Dec. 19, 1933. C. W. GALE 1,940,492

BARREL ROTATING APPARATUS

Filed Sept. 17, 1932 2 Sheets-Sheet 1

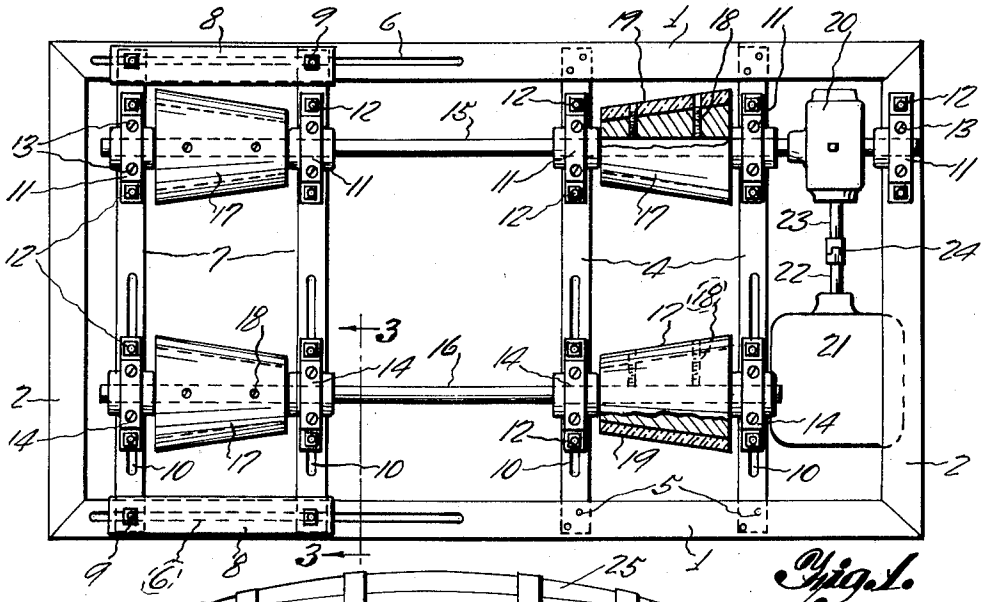


Fig. 1.

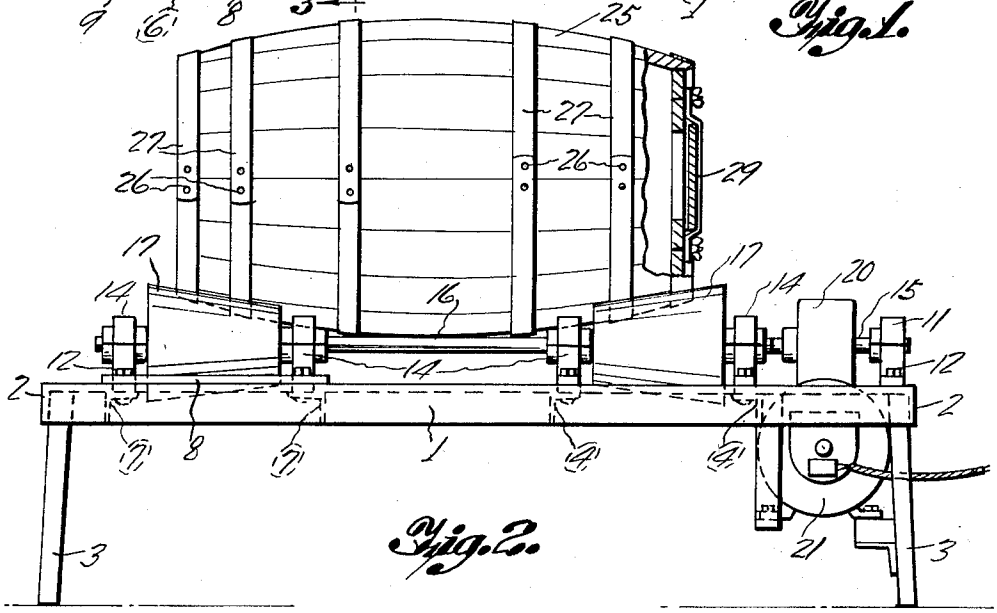


Fig. 2.

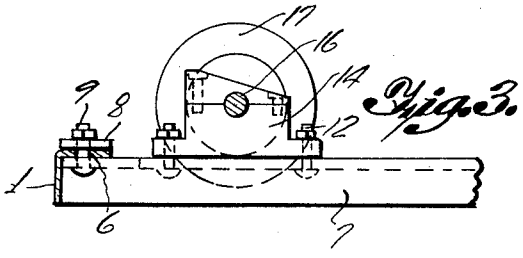


Fig. 3.

