

No. 708,218.

Patented Sept. 2, 1902.

A. W. FRENCH.
APPARATUS FOR PACKING OIL CAKES.

(Application filed Nov. 30, 1900.)

(No Model.)

2 Sheets—Sheet 1.

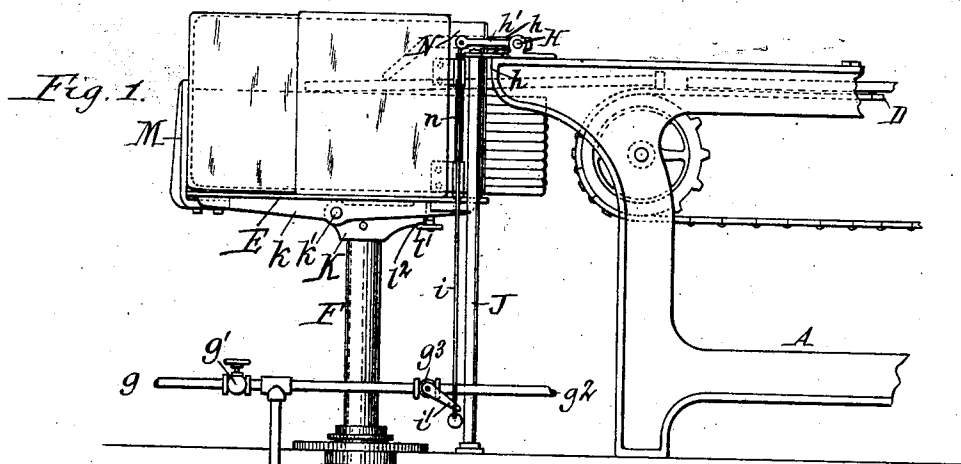


Fig. 5.

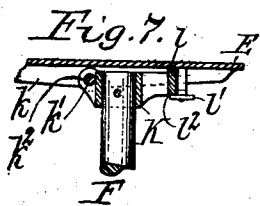
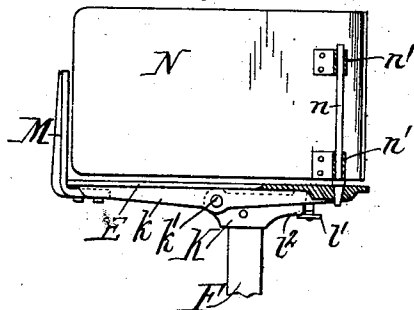
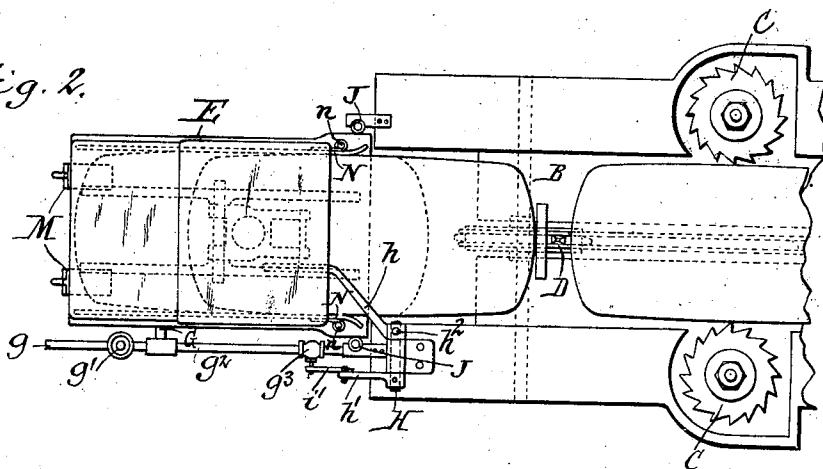


Fig. 2.



