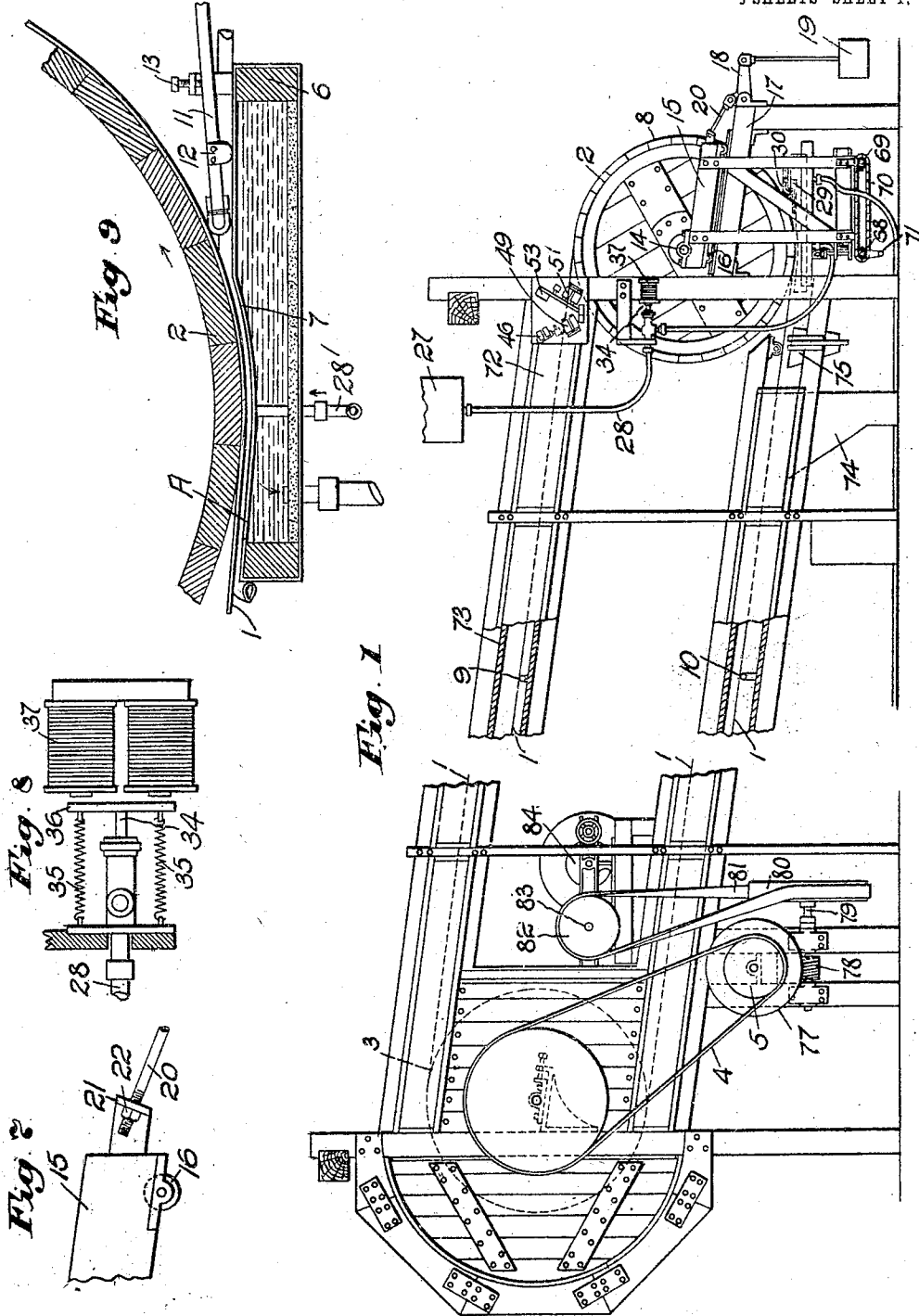


J. M. HUSSEY.
 APPARATUS FOR DESICCATING EGGS.
 APPLICATION FILED AUG. 31, 1907.

945,002.

Patented Dec. 28, 1909.