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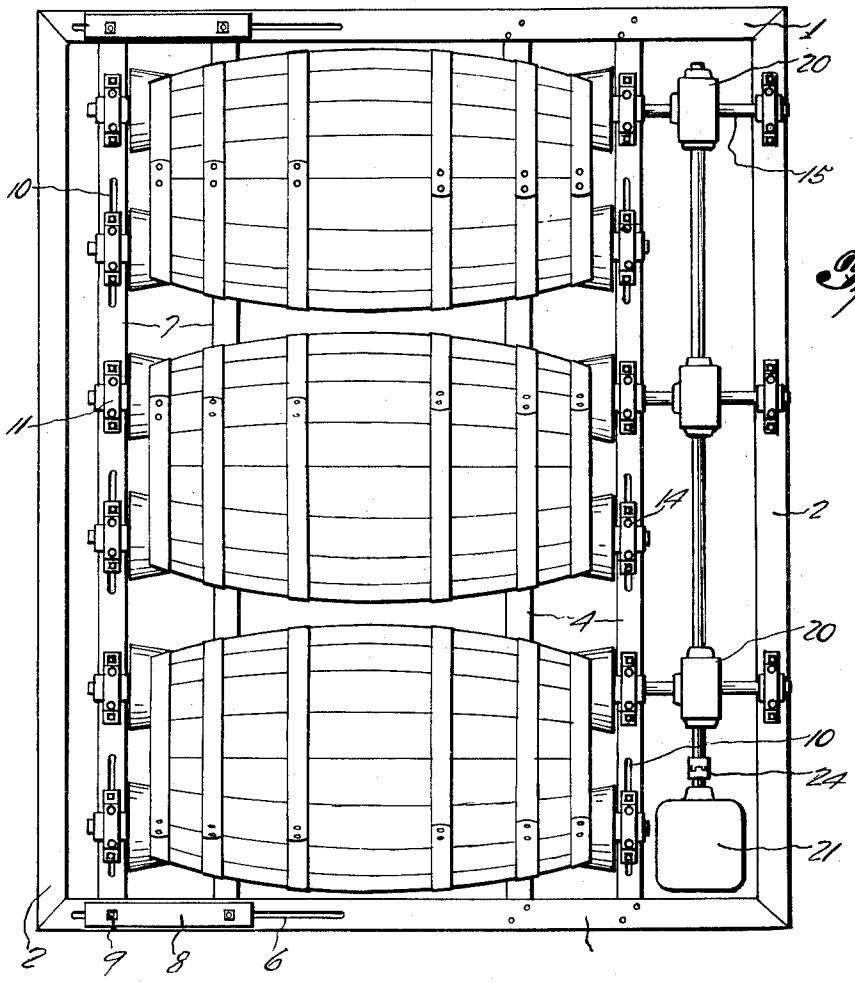


Fig. 4.

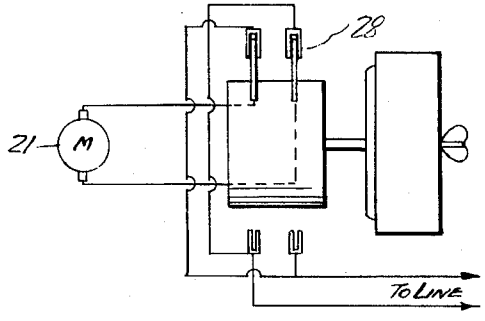


Fig. 5.

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UNITED STATES PATENT OFFICE

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BARREL ROTATING APPARATUS

Charles W. Gale, Salisbury, Md.

Application September 17, 1932
Serial No. 633,582

2 Claims. (Cl. 259—81)

This invention relates to devices for rotating barrels for any desired purposes, such as for churning milk into butter, or for tumbling and finishing metal parts, or for mixing compounds.

One object of the invention is to provide a relatively simple and practical apparatus upon which barrels of various sizes may be mounted and rotated for the purposes suggested.

Another object is to provide a cradle including a supporting frame, and rollers mounted in a rectangular formation thereupon, with means for rotating at least one of the rollers, whereby a barrel positioned or laid horizontally upon the rollers, will be rotated for the accomplishment of the desired purpose.

Another object is to provide a frame having rollers adjustably mounted in spaced relation therein in a rectangular formation, thereby constituting a cradle within which a barrel may be laid for rotating same, and means for rotating the said barrel.

Another object is to provide a battery of barrel receiving cradles, each including a set of rollers arranged in a suitably spaced formation for the reception of a barrel, means for varying distances between the rollers so as to accommodate barrels of various sizes, and means for rotating the said barrels.

With these and such other and further objects and advantages in view as may be disclosed in the following specification and accompanying drawings, attention is now directed to the said drawings as exemplifying a practical embodiment of the invention, and wherein

Figure 1 is a plan view of one of the barrel cradles, certain of the rollers thereof being shown partly in section for the purpose of showing the manner of construction.

Figure 2 is a side elevation of a barrel cradle, showing a barrel operatively mounted therein.

Figure 3 is an enlarged cross section along the line 3—3 in Figure 1.

