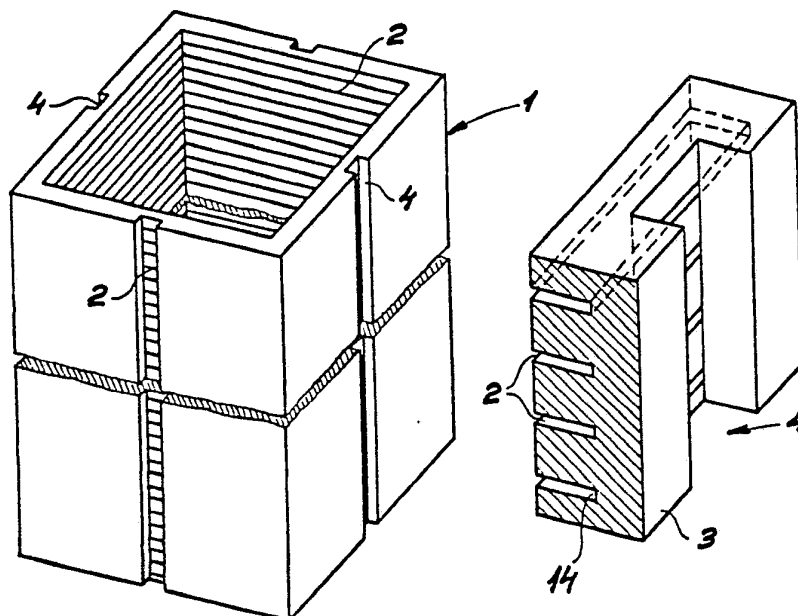


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(54) Title: A CHEESE MOULD



(57) Abstract

An oblong cheese mould (1) having a substantially constant cross-section has in its side wall (3) slits (2) for drainage of whey from the cheese mass received by the cheese mould. According to the invention, the slits (2) extend transversely to the longitudinal direction of the mould, and their width, measured internally in the longitudinal direction of the cheese mould (1), is smaller than the cheese particles in the cheese mass, and the bottom (14) of the slits (2) facing the exterior of the mould is substantially closed, apart from channels (4) for drainage of the whey. This causes the cheese to be movable longitudinally of the mould because of its own weight so that the cheese obtains a very smooth surface, and thus the mould easily releases the cheese.

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A cheese mould

The invention concerns a cheese mould consisting of an elongate pipe with a substantially constant cross-section to receive cheese mass in the form of cheese particles and whey, the wall of the mould being provided with a plurality of slits for drainage of liquid when the mould is essentially vertically disposed.

The latter transport of liquid concerns in particular drainage of the whey from the cheese mass, but may also take place during salting of the cheese as the cheese mould is immersed in a brine.

A cheese mould of the present type is known e.g. from the German Patent Specification 929 945 showing a cheese mould with a plurality of vertical slits. When a cheese mould has stood for some time after having been filled with cheese mass, so much whey will have escaped that the particles of cheese begin gathering to a coherent elastic mass, and then the cheese mould is usually inverted. Normally, the mould is inverted several times before the cheese is removed from the mould and/or is placed in a brine. It was believed in the past that these slits should preferably extend longitudinally of the cheese mould in order for the above-mentioned operations to be performed satisfactorily, i.e. for the cheese mass to be movable in the longitudinal direction of the mould and be readily removable from it, which is e.g. not the case with moulds having a large number of holes, as is known e.g. from the Danish Patent Specification 90378.

The object of the invention is to provide a cheese mould which involves a surprising improvement over



the prior art, with respect to the discharge of the whey as well as with respect to the tendency of the mould to release the cheese.

5 This object is achieved in that the slits are shaped as stated in the characterizing portion of claim 1. When the cheese mass sets in the mould and whey penetrates into the grooves, also cheese particles are pressed a distance into the grooves, and it might be expected that the cheese particles protruding into
10 the grooves would prevent the cheese mass from sliding downwards in the mould upon inversion of it. However, the stated slit width is sufficiently small for the elasticity and weight of the cheese, when hanging at the top of the inverted mould, to cause the protruding
15 particles to be drawn clear of the slits, provided the friction is sufficiently small. The slit shape according to the invention involves a sufficiently small friction because the predominantly closed slits ensure a moist atmosphere so that the protruding cheese por-
20 tions maintain a relatively wet and thus smooth surface. The horizontal or approximately horizontal slits cause the whey to run off relatively slowly so that residue of whey may be present in the slits after the mould has been inverted, and such residue serves as a lubricant
25 and additionally decreases the friction.

Cheese particles having worked themselves a short distance into the slits are therefore easily drawn clear of these when the cheese mould is inverted, and the cheese mass is therefore effectively displaced trans-
30 versely to the slits. This provides a very uniform discharge of the whey, and the constant movement of the surface of the cheese mass into and out of the slits imparts a very smooth surface to the cheese and



causes the mould to release the cheese very easily. The features stated in claim 2 bring about the above-mentioned advantages as well as a good rind formation.

