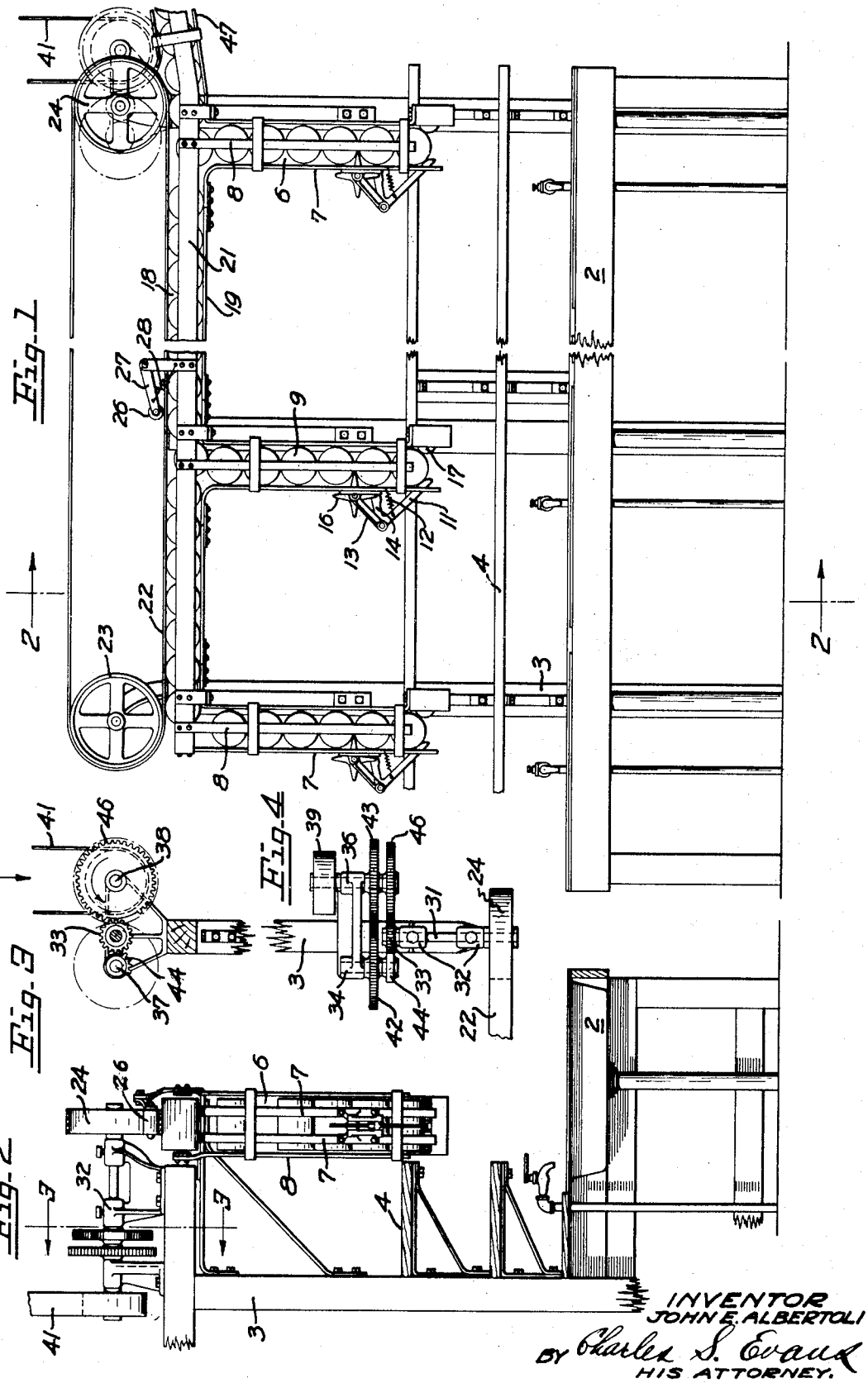
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CAN DISTRIBUTING SYSTEM

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CAN-DISTRIBUTING SYSTEM

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My invention relates to conveyors, and particularly to conveyors for distributing cans.

One of the objects of the invention is the provision of a can distributing system for the efficient and continuous feeding of cans to a plurality of can chutes.

Another object of the invention is the provision of conveying mechanism in which means are provided for preventing the jamming of cans over the mouths of the chutes.

My invention possesses other objects which will be set forth in the description of the preferred embodiment of my invention which is illustrated in the drawings forming part of the specification. It is understood that I do not limit myself to the showing made by the said description and drawings as I may adopt variations of my preferred embodiment within the scope of my invention as set forth in the claims.

Referring to the drawings:

Figure 1 is a front elevation of a can distributing system embodying my invention. Portions of the structure are omitted to shorten the view.

Figure 2 is a vertical sectional view, the plane of section being indicated by the line 2—2 of Figure 1.

