Dec. 14, 1954 M. KRUPKE 2,696,903

STOP MECHANISM FOR JAR FILLING MACHINES

Filed Sept. 26, 1949 2 Sheets-Sheet 1

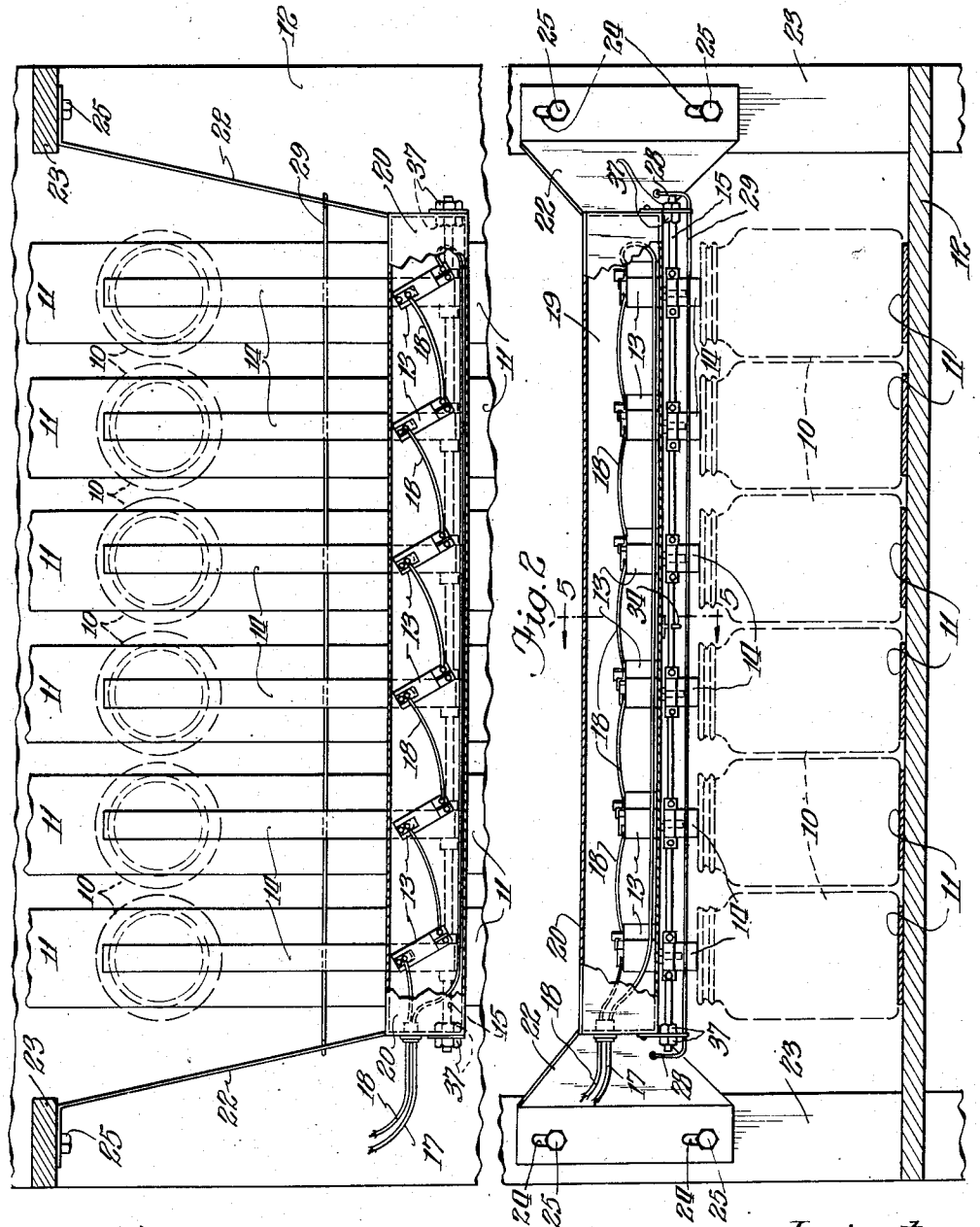


Fig. 1

Fig. 2

Inventor:
Merton Krupke
By: Archibald D. McKellar
Attorney.