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

Fig. 2

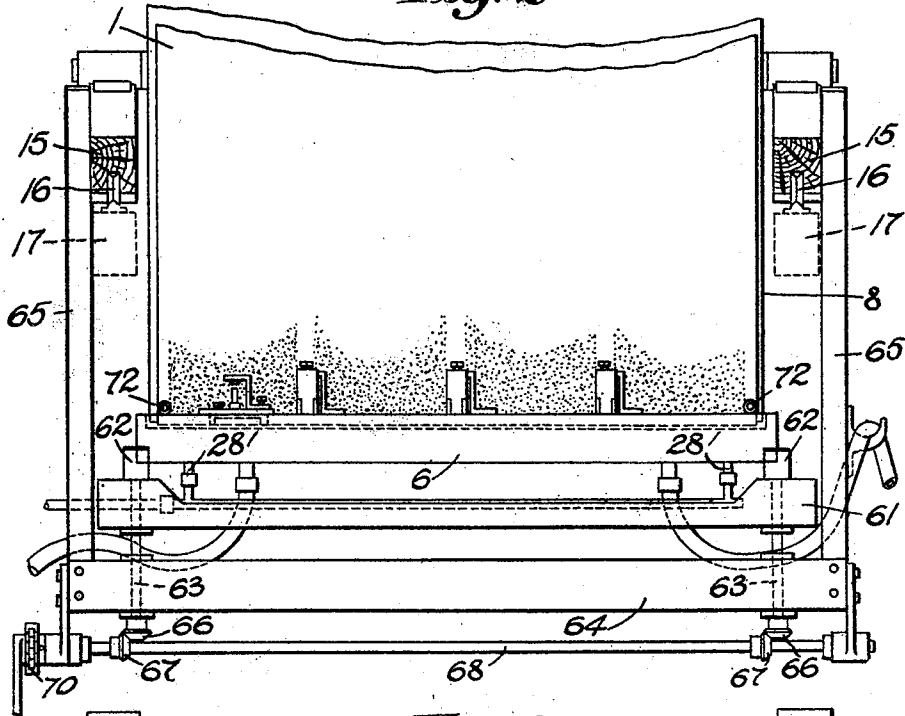


Fig. 3

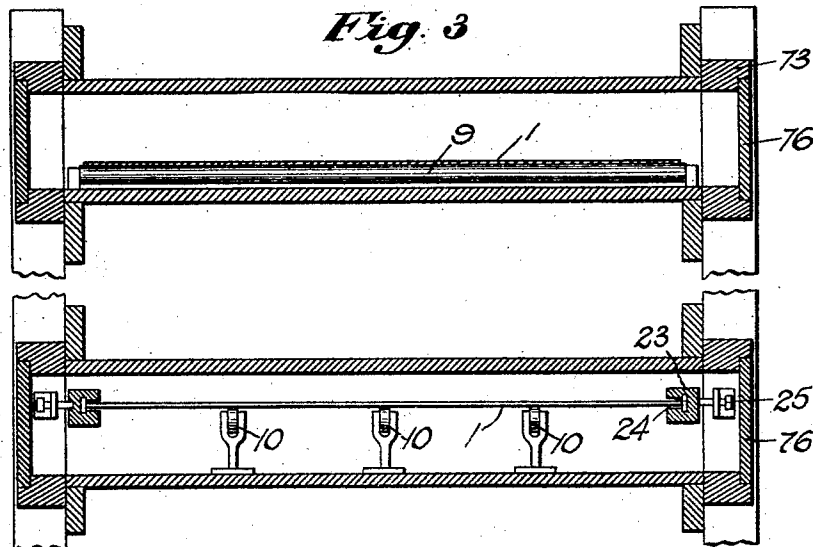
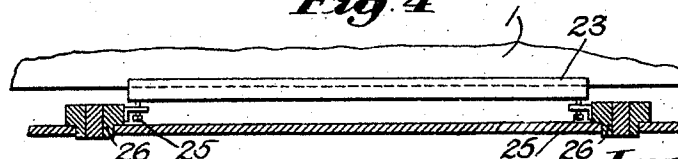


Fig. 4



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 3 SHEETS—SHEET 3.

Fig. 5

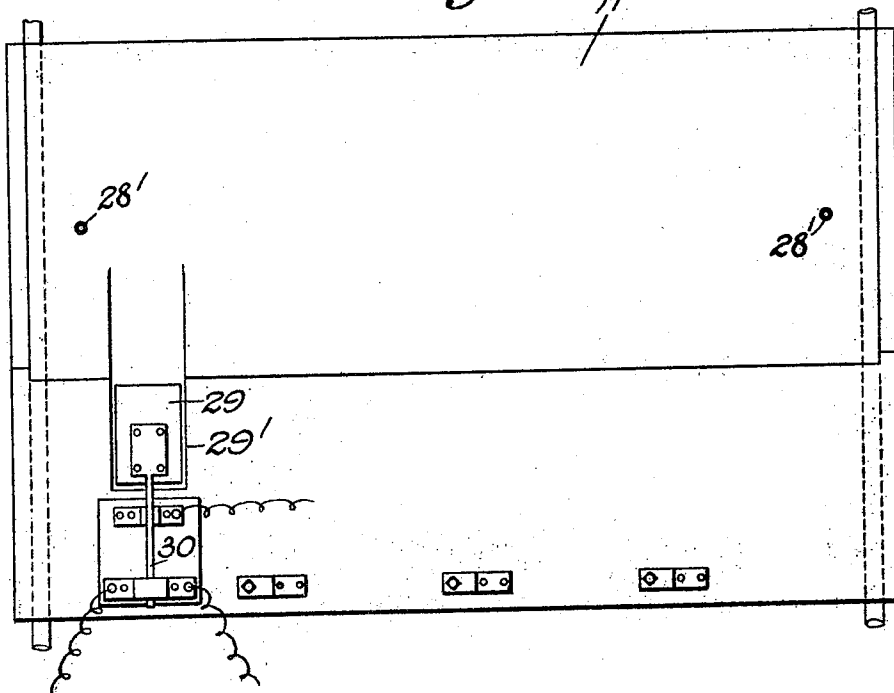
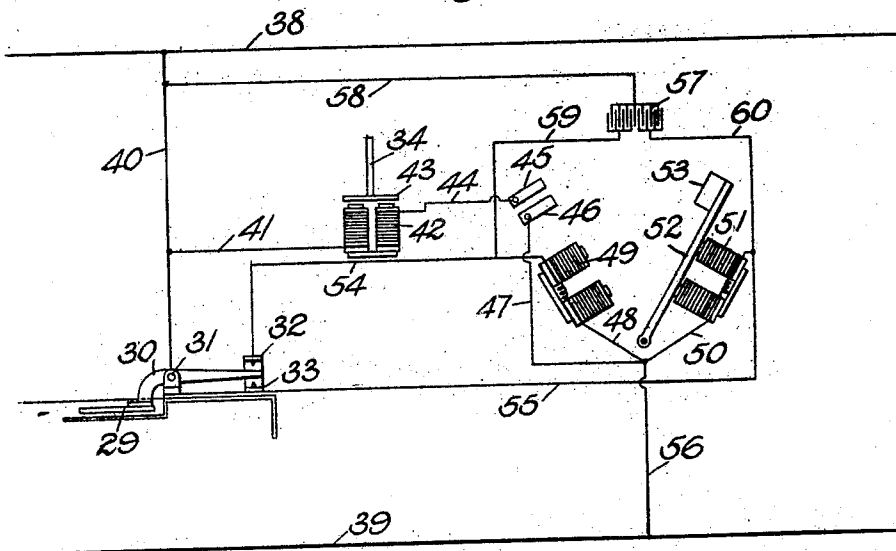


Fig. 6



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR DESICCATING EGGS.