Figure 4 is a plan view of an assembly or battery of the barrel cradles.

Figure 5 is a diagrammatic detail of a form of automatic switch or time switch, for reversing the direction of rotation at stated intervals.

The invention comprises an elongated, rectangular frame made up of the side bars 1, connecting end bars 2 and legs 3. Across one end of this frame are extended in parallel relation two spaced roller supporting bars 4 which are rigidly anchored at their ends, as shown at 5, to the said side bars 1. The opposite end portions of the side bars are longitudinally slotted, as shown at 6, and the ends of two complemental roller supporting bars 7 are adjustably associated with the said slotted portions of the bars 1 by means of metal connecting straps 8 which are longitudinally positioned upon the bars 1 over the slots 6, bolts 9 then rigidly connecting the ends of the straps 8 and of the bars 7, through the said slots. The bars comprising the pairs of roller supporting bars 4 and 7 are spaced equally and uniformly apart, and all of these bars are longitudinally slotted at one end, at one side of the frame, as shown at 10.

A set of five pillow or journal blocks 11 are bolted at 12 to the upper sides of the bars 4 and 7 and at one of the end bars 2, at the side of the frame opposite to the slots 10 of the said bars 4 and 7, in perfect alignment. These blocks are of the conventional two-piece type, the parts thereof being secured together by screws 13. Similar pillow blocks 14 are adjustably mounted upon the slotted ends of the bars 4 and 7, being secured in place by passing the bolts 12 down through the slots 10, whereby the blocks 14 may be readily locked in any adjusted position along the slots 10. A drive shaft 15 is journaled through the blocks 11, and an idler shaft 16 is journaled through the blocks 14. Suitable rollers 17 are keyed at 18 to ends of these shafts, the said rollers being located between the bars making up the pairs 4 and 7. As here shown, these rollers are conical in form and are provided with shells or outer coverings 19 of rubber or some other suitably elastic or resilient material for a purpose later to be pointed out. A speed reducer 20 is mounted upon the outer end of the drive shaft 15, and an electric motor 21 is mounted in the frame oppositely to the speed reducer, their respective shafts 22 and 23 being joined, as shown at 24.

In operation, the rollers 17 are adjusted in the two rectilinear directions provided for by the slotted bars 1, 4 and 7, in manner already pointed out, and so as to best accommodate the barrel 25, which is then mounted within the cradle thus formed by the four rollers and as shown in Figure 2. The motor 21 being then energized, the drive shaft 15 is in turn rotated, the result being to rotate the barrel 25 through frictional contact of the rollers 17 of the drive shaft with the sides of the barrel. In this process the resilient shells 19 of the rollers not only accord a positive and strong frictional contact with the barrel, but also yield to the rivet heads 26 of the hoops 27, thereby affording a smooth, even and uniform rotation to the barrel.

As shown in Figure 3, a battery comprising a plurality of the cradles may be constructed and operated from one motor. A time switch or reversing switch 28 may be incorporated on the motor for reversing the direction of rotation of the barrel, if such arrangement is found desirable.

The barrels 25 are, of course, provided with any desired form of covered opening, as indicated at 29, for the insertion and removal of the material to be treated. No invention is claimed here in respect of such matter.

While Figure 3 shows a battery of three barrels, it is obvious that as many barrels may be assembled in battery formation as may be desired. It is also obvious that any form of engine or driving power may be used in lieu of the electric motor here shown. If desired, any suitable or conventional mechanism can be incorporated for causing the barrels to oscillate back and forth, in lieu of the continuous rotation.

While I have herein described a certain specific manner and method of constructing and assembling the elements of my invention, it is understood that I may vary from the same in minor details, not departing from the spirit of my invention, so as best to construct a practical device for the purpose intended, as defined in the appended claims.

I claim:

1. In a device of the kind described, a rectangular frame including side and end bars, a pair of spaced roller supporting bars extended in parallel relation across one end of the frame, a complemental pair of roller supporting bars adjustably mounted across the opposite side or end of the frame, so as to be movable towards or from the first named pair of roller supporting bars, journal blocks permanently mounted in alignment at one end of the said roller supporting bars, other journal blocks adjustably mounted upon the opposite ends of the said roller supporting bars so as to be movable towards or from the permanently mounted journal blocks, rollers journaled between the said journal blocks, and means for rotating the barrel placed upon the said rollers.

2. In a device of the kind described, a rectangular frame including side and end bars, the former being longitudinally slotted at one end of the frame, a pair of roller supporting bars linked together in parallel spaced relation and so adjustably mounted at their ends in said slots of the frame side bars, a complemental pair of roller supporting bars fixedly mounted across the opposite end of the frame, all of the said roller supporting bars being slotted longitudinally at one end, journal blocks adjustably mounted at the slotted ends of the said roller supporting bars, shafts journaled through the said journal blocks, and rollers fixedly mounted upon the said shafts between the pairs of roller supporting bars.

CHARLES W. GALE.