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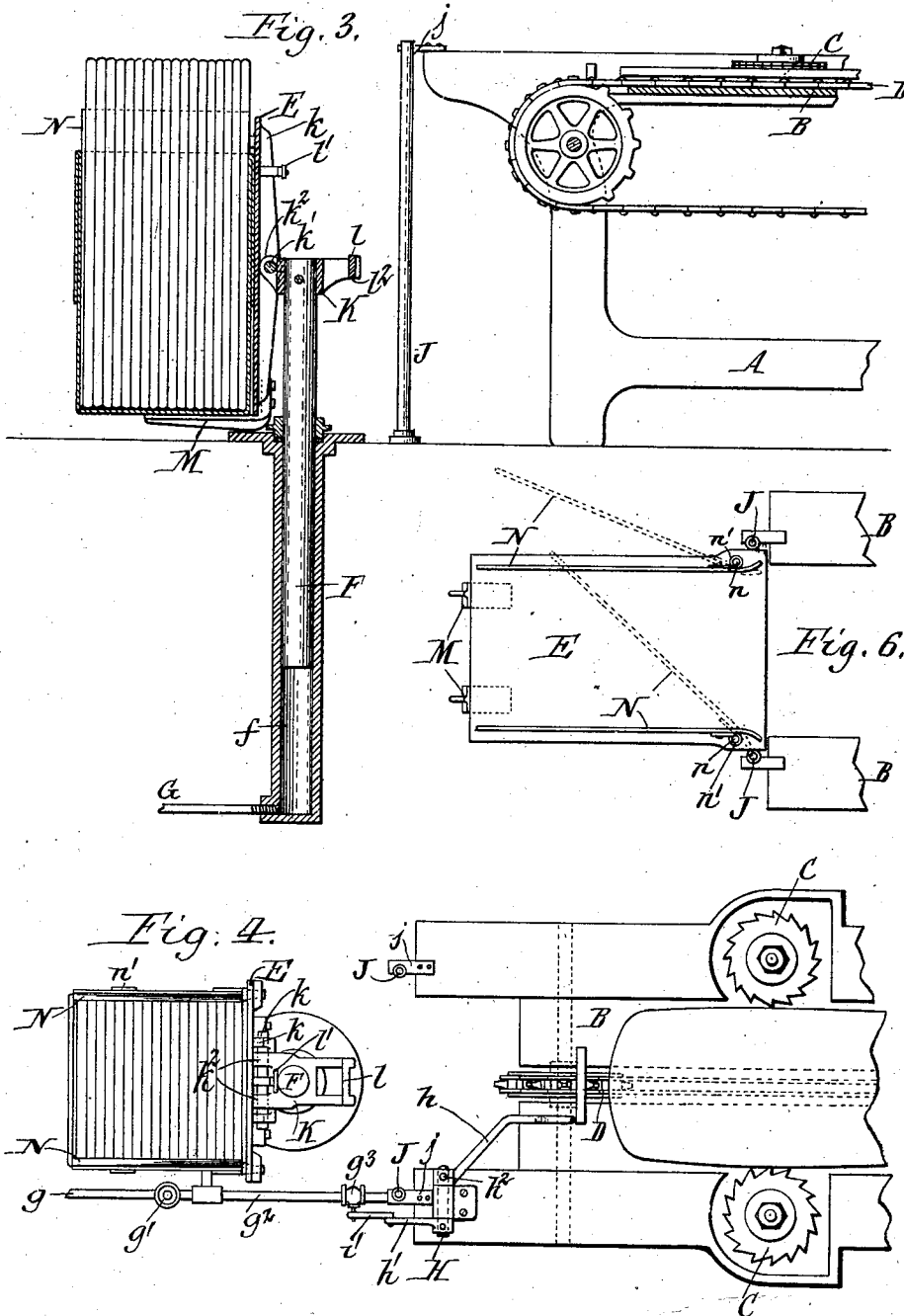
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UNITED STATES PATENT OFFICE.

ALFRED W. FRENCH, OF PIQUA, OHIO.

APPARATUS FOR PACKING OIL-CAKES.

SPECIFICATION forming part of Letters Patent No. 708,218, dated September 2, 1902.

Application filed November 30, 1900. Serial No. 38,127. (No model.)

To all whom it may concern:

Be it known that I, ALFRED W. FRENCH, a citizen of the United States, and a resident of Piqua, in the county of Miami and State of Ohio, have invented a new and useful Improvement in Apparatus for Packing Oil-Cakes, of which the following is a specification.

This invention relates to an apparatus which is more especially designed for packing oil-cakes in bags after the cakes have been trimmed by a machine which removes the soft oil-bearing edge portions of the cakes. Heretofore the cakes were piled upon a receiving-table as they came from the trimming-machine, and the pile of cakes was then removed from the table and placed in a bag. This was a laborious operation and consumed considerable time.

One object of this invention is to introduce the cakes into the bags directly one after another as they are delivered from the trimming-machine, thereby packing the cakes more expeditiously and conveniently and enabling the pile to be more readily removed from the receiving-table.

Another object of this invention is to mount the receiving-table in such manner that it can be tilted from its horizontal receiving position into a vertical position, or nearly so, for facilitating the removal of the bagged pile of cakes from the table.

In the accompanying drawings, consisting of two sheets, Figure 1 is a side elevation of my improved packing apparatus shown in connection with part of an oil-cake-trimming machine. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical longitudinal section of the same, showing the pile-table tilted preparatory to removing the package of cakes therefrom. Fig. 4 is a top plan view of the apparatus corresponding to Fig. 3. Fig. 5 is a fragmentary sectional elevation of the receiving-table and the guide-plates whereby the bags are held distended on the table. Fig. 6 is a top plan view of the same. Fig. 7 is a fragmentary vertical section showing the means for locking the receiving-table in a horizontal position.