5 An embodiment of the cheese mould of the invention may be provided by the provision in the inside of walls forming the cheese mould of a large number of parallel slits, which extend from the inner surface of the mould a distance into the wall of the mould and communicate with a plurality of longitudinal drainage channels in 10 the outer surface of the mould walls. However, the mould of the invention may also be produced as a stack of slats, as stated in claim 3.

The slit arrangement defined in claim 4 entails that the slits restrain the whey, which is exclusively drained 15 through the said narrow belts. The slit width (measured internally in the longitudinal direction of the cheese mould) is typically of the order of 0.2 to 1 mm, preferably 0.5 to 0.7 mm.

20 The features defined in claim 5 facilitate cleaning of the mould. The inner tube may be made of metal, while the outer jacket stated in claim 6 provides for the necessary heat insulation. Alternatively, the entire cheese mould may be made of a heat insulating material, as stated in claim 7.

25 The invention will be explained more fully by the following description of some embodiments with reference to the drawing, in which

fig. 1 shows a first embodiment of the cheese mould of the invention,

fig. 2 is a close-up of the wall from the cheese mould shown in fig. 1,

fig. 3 is a plan view of a slat for the construction of another embodiment of the cheese mould of the invention,

5 fig. 4 is a section along the line IV-IV in fig. 3, while

fig. 5 is a segment of a cross-section of the cheese mould through one of its drainage belts.

Fig. 1 shows an embodiment of a cheese mould 1 of the
10 invention in which the mould is divided in the drawing, the mould being significantly longer than its transverse dimensions in practice. In the operative position the mould is vertical, so its internal side faces are provided with a large number of horizontal slits 2, which
15 can be seen more clearly on the segment of the cheese mould wall shown in fig. 2. The slits 2 extend only partly into the side wall 3, which on the other hand has some vertical grooves or drainage belts 4 cut so deep into the side 3 that the slits 2 communicate with
20 the grooves 4. Thus, the grooves 4 constitute discharge chutes for the whey running from the cheese mass in the mould 1 through the grooves 2. The opposite surfaces of the slits are preferably mutually parallel, while the slits may have the cross-section in the drainage belts
25 which is shown in fig. 5.

The cheese mould of the invention may also be produced in the form of a stack of slats, such as the slat shown in fig. 3. The slat 5 consists of a plate with an internal hole 6, each of the plate corners having holes 7 for
30 receiving a stay bolt serving to clamp a large number of slats together to a shape which corresponds to the

internal part of the mould from fig. 1. Fig. 4 shows a section along the line IV-IV in fig. 3, from which it appears that the wall thickness of the slat in the regions 8 around the holes 7 is thicker than the wall thickness of the rest of the slat; thus, stacking of the slats 5 on top of each other results in a pipe where the described slits extend everywhere from the internal side of the pipe to its external side, and the regions 8 do not extend right into the hole 6, cf. the gap designated by 13. The side faces of the slats may moreover be provided with pins and complementary holes for the provision of spacing stabilizers and/or coupling means.

To additionally heat insulate the cheese mass from the surroundings, the cheese mould may be encircled by an insulating jacket, a fragment of which being schematically shown at 9 in fig. 3; this jacket has longitudinal discharge chutes 10. The jacket 9 is of course removed before the cheese mould is dipped into a brine, or when the cheese mould is to be cleaned.

To illustrate the invention, fig. 5 shows a vertical segment of the cheese mould wall through a drainage belt whose inner side is shown to have a plurality of cheese particles thereon. The cheese particles 11 are spaced at the top, the gap being filled with whey, while the lower cheese particles have begun coalescing because the whey is driven off more rapidly at the bottom of the mould where the pressure from the overlying cheese mass is greatest. When the cheese particles 11 have coalesced, the cheese mould is inverted so that the cheese mass, which is now elastic, is stretched a little in the mould. Though the cheese particles protrude partly into the slits 12, the cohesion between the cheese particles is great enough to ensure that the cheese particles are



drawn out of the slits because the almost closed and substantially horizontal slits cause the cheese protrusions to be moist and smooth (in the prior art the cheese dries a little so that the coefficient of friction increases) and free whey to be present in the slits after the mould has been inverted (in the prior art it is drained too rapidly), which brings about a very small coefficient of friction. The elastic movement of the cheese mass causes varying parts of the cheese mass to be disposed opposite the slits 12 so the last part of the whey is driven off considerably more effectively than was known in the past. Moreover, the constant movement of the cheese particles with respect to the slits 12 causes the cheese surface to be very smooth and the mould to release the cheese easily when the cheese is to be removed from it.

