

Aug. 21, 1962

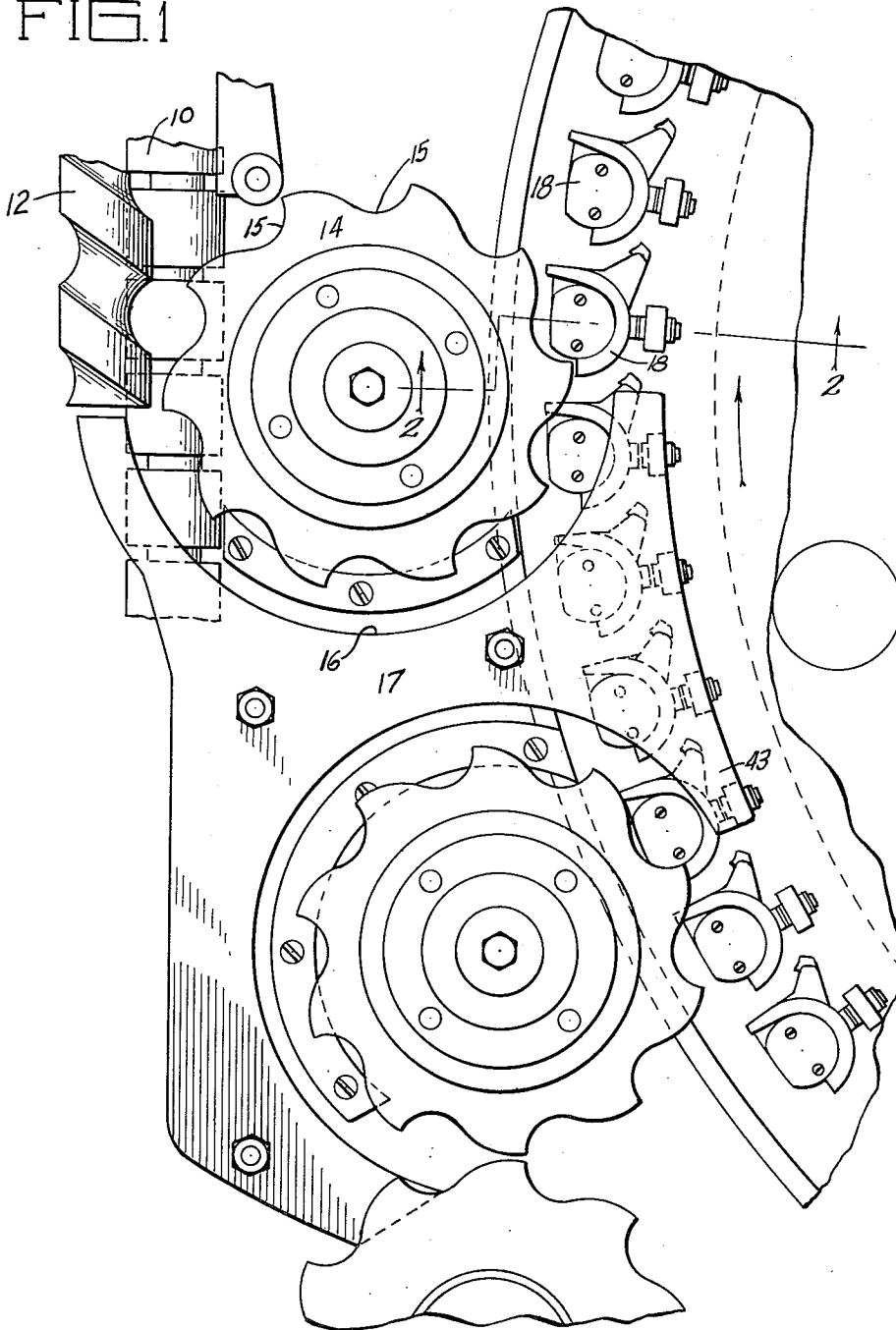
G. L. N. MEYER  
CAN FILLER STIRRUP

3,050,091

Filed Feb. 27, 1959

3 Sheets-Sheet 1

FIG. 1



Inventor:  
George L. N. Meyer  
By: *Raymond Simpson*  
Attorney:

