Oct. 27, 1931. H. E. HALL 1,829,089

MIXER

Filed Sept. 25, 1930 3 Sheets-Sheet 1

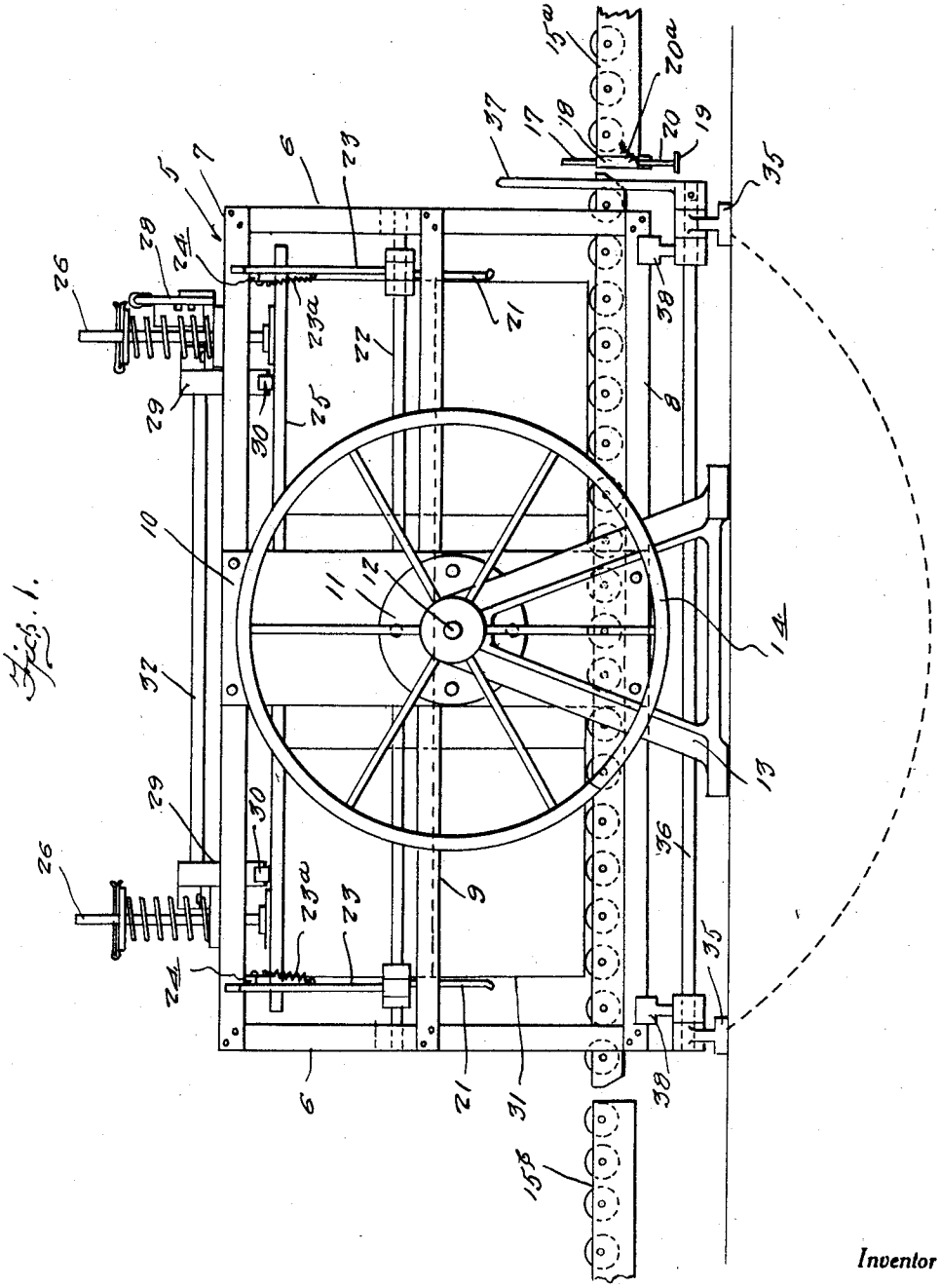


Fig. 1.

