

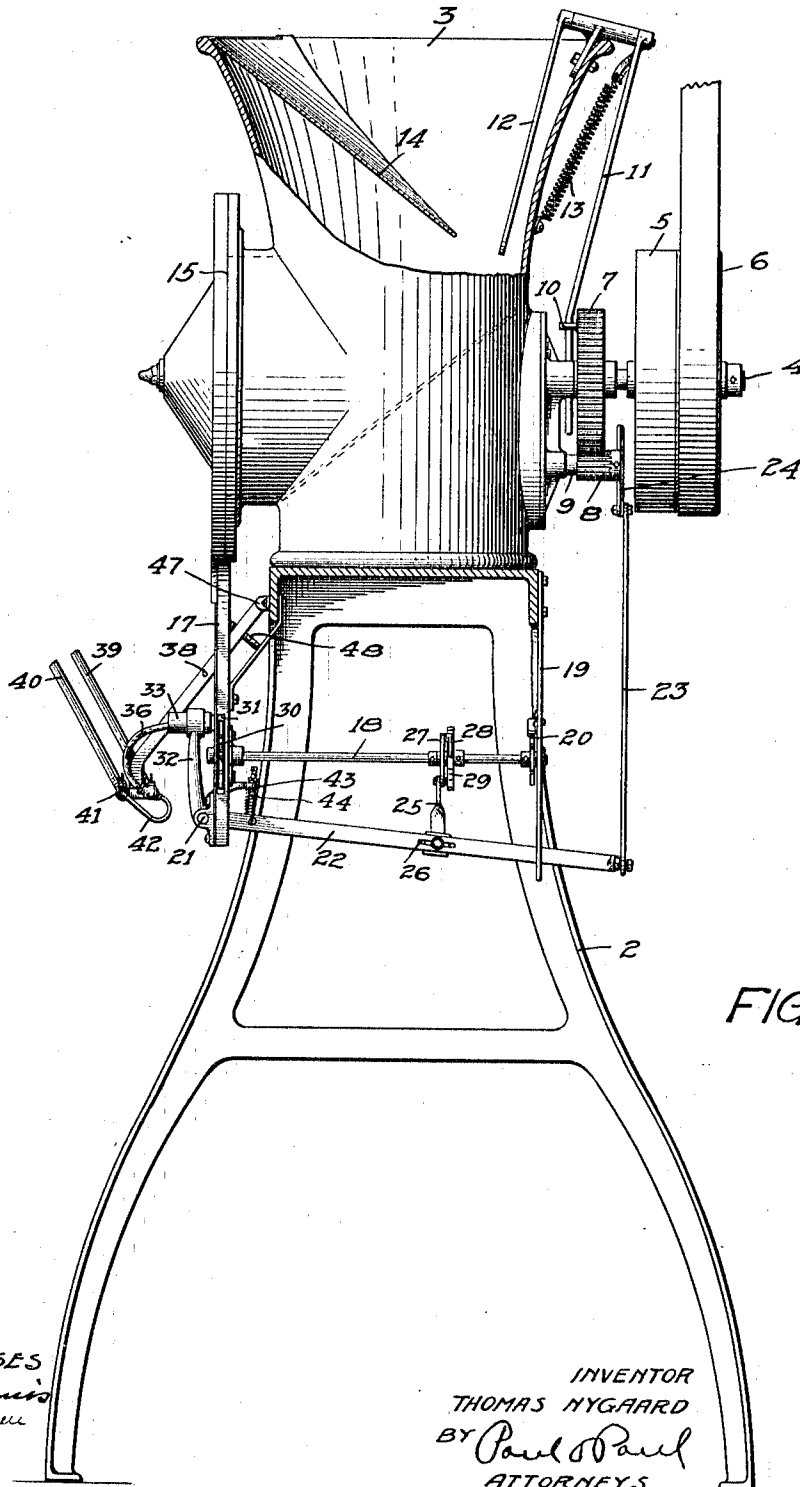


FIG. 1

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1,059,311.

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BRANDING MACHINE.
APPLICATION FILED OCT. 14, 1911.

Patented Apr. 15, 1913.