It will be appreciated that the cheese mould of the invention is not restricted to the described cross sectional shapes as the substantially constant cross-section of the cheese may also have a round, square or other shape.



P a t e n t C l a i m s :

1. A cheese mould consisting of an elongate pipe with a substantially constant cross-section to receive cheese mass in the form of cheese particles and whey, the wall of the mould being provided with a plurality of slits
5 for drainage of liquid when the mould is essentially vertically disposed, c h a r a c t e r i z e d in that the slits (2) extend transversely to the longitudinal direction of the mould (1) and have a width which is smaller than the size of the cheese particles, as mea-
10 sured in the said longitudinal direction, and that the predominant part of the bottom (14) of the slits facing the exterior of the mould is closed.

2. A cheese mould according to claim 1, c h a r a c -
t e r i z e d in that the distance between adjacent
15 slits (2) is about 2 to 5 times greater than the slit width.

3. A cheese mould according to claim 1, c h a r a c -
t e r i z e d in that the mould (1) consists of a
large number of slats (5) stacked longitudinally of the
20 pipe, and that slits are present between slats adjacent in pairs.

4. A cheese mould according to claim 1, c h a r a c -
t e r i z e d in that the opposite sides of the slits
(12) are mutually parallel, apart from a plurality of
25 narrow belts along the cheese mould where the parts of the slit sides facing the exterior of the mould diverge.

5. A cheese mould according to any of claims 1-4,
c h a r a c t e r i z e d in that the mould comprises an inner pipe having slits extending therethrough and



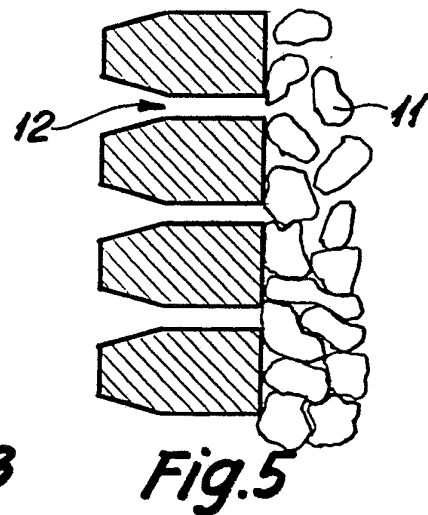
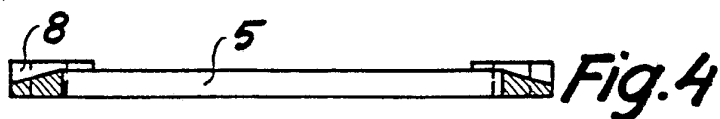
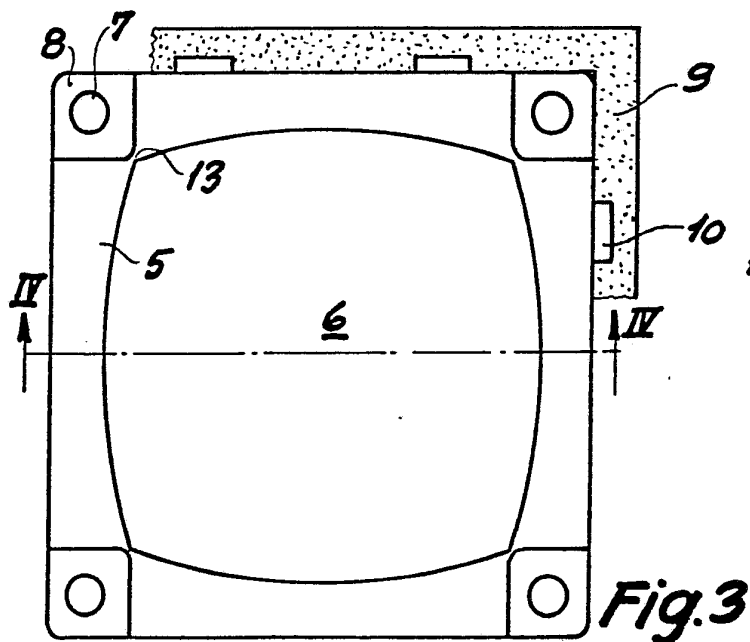
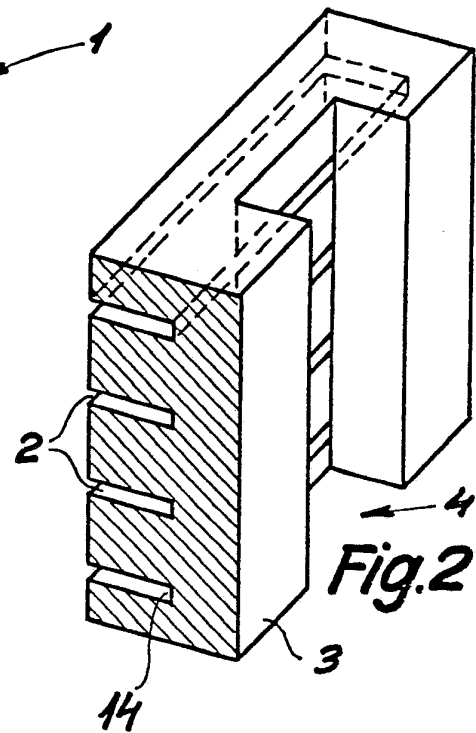
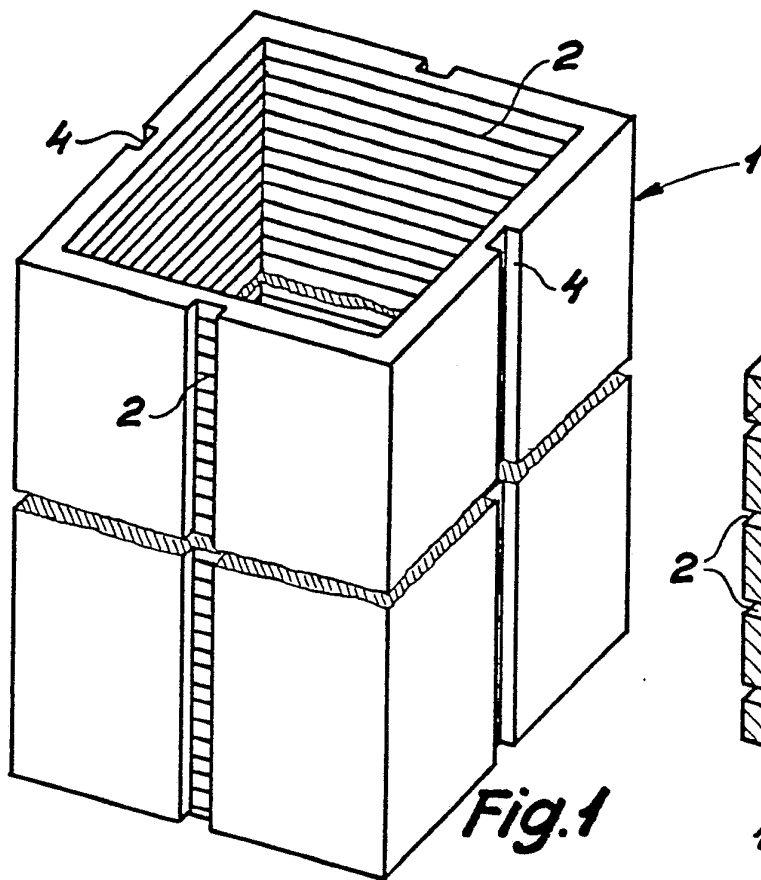
an outer jacket (9) with longitudinal channels (10) for draining whey.