945,002.

Specification of Letters Patent.

Patented Dec. 28, 1909.

Original application filed March 8, 1907, Serial No. 361,225. Divided and this application filed August 31, 1907. Serial No. 390,857.

To all whom it may concern:

Be it known that I, JOHN M. HUSSEY, a citizen of the United States, and a resident of Cambridge, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Apparatus for Desiccating Eggs, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to apparatus for desiccating eggs; this application, wherein the same is set forth, being a division of my co-pending application, Ser. No. 361,225, filed March 8, 1907, and being directed to the means for controlling the belt and for controlling the supply of liquid egg to the tray or receptacle, from which it is supplied to the belt.

In order that the principles of the invention may be fully understood, I have illustrated one type or embodiment of the apparatus in the accompanying drawings, in which—

Figure 1 is a side elevation of an apparatus for desiccating eggs embodying my invention, a portion thereof intermediate the ends being broken away; Fig. 2 is an end elevation of a portion of the belt at the point where it receives a film thereon, and the associated parts; Fig. 3 is a vertical transverse section taken through the belt and its casing, intermediate the supporting drums; Fig. 4 is a view partly in horizontal longitudinal section and partly in plan, of a form of side guide for the belt; Fig. 5 is a plan view of the receptacle whereto egg is delivered and from which it is taken in a film by the belt, and valved means to control such delivery; Fig. 6 is a diagrammatic view representing an electric circuit completed when the supply of egg in the receptacle becomes excessive or falls below a desired minimum; Fig. 7 is a detail in side elevation, representing means for adjusting the belt; Fig. 8 is a detail in side elevation of a portion of the valve operating mechanism; and Fig. 9 is a vertical sectional view of the liquid egg receptacle, the belt and one of the supporting drums therefor.

In that specific embodiment of my invention herein disclosed I employ a traveling belt whereto the egg is applied. In certain combinations or expressions of the invention, I am not to be limited to the employ-

ment of a belt, as will appear in the claims. In so far as such expressions of the invention are concerned, other traveling egg receiving surfaces may be employed. Since, however, I herein dry each egg film before a second film is applied thereto, I have found that a traveling belt is best adapted to my purposes as it gives an extended surface, any portion whereof is not returned for a subsequent receipt of egg until the film already deposited thereon has had full opportunity to become dried.

The belt preferably employed by me is disposed with the drying runs thereof substantially horizontal. By substantially horizontal, I mean such a disposition thereof that the egg film received thereon will not run and become uneven upon such portions. While the belt may be truly horizontal, I preferably incline the same upward at a preferably comparatively slight angle because of the manner in which, in the present embodiment of the invention, I apply the egg to the belt. That is to say, since herein I apply the egg at or near one extremity of the under run of the belt, I incline the belt properly to apply the egg thereto and properly to confine the egg supply, but I am in no wise to be restricted to such manner of applying the egg, save as expressly stated, nor to the point at which the same is applied. Therefore, when I use the term "substantially horizontal" or the like in the claims, I contemplate such variations thereof or departures therefrom as may permit the accomplishment of the purpose heretofore stated, namely, the procuring of an egg film of substantially uniform thickness throughout and which will not run and become uneven upon the drying portions or runs of the belt.

Referring to that single embodiment of the invention disclosed in the accompanying drawings and referring more particularly to Figs. 1, 2 and 3, the belt whereto the egg film is applied is indicated at 1, it being suitably guided about supporting drums 2 and 3 (Fig. 1), one of said drums and herein the drum 3 being positively driven in any suitable manner as by a band 4 passing about pulley 5 (Fig. 1) to which power is applied in a manner to be more fully described. While I may so locate and arrange the belt 1 as that one or both runs thereof are truly horizontal, preferably the

belt is inclined upward from the drum 2, though I am in no wise to be limited to the precise arrangement described or shown. Such upward inclination of the belt is
 5 mainly provided to permit the proper application to the belt of the egg film as will be more clearly understood by reference to Fig. 9 wherein 6 indicates an egg receiving
 10 tray of any suitable form and structure adapted to receive a sufficient supply of egg. Herein the upper surface A of said tray is shown as concaved or recessed as at 7, thus
 15 conforming substantially to the surface of the drum 2, which preferably is located at a very slight distance above the recessed portion 7 of the tray. By the described upward
 20 trend of the belt I am enabled to apply the egg to the under run of the belt, while at the same time confining the egg to such recessed portion of the tray. I am,
 25 however, not to be limited to the application of the egg to the belt at the under run thereof, though I find such arrangement preferable. If desired, the upper run of
 30 the belt may be maintained horizontal and the lower run inclined upward toward the drum 3. This could be readily done by making the drum 2 larger than drum 3 and locating the drum so that the upper surfaces
 35 are in the same plane. In this manner, egg could be readily applied to the lower surface of the belt beneath the drum 2. As clearly shown in Fig. 9, the egg is supplied directly to the surface of the belt.
 40 It will be observed that herein the egg is applied to a continuous or uninterrupted surface from which it may be readily removed at the proper time as will be more fully described.
 45 Viewing Fig. 9, it will be observed that the egg is applied in a film to the belt by reason of the travel of such belt in contact with the egg, a preferably shallow supply of which is maintained in or upon the egg tray
 50 6. The egg supply should receive a minimum extent of exposure to the air in order to prevent souring thereof. Hence the egg tray is preferably made shallow to maintain the least possible amount of egg therein.
 55 The exposed surface of egg should likewise be reduced to the minimum. Moreover, it is highly desirable that the length of time of exposure of the film upon the belt to the egg supply, thereby to receive a second film
 60 thereon, should be reduced to a minimum, because the exposure of a dried film to the egg supply tends to soften such film. I have found in practice that this injures the product. Hence, in this embodiment of the invention, I reduce to the desired minimum
 65 the zone of contact or arc of exposure of the drum 2, or rather of the belt 1 supported thereon, to the egg. The egg supply, when exposed to the air, should, for the best results, be maintained as near the freezing