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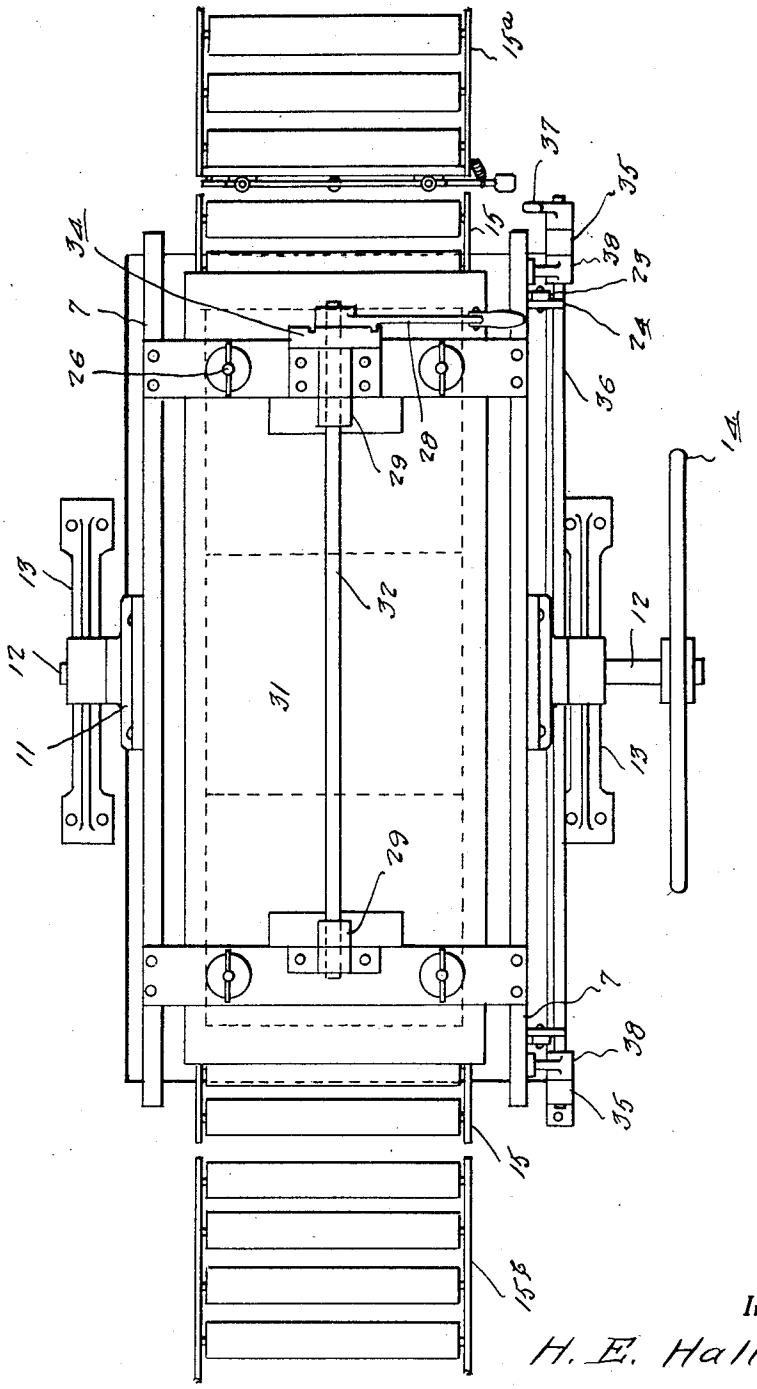


Fig. 2.