3 SHEETS-SHEET 2.

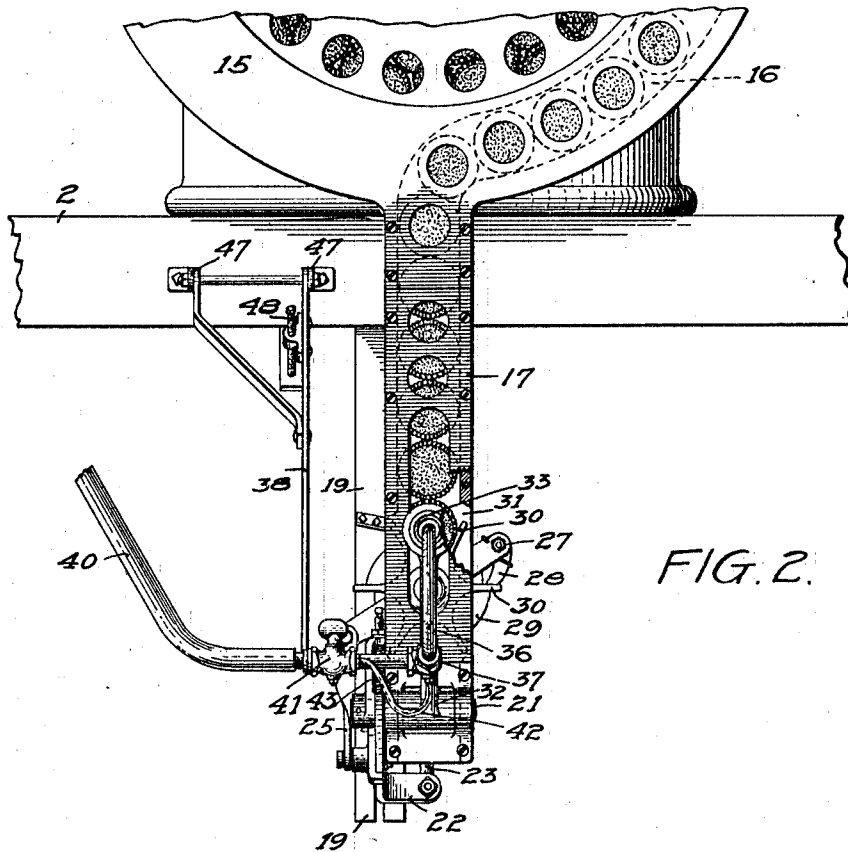


FIG. 2.

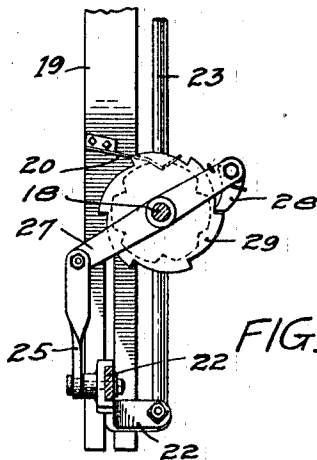


FIG. 6.

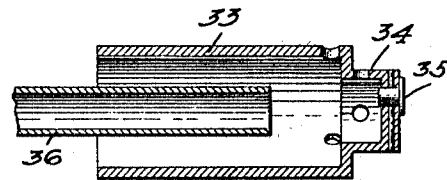


FIG. 5.



FIG. 7.

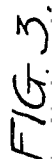
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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BRANDING-MACHINE.

1,059,311.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed October 14, 1911. Serial No. 654,673.

To all whom it may concern:

Be it known that I, THOMAS NYGAARD, of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful Improvements in Branding-Machines, of which the following is a specification.

The object of my invention is to provide a machine for branding the lining of bottle caps and particularly those used on beer bottles, it being customary to brand a date or other mark on the lining preparatory to sealing the bottles.

A further object is to provide a machine in which the branding will be accurately and quickly performed and without any attention except to fill the hopper with the bottle caps.

My invention consists generally in various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification, Figure 1 is a side elevation of a branding machine embodying my invention, the hopper wall being broken away, illustrating the means for directing the caps to the feeding mechanism of the machine, Fig. 2 is a detail view of the feeding apparatus, Fig. 3 is a detail sectional view showing the manner of mounting the branding iron, and the mechanism for operating the same, showing the iron in the act of branding the cork lining of the cap, Fig. 4 is a view showing the branding iron in its retracted position, Fig. 5 is a detail sectional view of the branding iron, showing the construction of the burner, Fig. 6 is a detail view of the ratchet mechanism by which the movement of the branding iron is controlled, Fig. 7 is a detail view of a portion of one of the bottle caps, showing the brand burnt into the lining thereof.

In the drawing, 2 represents a suitable frame supporting a hopper 3 of ordinary construction.