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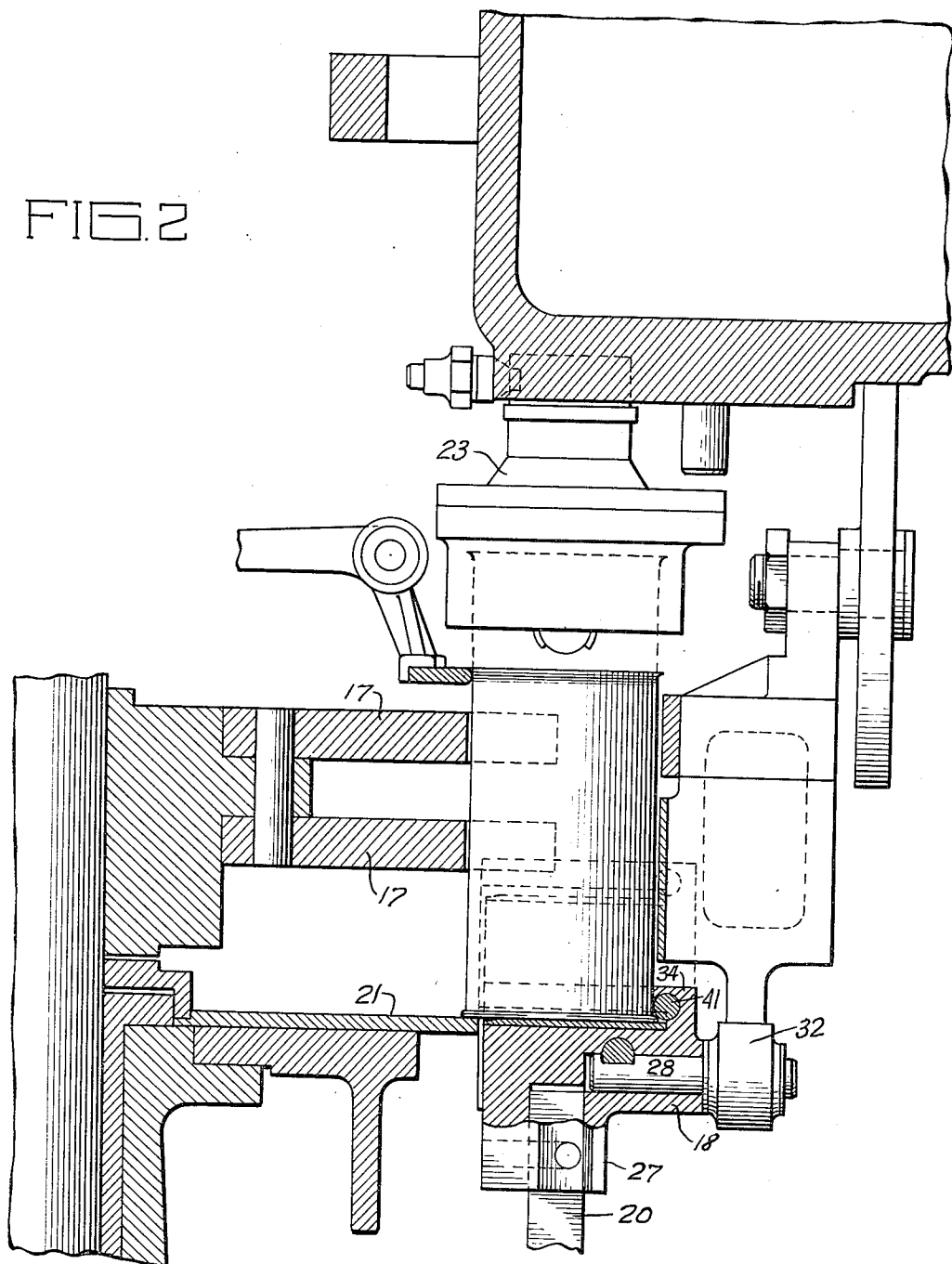
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FIG. 2



Inventor:  
George L. N. Meyer  
By: Eugene W. Simpson.  
Attorney.

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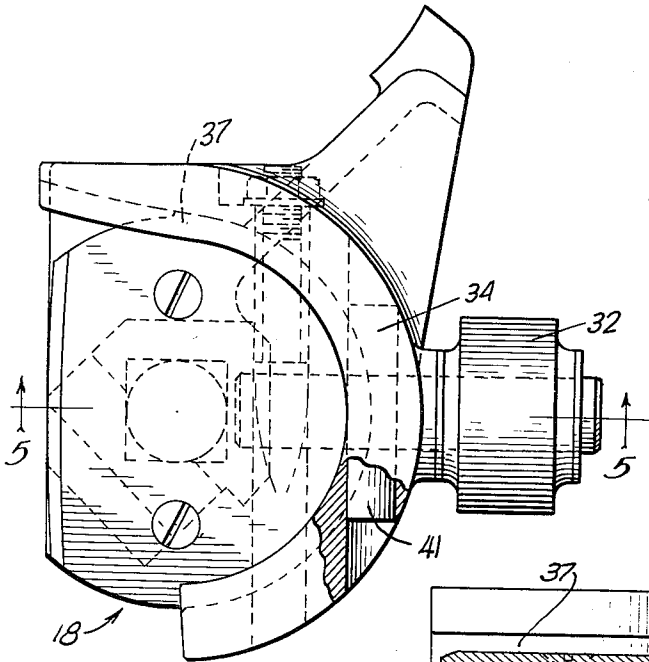