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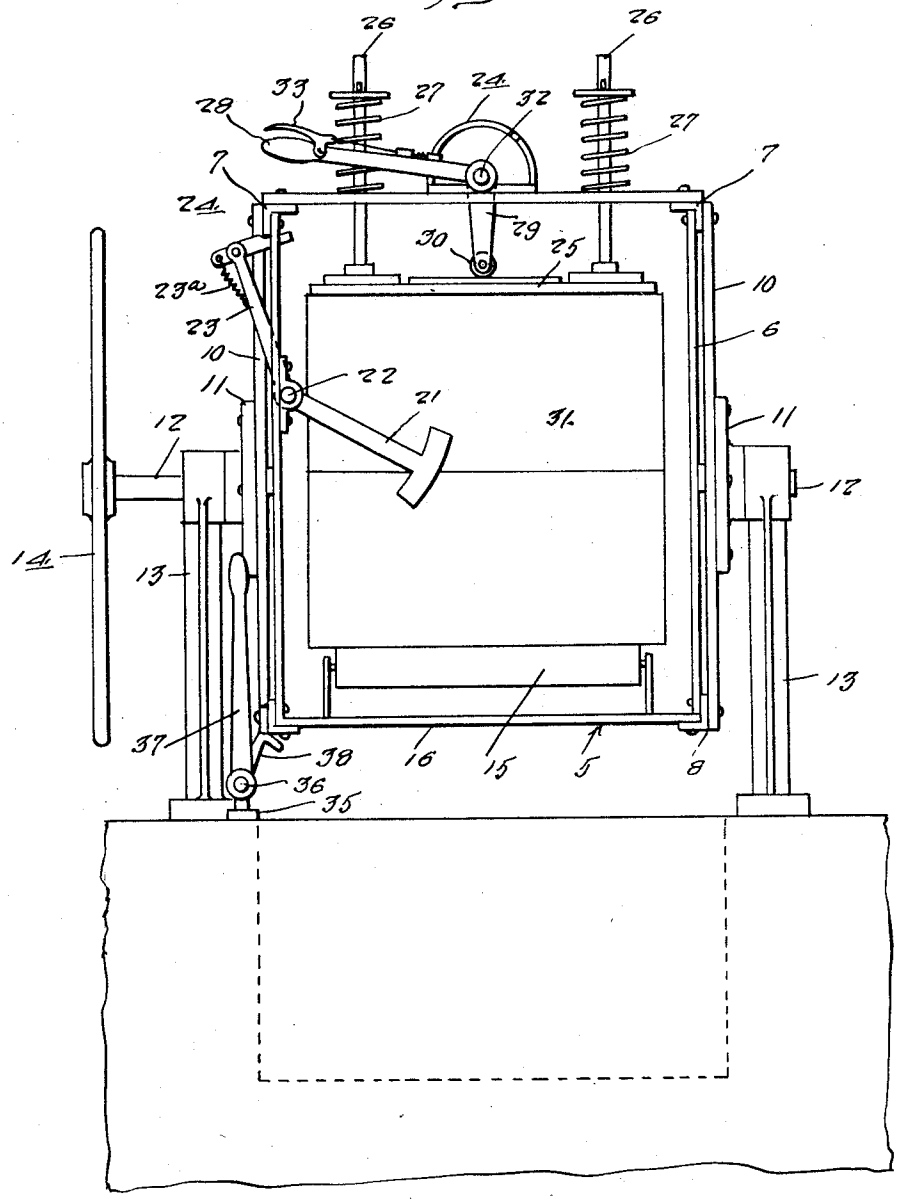
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Filed Sept. 25 1930 3 Sheets-Sheet 3

Fig. 3.



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Patented Oct. 27, 1931 1,829,089

UNITED STATES PATENT OFFICE

HERBERT E. HALL, OF RUMFORD, MAINE

MIXER

Application filed September 25, 1930. Serial No. 484,453.

This invention relates generally to mixing machines in which the liquid contents of closed bottles or the like containers, is agitated and mixed, and particularly to a machine of this type which is to be placed in the line of gravity conveyors, and handles cases of bottles or containers, fed into the machine by a conveyor, and more specifically to a machine of this type which is adapted to agitate and mix the liquid contents of the said containers by an operation of rotating the machine about a horizontal axis.

It is an object of this invention to provide a machine of this type which is readily placeable within and cooperable with a line of gravity conveyor, so that the loading and the unloading of the machine is practically automatic, means being provided for securely retaining the cases of bottles or the like during the rotation of the machine, and providing means for holding the cases of bottles or the like on the meeting end of the conveyor, during the rotating operation.

It is also an object of this invention to provide a device of the character described, which comprises new and novel features, which results in a superior and more efficient results, and which is simple and satisfactory in operation, which consists of few and simple and efficiently coordinated parts, and which is capable of being cheaply and quickly manufactured and installed.

These and other objects of the invention, its nature, its composition and arrangement and combination of parts will be readily understood by any one acquainted with the art to which this invention relates upon consulting the following descriptions of the drawings, in which:—

Figure 1 is a general side elevational view showing my complete mixer associated with a gravity conveyor.

Figure 2 is a top view of Figure 1.

Figure 3 is an end view taken from the right of Figure 1.

It is to be definitely understood that I do not desire to limit the application of this invention to the particular modification set out herein to illustrate the principles thereof, and any change or changes may be made in material, structure or arrangement of parts, consistent with the spirit and scope of the invention.

Referring in detail to the drawings, it will be seen that the device consists especially of a frame 5 consisting of flat bars and channel irons suitably riveted or otherwise fastened together to provide vertical corner members 6 and top and bottom members 7 and 8, respectively, and intermediate side members 9. Mounted centrally on each side of the frame and approximately equally spaced from each end member 6 is an elongated vertically disposed plate 10 fastened to the upper and lower members 7 and 8, and the plate carries at its middle portion a trunnion plate 11 from which projects a stub-shaft 12, which is pivoted in a triangular standard 13 one on each side of the frame. Fastened to the outer end of an extension of one of the stub-shafts 12 is a hand wheel 14. It is obvious that with the arrangement stated, turning the handle wheel 14 will result in rotating the frame 5 on the axis of the stub-shafts 12. A section of a conveyor roller generally designated at 15 is placed upon a bottom member 16 of the frame so as to facilitate loading and unloading of the cases of bottles or containers.