Figure 3 is a detail showing part of the driving mechanism; the plane of projection is indicated by the line 3—3 of Figure 2.

Figure 4 is a plan view of the driving mechanism, the direction of the view being indicated by the arrow 4 in Figure 3.

In terms or broad inclusion, the can distributing system of my invention comprises a plurality of upright can chutes conveniently arranged adjacent the workers' stations and opening at their upper ends into a can trackway, the function of which is to supply the chutes with cans as fast as the cans are removed from the bottom of the chutes by the workers. Means are provided for moving a succession of cans along the trackway and in order to prevent jamming of the cans adjacent the opening into the can chutes, means are also provided for intermittently reversing the movement of the succession of cans, so that any pressure between the cans is released by the reverse movement and the cans readily fall into the can chutes. Means are also provided in each can chute to retain the cans therein until the bottom can is extracted by the worker, whereupon the column of cans in each chute moves downwardly one step and a fresh can enters at the top of the chute. Thus the chutes are always full of cans and a can is always available at the bottom for the worker.

In terms of greater detail, the distributing system of my invention comprises a succession of sinks 2, along which the workers labor, each at his own station. Arranged on suitable framework 3, are shelves 4 upon which the filled cans may be placed, all in the manner common to canneries. Opposite each station is a vertically disposed can chute 6 formed by the bars 7 and 8 so arranged as to provide a passage for a single file or succession of cans 9. Means are provided for resiliently retaining the lowest can in the chute, comprising an arm 11 held by the spring 12 against the side of the can and pivotally mounted on the bracket 13 extending from the side of the chute. Integral with the arm 11 is an arm 14, the end of which is adapted to engage one of the points of the star wheel 16 so disposed as to intrude another of its points into the chute to hold up the column of cans therein. When the worker draws down the lower can in the chute, the star wheel is released by the movement of the arm 14 and the weight of the cans then causes the star wheel to revolve until the next succeeding point is caught by the recovered arm 14. The arms 11 and 14 therefore act as latches, both for the lowest can in the chute and the star wheel which controls the movement of the column of cans. In accordance with the usual practice I provide a printer roll 17 on the opposite side of the can from the arm 11 so that the desired characters may be applied automatically to the can when it is withdrawn from the chute.

At the upper ends, the chutes open into the can trackway 18, comprised of the bars 19 and 21 so spaced as to permit a succession of cans to roll therealong. The bars 19 and 21 are disposed to form a trough for the cans and

movement is imparted to the cans by a belt 22 disposed above the trough or trackway and resting upon the cans therein. The belt is carried on pulleys 23 and 24 and contact with the cans is insured by rollers 26, each of which is journaled on the end of the arm 27, which may be urged downwardly either by its own weight or by the spring 28. Such rollers may be placed at intervals along the inner side of the lower reach of the belt and particularly immediately before the entrance into each can chute.

Movement of the belt will of course roll the cans along the trackway, but it is found that when the belt moves continuously in one direction, there is a tendency for the cans to jam together and miss falling into the chute openings. In order to obviate this I provide means for reversing the direction of movement of the belt at intervals, so as to release the cans and permit them to assume their natural position. The pulley 24 is fixed on the shaft 31, suitably journaled in bearings 32 mounted on the frame 3 and having a gear wheel 33 fixed at the opposite end. Journaled on each side of the shaft 31 in bearings 34 and 36 and at unequal distances from the shaft 31 are the shafts 37 and 38, the latter of which is provided with a pulley 39 connected by a belt 41 to any suitable source of power. Fixed on the shafts 37 and 38 are gears 42 and 43 respectively. These gears are equal in diameter and are in mesh with each other so that the shafts are connected for rotation together at the same speeds and in opposite directions. Last fixed on the shafts 37 and 38 are the gears 44 and 46 respectively, each adapted to mesh with the gear 33 during part of its revolution. By an inspection of Figure 3, it will be seen that each of these last two gears has a toothless segment equal in arc to the toothed segment of the other gear. The relative position of the two gears is such that they alternately mesh with gear 33, that is, when the toothed segment of gear 44 is in mesh with the gear 33, the toothless segment of the gear 46 is turning past the gear 33 without engagement, and as the last tooth of the gear 44 passes out of mesh with the gear 33, the first tooth of the gear 46 meshes with the gear 33. Since the gears turn in opposite directions and are of unequal size, it will be seen that the belt 22 which is driven by rotation of the gear 33 will be given a long step forward by the gear 46 and a short step rearward by the gear 44 and that so long as the shaft 38 is rotating, the two gears 44 and 46 will alternately engage the gear 33 and impart to the belt this intermittent forward and reverse movement. The velocity of the gears is quite low so that there is no tendency for the gear 33 to overshoot, which if it occurred would of course cause difficulty in the meshing of the teeth. The cans are fed into the trackway 18 from the trackway 47 supplied with cans in the usual way.

