Dec. 23, 1952 R. SLAMA 2,622,724

CONTINUOUS PROCESS ROTARY APPARATUS

Filed Dec. 16, 1950 2 SHEETS—SHEET 1

Fig. 1

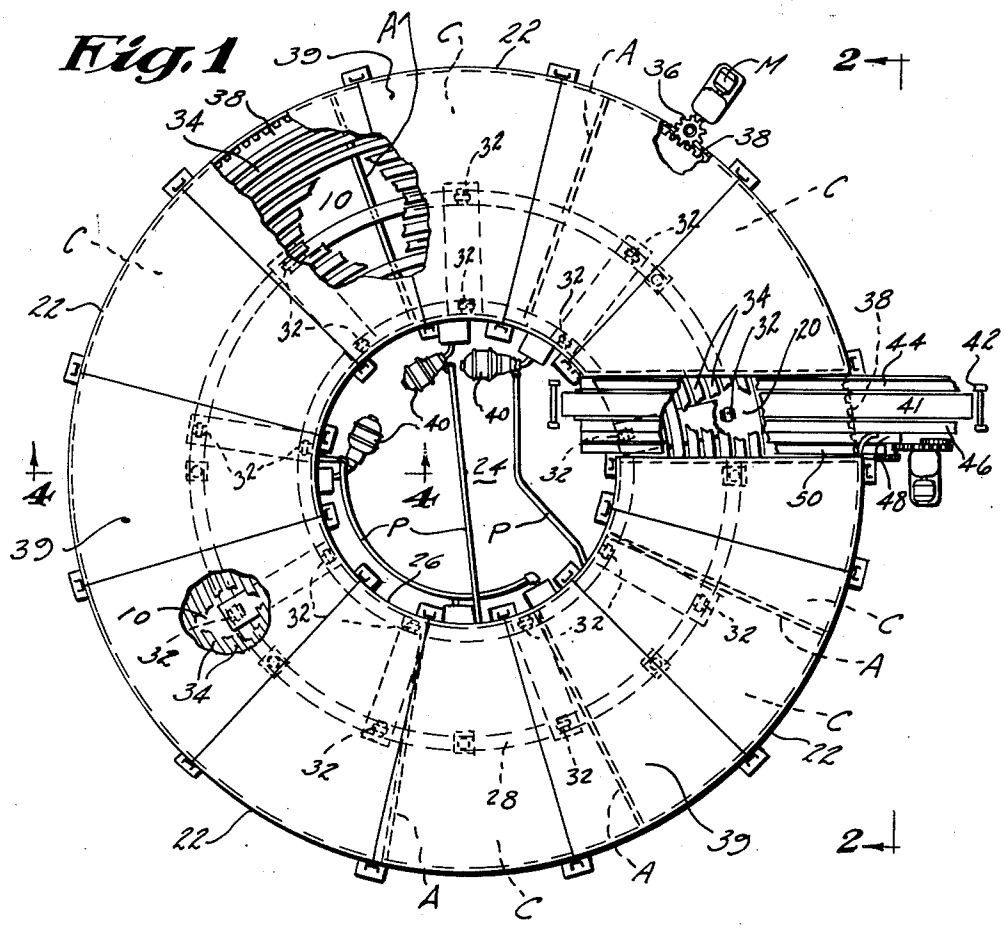
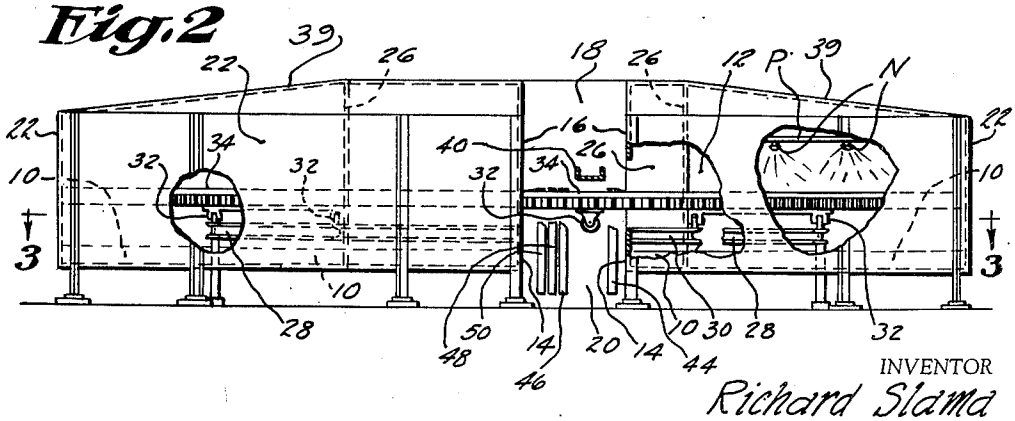


