T. CHRISTOFFEL.

CHEESE HANDLING APPARATUS.

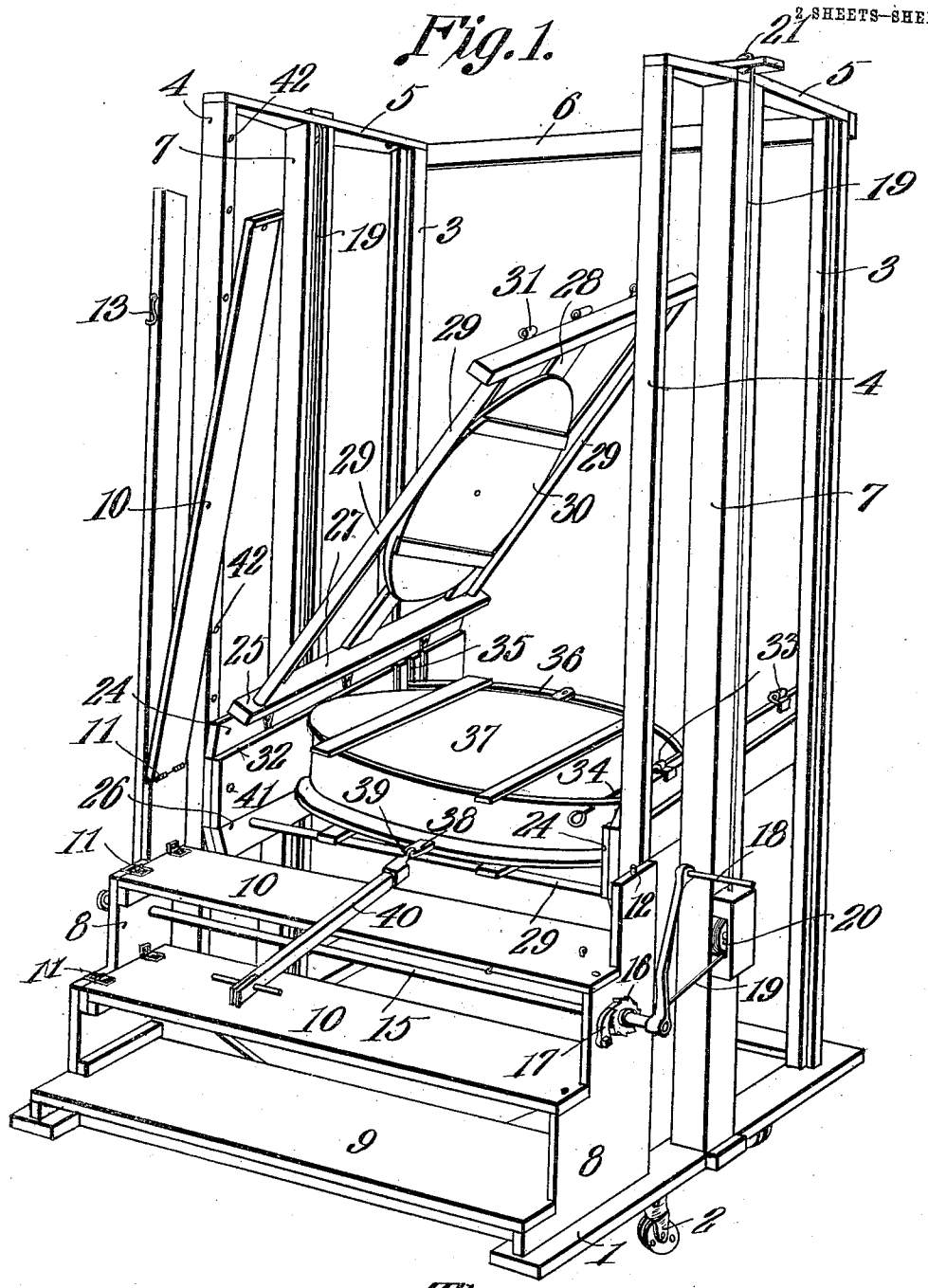
APPLICATION FILED NOV. 16, 1910.

