

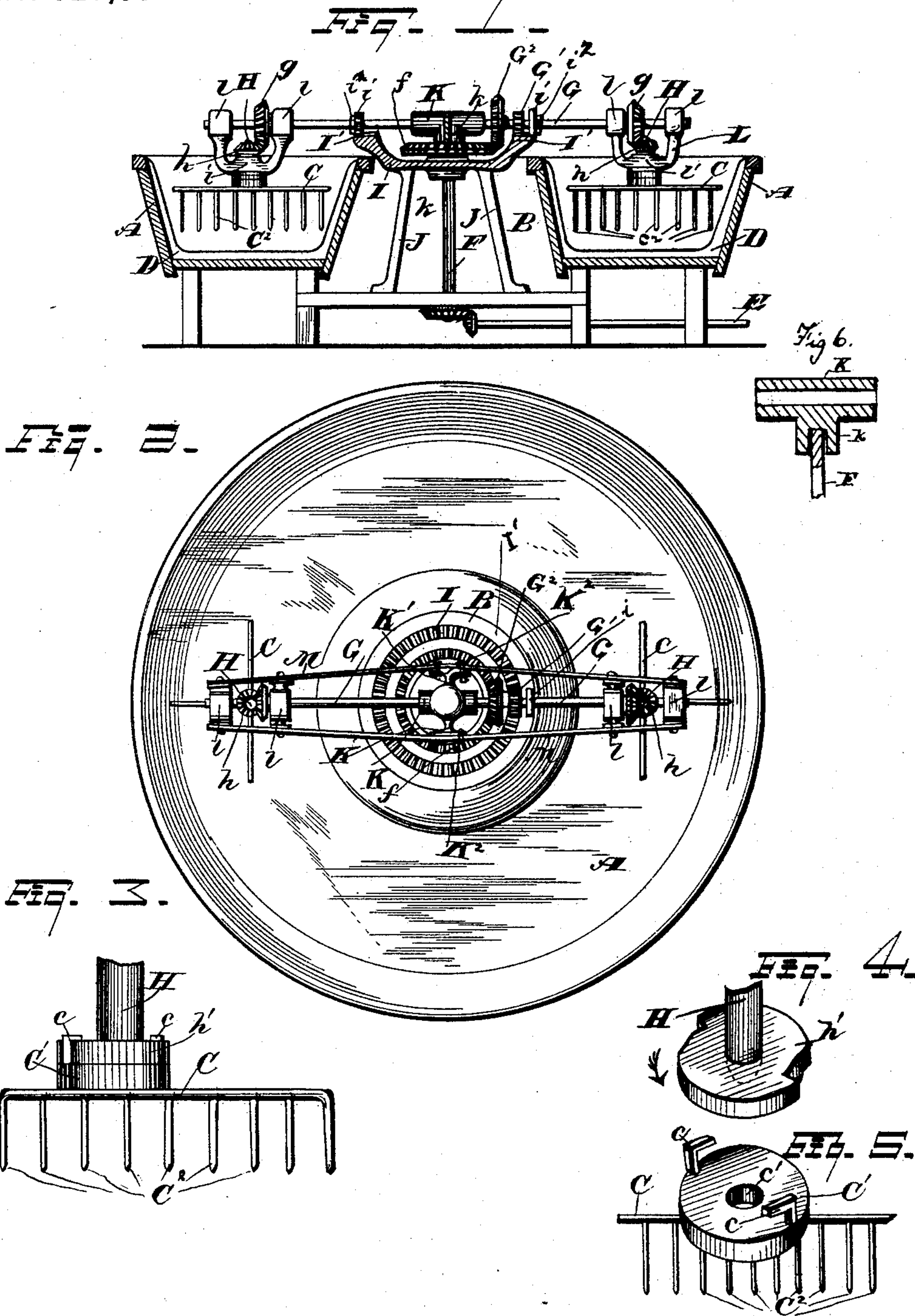
(No Model.)