I claim:—

1. A can distributing system comprising a plurality of can chutes, a trackway out of which said chutes extend, a belt for rolling said cans along said trackway, means for moving said belt to roll the cans forwardly, and means for momentarily reversing the direction of said belt to roll the cans backwardly.

2. A can distributing system comprising a can trackway, a can chute opening downwardly from said trackway, a belt for rolling cans along said trackway over said chute, and means for giving to said belt a movement comprising short backward steps interposed between long forward steps.

3. A can distributing system comprising a can trackway, a can chute opening downwardly from said trackway, a belt for rolling cans along said trackway over said chute, a shaft for driving said belt, a wheel fixed on said shaft, a driving wheel on each side of said shaft wheel and forming engagement therewith during a part of its revolution, and means for rotating said driving wheels.

4. A can distributing system comprising a can trackway, a can chute opening downwardly from said trackway, a belt for rolling cans along said trackway over said chute, a shaft for driving said belt, a gear wheel fixed on said shaft, a small gear wheel and a larger gear wheel adapted to mesh with said shaft gear wheel and each having a toothless segment equal in arc to the toothed segment of the other, and means for rotating said small and large gear wheels in time so that but one of them forms a driving engagement with the shaft gear wheel at a time.

5. A can distributing system comprising a can trackway, a can chute opening downwardly from said trackway, a belt for rolling cans along said trackway over said chute, a shaft for driving said belt, a gear wheel fixed on said shaft, a small gear wheel and a larger gear wheel adapted to mesh with said shaft gear wheel and each having a toothless segment equal in area to the toothed segment of the other, and driving connections between said small and large gears to rotate them at the same angular velocity in opposite directions.

6. A can distributing system comprising a can trackway, a can chute opening downwardly from said trackway, a belt for rolling cans along said trackway over said chute, a shaft for driving said belt, a gear wheel fixed on said shaft, a pair of shafts adjacent said belt driving shaft, gear wheels for connecting said adjacent shafts for rotation together at equal speeds in opposite directions, and alternately operative driving connections between said adjacent shafts and said belt driving shafts.

7. A can distributing system comprising a plurality of separated can chutes, a trackway out of which said chutes extend, a belt for rolling said cans along said trackway and means for imparting movement to said belt.

8. A can distributing system comprising a plurality of separated can chutes, a trackway out of which said chutes extend, a belt adapted to rest upon the cans in said trackway and roll them therealong, and means for imparting movement to said belt.

9. A can distributing system comprising a plurality of separated can chutes, a trackway out of which said chutes extend, a belt adapted to rest upon the cans in said trackway and roll them therealong, means for imparting movement to said belt and means for pressing the belt against the cans.

10. A can distributing system comprising a plurality of separated can chutes, a trackway out of which said chutes extend, a belt adapted to rest upon the cans in said trackway and roll them therealong, means for imparting movement to said belt, and a roller arranged to press the belt against the cans.

11. A can distributing system comprising a can trackway; a can chute opening downwardly from said trackway, means for rolling cans over said chute, and means for momentarily reversing the direction of the rolling motion.

12. A can distributing system comprising a can trackway; a can chute opening downwardly from said trackway, means for moving the cans over said chute, and means for interrupting the motion at intervals.

13. A can distributing system comprising a can trackway, a can chute opening downwardly from said trackway, means for rolling cans along the trackway over said chute, and means for retaining cans in said chute.

14. A can distributing system comprising a can trackway, a can chute opening downwardly from said trackway, means for rolling cans along the trackway over said chute, and means for yieldingly retaining cans in said chute.

15. A can distributing system comprising a can trackway, a can chute opening downwardly from said trackway, a belt for rolling cans along said trackway, means for retaining said cans in the chute whereby cans may pass over the chute, and means for imparting movement to the belt.

16. A can distributing system comprising a can trackway, a can chute opening downwardly from said trackway, means for moving cans along the trackway over said chute, and means for retaining cans in said chute.

17. A can distributing system comprising a can trackway, a plurality of can chutes opening downwardly from said trackway, means for moving cans along the trackway over said chutes, and means for retaining cans in said chutes.

18. A can distributing system comprising a can trackway, a can chute opening downwardly from said trackway, means for moving a succession of cans along said trackway over said chute, and means for preventing jamming of the cans.

19. A can distributing system comprising a can trackway, a can chute opening downwardly from said trackway, means for moving a succession of cans along said trackway over said chute, and means for effecting release of pressure between cans to prevent jamming thereof.

20. A can distributing system comprising a can trackway, a can chute opening downwardly from said trackway, a belt for moving a succession of cans along said trackway over said chute, and means for preventing jamming of the cans.

In testimony whereof, I have hereunto set my hand.

JOHN E. ALBERTOLI.