981,381.

Patented Jan. 10, 1911.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

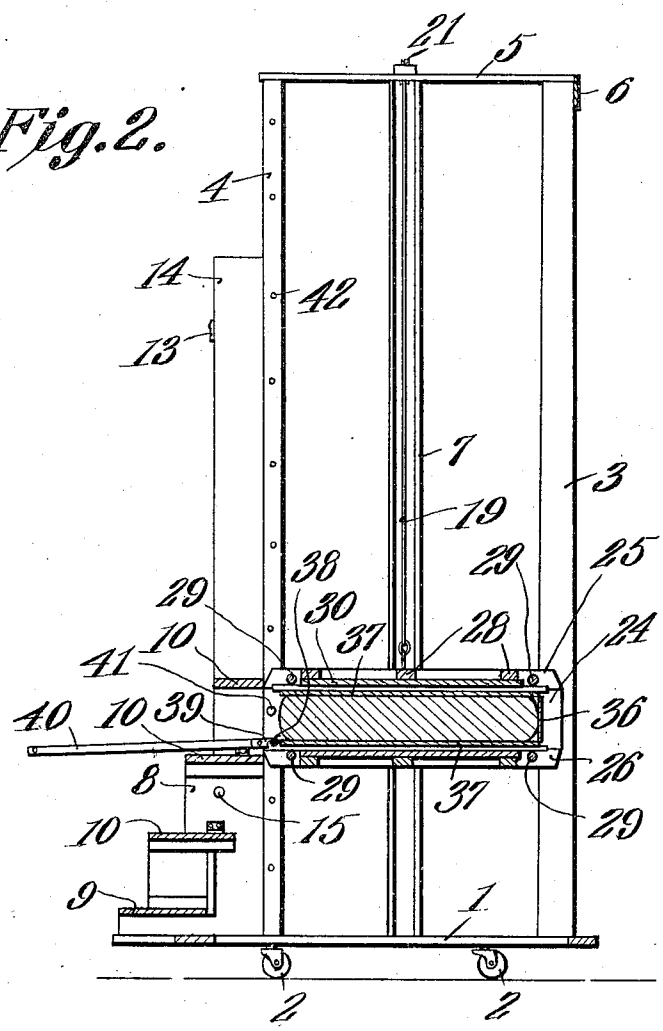
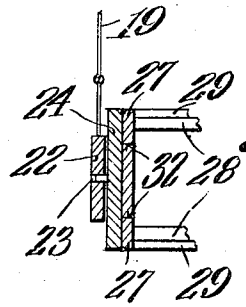


Fig. 3.



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UNITED STATES PATENT OFFICE.

THOMAS CHRISTOFFEL, OF MONROE, WISCONSIN.

CHEESE-HANDLING APPARATUS.

981,381. Specification of Letters Patent. **Patented Jan. 10, 1911.**

Application filed November 16, 1910. Serial No. 592,745.

To all whom it may concern:

Be it known that I, THOMAS CHRISTOFFEL, a citizen of Switzerland, residing at Monroe, in the county of Green and State of Wisconsin, have invented a new and useful Cheese-Handling Apparatus, of which the following is a specification.

This invention relates to apparatus for handling cheese, the same being particularly designed for turning cheese and for moving it to a desired elevation.

Because of the great weight of cheeses, and particularly Swiss cheeses, it has heretofore been difficult to turn and to move them from shelf to shelf during the curing process.

One of the objects of the present invention is to provide apparatus which may be readily moved from place to place and which constitutes means for efficiently turning the cheeses and moving them to any shelves desired, said apparatus being provided with means whereby the cheese carried thereby can be rotated when it is desired to salt and brush it.

With these and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings Figure 1 is a perspective view of the apparatus constituting the present invention, the top frame and its turn table being raised from the cheese. Fig. 2 is a central vertical longitudinal section through the apparatus, a cheese being shown held within the tumbler portion of the apparatus. Fig. 3 is a vertical section through the middle portion of one side of the tumbler.