point as possible. By the described construction a minimum amount of egg will be taken up by the belt and the egg will be confined strictly to the surface of the belt, means being provided, as will be described, to prevent contact of the egg with either the edges of the belt or any portion of the drum 2. The belt 1 travels herein in the direction of the arrow upon Fig. 9. That portion of the belt which is passing about the lower portion of the drum 2 may be considered as the egg receiving portion of the belt. That portion of the belt which is passing about the side or lateral portion of the drum as at 8 in Figs. 1 and 2 may be considered as the draining portion of the belt, inasmuch as if the belt does receive an excess quantity of material it is quickly drained therefrom as the belt passes from the lower to the upper run. Draining occurs only when the belt runs too fast and should not be permitted. When properly operated, the belt receives only a film of the proper thickness. The other portions of the belt may be considered to be the drying surfaces proper of the belt, and such surfaces should be sufficiently extensive or the movement of the belt should be properly regulated to permit drying of the egg thereon before the return of any portion of the belt to the drum 2.

While I am in no wise to be limited to any dimensions, I may state that in practice I have found a belt that is eighty feet from the centers of the drums 2 and 3 and four feet in width gives excellent results. It is my purpose herein to apply the egg to the belt as a film of the least possible thickness. In practice, when merely the first film is applied thereto the belt has the appearance of being merely wet, without appreciable egg color. The more nearly such film approximates, for example, the thickness of a soap bubble film the better results are obtained.

An egg contains about 72% of water which, in the present preparation of my food product, is nearly all removed therefrom. This is accomplished most efficiently by the application of heat and this is specifically effected by the drying action of a current of heated air, that passes in contact with the egg in the condition of a film.

The belt 1 may be of any suitable material, though in practice I find zinc preferable, inasmuch as it has no deleterious action upon the egg.

In order that the egg may be preserved from contamination I herein maintain the egg upon the belt from contact with other portions of the mechanism. Between the drums 2 and 3 the upper run of the belt may be supported upon its under side by means of guide rolls or other devices 9 (see Figs. 1 and 3), which may, if desired, extend from edge to edge of the belt, inasmuch as they contact therewith upon the non-egg re-

ceiving surface. It is desirable to support the lower run of the belt between the drums 2 and 3. I accomplish this effectively by providing cleared tracks extending longitudinally of the belt, in which tracks run the guide disks 10 (see Figs. 1 and 3), which may be laterally adjusted in any suitable manner as by means of a slot and screw construction. Any desired number of such disks may be provided both laterally and longitudinally of the belt, herein three disks being provided to support a belt from edge to edge thereof. Any suitable means may be provided to furnish the cleared tracks upon the belt. Herein for the purpose, I employ a series of clearing devices 11 (Fig. 9) each constructed as a lever having a depending portion 12 serving to fulcrum the same upon the upper surface of the tray 6, the forward end of the device 11 being suitably formed to clear a portion of the drum. If desired, a set screw 13 may be provided, suitably mounted upon the tray 6 to bear upon each clearing device 11 to vary the pressure thereof against the belt. It will be observed that the clearing device is readily removable from its position. Any other mechanism may, however, be employed for the purpose.

If desired, the belt may be strengthened or reinforced in any suitable manner.

It is desirable that the belt be so supported that it may run truly and evenly upon the drums 2 and 3 without lateral creep. Moreover the belt should be so supported that all slack therein may be taken out, which may vary from time to time in accordance with the temperature. When the egg is removed from the belt, and preferably by a scraper as will be described, strain is thereby applied to the belt, thus giving a tendency to unevenness in the running thereof. To provide against these several contingencies, I have herein mounted the bearings 14 of the drum 2 upon a movable frame 15 preferably provided with grooved rollers 16 (see Figs. 1 and 2) received upon suitable tracks upon the frame work 17, whereby the frame 15 may be moved toward and from the drum 3 as found desirable. In order that slack may be taken up automatically, I herein mount upon the frame work 17 a plurality of bell crank levers 18 from one arm whereof are suspended weights 19, the other arm 20 being connected to the frame 15. The belt 1 may, of course, be maintained taut in any desired manner.

If the belt 1 be true, it is desirable accurately to place the axis of the drum 2 in parallelism with that of the drum 3. If, on the other hand, the belt be not true, this being apt to occur in a long belt, then it is necessary to place the axis of the drum 2 at a slight angle to that of the drum 3, inasmuch as such inaccuracy of the belt tends to pro-

duce a sidewise creep of the belt. This may be corrected by moving one end of the drum farther from or nearer to the drum 3 while maintaining the other end of the drum fixed. In order accurately to accomplish this result, I have formed the arm 20 of each bell crank 18 as a threaded bolt adapted to engage a portion of the frame 15, as a casting 21 thereon (see Fig. 7), a nut 22 being provided between said casting and the frame 15. In this manner an extremely delicate adjustment of the drum 2 may be accomplished, effectively preventing sidewise or lateral creep of the belt 1.

Preferably each edge of the belt is suitably guided between the drums 2 and 3. If desired, fixed guides may be provided for the greater portion of the distance between these drums, but preferably for certain portions of such edges, and herein for that portion of each run that is approaching one of said drums, I provide an adjustable guide herein represented in Figs. 3 and 4. That is to say, the upper run of the belt upon each side thereof is preferably provided with adjustable guides as it approaches the drum 3 and the lower run of the belt is so provided with guides as it approaches the drum 2.

