A. M. GAYNOR.

SAFETY DEVICE FOR FILLING MACHINERY.

APPLICATION FILED OCT. 17, 1912.

1,069,870. Patented Aug. 12, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

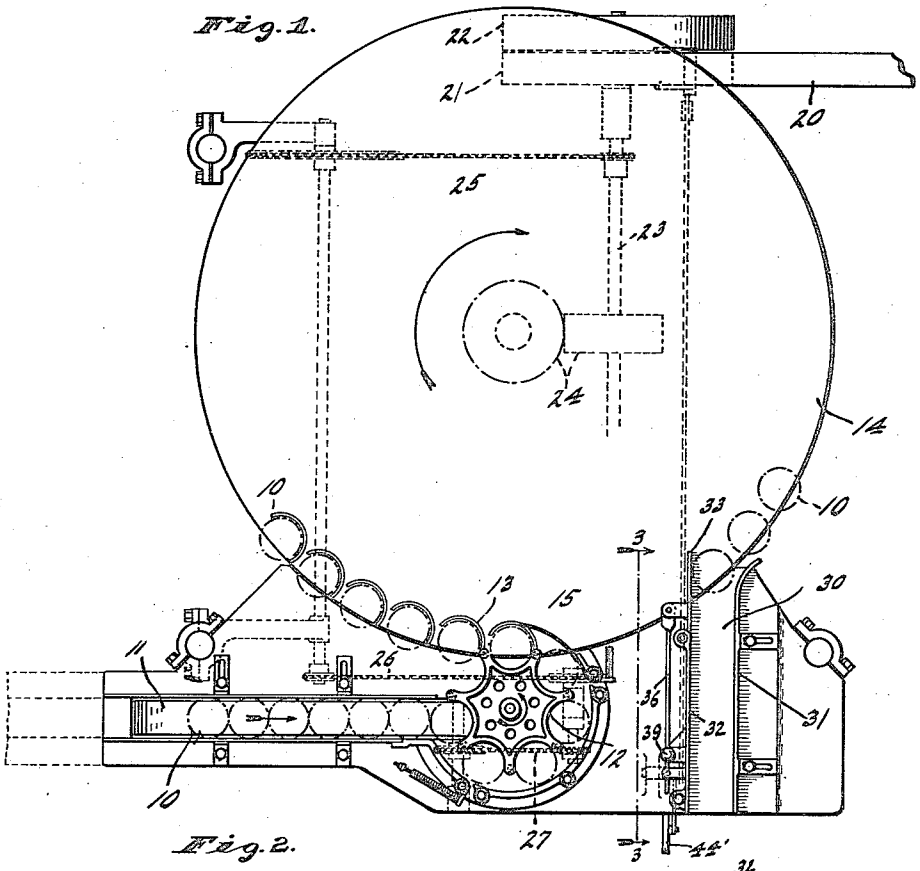

Fig. 2.

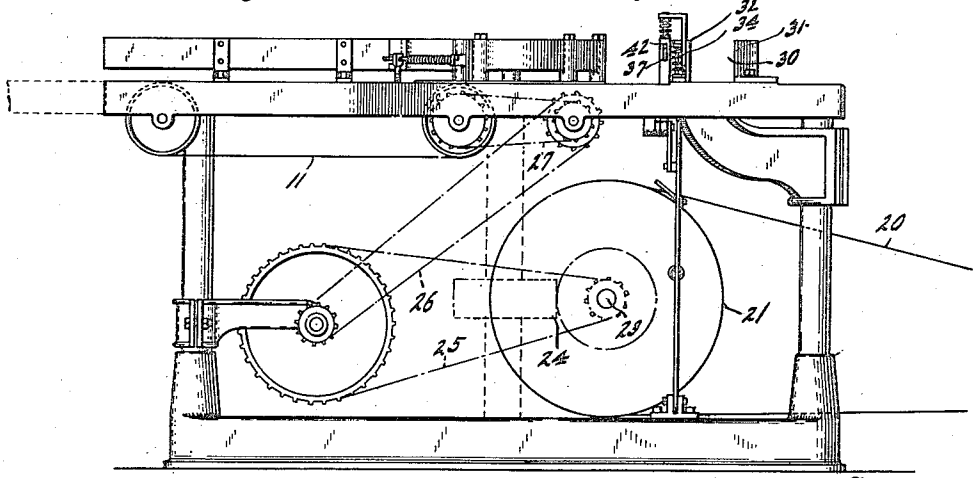

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Fig. 3.

