

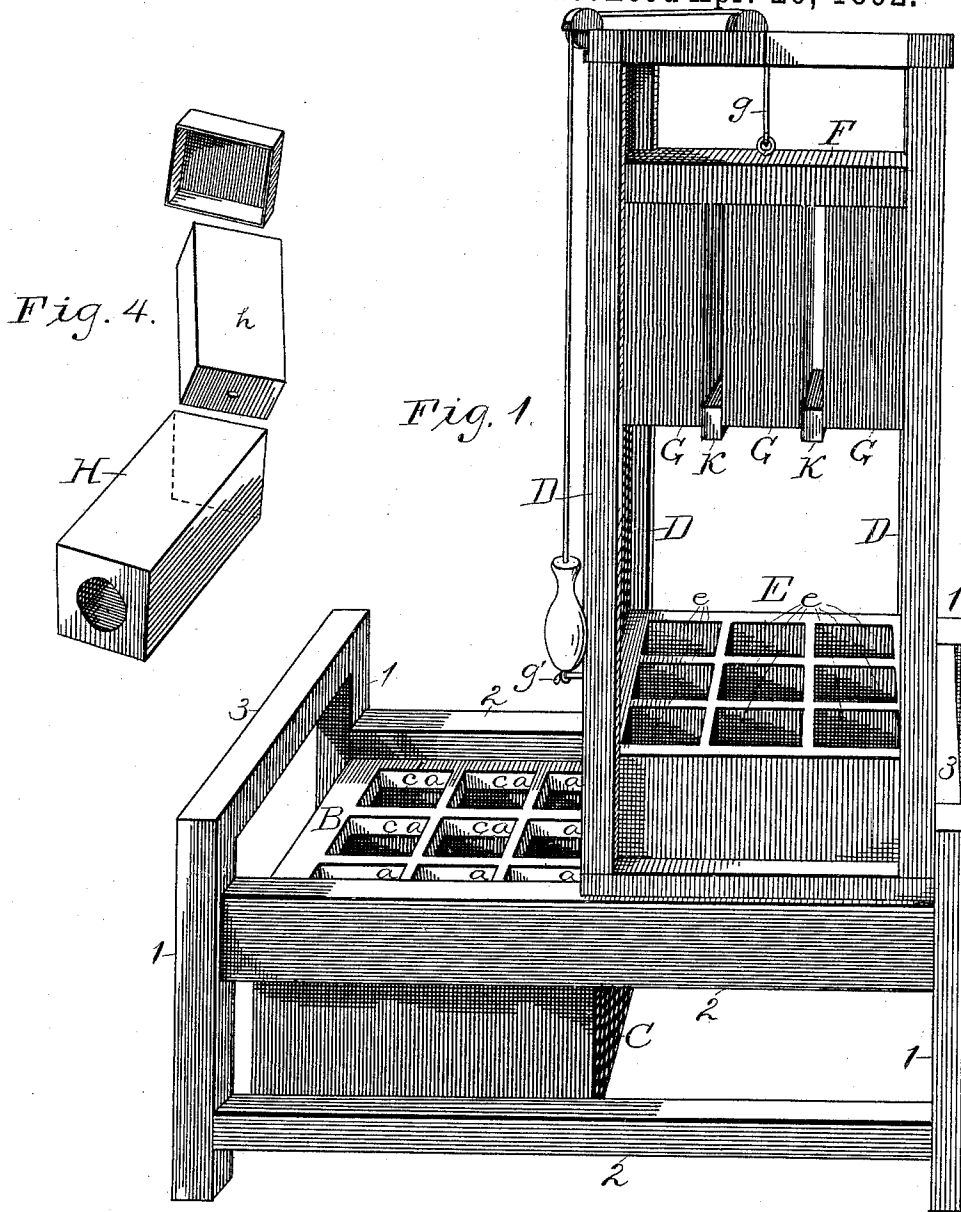
(No Model.)

2 Sheets—Sheet 1.

H. J. BRINE.
BUTTER PACKING MACHINE.

No. 473,494.

Patented Apr. 26, 1892.



Witnesses

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(No Model.)

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Fig. 3.

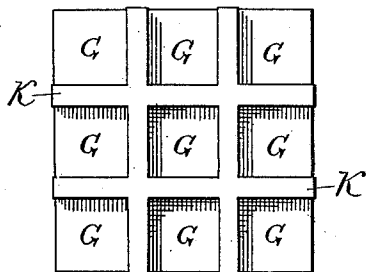


Fig. 2.