Dec. 14, 1954 M. KRUPKE 2,696,903

STOP MECHANISM FOR JAR FILLING MACHINES

Filed Sept. 26, 1949 2 Sheets-Sheet 2

Fig. 3

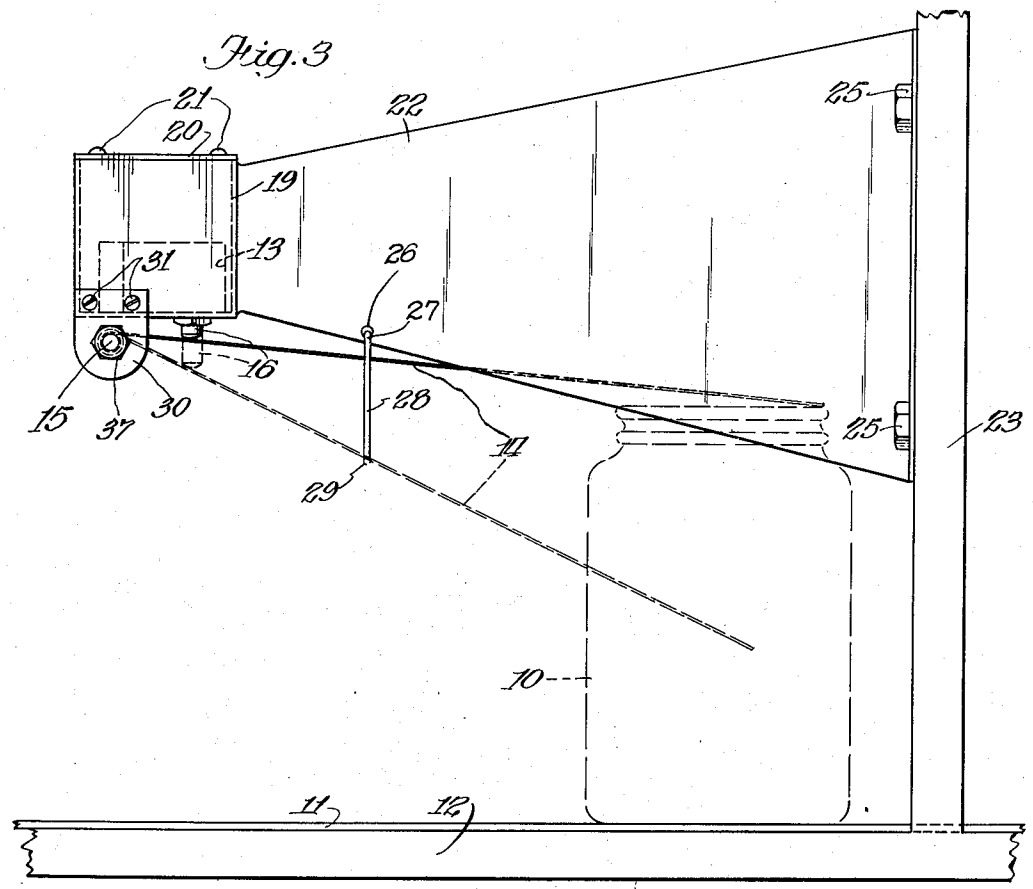


Fig. 4

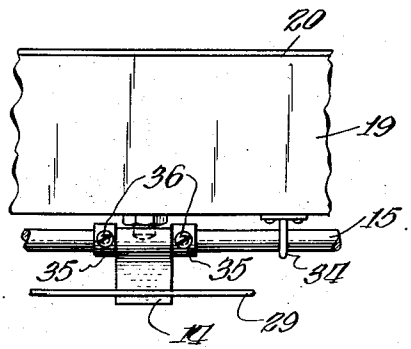
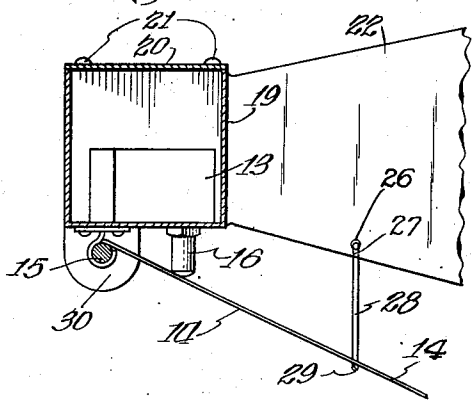