L. H. SPARKS.

CHEESE VAT.

No. 328,352.

Patented Oct. 13, 1885.



WITNESSES

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LORENZO H. SPARKS, OF TRIUMPH, ASSIGNOR OF ONE-HALF TO DANIEL H. ROE, OF MADISON, OHIO.

CHEESE-VAT.

SPECIFICATION forming part of Letters Patent No. 328,352, dated October 13, 1885.

Application filed July 26, 1884. Serial No. 138,888. (No model.)

To all whom it may concern:

Be it known that I, LORENZO H. SPARKS, of Triumph, in the county of Trumbull and State of Ohio, have invented certain new and useful
5 Improvements in Cheese-Vats; 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 pertains to make and use the same.

10 My invention relates to improvements in cheese-vats, but more especially to an improved agitator and the mechanism for actuating the same, the object being to provide a simple device for securing the agitator to its
15 shaft in such a manner that it may be easily attached or detached, to the end that the agitator may be removed from the cheese-vat for cleaning and other purposes.

A further object is to simplify the mechanism, to the end that it is more convenient, durable, and less in initial cost than devices of this class heretofore in use.

With these objects in view my invention consists in certain features of construction and
25 in combination of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical section through the center of the cheese-vat and agitator. Fig. 2 is a plan view
30 of the same. Fig. 3 is a side view in elevation of a portion of the agitator in position on its driving-shaft. Figs. 4 and 5 are views in perspective showing the mechanism for attaching the agitator to its driving-shaft, and Fig. 6 is
35 a view in vertical section showing the connection between sleeve K and shaft F.

A represents a circular cheese-vat, provided with a central opening, B, of considerable size, and in which is located a portion of the
40 mechanism for actuating the agitators C. The vat is constructed with double walls and bottom, inclosing the chamber D, into which any cooling or heating agent may be introduced.

E is the driving-shaft, that is intergeared
45 with the upright shaft F, that in turn is intergeared with the horizontal shaft G, that transmits motion to the vertical shafts H of the agitators.

I is a stationary bevel-gear, preferably supported on the frame-work J. This gear, that

is of large size, engages the small pinion G' on the shaft G, and by means of which when the shaft G is rotated the shaft and the attached agitators travel around the vat, and by means of the relative sizes of the gear and pinion
5 this movement around the vat is quite slow. The hub of the gear I forms the upper journal-box for the shaft F. The gear f on the shaft F engages the gear G² and revolves the shaft G.

k is a cap or bearing, provided at its lower
6 end with a socket or recess for the reception of the upper end of the shaft F. This cap is simply supported or has a bearing on this shaft, and is free to turn independently of the same, and is provided at its upper end with the
6 horizontal sleeve through which the shaft G passes. The sleeve K is provided with laterally-projecting arms K², to which are secured wooden strips M, which will be hereinafter described.

7 The gear I is provided with an outside annular flange, I', lying in a horizontal plane, and forming a circular track on which travel the rollers i, that are journaled on the shaft G and support the shaft in its movement around
7 the vat. These rollers i are held endwise on the shaft by the collars i².

L are yokes provided with the thimble-boxes l and l'. The shaft G passes through the former, and the vertical shaft H is journaled in
8 the latter. The shaft H is provided with the pinion h, that engages the gear g on the shaft G. The shaft H, below the thimble l', is provided with the disk h', that is notched on the edges, as shown on Fig. 4, to admit the pas-
8 sage of the hooks c of disk C', to which the agitator is secured. The shaft H extends a short distance below the disk h', as shown in dotted lines, Fig. 4, and enters the central hole, c', in the disk C' and forms a steady-pin for the
loose disk. When the disks are placed in position, as shown in Fig. 3, and the lower disk is turned in the opposite direction from that indicated by the arrow in Fig. 4, the hooks engage the shoulders of the disk h' and hold
the disks together, and as the disk h' revolves in the direction indicated by the arrow the disk C' and the attached agitator are made to revolve also.