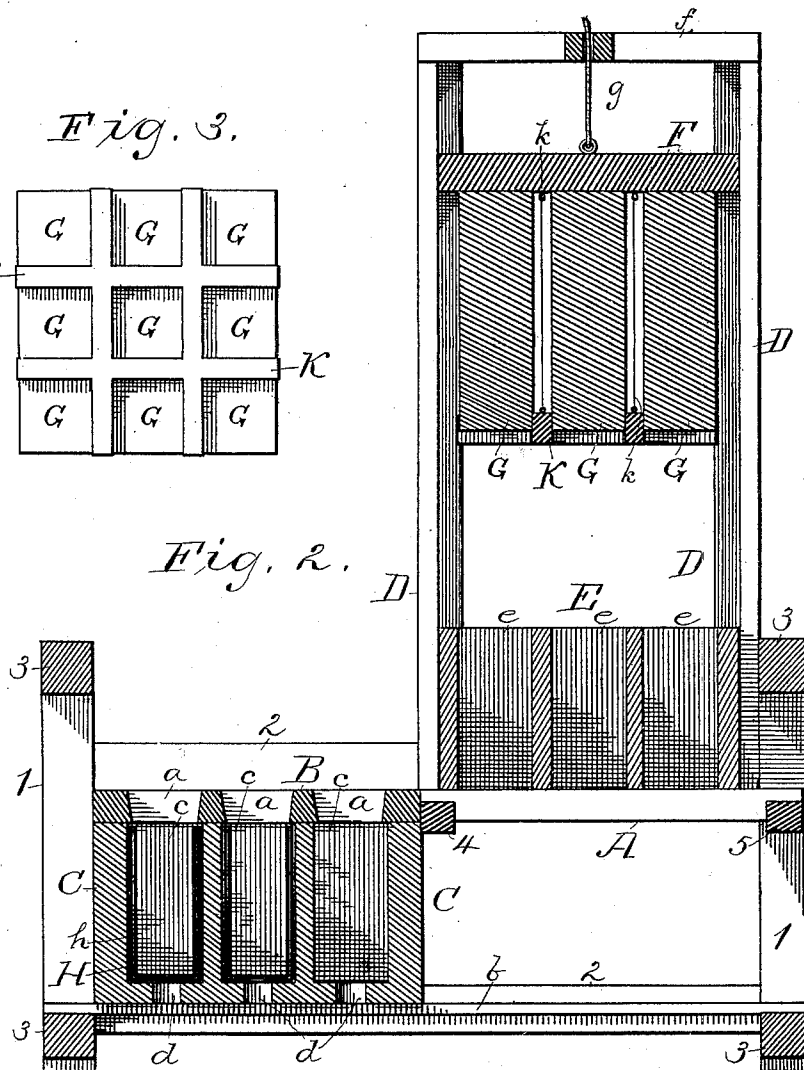
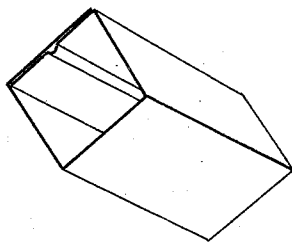


Fig. 5.



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UNITED STATES PATENT OFFICE.

HENRY JAMES BRINE, OF CHICAGO, ILLINOIS.

BUTTER-PACKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 473,494, dated April 26, 1892.

Application filed April 12, 1890. Serial No. 347,689. (No model.)

To all whom it may concern:

Be it known that I, HENRY JAMES BRINE, of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Butter-Packing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon.

The object of my invention is to furnish a machine for packing a given weight of butter into packages rapidly, cheaply, and without waste, so that said packages, without requiring further labor than is involved by the putting of the covers thereon, will be ready for the market or for shipment, substantially as hereinafter fully described, and as illustrated in the drawings, in which—

Figure 1 is a perspective view of my invention. Fig. 2 is a longitudinal central section therethrough. Fig. 3 is a plan view of the packing-head inverted. Fig. 4 is a perspective view of the several parts of the package. Fig. 5 is a perspective view of a modification of said package.