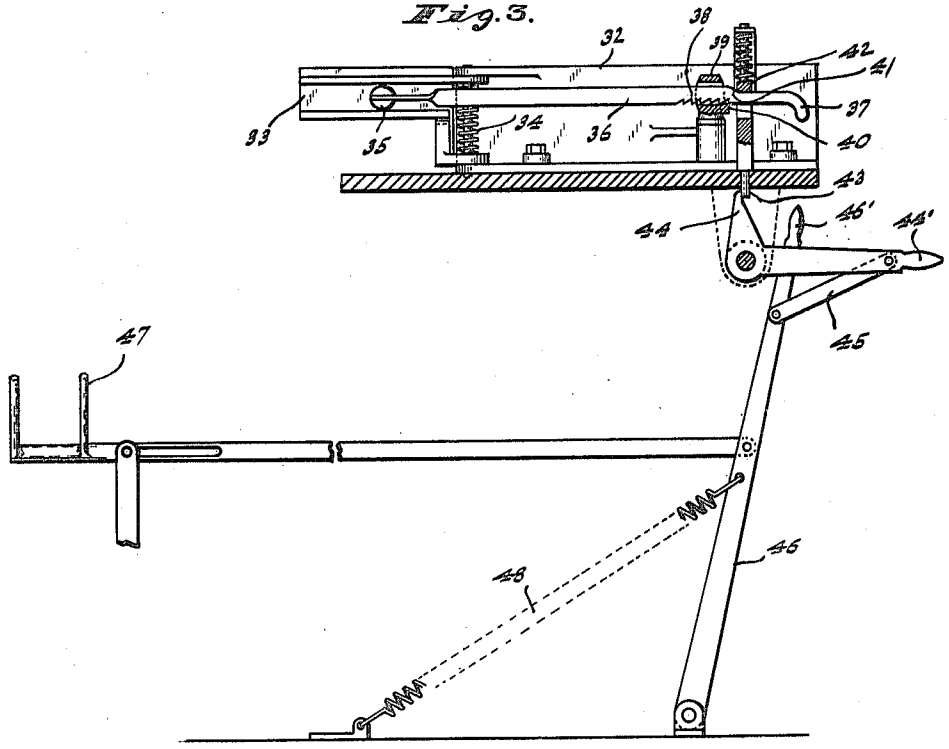
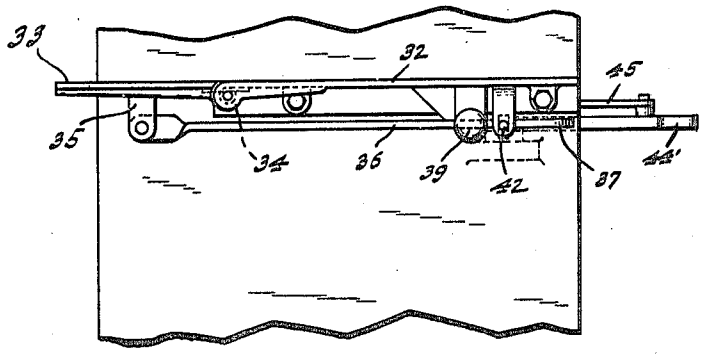


Fig. 4.



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UNITED STATES PATENT OFFICE.

ABRAHAM M. GAYNOR, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO AUTOMATIC MACHINERY MANUFACTURING AND SALES COMPANY, OF INDIANAPOLIS, INDIANA, A CORPORATION OF INDIANA.

SAFETY DEVICE FOR FILLING MACHINERY.

1,069,870. Specification of Letters Patent. Patented Aug. 12, 1913.

Application filed October 17, 1912. Serial No. 726,288.

To all whom it may concern:

Be it known that I, ABRAHAM M. GAYNOR, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Safety Device for Filling Machinery, of which the following is a specification.

The operation of filling machinery is oftentimes seriously interrupted by the jamming of the receptacles, such jamming most frequently occurring after the receptacle has been filled and at the point where it is being removed from the filling table. Frequently the filled receptacle is broken and its contents spilled upon the machinery, necessitating a disagreeable, as well as time-consuming, cleaning of the entire apparatus.

It is the object of my present invention to provide means for preventing this jamming, and to stop the machine as soon as the jamming tends to occur but before any disastrous results can follow. To this end I have provided a yieldable spring-pressed plate at the point where the jamming usually occurs and have connected with this plate a device for shutting off the power for the machinery when such plate is forced to yield.

The accompanying drawings illustrate my invention.

Figure 1 is a plan view of a filling machine embodying my invention; Fig. 2 is a front elevation of such machine; Fig. 3 is an enlarged sectional view on the line 3—3 of Fig. 1 showing the yieldable plate and the mechanism controlled thereby; and Fig. 4 is a plan view of the parts shown in Fig. 3.