FIG. 3

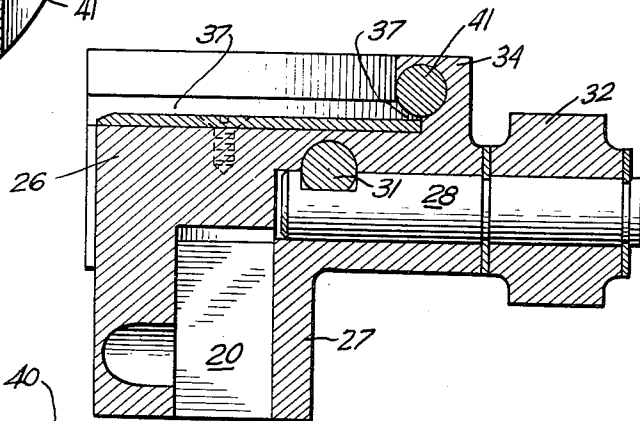


FIG. 4

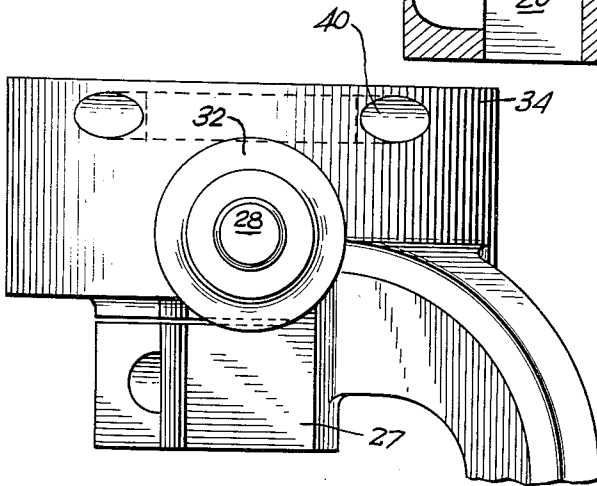


FIG. 5

Inventor:  
George L. N. Meyer  
By: Eugene H. Simpson  
Attorney.

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3,050,091

**CAN FILLER STIRRUP**

George L. N. Meyer, Milwaukee, Wis., assignor to Geo. J. Meyer Manufacturing Company, Cudahy, Wis., a corporation of Wisconsin

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3 Claims. (Cl. 141-370)

In filling cans with beer, it is essential that the can be accurately centered under the filler valve. In order to accurately center the cans, a star wheel is used to move the cans onto the stirrup and against a recess thereon. On account of the thinness of the cans, and their natural tendency to yield under pressure, the bottle grippers used in bottle fillers are not adaptable to can fillers. If the can is left loose on the stirrup without any restraint, the centrifugal force of the machine throws the can outwardly slightly, causing mis-alignment of the can when the stirrup raises it in engagement with the filler valve.

It is an object of the present invention to provide a can filling machine with a stirrup which will positively grip the can and cause the can to move up under the filler valve in alignment therewith.

Another object is to provide a stirrup for a can filling machine which will not bend nor crush the can during the filling thereof.

A further object is to provide a stirrup for a can filling machine which will prevent mis-alignment of the can with the filler valve.

A still further object of the invention is to provide a stirrup for a can filling machine, including a gripping member for the can, which will permit ready disengagement of the can from the gripping member.

A still further object is to provide a stirrup for a can filling machine having means to center the can accurately under the filler valve.

A further object of the invention is to provide a can filling machine, including stirrups to raise the can into engagement with the filler valve, which will not mar or bend the material of the cans.

Still further objects will become apparent upon considering the following specification, which when taken in conjunction with the accompanying drawings illustrates the preferred form of the invention.

In the drawings:

FIG. 1 is a plan view of the can filling machine showing the infeed star and the discharge star, and a portion of the stirrups mounted in proper position on the machine;

FIG. 2 is a vertical cross-section of the machine shown in FIG. 1, showing a can in place on a stirrup about to be raised into filling position;

FIG. 3 is a plan view of a single stirrup involving the elements of the present invention;

FIG. 4 is an elevational view of the stirrup shown in FIG. 3; and

FIG. 5 is a vertical cross-section taken on the line 5-5 of FIG. 3, looking in the direction of the arrows.