The supporting-frame of my machine consists of four corner-posts 1 1 1 1, connected by longitudinal top and bottom side rails 2 2 and by the transverse bars 3 3. The upper side rails 2 2 are connected below the plane of their upper edges about their center of length by a cross-bar 4, and connecting the posts 1 1, at the right-hand end of the frame, so that its upper surface is on the same horizontal plane as that of the cross-bar 4, is a cross-bar 5. Resting on these bars 4 and 5 are corresponding slabs of a suitable thickness of a length corresponding to that from the end of the frame at which posts 1 1 are connected by bar 5 to the edge of bar 4 nearest the opposite end of the supporting-frame and are of such width that a given number of them will snugly fill the space between the upper side rails 2 2, so as to make a platform A.

Immediately next to and between the end edge of platform A and the end of the supporting-frame farthest from bar 5 is a guide-frame B, having a series of corresponding rectangular openings *a a* therein, the septa

between which is preferably slightly wider at the bottom than at the top.

Secured longitudinally and horizontally to the inner side of the lower side rails 2 of the supporting-frame are corresponding cleats *b b*, and resting on these cleats *b* is a tray C, which is shoved into the supporting-frame from the end thereof farthest from bar 5, and which is of a height reaching from said cleats to the undersurface of the guide-frame B, but is not so high as to prevent its being moved longitudinally under the same. This tray is divided into a number of compartments *c c* by means of suitable partitions, and each compartment is provided with a central opening *d d* in its bottom. Their surface dimensions are slightly greater than the area of the opening *a* at the upper surface of guide-frame B. When in position, one end of tray C bears against cross-bar 4, and the several compartments therein are respectively concentric with and immediately under the opening *a* in guide-frame B with reference to which it is made.

D D D D represent four uprights, which are L-shaped in cross-section and are arranged with their inner angles facing the rectangular area, the four corners of which they bind, and in this position they are connected together at their lower ends and braced by the rectangular mold E. Mold E is divided into smaller molds *e*, corresponding to the number of openings *a* in guide-frame B, and the plan of said molds correspond in position and dimensions to the plan of the said guide-frame. Molds *e* are open both at the top and bottom, but are of such depth that when in position for filling their bottom is practically closed by platform A.

The uprights D D are braced at the top by the X-frame *f* and they serve as a guide for the vertical reciprocations of the rectangular plunger-head F, the corners of which are seated in the inner angles of the said uprights. This head is moved vertically by means of a cable *g*, which, being attached to the center of its upper surface, passes up through an opening in the intersection of the arms of the cross-frame *f* over suitable pulleys and down the outside with a suitable hand-grasp

on its pendent end, which has an eye on its lower end that can catch over a pin *g'* when pulled down to its lowest limit and thus hold head F up. Depending perpendicularly downward from the under surface of head F are the plungers G G, which are in horizontal cross-section. The reverse of the dimensions of the molds *e*, respectively, are of a length greater than the depth of molds *e*, and are separated from each other a distance corresponding to the thickness of the partitions between said molds *e*.

The operation of my machine, as hereinbefore described, is substantially as follows: The butter is placed in sufficient quantity on top of mold E and then plungers G G are dropped, so as to pack the butter into molds *e e*. When the molds *e* are full, the surplus butter remaining on top thereof is scraped off by a knife or trowel or in any other suitable manner. The whole packing device is then moved laterally, the upper edges of the upper side rail 2 serving as tracks for the guidance of the same and the lower ends of the uprights being especially constructed with this end in view, until the molds *e e* are immediately over and in vertical register with the openings in frame B, whereupon the plungers are again lowered and by their weight push the butter out of molds *e*, through openings *a*, and into suitable packages placed in and snugly fitting the compartments *c c* of tray C. The plungers are then raised to their original position and the whole packing device and molds pushed back to their original position over platform A. In order that the accumulation of butter packed in molds *e* may readily be forced into packages in compartments *c c* of tray C, it is necessary that a peculiarly constructed package be made which will permit the passage of the air in the package in front of the butter as it is pressed out of molds *e* into the same. This I accomplish by a package H, which is of such dimensions as to fit snugly into compartments *c* of the tray and is provided with a central opening in its bottom and has its top entirely open. Inside of this package I place another package *h*, which fits snugly therein and which also has a smaller central hole in its bottom. These holes of both the exterior and interior package are concentric. Thus it will be perceived that the air readily passes from the interior package when the butter is forced therein. It obviously is desirable to provide some automatic means for cleaning the lower edges of the plungers from particles of butter after they have been used to pack molds *e*. This I accomplish by means of a frame K, which is composed of longitudinal and transverse bars which intersect and are connected to each other in the same manner as the partitions of mold E, to which they correspond in surface dimensions. This frame K is placed and moves in the intervening spaces between plungers G and is suspended from the head F by cords or