Fig. 5



Inventor:
Merton Krupke
By: Archibald D. McKellar
Attorney.

United States Patent Office

2,696,903

Patented Dec. 14, 1954

2,696,903

STOP MECHANISM FOR JAR FILLING MACHINES

Merton Krupke, Tacoma, Wash., assignor to Nalley's, Inc., Tacoma, Wash., a corporation of Washington

Application September 26, 1949, Serial No. 117,833

3 Claims. (Cl. 198—37)

The invention relates to stop means for a motor operated filling machine for containers, but more particularly to machines adapted to fill open mouthed jars with edible foods such as salad dressing of the mayonnaise type in which the jar is of glass and provided with a suitable closure after passing the depositing mechanism of the filling apparatus, and has for its objects the provision of such a stop mechanism which will be simple of structure, economical to manufacture and highly efficient in use.

Other objects will appear hereinafter.

In the handling of such foods, such as mayonnaise dressing, a missing jar or a broken top to a jar will allow the material to spill onto the traveling mechanism and associated parts, necessitating the shut down of operations and the cleaning of the machine before returning to operation, as will be readily understood.

The invention comprises the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the following drawings, in which:

Figure 1 is a top plan view of a plurality of rows of jars as arranged for simultaneous filling in approaching to the filling station;

Figure 2 is a rear view of Figure 1, showing each row of jars arranged in traveling position toward the filling station;

Figure 3 is an end view of Figure 2;

Figure 4 is a fragmentary rear elevation of a control arm in operative position for the filling of a jar; and

Figure 5 is a side view of a control arm in which position the machine is inoperative and the circuit to the motor is closed.

The drawings forming a part of this application are to a limited degree schematic and illustrate by broken line (Figs. 1 and 2) a plurality of jars **10** arranged in transverse alignment on six moveable belts **11** traveling in unison over the load platform **12** of a conventional machine for the purpose. The jars **10** while empty, are carried on the belts **11** to a loading station (not shown) where each jar in a transverse row is filled simultaneously. To insure that a complete row of jars **10** arrive at the loading station, each belt **11** is associated with a spring operated micro-switch **13** which is in closed circuit with a motor (not shown) operating the belts **11**. Such a motor drives the belts **11** through conventional pulleys (not shown) and power to the motor is controlled by the micro-switch **13**. The closed circuit is maintained through each micro-switch **13** by control lever **14**, rotatively pivoted at one end on a fixed horizontal shaft **15** and extends forwardly in the direction of travel in vertical alignment with the belts **11** and the jars **10**, and is arranged to glide over the tops of the jars **10** when in motion. By this arrangement the circuit is kept closed when the jars **10** form a complete transverse row. If and when it so happens that the row of jars **10** is not complete, the forward end **16** of the arm **14** falls by gravity and allowing the micro-switch **13** to open; as best shown in Figs. 4 and 5.

The micro-switch members **13** and the necessary wiring **17** and **18** therefor, are carried in an elongated housing **19** having a cover **20** fastened by screws **21**. Each of the micro-switches **13** is provided with a downwardly depending push rod **16** in operable contact with its respective control lever **14**. The housing **19** is attached at its ends to rearwardly and outwardly extending brackets **22** in operative alignment with the pluralities of belts **11** mounted on opposite sides to suitable standards **23**. By means of