Referring to Figs. 3 and 4, 23 indicates a strip of any suitable material provided with a longitudinal groove 24 to receive therein the adjacent edge of the belt, such groove preferably being enlarged at the base thereof to receive a strip of plate glass or the like to contact with the belt without undue friction. The guide may be adjusted laterally in any suitable manner as by set screw 25 mounted upon any suitable part of the casing as the posts 26. In this manner the belts may be adjusted laterally or held to their true course.

Viewing Fig. 1, a suitable supply of charge of egg is contained in the tank 27 wherein it is maintained from exposure to the air, and is at a temperature at or near the freezing point, being maintained thereat by proper insulating material in or upon the receptacle, which may be hair felt. From this tank the egg is delivered by a flexible or other pipe or tubing 28 to the concaved or recessed portion of the upper surface of the egg tray 6.

In Figs. 5 and 9 I have indicated in full lines at 28' near the opposite edges of the egg tray 6 the points at which the two egg supplying pipes 28 discharge the egg batter upon the concaved upper surface of the tray. By introducing the egg batter at such points, there results a more uniform drying of the film or layer as received upon the belt. The egg receiving portion of the tray is preferably of such relatively short length in the direction of travel of the belt that the surface of the egg exposed to the air is reduced to a minimum and the length of

exposure of any portion of dried film upon the belt to the egg in the tray is reduced to a minimum. I have found in practice that if a dried film be retained in the egg supply for more than a minimum exposure, it tends to soften and to become dissolved, thus injuring the product. The time of exposure of the egg in the tray 6, to the air, should be reduced to a minimum, as egg rapidly deteriorates in the presence of air.

Preferably only a shallow supply of egg is maintained upon the tray 6 and, in the present embodiment of my invention, I maintain this supply at a fixed level. While this may be accomplished in various ways, I herein provide (Figs. 1, 5 and 6) a float valve 29 of cork or other suitable material. The valve 29 is located in a recess or well 29' (see Fig. 5) communicating with the concaved portion 7 of the upper surface of the tray and extending beyond the zone of contact of the belt with the egg upon the surface A. Preferably the valve is provided with an arm 30 extending rearwardly therefrom and suitably pivoted at 31 upon the frame work, said arm 30 being of suitable conducting material and adapted to contact with terminals 32 and 33 of an electric circuit, whereby the valve is controlled, being either opened to admit a further supply or closed to cut off a supply of egg.

Any desired form of valve may be employed for the purpose. In Figs. 1, 6 and 8 is indicated a valve stem 34 normally held in valve closing position by means of springs 35 connected at one end to the framing and at the other to a plate 36 formed as an armature of a magnet 37 forming a portion of the circuit referred to, whereby upon the closing of the circuit the valve may be opened to admit a further supply of egg to the tray 6. Such opening of the valve occurs when contact is made by the float arm 30 with the contact 32.

While any desired apparatus may be employed, rendered operative by the movement of the float 29, herein the electric circuit employed for that purpose comprises line wires 38 and 39, from the first of which a wire 40 leads to the arm 30 of the float. Leading from said wire 40 is a wire 41 connected with magnet 42 adapted when energized to attract armature 43, to which is attached the valve stem 34 of the valve controlling the flow of egg to the tray. Leading from said magnet is a wire 44 connected with a bridge piece 45, and from a companion bridge piece 46 extends a wire 47 leading through wire 48 to the valve opening magnet 49. Likewise leading from said wire 47 is a wire 50 connected with the valve closing magnet 51. Pivotaly mounted between said magnets 49 and 51 is an armature 52 having a bridge piece 53, so that when said armature is attracted by the magnet 49 the bridge piece 53

places the bridge pieces 45 and 46 in communication, thereby energizing the magnet 42 and attracting the armature 43 to open the valve. Leading from the contact 32 is a wire 54 leading to the magnet 49, and leading from the lower contact 33 is a wire 55 connected with the magnet 51. The wires 47, 48 and 50 are connected by the wire 56 with the line wire 39. 57 indicates a condenser in communication with the line wire 38 through the wire 58 and with the wires 54 and 55 through the wires 59 and 60.

By the described circuit, if the level of the egg in the tray falls below an established minimum, an electric circuit is established through the contact 32 whereby the magnet 49 is energized, thus attracting the armature 52, so that by means of the bridge piece 53 carried thereby the magnet 42 is energized to attract the armature 43 and open the valve that controls the flow of egg to the tray. As additional egg is received by the egg tray and the level thereof rises therein, the arm 30 of the float valve is withdrawn from the contact 32 and the circuit is interrupted. Nevertheless the armature 52 remains in contact with the magnet 49, so that the magnet 42 continues to be energized until the float 29 rises so high that a circuit is established by the arm 30 of the float through the contact 33, in which event the magnet 51 is energized to withdraw the armature 52 from the deenergized magnet 49, whereby the magnet 42 is deenergized. In this position of the parts, the valve is closed by the springs 35 (Fig. 8). I preferably provide the condenser 57, which is in circuit when a circuit is established through either contact 32 or 33, to minimize the sparking at said contacts as the arm 30 separates from either of them, thus to minimize danger of fire at such points as well as to prevent injurious action upon said contacts.

Preferably the egg tray 6 is mounted so as to be vertically adjustable, that is, toward and from the drum 2 and belt 1 thereof. While this may be accomplished in any desired manner, herein the tray is supported upon a frame 61 having thereon shouldered supporting bars 62, upon which shouldered portions the tray 6 is adapted to rest. The frame 61 may be raised and lowered in any suitable manners, and herein by means of four threaded shafts 63 (Fig. 2) received in threaded portions of the frame 61, such shafts passing through bearings in a frame 64 that is suspended from the frame 15 by means of hangers 65, shown most clearly in Fig. 2.