When the apparatus is not in motion, the

agitator is quickly detached by turning it a trifle backward, and may be removed from the vat for cleaning, and may as quickly be again secured in position.

The agitator is preferably of wood, and consists of the bar C, that is attached, as aforesaid, to the disk C', and is provided with pendent teeth C², so that the agitator resembles the head of a large rake.

M are wooden strips set edgewise and bolted to the flanges K² and to the sides of the thimble I, and help to support the yokes L and attachments, and prevents the yokes from torsional displacement.

In certain stages in the process of manufacturing cheese the curd requires to be agitated and broken and kept in small pieces. At such times the apparatus hereinbefore described is set in motion. The shaft G, with the agitators, sweep slowly around the vat, while the agitators revolve on the respective axis at the required speed, that is attained by the comparative sizes of the gear g and the engaging-pinion H. The curd by the action of the agitators is kept broken and well stirred during the cooking process.

The mechanism is simple, durable, and effective, and can be manufactured at a much less initial cost than devices of this class that have heretofore been in use.

When preferred, as, for instance, in small cheese-vats, one agitator alone can be used, and in such cases the left-hand end of the shaft from the sleeve K might be dispensed with. The two agitators are preferable for the reason that they balance each other, and can be operated at a much slower speed than would be required with one agitator.

I am aware that it is not new to journal horizontally-rotating agitators in an arm or frame carried by a shaft located within a vat or tub; also, that it is not broadly new to provide a vat or trough having an open center with an agitator operated by a shaft located within said open center, and, also, that it is old to secure a frame or arms to a vertical shaft and operate the agitators journaled in bearings in said frame or arm by a stationary pinion located within the vat and engaging bevel-gears secured to the agitator-shafts.

What I claim is—

1. The combination, with a cheese-vat consisting, essentially, of a circular trough having in open center, of a vertical shaft located

within said open center, a horizontal shaft 55 located above the vertical shaft, gearing connecting the horizontal shaft and vertical shaft, yokes loosely supported on said horizontal shaft, agitators journaled in said yokes, and gearing connecting the agitators and horizontal shaft, substantially as set forth. 60

2. The combination, with a cheese-vat consisting, essentially, of a circular trough having an open center, of a supporting-frame located within the said open center, a stationary bevel-gear secured to the frame, a vertical shaft, a horizontal shaft located above the vertical shaft, a pinion secured to the vertical shaft and meshing with a pinion on the horizontal shaft, and a pinion on the horizontal shaft 70 meshing with stationary bevel-gear on the supporting-frame, and horizontally-rotating agitators secured to the ends of the horizontal shaft, substantially as set forth.

3. The combination, with a cheese-vat and a supporting-frame, of a vertical shaft, a horizontal shaft connected with said vertical shaft, carrying-yokes mounted on the horizontal shaft, wooden strips or braces secured to the bearings supporting the horizontal shaft and 80 to the yokes, and horizontally-rotating agitators journaled in said yokes, substantially as set forth.

4. The combination, with a cheese-vat provided with a circular trough and an open center, of a supporting-frame located in said open center, a vertical shaft, a cap adapted to embrace and revolve on the shaft, a horizontal shaft journaled in said cap, gearing connecting said horizontal and vertical shafts, yokes 90 mounted on the horizontal shafts, and agitators journaled in the yokes, and each provided with a pinion meshing with a similar pinion on said horizontal shaft, substantially as set forth.

5. The combination, with the agitators secured to the disks C', and provided with the hooks c, of the disks H, provided with the notch h' and mounted on the shafts H, the ends of which protrude and form steady-pins 100 for the lower disks, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 8th day of July, 1884.

LORENZO H. SPARKS.

Witnesses:

DAVID BARNES,
D. H. ROE.