In Figure 1 the sections of gravity conveyors are designated 15*a* and 15*b*. The cases are conveyed from the conveyor section 15*a* on to the conveyor section 15 secured in the mixer frame, and after mixing, the cases are discharged from the mixer frame on to the conveyor section 15*b*.

At the end of the conveyor section 15*a* is provided stop means for preventing the cases thereon from leaving the end of said conveyor section 15*a*. This stop means consists of a pair of spring projected pins 17 slidably mounted in a block 18 secured across the end of the conveyor section 15*a*. They are retracted by a foot treadle 19 connected with a lever 20 which is pivoted on the far side of the conveyor section, and the lower ends of the pins 17 have a link connected with the lever 20. The lever 20 is normally held raised by a spring 20*a* for normally maintaining the said stop pins 17 in upwardly projected case retaining position, for preventing the acci-

dental movement of the cases of bottles or the like from the end of the conveyor section, thus preventing accidental interference with the loading or unloading or rotation of the mixer.

On one side of and extending longitudinally of the frame is a bar 22 suitably secured to the frame, on each end of which is an arm 21. These arms are adapted to be projected in the position indicated in Figure 3, for engagement against the outer sides of the cases or the like, to prevent the displacement of a case from the frame in the longitudinal direction during the rotation of the frame. Each arm 21 has an extension 23 to which is connected a spring, latch mechanism 24 which is adapted to engage the under edge of one of the upper side members 7 of the frame 5 to maintain the arm 21 in firmly projected position during the rotation of the frame.

To hold the cases against vertical displacement there is provided an adjustable follower 25 which is mounted in the upper portion of the frame, and is brought to bear firmly on the top of the cases. For retracting the follower 25 during the loading operation, springs 27 are provided coacting with rods 26 arising from the upper side of the follower. For finally compressing the follower 25 against the top of the cases there is provided a cam arrangement consisting of the lever 28 and the arms 29 provided with the rollers 30, the lever and arms being connected to a shaft 32, rotatably supported at the top of the frame so that when the lever 28 is moved, the shaft 32 will be rocked to move the arms 21 into holding or releasing position. Means generally designated 33 and 34 are provided for releasably retaining the lever 28 and hence the cams in adjusted tightened position.

It is obvious that some means must be provided for retaining the mixing frame against oscillation or partial rotation during the loading and unloading operations, and such a structure is provided and pivoted in standards 35, and consisting of a bar 36 running longitudinally under one side of the frame, and rotated by a lever 37 attached to one end. Mounted for rotation with the bar 36 are detents 38 for engaging the bottom edge of the frame so that the same is effectively maintained against longitudinal rotation for loading and unloading purposes, while the said lever is properly positioned.

It is thought to be obvious that when the stop pins 17 are lowered, when the retaining arms 21 are released from their position across the end of the frame, and when the follower 25 is raised out of position, the conveyor, become operative once again, and the cases may be uninterruptedly conveyed from the conveyor section 15*a* across and upon the conveyor section 15 mounted in the frame, and then to the conveyor section 15*b*, thus providing for automatic loading and unloading of the mixer frame, with obvious consequent advantages in the saving of time and labor.

It is thought to be now obvious that I have provided a device of the character described, in which is embodied new and novel principles, and a new combination of parts to produce a result not heretofore achieved in machines of this type, entailing an inconsiderable expense for manufacture and installation and requiring little labor for handling and little additional expense for its operation, and which is simple and easy to maintain, and is cheap to manufacture.

What is claimed is:—

1. A device of the class described comprising a frame supported for rocking movement and adapted to hold a case of bottled goods, a follower carried by the top of the frame for engaging the top of the case, spring means for normally holding the follower in raised position, a shaft journalled in the top of the frame, arms attached to the shaft and having rollers at their lower ends engaging the follower, when the shaft is moved to a position with the arms depending therefrom, and a hand lever connected with the shaft for rocking the same.

2. A device of the class described comprising a frame supported for rocking movement and adapted to hold a case of bottled goods, a follower carried by the top of the frame for engaging the top of the case, spring means for normally holding the follower in raised position, a shaft journalled in the top of the frame, arms attached to the shaft and having rollers at their lower ends engaging the follower, when the shaft is moved to a position with the arms depending therefrom, a hand lever connected with the shaft for rocking the same, a shaft journaled in one side of the frame, an arm fastened to the shaft at each end thereof and intermediate the ends of the arms, one end of the arm being adapted to engage a side of the case, and latch means at the other end of each arm for engaging a part of the frame to hold the arms in holding position.

In testimony whereof I affix my signature.

HERBERT E. HALL.