(No Model.)

J. NAYLOR, Jr.

Device for Cheese Manufacture.

No. 240,326. **Patented April 19, 1881.**

Fig. 1.

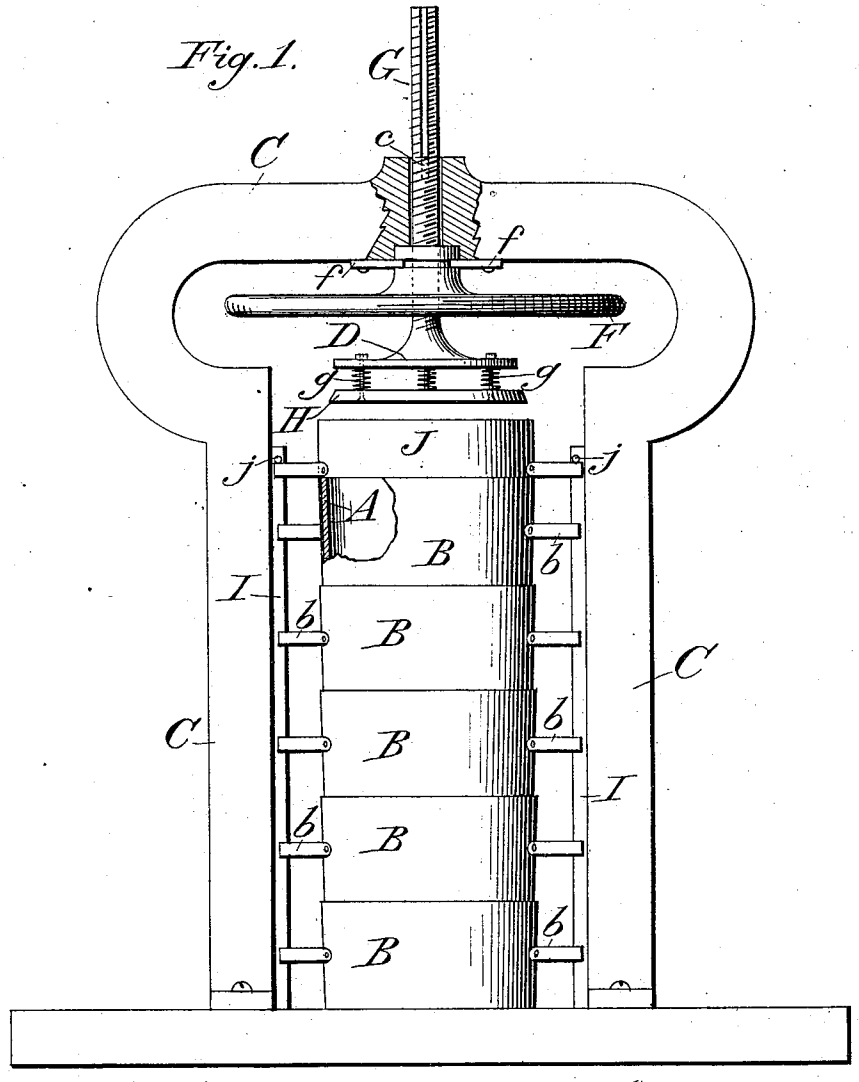


Fig. 2.

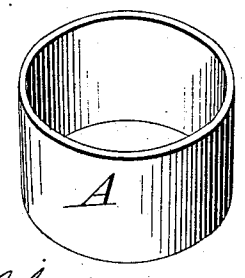


Fig. 3.

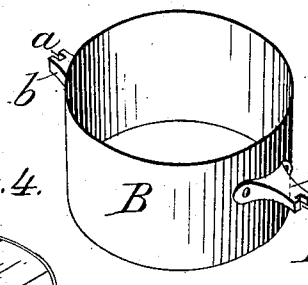
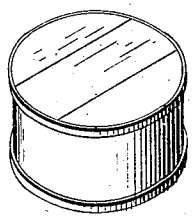


Fig. 4.



Attest:

J. H. Schott.

A. R. Brown

Inventor:

Jas. Naylor Jr.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES NAYLOR, JR., OF ROCHESTER, NEW YORK.

DEVICE FOR CHEESE MANUFACTURE.

SPECIFICATION forming part of Letters Patent No. 240,326, dated April 19, 1881.

Application filed September 23, 1880. (No model.)

To all whom it may concern:

Be it known that I, JAMES NAYLOR, Jr., a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Cheese Manufacture; 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, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to the art of making cheese; and it consists of a new and improved method or process of pressing, clothing, curing and packing, the object of which is to make firmer cheese, to provide means for a more thorough curing, and to furnish the market with smaller cheeses in better shape and condition at less expenditure than what has been done heretofore.

In the drawings, Figure 1 is a front elevation of press ready to receive the curd. Fig. 2 is a perspective view of a paper hoop; Fig. 3, a like view of a galvanized-iron hoop. Fig. 4 shows the completed article—viz., a cheese ready for market.

A is a paper hoop of the required dimensions of the cheese, it being about three-sixteenths of an inch in thickness. This hoop is originally made cylindrical, then immersed in a bath of hot paraffine, and afterward pressed, so as to get it slightly pressed tapering, and also to solidify and press out the superfluous paraffine. I do not confine myself to paper alone, but prefer it to all known substances as will answer the purpose.