Fig. 2



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Fig. 3

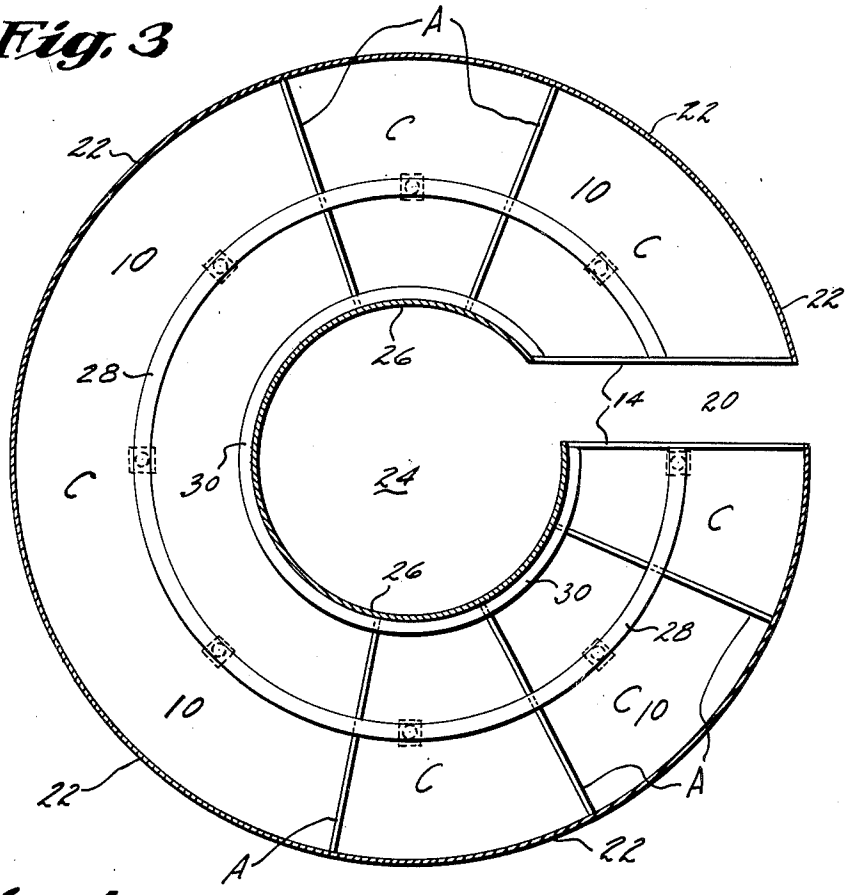
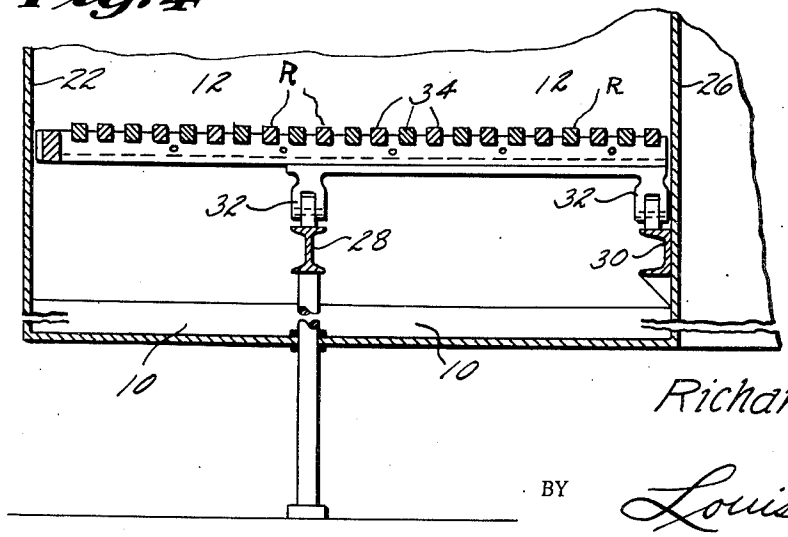



Fig. 4




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## CONTINUOUS PROCESS ROTARY APPARATUS

Richard Slama, Philadelphia, Pa.

Application December 16, 1950, Serial No. 201,189

1 Claim. (Cl. 198—209)

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My invention relates to a rotary apparatus adapted for continuous treatment or processing of various materials.

One object of the invention is to produce an improved apparatus of this type.

A further object is to produce an improved apparatus of the type set forth which is so constructed that all the parts which may need servicing are readily accessible without extensive dismantling and in many cases without interrupting the operation of the apparatus.