Like letters of reference refer to like parts in the several figures.

In the drawings my improved packing ap-

paratus is represented in connection with a machine for trimming oil-cakes, although the same packing apparatus may be used in connection with other kinds of machines or independently of any other machine.

The trimming-machine shown in the drawings consists, essentially, of two side frames A A, a horizontal feed table or bed B, over which the cakes are moved, rotary cutters C C, which are arranged above the feed-table and on opposite sides thereof, and a feed chain or belt D, whereby the oil-cakes are moved past the cutters and discharged from the trimming-machine.

E represents the receiving-table, which is arranged adjacent to the discharge end of the trimming-machine and upon which the cakes are piled one after another as they are discharged from the trimming-machine. The pile-table may be raised and lowered by any suitable mechanism; but it is preferably operated by a mechanism which lowers the table automatically as the cakes are fed upon the table. The mechanism which is shown in the drawings for this purpose is substantially the same as that shown and described in Letters Patent of the United States issued to me August 7, 1900, No. 655,337, and is constructed as follows:

F represents an upright plunger which supports the receiving-table at its upper end and which is arranged with its lower end in an upright hydraulic cylinder *f*.

G represents a branch pipe which is connected with a pipe *g*, by which a fluid under pressure is supplied to the apparatus. This pressure-pipe is provided with a hand-valve *g'*.

*g*² is an escape-pipe which is provided with a valve *g*³.

H represents a rock-shaft provided with an inner rock-arm *h*, which projects over the receiving-table, and an outer rock-arm *h'*, which is connected by a vertical rod *i* with the weighted arm *i'* on the rotary stem of the escape-valve *g*³. Upon opening the valve *g'* in the pressure-pipe the pressure fluid is admitted into the cylinder and the plunger-rod and receiving-table mounted thereon are raised. When the required height has been reached, the pressure-valve is closed. As the trimmed oil-cakes are delivered successively from the trimming-machine to the receiving-table each

cake passes along the under side of the inner rock-arm h , whereby the latter is lifted and the escape-pipe is opened, thereby permitting the liquid to escape from the cylinder and causing the plunger and the receiving-table to descend. When the table and the pile of cakes resting thereon have been lowered to the extent of the thickness of a cake, the inner rock-arm h has been lowered sufficiently to close the escape-valve, thereby stopping the descent of the receiving-table. This operation is repeated for each cake which is delivered upon the receiving-table, whereby the latter is lowered intermittently by gravity in the same measure as the cakes are fed upon the same, thereby keeping the top of the pile always at the same height relative to the top of the feed-table. The receiving-table is preferably guided in its vertical movements by two vertical guide-rods J , arranged on opposite sides of the front end of the receiving-table and secured at their lower ends to the floor and at their upper ends to brackets j on the frame.

In order to permit of the convenient removal of the pile of cakes from the receiving-table, the latter is mounted on the plunger, so that the table can be tilted from its horizontal receiving position into a vertical discharging position. For this purpose the table is pivoted to the upper end of the plunger by a horizontal pivot-joint. As shown, the plunger is provided with a supporting-head K and the under side of the receiving-table with ribs k , which are pivoted by a horizontal pin k' to eyes k^2 on the supporting-head. The pivot-pin k' is arranged in rear of the plunger, so that the receiving-table can be swung from its horizontal receiving position rearwardly into a vertical discharging position. When the receiving-table is swung into its horizontal receiving position, it rests at its front end upon a stop l , which is arranged on the front end of the supporting-head. The receiving-table may be locked in this horizontal position by any suitable device—for instance, by a turn-button l' , pivoted on the under side of the table and engaging with the under side of a shoulder l^2 on the front part of the supporting-head K , as shown in Fig. 7.

M represents an abutment, which is arranged on the rear end of the receiving-table and against which the pile of oil-cakes rests with its lower end when the table is tilted. This abutment preferably consists of two elbow-shaped arms, which are attached with their lower members to the under side of the receiving-table and project upwardly with their upper members from the receiving-table.

N represents two bag-holders which are arranged upon the receiving-table, on opposite sides thereof, for holding the bag distended and guiding the cakes as they enter the bag and pile up in the same. These holders in their preferred form are plates of such size and shape that the bag can be slipped on both plates and that the latter when standing

lengthwise on the feed-table will hold the bag open and distended. Each plate is attached at its front end to the table by a vertical pivotal connection, which is detachable, so that the plates can be removed from the table with the filled bag. As shown in the drawings, the pivotal connection of each plate consists of an upright pivot-post n , which is removably inserted with its lower end in a socket in the table and to which the front end of the plate is secured by sleeves n' . If preferred, the pivot-posts may be secured to the table and the plates be detachably connected to the posts by these sleeves.