suitable slots **24** in the brackets **22** and bolts **25**, the brackets **22** may be adjusted as to space relative to the top surface belts **11**, to that of the tops of the jars **10**. Referring to Figures 3 and 5, each of the brackets **22** is provided with a hole **26** into which is loosely fitted and outwardly turned pivot ends **27** of a downwardly extended arm **28** of a rod **29** which extends transversely in parallel alignment with said housing **19**, and rearwardly of push rods **16**. The operative adjustment of said rod **29** is such that it will pass over the top of jars **10** carried on the belts **11**. The horizontal shaft **15** is provided with threaded ends, mounted in downwardly depending brackets **30** fastened by screws **31** to the ends of the housing **19** by clamping screws **32**. The threaded ends of the shaft **45** are rigidly held by nuts **37**. A T flange bearing bracket **34** is attached intermediate the brackets **30** to the bottom of the housing **19** by screws **32**. The adjustment is such that the rod **29** will pass the top of the jars **10** in the transverse row without restricting the operation of any one of the push rods **16**, should any one of the arms **14** be lowered because of the absence of a jar **10** in any transverse row.

The control levers **14** which are rotatably pivoted on the fixed shaft **15** are held in spaced alignment by ring clamps **35** having set screws **36**, as best shown in Figs. 4 and 5.

When in use the device serves to eliminate time consuming stops that occur when one or more jars are missing on the filler platform **12**. When this happens, a considerable amount of product is discharged directly on the conveyor and must be cleaned up before the machine can be put in operation again. The missing jars may occur for various reasons, such as defects in glass causing them to collapse along the line, defective or rough edges on bottoms, causing them to stick or retard the flow of jars. Inadvertent operation may start a machine with insufficient jars on filler platform **12**.

While I have illustrated and described practical means for carrying my invention into use, this is capable of variations, modifications and alterations of parts without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise arrangement of parts but desire to avail myself of such changes and alteration as may fall within the scope of interpretation of the following claims.

I claim:

1. In a conveyor for use in a container-filling machine the improved mechanical stop mechanism comprising a pair of standards in spaced relation mounted in supporting position adjacent the sides of a jar supporting platform; a rearwardly extending bracket on each of said standards; a housing mounted between the outer ends of said brackets; a plurality of micro switches each having a downwardly projecting reciprocal circuit-controlling push rod arranged in spaced relation mounted in and projecting from said housing; there being suitable openings in the bottom of said housing; a fulcrum shaft mounted in spaced and parallel alignment with the bottom of said housing longitudinally; a forwardly and downwardly projecting control lever for each circuit-controlling push rod mounted in vertical and spaced alignment and pivoted at a rearward end to said fulcrum shaft and in close proximity with the forwardly adjacent circuit controlling push rod; and a forwardly end of each control lever positioned to be elevated by the uppermost portion of each jar in succession in its respective row to maintain a closed circuit with said micro-switches.

2. The construction specified in claim 1 in which a horizontal transverse rod is pivotally suspended below each of said control levers to operationally limit the downward movement of each or all of said control levers.

3. In a conveyor adapted to use in a container-filling machine comprising a horizontal container-supporting platform adapted to receive a plurality of rows of containers, a pair of laterally extending brackets above said platform, a support member arranged transverse to said brackets and spaced above said platform, a plurality of micro switches arranged in spaced alignment on said support member, said micro switches being connected in series, a switch-actuating push rod depending from each of

said switches over each of said rows, a fulcrum shaft mounted below said support member adjacent and parallel thereto, a plurality of downwardly and rearwardly extended control levers hinged to said rod, each lever being arranged over one of said rows of containers, and a lever supporting rod extending transverse to said levers and hingedly fixed at its ends to said laterally extending brackets for limiting the free fall of said control levers so as to retain them out of contact with said platform.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
701,248	Bannon	May 27, 1902
1,149,018	Beregh	Aug. 3, 1915
1,332,264	Laporte	Mar. 2, 1920
1,393,276	Fuller	Oct. 11, 1921
2,082,048	Everett	June 1, 1937
2,202,073	Wollenweber	May 28, 1940

FOREIGN PATENTS

Number	Country	Date
4,011 of 1897	Great Britain	Dec. 18, 1897