Each shaft 63 is provided at its lower end with a beveled gear 66 meshing with a similar gear 67 upon shafts 68 and 69, preferably connected by sprocket gearing 70 to turn in unison when power is applied to either of said shafts, as for example, by handle 71. In

this manner the tray may be raised or lowered while maintaining the same truly level. By reason of the fact that the frame 64 is supported from the frame 15 carrying the drum 2, said tray and drum move in unison, thus maintaining a fixed relation.

Any suitable means may be provided to prevent the escape of the egg supply from the tray 6 at either edge of the belt 1. Herein for the purpose I have employed dams 72 (see Fig. 2), preferably composed of highly flexible rubber tubing which rests upon the tray 6 at or near opposite edges of the belt beyond the confines of the egg film thereon, such dams conforming to the contour of the belt 1 upon the drum 2 and affording a minimum amount of friction to the movement of the belt by reason of its described nature. In this manner, contact of the egg film with the edges of the belt or with the drum 2 is effectually prevented.

In order suitably and rapidly to dry the egg film upon the belt 1, I preferably employ a current of heated air passing in contact therewith, and introduced in any suitable manner at 72 (see Fig. 1).

While air may be heated to any suitable temperature to dry the egg film upon the belt 1, preferably I maintain it at a temperature ranging from 120° F. to 130° F. and most desirably at about 122° F. I am enabled to bring air at this temperature in contact with the egg film without injuring the same by reason of the fact that the film is so thinly disposed upon the belt 1 that the moisture is quickly dried therefrom, the solids of the egg remaining at a relatively low temperature throughout the process as has been stated. Thus, the undesirable combination of moisture in the egg in the presence of heated air is not long maintained.

Although herein the heated air, while in contact with the egg film upon the belt 1, travels in the direction of movement of said belt and hence is admitted directly to the upper run of the belt, I may, if desired, admit the heated air to travel in contact with the egg film upon the belt 1, in any desired direction or manner.

I have found it preferable to feed the air in the direction of travel of the belt 1 because the highly heated air acts at once upon the film of egg as received from the egg tray, the air gradually dropping in temperature from 120° F. to about 100° F. during its travel in contact with the film upon the belt. I have found that in this manner evaporation of the moisture in the egg film is so rapid that the belt and egg are actually cold to the touch, when the process is being carried out under the best conditions. As previously stated, the film is dried and as described is in the proper condition to receive a second film upon the non-viscid surface thereof.

As shown in Figs. 1 and 3 the casing 73 suitably supported upon the frame work of the apparatus, provides a passage wherein the egg belt 1 travels throughout its course excepting where in contact with the drum 2 and where the egg is removed from the belt, and likewise provides a passage for the heated air which may be discharged at the end thereof through the passage 74 (see Fig. 1).

The superposed egg films may be removed from the belt 1 in any suitable manner. Preferably I employ a scraper 75 which normally is maintained out of contact with the belt 1 in order that the desired number of films may be superposed thereon. Preferably, and as indicated in Fig. 3, the casing 73 is provided with removable panels 76, whereby access may be conveniently afforded to the adjustable lateral guides for the belt or any other desired portion thereof.

As previously stated the belt 1 is driven from the pulley 5, said pulley being rotated by a worm wheel 77 co-axial therewith. Meshing with said worm wheel is a worm 78 upon a shaft 79 suitably mounted in the frame work and having thereon a pulley 80 about which passes a belt 81 driven by pulley 82 upon a shaft 83. The shaft 83 may be driven at any desired speed from pulley 84, any suitable speed changing mechanism, such as that indicated, being employed. Pulley 84 may be driven by an electric motor, preferably a separate motor and air circulating system being employed for each machine, so that each is complete in itself. It at times becomes desirable to change the speed of belt 1, because of changes in the humidity of the air or in the density of the egg that is being treated.

Having thus described one type or embodiment of my invention, I desire it to be understood that although I have employed specific terms, they are used in a descriptive and generic sense and not for purposes of limitation, the scope of the invention being set forth in the following claims.

1. Apparatus for desiccating eggs comprising in combination, belt supporting drums, an egg batter receiving and conveying belt supported thereon, an egg batter receptacle supported in proximity to said belt, whereby egg batter may be conveyed to the latter, and common means for conjointly moving one of said supporting drums and said egg batter receptacle, thereby to tighten the belt and at the same time to maintain the relative position of said drum and said receptacle.

2. Apparatus for desiccating eggs comprising in combination belt supporting drums, one at least of which is bodily movable, an egg batter receiving and conveying belt supported thereon, the upper run of said belt being maintained in a flame suffi-

ciently approaching the horizontal to permit the drying of the egg batter upon the belt in an even layer, an egg batter receptacle connected to said bodily movable drum so as to move therewith, and positioned in proximity to said belt so that egg batter may be conveyed thereto, and means bodily to move said drum to tighten the belt.

3. Apparatus for desiccating eggs comprising in combination belt supporting drums, one at least of which is bodily movable, an egg batter receiving and conveying belt supported thereon, an egg batter receptacle connected to said bodily movable drum so as to move therewith, and positioned in proximity to said belt so that egg batter may be conveyed thereto, and automatically acting means bodily to move said drum to tighten the belt.

4. Apparatus for desiccating eggs comprising in combination belt supporting drums, one at least of which is bodily movable, an egg batter receiving and conveying belt supported thereon and having a substantially horizontal egg drying run, an egg batter receptacle so connected to said bodily movable drum as to move therewith, and positioned in proximity to said belt, so that egg batter may be conveyed to the latter, and means to move said drum to tighten the belt.