In the arrangement shown, the receptacles 10 to be filled are carried by the conveyer 11 to the star wheel 12, into the pockets of which they are successively discharged by the conveyer as the star wheel rotates in the direction indicated. The star wheel discharges the receptacles 10 into the stirrups or shoes 13 arranged around the periphery of the rotatable filling table 14, the star wheel being operated by the engagement of its prongs with said stirrups, or in any other suitable manner. The filling table may be of any suitable construction, usually comprising a series of holders for the receptacles. The filling table 14 and the conveyer 11 are conveniently operated from the same source of power; as illustrated, there is a belt 20 shiftable between tight and loose pulleys 21 and 22 on a shaft 23, which drives the table through worm gearing 24 and the conveyer through chains 25, 26 and 27 running on suitably mounted sprockets.

The receptacles 10 are filled in any suitable manner as they are carried around by the table 14 in the direction of the arrow, and after completing their movement with the table 14 come to the discharge passageway 30. This passageway has guiding walls 31 and 32, between which the receptacles 10 are guided by a pivoted plate 33 pivoted to the end of the wall 32 and projecting over the table 14. This plate is pressed in a clockwise direction (Figs. 1 and 3) by a spring 34, its movement in this direction being limited to the position in which it is in alinement with the wall 32. To a projection 35 from the back of the plate 33 is loosely pivoted a rod 36 which is provided at its other end with a handle 37 and near its other end with a plurality of camming teeth 38. The rod 36 projects through an opening in a post 39 which is provided with a tooth 40 projecting up to coöperate with the teeth 38 so that the rod 36 is lifted as it is moved to the right (Figs. 3 and 4). The upper surface of the rod 36 has a camming face 41, which, as the rod is moved to the right, passes under the upper surface of an opening in a spring-pressed plunger 42 which bears downward against the upper surface of the rod and at its lower end is provided with a pin 43 which acts as a latch for a bell-crank lever 44 connected by a link 45 to the operating arm 46 of the belt shifter 47 for the belt 20. The lever 46 is biased to the left (Fig. 3) in any suitable manner, as by a spring 48.

To start the apparatus, the belt 20 is shifted to the tight pulley 21, either by moving the handle 46′ of the lever 46 to the right (Fig. 3) or by lifting the handle 44′ of the bell crank lever. The short end of such bell crank lever now engages the pin 43 and the latter holds the parts in position so that the belt 20 is on the tight pulley 21. In order to stop the operation manually, it is merely necessary to lift the handle 37, thereby releasing the bell-crank lever so that the spring 48 moves the belt shifter 47 to the left (Fig. 3) to shift the belt 20 to the loose pulley 22. If during the operation of the machine there is a tendency for the receptacles

10 to jam, which tendency almost invariably occurs at the entrance to the discharge passageway 30, the pivoted plate 33 yields in a counter-clockwise direction (Figs. 1 and 4) and thereby shifts the rod 36 to the right (Figs. 3 and 4). By reason of the teeth 38 and 40 and of the camming surface 42, this movement of the rod 36 to the right lifts the plunger 40, so that the pin 43 releases the bell-crank lever 44 and stops the operation in the same manner as if the handle 37 had been lifted by hand.

I claim as my invention:

1. In combination, a power-operated table on which receptacles are operated on, power-operated means for feeding receptacles onto said table, a spring-pressed plate for guiding the receptacles from said table into a discharge passageway, and means controlled by the yielding of said plate for shutting off the power from said table and said feeding means.

2. In combination, a power-operated table on which receptacles are operated on, a spring-pressed plate for guiding the receptacles from said table into a discharge passageway, and means controlled by the yielding of said plate for shutting off the power from said table.

3. In combination, a table upon which receptacles are carried, means for feeding receptacles onto said table, unitary driving means for operating said table and said feeding means, a yieldable device for guiding the receptacles from said table into a discharge passageway, and means operated by the yielding of said device for stopping said driving means.

4. In combination, a table upon which receptacles are carried, driving means for operating said table, a yieldable device for guiding the receptacles from said table into a discharge passageway, and means operated by the yielding of said device for stopping said driving means.

5. In combination, a table upon which receptacles are carried, means for feeding receptacles onto said table, a driving shaft from which said table and said feeding means are driven, tight and loose pulleys on said shaft, a driving belt coöperating with said pulleys, a belt shifter for said belt, a yieldable plate for guiding the receptacles from the table into a discharge passageway, and operating connections between said yieldable plate and the belt shifter for causing the shifting of the belt from the tight pulley to the loose pulley upon the yielding of said plate.

6. In combination, a table upon which receptacles are carried, a driving shaft from which said table is driven, tight and loose pulleys on said shaft, a driving belt coöperating with said pulleys, a belt shifter for said belt, a yieldable plate for guiding the receptacles from the table into a discharge passageway, and operating connections between said yieldable plate and the said belt shifter for causing the shifting of the belt from the tight pulley to the loose pulley upon the yielding of said plate.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana, this 26th day of September, A. D. one thousand nine hundred and twelve.

ABRAHAM M. GAYNOR. [L. S.]

Witnesses:
J. D. LAMBERTSON,
G. B. SCHLEY.