Referring to the drawings and more particularly to FIG. 1 and 2, the cans are brought onto the machine on an endless conveyor 10 and are timed by a helical screw 12, the screw 12 synchronizing the arrival of the cans with the pockets 15 of a star wheel 14 so that cans enter the pockets 15 and are transmitted around the guide 16 and placed accurately on stirrups 18.

The stirrups 18 are mounted on an annulus and rotate about the center thereof as the cans are being filled.

As seen in FIG. 2 the stirrups are mounted on the upper end of a square piston rod 20. The piston rod is actuated by a plunger and a cylinder (not shown) so that the stirrup will receive the can at the level of the base

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plate 21, and raise the can into engagement with the sealing ring (not shown) of the filler valve 23.

Details of the stirrup constituting the preferred form of the invention are shown in FIGS. 3, 4 and 5.

Referring now to those figures, the stirrup has a base 26, made integrally with a depending square socket 27, receivable over the piston rod 20.

The base is bored to receive a shaft 28, and held therein by a lock pin 31. The shaft 28 mounts a roller 32 which contacts a cam at the proper point in the rotation of the stirrup to lower the stirrup in the event that the piston and cylinder as shown fail to operate at the proper time.

An upstanding collar 34 is formed about the periphery of the top surface of the base 26 the inner surface of the collar opening outwardly relative to the rotation of the stirrup, and conforming to the outward shape of the normally perfect can.

The collar has an annular recessed portion 37 to accommodate the bead of the can, so that the side of the can is received accurately in the inner arcuate surface of the collar, with the bead of the can projecting into the recess 37.

The recess receives a permanent bar magnet 41 which provides a magnetic field adjacent the innermost position of the can. As the can comes onto the stirrup, it is positioned in the arcuate collar 34 with the bead on the lower end of the can entering the groove 37 in the collar.

As the can moves into the arcuate collar, the bar magnet 41 exerts a magnetic influence on the steel can to draw the can in tight against the inner surface of the collar. In this position the can is accurately centered under the filler valve 23 and is retained in that position by the magnet 41 as the can is raised by the stirrup into engagement with the filler.

After filling the can is lowered out of engagement with the valve and is removed from the stirrup by the finger 43 on the guide plate 17.

It will be realized that the herein described form of the invention is to be taken merely as a preferred embodiment thereof, and that various changes in size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the sub-joined claims.

That which is claimed as new and is desired to be secured by United States Letters Patent is:

1. In a can filling machine of the character described, a stirrup having a can-supporting surface adjacent the upper portion thereof composed of non-magnetic material, a collar extending upwardly from the plane of said surface having a bead recess in said collar and adjacent the can supporting surface of said stirrup to receive the lower bead of a can, said collar including a vertically extending cylindrical surface above said recess conforming to the outer surface of the can to be filled and a magnet located in said collar extending tangentially to said vertically extending cylindrical surface and disposed in the region of meeting of said can-supporting surface and said vertical surface, the magnet producing a magnetic field adjacent the surface of the can causing the outer surface of the can to adhere to the vertical surface during filling.

2. In a can filling machine of the character described, a stirrup having a can-supporting surface adjacent the upper portion thereof composed of non-magnetic material, a collar extending upwardly from the plane of said surface and having a bead recess in said collar adjacent the can supporting surface of said stirrup adapted to receive the lower bead of the can, said collar including a vertically extending cylindrical surface above said recess conforming to the outer surface of the can to be filled, and a horizontal bar magnet located in said collar

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disposed tangentially to the said vertically extending cylindrical surface adapted to produce a magnetic field adjacent the base of the can to retain the can in the collar prior to filling.

3. In a can filling machine of the character described, a stirrup having a can supporting surface adjacent the upper portion thereof composed of non-magnetic material, a collar extending upwardly from the plane of said surface, said collar including a vertically extending cylindrical surface conforming to the outer surface of the can to be filled, and a bar magnet located in said collar and disposed tangentially to the said vertically extending cylindrical surface in the region of meeting of said can supporting surface and said vertical surface, the magnet producing a magnetic field adjacent the surface of the can causing the outer surface of the can to adhere to the vertical surface during filling.

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dical surface in the region of meeting of said can supporting surface and said vertical surface, the magnet producing a magnetic field adjacent the surface of the can causing the outer surface of the can to adhere to the vertical surface during filling.

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