5. Apparatus for desiccating eggs comprising in combination belt supporting drums, one at least of which is bodily movable, an endless egg batter receiving and conveying belt supported thereon the upper run of said belt being maintained in a plane sufficiently approaching the horizontal to permit the drying of the egg batter upon the belt in an even layer, an egg batter receptacle located adjacent the under run of said belt, so that said run of the belt may receive egg batter from said receptacle, means connecting said bodily movable drum and said receptacle for movement in unison, and means to move said drum to tighten the belt.

6. Apparatus for desiccating eggs comprising in combination belt supporting drums, a movable support for one of said drums, an egg batter receiving and conveying belt supported upon said drums, an egg batter receptacle attached to said movable support, and means to move said support to tighten the belt.

7. Apparatus for desiccating eggs comprising in combination belt supporting drums, a movable support for one of said drums, an egg batter receiving and conveying belt supported upon said drums, the upper run of said belt being maintained in a plane sufficiently approaching the horizontal to permit the drying of the egg batter upon the belt in an even layer, an egg batter receptacle depending from said movable sup-

port and positioned in proximity to the lower run of said belt so that egg batter may be conveyed to the latter, and means to move said support to tighten the belt.

8. Apparatus for desiccating eggs comprising in combination, belt supporting drums, an egg batter receiving and conveying belt supported thereon, an egg batter receptacle supported in proximity to said belt whereby egg batter may be conveyed to the latter, means supported by said receptacle to maintain a regulated level of egg batter therein, and means bodily to move one of said belt supporting drums and said receptacle, thereby to tighten the belt without relative displacement of said receptacle.

9. Apparatus for desiccating eggs comprising in combination, belt supporting drums, an egg batter receiving and conveying belt supported thereon, the upper run of said belt being maintained in a plane sufficiently approaching the horizontal to permit the drying of the egg batter upon the belt in an even layer, a tank for an egg batter supply, an egg batter receptacle supported in proximity to said belt whereby egg batter may be conveyed to the latter, a pipe connecting said tank and receptacle, a valve controlling the flow of batter through said pipe, a valve controlling device carried by said receptacle, and means bodily to move one of said belt supporting drums and said receptacle, thereby to tighten the belt without displacement of said receptacle.

10. Apparatus for desiccating eggs comprising in combination, belt supporting drums, an egg batter receiving and conveying belt supported thereon, an egg batter receptacle supported in proximity to said belt whereby egg batter may be conveyed to the latter, automatically acting means supported by said receptacle to maintain a uniform level of egg batter therein, and means bodily to move one of said belt supporting drums and said receptacle, thereby to tighten the belt without relative displacement of said receptacle.

11. Apparatus for desiccating eggs comprising in combination, belt supporting drums, an egg batter receiving and conveying belt supported thereon, a tank for an egg batter supply, an egg batter receptacle supported in proximity to said belt whereby egg batter may be conveyed to the latter, a flexible pipe connecting said tank and receptacle, and means bodily to move one of said belt supporting drums and said receptacle, thereby to tighten the belt without relative displacement of said receptacle.

12. An apparatus for desiccating eggs comprising an egg batter receiving belt, a pair of drums for supporting the same, a frame whereon one of said drums is supported for bodily movement toward and from the other drum, tracks whereon said frame is mount-

ed, self-acting means tending normally to move said frame upon said tracks away from the other drum, thereby to maintain the belt automatically taut, and an egg batter receiving tray supported in close proximity to the outer surface of said belt, so that such surface of the belt may receive a layer of material from said tray.

13. An apparatus for desiccating eggs comprising an egg batter receiving belt, a pair of drums for supporting the same, a frame whereon one of said drums is supported for bodily movement toward and from the other drum, self-acting means tending normally to move said frame away from the other drum, thereby to maintain the belt automatically taut, and an egg batter receiving tray supported in close proximity to the outer surface of said belt, so that such surface of the belt may receive a layer of material from said tray.

14. An apparatus for desiccating eggs, comprising in combination an egg batter receiving receptacle, an egg batter receiving belt located with its run or runs substantially horizontal, such belt having a substantially horizontal run thereof located adjacent said egg receiving receptacle, whereby such run may contact with the egg contents of the receptacle, and automatic means to maintain said belt taut.

15. An apparatus for desiccating eggs comprising in combination an egg batter receiving tray and an egg batter receiving belt located with its under run adjacent said tray so that said run of the belt may contact with the egg batter contents of said tray, said belt being adapted to receive the egg batter directly upon the outer face thereof from said tray, the upper run of said belt being maintained in a plane sufficiently approaching the horizontal to permit the drying of the egg upon said belt in an even layer, and drums for supporting and driving said belt, the belt supporting drums being relatively bodily movable to take up slack in said belt, and means contacting with said belt to remove the dried egg batter therefrom.

16. An egg desiccating apparatus comprising in combination a metallic egg drying belt, a plurality of drums for supporting said belt, an egg batter receiving receptacle supported in close proximity to the surface of said belt, so that such belt may contact with the contents of the receptacle and receive a layer of egg batter therefrom, means to dry the batter upon said belt, and automatic means to take up the slack of such metal belt.

17. An apparatus for desiccating eggs comprising in combination a metallic belt having an egg receiving surface, drums to support and drive said belt, an egg batter receiving tray located in close proximity to said belt, so that said belt may contact with

the batter in said tray and receive a layer therefrom, means to dry the egg batter upon the belt, and weights connected to said belt supporting means and tending automatically to take up expansion in said belt and maintain the same taut.

18. An apparatus for desiccating eggs comprising means to receive an egg batter supply, an egg batter receiving belt located in operative proximity to said egg supply, means to dry the egg batter upon the belt, and automatic means to take up slack in said belt.