Fig. 1 is a diagrammatic top plan of a continuous process apparatus embodying my invention, certain parts being omitted and other parts being broken away more clearly to show details of construction.

Fig. 2 is a diagrammatic sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a diagrammatic sectional view taken on line 3—3 on Fig. 2.

Fig. 4 is an enlarged, fragmentary, sectional view taken on line 4—4 on Fig. 1.

The apparatus shown includes a lower tank 10 for receiving the heat transferring medium, such as water, and an upper chamber 12 for receiving the material to be treated. The tank 10 and the upper chamber 12 are generally circular but they are not continuous. In other words they terminate in spaced vertical end walls 14 and 16 which define therebetween an upper passage 18 and a lower passage 20 (Figs. 2 and 3). The lower passage 20 extends completely through the width of the tank or from the exterior vertical wall 22 thereof into the central space 24 space which is defined by the inner vertical wall 26 of the tank.

The tank is divided, by means of suitable partitions A into a plurality of compartments C for storing quantities of water, or other heat exchanger, at selected, different temperatures. Slightly above tank 10, I provide annular, spaced tracks 28 and 30 over which ride a plurality of circumferentially spaced rollers 32 carried by the underside of a rotary table 34 which forms the bottom wall of the upper chamber 12.

The rotary table is preferably formed of spaced concentric rings R adapted to support the material to be treated. The table is rotated by a pinion 36 which is driven by motor M and which engages a ring gear 38 on the periphery of the table. Above the table are a plurality of nozzles N which are connected by pipes P to pumps 40 and to the various compartments C. The nozzles N are adapted to subject the material passing thereunder to treatment by the liquid contained in the particular compartment to which

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the nozzle is connected. As will be seen from Fig. 2 the upper chamber 12 is preferably provided with a roof or cover 39.

The floor of the upper passage 18 provides a catwalk 41 which affords access to the top of rotary table 30 as well as to the central space 24. Access to the catwalk may be had by means of ladder 42. To one side of the catwalk, and extending parallel thereto is a feed belt 44 for introducing the material to be treated into chamber 12, and to the other side of the catwalk are three delivery belts 46, 48 and 50 for conducting material out of the chamber.

The feed and delivery belts are driven at any desired speeds, by any suitable means, not shown.

The manner in which the various bodies of water are maintained at the desired temperatures, and the manner in which the water from the various compartments is transmitted to the respective nozzles may be conventional and are, hence, not shown nor described in detail. It is sufficient to point out that pumps 40 are connected by pipes P to the compartments C and to the various nozzles N.

An apparatus, such as that described, can be very large. In actual practice it is large enough to support from twelve to sixteen thousand six or eight ounce containers and is adapted to complete its cycle of operation in about one hour depending on the particular type of operation to be performed. Furthermore it is intended for continuous, as distinguished from batch processing. Therefore an interruption in the operation, or the complete unloading of the apparatus can be very disadvantageous not only because of time and labor lost but because, at any given time during its operation, containers will be in various stages of processing or treatment and, in many cases, interruption of the processing operation can result in partial or in total spoilage of the material. Still further, the rollers 32 require periodical greasing and replacement or repair. Also, if the containers being processed are made of glass, and if one of them should break, it is necessary to remove the pieces as otherwise other containers may break also. Again, interruption of the operation while broken pieces of glass are removed, can be costly. By providing lower passage 20, all of the foregoing difficulties are fully overcome because an operator can stand in passage 20 and when a roller 32 to be serviced is overhead he can grease, tighten the bearing, etc. If the bearing must be replaced, the table 34 can be arrested momentarily while one roller is knocked out and the other slipped in its place.

This interruption is short and causes no appreciable loss of time or labor and without appreciable effect on the processing operation as would be the case if twelve or more thousand containers must be removed or if the operation is interrupted while one portion or another of the walls of the apparatus is dismantled while the repair is being made. The same is true when a container breaks because, by means of a poker or the like, the operator can remove the pieces from between the rings forming the rotary table, while the table is moving overhead, without stoppage and without unloading.

What I claim is:

An apparatus of the character stated, including a support, an annular, non-continuous rail fixed on said support and having its ends spaced apart a predetermined distance, an annular table, spaced rollers carried by the underside of said table and riding on said rail, an upper, annular, non-continuous wall structure defining an upper central non-continuous open-top well and cooperating with the upper side of said table to form



an upper chamber, a lower, annular, non-continuous wall structure defining a lower central non-continuous well forming a continuation of said upper well and cooperating with the under side of said table to form a lower chamber enclosing said rail and said rollers the ends of said upper and lower wall structures being spaced apart and the space between the ends of said wall structures being in registration with the space between the ends of said rail.

RICHARD SLAMA.


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