chains *k*, which are of such length as to permit the lower edges of frame K, when the plungers are elevated above the molds *e*, to remain on a plane below the engaging end of said plungers. When the plungers are moved downward, the frame K first strikes against and then rests upon the upper edges of the partition of mold E, while the plungers continue their packing movement, when, however, the said frame K remains on the top of the molds until the cords *k*, connecting it to the plunger-frame, are drawn taut by the upward movement of the plunger. As, however, the cords *k* by which said frame K are of sufficient length to cause the under surface of said frame to be below that of the plungers, the edges of the latter will have the particles of butter adhering thereto, when it makes its upward movement, scraped off by frame K.

Uprights D and their connecting framework may, if desired, be dispensed with and the mold E be moved independently of the plungers from side to side. The plungers may be suspended from a suitable tramway overhead and be manipulated in substantially the same way as hereinbefore described.

I do not wish to be confined to the use of packages H *h*, as hereinbefore described, because any suitable package which will permit of the air being removed, when the butter is being packed therein, will answer. For instance, in Fig. 5 is shown a package which, instead of having a hole in its bottom, is provided with an exhaust-port.

It is obvious that instead of the number of molds shown in connection with the machine, as hereinbefore described and illustrated, together with a tray having a corresponding number of compartments and a guide-frame, with its complementary set of openings *a*, I may make a machine with any number of molds *e*, compartments *c*, and openings *a*, as desired, and wish, therefore, to be understood as considering such a change as being within the spirit of my invention.

The reason why I used slabs, as described in the construction of platform A, is for the purpose of permitting the brine which is expressed from the butter when the plungers pack the molds to drip through the same into a suitable drip-pan, which may be placed below. Instead of using slabs, I can, with equal facility, bore holes through the same, so as to carry off the drippings. In this latter case I would prefer to make the platform integrant and if possible of one piece of board or other material.

If desired, instead of adjusting the molds *e* and the plungers laterally, as hereinbefore described, I can connect the platform A and the guide-frame B and make them so that together they may be adjusted laterally, so as to bring first the said platform under the molds and then the guide-frame thereunder, so that the openings *a* therein will be in vertical register with the said molds. In this

event the case C would be fastened to and carried by the guide-frame, so as to receive in the packages placed in the compartments thereof the butter forced out of said molds by the downward movement of the plunger.

What I claim as new is—

1. In a butter-packing machine, the combination, with vertically-movable plungers G and transversely-movable molds *e*, of a tray C, divided into compartments, said molds being originally under and filled with butter by said plungers, and then, together with said plungers, moved laterally until in position over and in register with the compartments of said tray, whereupon said plungers are moved downward through said molds, so as to force the butter out of the same into suitable packages in said compartments, as set forth.

2. The combination, with plungers G, molds *e*, and guide-frame B, having openings therein corresponding in relative location and dimensions to the plan of molds *e*, and the septa between which are slightly wider at the bottom than at the top, of the tray C, divided into compartments, the dimensions and relative position of which correspond to the molds *e*, as set forth.

3. The combination, with plungers G, molds

e, and guide-frame B, having openings *a* therein corresponding in relative location and horizontal dimensions to the plan of molds *e* and the septa between which are slightly wider at the bottom than at the top, of the tray C, divided into compartments, the dimensions and relative position of which correspond to the molds *e* and each of which has a hole *d* in its bottom, as set forth.

4. The combination, with the vertically-movable plungers G, molds *e*, and platform A, said plungers and molds both being capable of transverse adjustment, of tray C, divided into compartments, as set forth.

5. The combination, with the vertically-movable plungers G, molds *e*, and platform A, of the frame K, composed of longitudinal and transverse cross-bars and located in the spaces between said plungers, and which, when the said plungers move upward above the said molds, rests on top of the molds until the under surfaces of the plungers pass above the plane of its lower surface, thus cleaning off the particles of butter adhering to said plungers, as set forth.

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Witnesses:

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