19. An apparatus for desiccating eggs comprising in combination means to receive an egg batter supply, a traveling belt located in operative proximity to said egg batter supply, drums to support said belt, one of said drums being bodily movable toward and from the other, a threaded bolt and nut operatively connected to each end of said movable drums, whereby either end of said movable drum may be moved with respect to the other drum to prevent lateral displacement of the belt with relation to the egg batter supply, and automatic means to maintain said belt taut.

20. An apparatus for desiccating eggs comprising in combination an egg batter receiving belt, a pair of drums for supporting the same, a frame whereon one of said drums is supported for bodily movement toward and from the other drum, downwardly inclined tracks whereon said frame is mounted, means tending to move said frame downwardly upon said tracks to maintain the belt taut and an egg receiving tray suspended from said frame in operative relation to the belt upon said drums.

21. Apparatus for desiccating eggs comprising in combination, belt supporting drums, an egg batter receiving and conveying belt supported thereon, an egg batter receptacle supported in proximity to said belt, whereby the batter may be conveyed to the latter, a float valve carried by said receptacle and dependent upon the level of egg batter therein for controlling the supply of egg batter to said receptacle and means bodily to move one of said supporting drums to tighten the belt without relative displacement of said receptacle and said belt.

22. Apparatus for desiccating eggs comprising in combination, belt supporting drums, an egg batter receiving and conveying belt supported thereon, an egg batter receptacle supported in proximity to said belt, whereby egg batter may be conveyed to the latter, electrical connections dependent upon the level of egg batter in said receptacle to control the flow of batter thereto, and means bodily to move one of said supporting drums to tighten the belt without relative displacement of said receptacle and belt.

23. Apparatus for desiccating eggs com-

prising in combination, belt supporting drums, an egg batter receiving and conveying belt supported thereon, an egg batter receptacle supported in proximity to said belt, whereby egg batter may be conveyed to the latter, a float valve mounted upon said receptacle and controlling the amount of egg batter therein, a source of egg batter supply, electrical connections between said float valve and said source of egg batter supply, and means bodily to move one of said supporting drums to tighten the belt without relative displacement of said receptacle and said belt.

24. Apparatus for desiccating eggs comprising in combination, belt supporting drums, an egg batter receiving and conveying belt supported thereon, an egg batter receptacle supported in proximity to said belt, whereby egg batter may be conveyed to the latter, said receptacle having a well or depression, mechanism located in said well or depression to control the level of egg batter in said receptacle, and means bodily to move one of said supporting drums to tighten the belt without relative displacement of said receptacle and said belt.

25. Apparatus for desiccating eggs comprising in combination belt supporting drums, an egg batter receiving and conveying belt supported thereon, an egg batter receptacle supported in proximity to said belt, whereby egg batter may be conveyed to the latter, a float valve to control the level of egg batter in said receptacle, a pair of terminals with either of which said float may make operative contact, an electrical circuit including said terminals, whereby when contact is made with one terminal the supply of egg batter is permitted to flow to said receptacle and when contact is made with the other terminal the flow of egg batter to said receptacle is cut off, and means bodily to move one of said supporting drums to tighten the belt without relative displacement of said receptacle and said belt.

26. Apparatus for desiccating eggs comprising in combination belt supporting drums, an egg batter receiving and conveying belt supported thereon, an egg batter receptacle supported in proximity to said belt, whereby egg batter may be conveyed to the latter, a float to control the level of egg batter in said receptacle, a valve controlled by said float, an electrical circuit including said valve and said float and including also a pair of magnets, a single armature mounted between said magnets and cooperating with both of them, a magnet and armature cooperating with said valve, a pair of contacts in said circuit, with either of

which said float may establish a circuit, whereby when a circuit is established through one contact one of said magnets is energized, thereby to open said valve, and whereby when a circuit is established with the other contact the other magnet is energized to close said valve, and means bodily to move one of said supporting drums to tighten the belt without relative displacement of said receptacle and belt.

27. Apparatus for desiccating eggs comprising in combination, belt supporting drums, an egg batter receiving and conveying belt supported thereon, an egg batter receptacle supported in proximity to said belt, whereby egg batter may be conveyed to the latter, a float carried by said receptacle to control the level of egg batter therein, an electric circuit including a pair of terminals, one of which is afforded by said float, a condenser placed in circuit when contact is made to minimize sparking at said contact, and means to move one of said supporting drums to tighten the belt without relative displacement of said receptacle and drum.

28. An apparatus for desiccating eggs comprising in combination an egg receiving and conveying belt, means to support and position the same in a plane sufficiently approaching the horizontal that the upper run thereof presents an extended drying surface and thereby prevents displacement of an applied viscid layer or portions thereof, a liquid egg receptacle, means to support the same in proximity to said belt, means to traverse said belt with relation to said receptacle and in adhering contact with the contents thereof, whereby a layer of egg may be received on said belt, and edge guides for said belt to prevent lateral displacement of said belt with respect to said receptacle.

29. An apparatus for desiccating eggs comprising in combination means to receive an egg batter supply, an egg batter receiving belt in operative proximity thereto and lateral guides for the edges of said belt to prevent lateral displacement of said belt and egg batter supply and comprising a rail in parallelism with said belt and having a longitudinally disposed groove therein to receive the edge of the belt, said groove having at the base thereof a layer of plate glass or the like.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JOHN M. HUSSEY.

Witnesses:

FREDERIC GILBERT BAUER,
EVERETT S. EMERY.

It is hereby certified that in Letters Patent No. 945,002, granted December 28, 1909, upon the application of John M. Hussey, of Cambridge, Massachusetts, for an improvement in "Apparatus for Desiccating Eggs," an error appears in the printed specification requiring correction, as follows: Page 5, line 130, the word "flame" should read *plane*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 1st day of February, A. D., 1910.

[SEAL.]

C. C. BILLINGS,
Acting Commissioner of Patents.