Referring to the figures by characters of reference, 1 designates a truck frame mounted on casters 2 or the like, this frame being provided with corner posts 3 and 4 which are perpendicular to the frame 1 and are connected, at their upper ends, by side strips 5 and a back strip 6. A longitudinally channeled guide member 7 is interposed between the posts 3 and 4 and is secured at its ends to the side strips 5 and the sides of the frame 1, these channeled members being parallel with the posts and equidistant from them.

The truck frame 1 extends beyond the corner post 4 and the sides of this projecting portion carry side supports 8 to which is secured the lower tread 9 of a step. This tread is fixed relative to its support but located above it are additional treads 10 each of which is hingedly connected to one of the supports, as indicated at 11, there being centering pins upon the other support, as shown at 12, for engaging the free ends of the treads to hold them against displacement while in use. One or more of these hinged treads can be swung upwardly when not in use and, when thus elevated, may be held by a hook 13 or the like carried by a standard 14 mounted on the frame 1.

A shaft 15 is journaled within the supporting members 8 and has a ratchet wheel secured to it and normally engaged by a dog 17 which serves to prevent the shaft, under ordinary conditions, from rotating in one direction. A crank 18 or the like is attached to one end of the shaft and by means thereof said shaft may be rotated in the other direction. Ropes 19 or the like are attached to the two end portions of the shaft and are extended under guide sheaves 20 mounted upon the lower portions of the channeled members 7 and extend upwardly over guide sheaves 21 mounted on the upper end portions of said members 7. These flexible members 19 then extend downwardly within the channels in the members 7 and are attached to blocks 22 slidable within the channeled members 7. Each of these blocks constitutes the bearing of a trunnion 23 extending from a head 24. One of these heads has frames 25 and 26 hingedly connected to it, each frame including side strips 27, cross strips 28, and rollers 29 which are journaled within the side strips. A circular table 30 is mounted for rotation upon one of the strips 28 and is arranged between the rollers 29 and suitable roller bearings (not shown) may be provided to facilitate the rotation of this table upon the strips 28. Both of the frames have fastener members 31 attached to the free sides thereof, these members, in the present instance, being in the form of eyes. Shoulders 32 are formed longitudinally of the inner faces of the heads 24 and constitute seats for the side strips 25 of the holding frames. When these frames are

resting on the seats, the eyes 31 are located close to corresponding eyes 33 arranged on one of the heads 24, all of the eyes 31 and 32 being arranged to receive one or more locking pins 34. It is to be understood, of course, that other means than those shown and described may be employed for securing the holding frames 25 and 26 to the heads 24.

The inner face of each of the heads 24 has vertical grooves 35 adjacent one end, these grooves being adapted to receive the end portions of a curved backing strip 36 which is adapted to fit close to the cheese carried by the apparatus. By utilizing a series of grooves in each head, the said strips can be adjusted toward or away from the center of the tumbler formed by the heads and the connections therebetween.

Two circular heads or covers 37 are used in connection with the apparatus, each of these heads having one or more loops 38 outstanding from its periphery and adapted to be engaged by a hook 39 projecting from one end of a bar 40.

When it is desired to remove a cheese from one shelf, turn it, and then deposit it upon another shelf, the apparatus is pushed to a position where the corner posts 3 are supported close to but adjacent opposite portions of the cheese. By means of shaft 15 and crank 18, the flexible members 19 can be wound on or unwound from the shaft so as to bring the heads 24 into position with the lower holding frame 26 substantially flush with the shelf on which the cheese is located. Pins 41 can then be inserted through the heads and into recesses 42 alining therewith in the corner posts 4. The heads will thus be held against rotation. Hook 39 is placed in engagement with one of the loops 38 extending from the head or cover on which the cheese rests and, by pulling on the bar 40, the said head or cover 30 with the cheese thereon, can be drawn forward onto the lower frame 26. If the cheese is located on a shelf which is not readily accessible from the floor, one or more of the step treads 10 can be swung downwardly into engagement with centering pins 12. After the cheese has been placed on the lower frame 26, the upper frame 25 may be swung to closed position and locked. By then withdrawing pins 41 from engagement with the corner posts 4, the two heads 24 and the frames connecting them, can be given a one-half revolution so as to invert the cheese. The curved backing strip 36 serves to support the cheese and prevent it from slipping from between the two heads or covers during this turning operation. After the cheese has been turned in this manner, the heads can be raised or lowered until the cheese is brought into position to slide onto the selected shelf. Before depositing the cheese upon the shelf, it can be salted and brushed and, as the cheese is mounted on the turn table 30, it can be rotated so as to bring all portions thereof into position where they can be easily reached.