6. A cheese mould according to claim 5, c h a r a c -
t e r i z e d in that at least the outer jacket (9)
5 is heat insulating.

7. A cheese mould according to claim 1, c h a r a c -
t e r i z e d in that the mould is made of plastics,
wood or a similar heat insulating material.

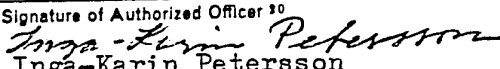


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INTERNATIONAL SEARCH REPORT

International Application No PCT/DK83/00019

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ³		
According to International Patent Classification (IPC) or to both National Classification and IPC		
A 01 J 25/13, 25/11		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁴		
Classification System	Classification Symbols	
IPC 3	A 01 J 25/10, 25/11, 25/12, 25/13	
US C1	426:36, 582	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁵		
SE, FI, DK, NO classes as above		
III. DOCUMENTS CONSIDERED TO BE RELEVANT ¹⁴		
Category ⁸	Citation of Document, ¹⁶ with Indication, where appropriate, of the relevant passages ¹⁷	Relevant to Claim No. ¹⁸
A	DE, A1, 2 113 312 (C LENZ) 12 October 1972 see fig. 2 and 3	1 - 7
A	FR, A1, 2 233 929 (G LEZIER) 17 January 1975 see fig. 2	1 - 7
A	DK, A, 90 378 (H A ROSSEN) 1 May 1961 see fig. 1	1 - 7
A	SE, B, 365 102 (B FROMAGERIES) 18 March 1974 see fig. 1 and 2 & GB, A, 1 281 510	1 - 7
A	SE, B, 319 040 (H A ROSSEN) 22 December 1969 see fig. 1 and 2 & DE, B2, 1 607 009	1 - 7
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IV. CERTIFICATION		
Date of the Actual Completion of the International Search ¹	Date of Mailing of this International Search Report ²	
1983-04-28	1983-05-06	
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