B is a galvanized-iron hoop, made slightly tapering, and just large enough to receive the paper hoop A within it. The depth of these hoops A and B is exactly alike. On the outer surface of the iron hoop B are the lugs *b b*. These serve for handles, and are provided with the notches *a a*, for the purpose of holding the hoops in proper position within the press. These lugs *b b* are securely riveted to the iron hoop B, and are made of malleable iron, so as to stand the pounding they may be subjected to when the cheese, with its paper envelope, is dumped out of the iron hoop B. It may here be observed that the iron hoop B has two important functions to perform—viz., of holding the paper hoop in correct position for the reception of the curd, and also to prevent its bursting under pressure.

C is the frame of a press firmly secured to a base. In a factory a number of such frames can all be secured to one common base. To this frame is applied any pressing mechanism, but preferably the screw, as shown.

D is the screw, having cut into it a longitudinal groove, *d*, and secured firmly into the flange E. Into the frame where the screw D passes freely through is put a feather, *c*, so as to be in all respects solid with it. This feather *c* fits loosely into the groove *d* of the screw D. Thus the screw and flange have a free up-and-down movement, but are prevented from turning by means of the groove *d* and feather *c*.

F is the hand-wheel, the hub of which is made to act as the nut for the screw D. This hub has a groove, *f*, around its periphery for the free insertion of the plates *f' f'*, and which are secured, by means of screws, to the frame C. Thus the hand-wheel is held in proper elevation and held laterally by means of the frame C and plates *f' f'*, with the screw D passing through it. Rotation of the hand-wheel F thus causes the required perpendicular movement of the screw D and the flange E, and constitutes the pressing mechanism, as shown.

It is well known to dairy-men that the most effectual method to press curd is with a constant unyielding pressure. To accomplish this I arrange to the flange E a series of powerful spiral springs, *g g*, being held thereto by any devised means; or the spiral springs *g g* can be attached to the follower H. The improved arrangement consists of locating the spiral springs, which are to act as a reservoir of power, between the positive pressing mechanism and the curd to be pressed. The added capacity of the spiral springs *g g* is nearly the equivalent in power of the pressing mechanism, so that the pressure is constantly kept up by the agency of the power required to close the spiral springs *g g*.

On the frame C are the guides I I. These guides are to keep all the hoops in line with each

other when placed in the press, the notches *a a* in the lugs *b b* of the iron hoop B fitting easily thereon.

J is a solid rim, of thickness equal to the hoops A and B combined, but of any width, the inside diameter being the same as that of the paper hoop A. This rim J is for holding the hoops, when placed in press, from rising, it being held in place by means of the pins *j j* through the frame C.

The operation of pressing is as follows: Sufficient paper hoops A are put within the galvanized-iron hoops B, the same inserted within the press by sliding the hoops down the guides I I from the top, the notches *a a* fitting loosely onto said guides, or they can be put in edgewise from any elevation. One is placed immediately above and onto each other until the required number are in press; then the rim J is put in position and secured from rising by means of the pins *j j*. Thus is obtained an open internal column extending through all the hoops. This constitutes the curd-receptacle, and is filled with curd, which is pressed down, the follower H elevated, then filled up and pressed again. The pressure exerted by means of the hand-wheel F and screw D closes the spiral springs *g g*, so that the pressure is constant until the cheese is firm; then the follower H is raised, the rim J removed, for in pressing the curd was forced just below this rim. To separate the curd within the hoops I take a fine wire and cut each off, and so remove until all are separated; then the hoops containing the pressed curd are again arranged within the press, putting press-cloths to the surface of each and every cheese. After all are within the press pressure is again applied and retained as long as necessary. This is for the purpose of forming a good rind to the top and bottom of the cheeses, after which the cheeses, firmly pressed within the paper hoops, are removed to the curing-room. Having a non-penetrable envelope, the cheese is protected from injuries now common to those provided with the ordinary cloth bandage.

After curing, all that remains to be done is to put on the covers, as are now in use, one being put on the bottom and the other on the top. These covers fit closely, and are nailed through into the paper and cheese. Thus the paper hoop A constitutes a part of the shipping-package of the cheese, as well as the envelope for the reception of the curd in pressing, and the protective feature in curing. This improved method enables me to furnish the market with a neater article produced at less cost and labor, that will find a ready market in foreign countries where present methods have failed. Small cheeses can also be made in better condition than has been done heretofore, at much less cost and labor.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cheese-press, the pressing mechanism and curd-receptacle, in combination with the spiral springs, arranged substantially as shown, and for the purpose specified.

2. The pressing mechanism, consisting of the screw D, having a free movement in line with the press, and held from turning by means of the groove *d* and feather *e*, the hand-wheel F, provided with the groove *f*, and plates *f' f'*, all arranged substantially as shown, in combination with the curd-receptacle and frame of a cheese-press.

3. The arrangement, as shown, consisting of placing a number of hoops in line with each other, making one common receptacle, so that the curd is pressed in one solid column, as herein shown and described.

4. The tapering paper hoop A, in combination with the galvanized-iron hoop B, also tapered, both forming a receptacle for the curd and a mold for the cheese, as herein set forth.

5. In the art of making cheese, pressing the curd within the hoop destined to serve as the body of the permanent package, as herein set forth.

6. In the art of making cheese, curing the pressed curd within the hoop destined to serve as the body of the permanent package, as herein set forth.

7. As a new article of manufacture, a cheese made within a paper envelope saturated with paraffine, substantially as shown and described.

8. The process herein described of making cheeses, consisting of the following steps: pressing the curd within the paper hoops A into one solid column, then separating by means of wire, then pressing with cap or press cloths, then curing within the same paper hoop A, and finally putting on the covers, as herein set forth.

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

JAMES NAYLOR, JR.

Witnesses:
F. H. SCHOTT,
A. R. BROWN.