What is claimed is:

1. Cheese handling apparatus including a portable structure, a tumbler carried thereby, and means for raising and lowering the tumbler within the structure.

2. Cheese handling apparatus including a portable structure, a tumbler, an adjustable cheese retaining device carried by the tumbler and shiftable close to the periphery of a cheese upon the tumbler, and movable holding devices coöperating with the cheese retaining device to hold said cheese against displacement during the turning thereof.

3. Cheese handling apparatus including a portable structure, and a tumbler slidably mounted therein, said tumbler including heads, cheese holding members connecting the heads, and a retaining device interposed between said members and the heads.

4. A cheese handling apparatus including a portable frame, a tumbler slidably mounted therein, said tumbler including heads mounted for rotation, cheese holding members connecting the heads, and a retaining device interposed between said members and adjustably engaging the heads.

5. Apparatus of the class described including a portable structure, and a tumbler slidably mounted therein, said tumbler including heads mounted for rotation, cheese holding members connecting the heads, and a turn table carried by each of said members.

6. Apparatus of the class described including a portable structure, and a tumbler slidably mounted therein, said tumbler including heads mounted for rotation, cheese holding members hingedly connected to one of the heads, means for detachably securing said members to the other head, antifriction devices carried by said members, and a turn table upon each member and between said devices.

7. Apparatus of the class described including a wheel supported structure, a tumbler slidably mounted therein and including heads, cheese holding members connecting the heads, and a retaining device interposed between said members and the heads, and means upon said structure for raising and lowering the tumbler within the structure.

8. Apparatus of the class described including a wheel supported structure, slides carried thereby, means for simultaneously raising or lowering the slides, tumbler heads mounted for rotation relative to the slides, cheese holding members connecting the heads, and means for securing said members against movement relative to the heads.

9. Apparatus of the class described including a wheel supported structure, a tumbler including slides mounted within said

structure, heads mounted for rotation relative to, and carried by the slides, cheese holding members hingedly connected to one of the heads, means for securing said members to the other head, and a cheese retaining device interposed between said members and adjustably engaging the heads.

10. Apparatus of the class described including a portable structure, a tumbler mounted for rotation therein, means for raising and lowering the tumbler within the structure, and steps upon the structure and leading to the tumbler.

11. Apparatus of the class described including a portable structure, a tumbler slidably and revolubly mounted therein, means for locking the tumbler against movement relative to the structure, and a turn table carried by the tumbler.

12. Cheese handling apparatus including heads mounted for rotation, cheese holding members movable relative to the heads, means for locking said members against such movement, and a turn table carried by one of the members.

13. Apparatus of the class described including a truck frame, upstanding guide members, slidable elements carried by said members, means for raising and lowering said elements, and a tumbler interposed between and mounted to rotate relative to the slidable elements, said tumbler including heads, cheese holding members movably connected to the heads, means for locking said members against such relative movement, and a cheese retaining device interposed between said members and the heads.

14. Cheese handling apparatus including a portable structure, a turn table, means for raising and lowering the turn table, and means for holding the turn table for movement about an axis perpendicular to its axis of rotation.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

THOMAS CHRISTOFFEL.

Witnesses:

CLEMENS SCHWABE,

H. G. LEUENBERGER.