For the purpose of applying the bag to the guide-plates the latter are swung to one side, as shown in dotted lines in Fig. 6. In this position the plates stand near together and allow the bag to be readily slipped on. The bag is placed on the plates with its open end folded or doubled backwardly, as shown in Figs. 1, 2, and 3, so as not to interfere with the pivots of the plates and adjacent parts. The plates are then swung into their longitudinal position, (shown in full lines in Fig. 6,) in which position they are parallel to each other, or practically so. In order to hold the plates in this position, a cake is placed by hand between the plates and upon the lower side of the bag, thereby holding the bag wide open and preventing the pull of the bag from unduly bending the plates toward each other. By placing the lowermost cake by hand into the bag the lower side of the same is protected and does not become wrinkled and displaced by the first cake which is pushed into the bag by the trimming-machine. In this position the two plates hold the bag distended with its mouth wide open. The cakes are now delivered into the bag between the guide-plates until the bag is nearly full, when the machine is stopped. The receiving-table is now unlocked from the head K by turning the button l' and then tilted backward, so that the package of cakes rests with its bottom on the abutment. The bag, containing the cakes and the two guide-plates, is then removed from the table and abutment. The guide-plates are then withdrawn from the bag and the latter is filled completely by inserting one or more additional cakes. The receiving-table is then returned to its horizontal position and locked, the guide-plates are replaced on the same, and the operation is repeated.

The guide-plates are turned or beveled outwardly at their front ends to facilitate the entrance of the cakes between them. After the bag of cakes has been completely filled the upper folded part is drawn over the upper end of the pile, so as to completely inclose the same.

In order to allow the table to be tilted rearwardly when the described automatic lowering mechanism is employed, the arm h of the mechanism is detachably secured to its shaft by a pin h^2 or otherwise, so that this arm, which normally projects over the table, can

be removed before tilting the table, or the arm can be swung forwardly out of the path of the pile of cakes, as shown in Fig. 4.

I claim as my invention—

5 1. The combination of a receiving-table for the trimmed cakes, means for holding a bag distended on said table, a support for said table, and a horizontal pivotal joint connecting said table with said support, whereby the table can be swung from its horizontal receiving position to its upright discharging position, substantially as set forth.

2. The combination of a receiving-table having an abutment, means for holding a bag distended on said table, a head on which said table is supported, a horizontal pivotal joint connecting said table with said head, and a stop provided on said head and supporting the table in its horizontal position, substantially as set forth.

3. The combination with a cake-trimming machine, of a receiving-table for the trimmed cakes, means for holding a bag distended on said table, and a support to which said table is attached by a pivotal connection which allows the table to be tilted for removing the pile of cakes and bag, substantially as set forth.

4. The combination with a cake-trimming machine, of a receiving-table for the trimmed cakes provided with an abutment at one end, means for holding a bag distended on said table, a support to which said table is attached by a transverse pivotal connection which allows the table to be tilted, and means for lowering said table-support automatically, substantially as set forth.

5. The combination of a receiving-table, a support on which the same is pivoted, and two separate bag-holding devices arranged lengthwise upon the table on opposite sides thereof, substantially as set forth.

6. The combination of a pivoted receiving-

table, and two holding devices arranged lengthwise upon the table on opposite sides thereof and pivoted at their front ends to the table, substantially as set forth.

7. The combination with the receiving-table, of two bag-holders arranged lengthwise upon the table on opposite sides thereof and provided at their front ends with vertical pivotal devices by which the holders are detachably connected to the table, substantially as set forth.

8. The combination with the receiving-table provided at its rear end with an abutment, of two bag-holders arranged lengthwise upon the table on opposite sides thereof and connected with the table at their front ends by vertical pivotal devices, substantially as set forth.

9. The combination of means for holding a bag distended, a receiving-table which supports said bag-holding means, means for feeding the cakes successively into the bag, and means for intermittently moving said table in a direction transversely of the direction of movement of the cakes by the feeding means, said receiving-table extending beneath the bag on said holder and supporting the cakes and the bag, substantially as set forth.

10. The combination of a receiving-table, and means for holding a bag thereon, said means being movable with said bag away from said table, substantially as set forth.

11. The combination of a tilting receiving-table, and a bag-holding means detachably connected with said table whereby the filled bag can be removed from the table, substantially as set forth.

Witness my hand this 23d day of October, 1900.

ALFRED W. FRENCH.

Witnesses:

THEO. L. POPP,
C. B. HORNBECK.