4 is a driven shaft, having the customary fixed and loose pulleys 5 and 6 and provided with a gear 7 meshing with a pinion 8 on a short shaft 9. A pin 10 is mounted on the gear 7 in position to engage an arm 11 and rock an agitator 12 that is mounted on the wall of the hopper and is normally held at the limit of its movement in one direction by a spring 13. A guide 14, preferably of sheet metal, is mounted on the

wall of the hopper and operates to direct the caps toward the agitator and prevent them from clogging in the passage leading to the distributing device 15. This distributing device is of ordinary, well-known construction and as I make no claim to it herein I have not thought it necessary to illustrate or describe it in detail. It is provided, however, with a channel 16 in which the caps are received edgewise, and at the bottom is a vertical way 17 forming a continuation of the channel. In this way the caps descend and slide downward by gravity. At the lower portion of this way is a branding device which forms the principal subject matter of my present invention.

A shaft 18 has bearings at one end in the way 17 and at its other end in a hanger 19, and a retarding ratchet 20 is provided to prevent the shaft from rotating too far during the feeding operation. A shaft 21 is journaled in the lower portion of the way 17 and a lever 22 is loosely mounted at one end on said shaft and extends across the machine and is connected by a pitman rod 23 with a crank 24 on the pinion 8. An arm 25 has a slotted connection at 26 with the lever 22 and is pivotally connected to one end of a lever 27 that is loosely mounted on the shaft 18 and carries a dog 28 which engages the teeth of a ratchet 29 that is secured on said shaft, so that the rocking of the lever 27 through the movement of the lever 22 will have the effect of rotating the shaft 18 with a step by step movement. A star wheel 30 is mounted on the shaft 18 within the way 17 and this star wheel 30 has recesses between its points of sufficient size to receive a cap, as shown in Fig. 2, the revolution of the wheel operating to discharge the caps, one at a time, from the way through the opening 31, as fast as the branding operation is completed.

32 is an arm rigidly mounted on the shaft 21 and having a socket to receive the branding burner. This burner consists of a sleeve 33 having a burner nozzle 34 in which is mounted a branding die 35. A gas pipe or tube 36 projects into the sleeve 33 and is carried by a mixing valve 37 that is supported by a bracket 38 from the frame of the machine. A tube 39 supplies gas to the valve 37 and a tube 40 supplies compressed air to a valve 41 that communicates with a valve 37 through a smaller tube 42. The

air and gas mixed in the valve 37 are ignited in the burner and form a blast flame which heats the end of the burner and the die 35 so that the branding operation will be instantly performed when the die contacts with the lining of the cap. Normally, the arm 32 is in a retracted position, but for the purpose of swinging it to its branding position I prefer to mount an arm 43 on the shaft 21 and yieldingly connect it with the lever 22 by a spring 44, so that as the lever swings down it will rock the shaft 21 and swing the arm 32 to its branding position. I prefer also to mount a set screw 45 in the arm 43 in the path of the lever 22, so that on the upward or return movement of the lever 22 the shaft 21 will be rocked in the other direction and the branding iron returned to its normal position, in case it should not do so when the tension on the spring 44 is released. I prefer also to mount a bracket 38 in the bearings 47 which will allow it to swing back and forth to adjust the valves and tubes connected therewith to the desired position, the bracket being held in its adjusted position by means of the adjusting screw 48.

In the operation of the machine the caps are fed down by gravity in a continuous stream, one cap riding upon another with the under or lining side of the cap exposed to the branding iron. At the point where the caps engage the star wheel the movement of each cap will be temporarily checked while the branding iron is burning the brand in the cork lining. This operation is almost instantaneous, so that the passage of the caps through the way and out of the machine will be practically continuous and uninterrupted.

In various ways the details of construction may be modified without departing from the scope of my invention.

I claim as my invention:—

1. The combination, with a way adapted to receive bottle caps and means for supplying caps thereto, of a branding nozzle having a branding die, means for supplying gas under pressure to said nozzle, said means including a valve, a gas pipe communicating therewith, a compressed air pipe communicating with said valve, a flexible connection between said valve and said nozzle, and means for actuating said nozzle to brand the cap.

2. The combination, with a way adapted to receive bottle caps and means for supplying caps thereto, of a branding nozzle having a branding die, means for supplying gas under pressure to said nozzle, said means including a valve, a gas pipe communicating therewith, a compressed air pipe communicating with said valve, flexible means leading from said valve to said nozzle, a pivoted bracket whereon said valve is supported, and means for actuating said nozzle to brand the cap.

3. The combination, with a way and means for feeding bottle caps thereto, of a rock shaft, an arm mounted thereon, a burner carried by said arm and having a branding die, a second arm mounted on said shaft, a lever loosely mounted on said shaft and having a yielding connection with said second arm, means for oscillating said lever to rock said shaft and arms and move said die into contact with the cap lining.

4. The combination, with a way and means for feeding bottle caps thereto, of a rock shaft, an arm mounted thereon, a burner carried by said arm and having a branding die, a second arm mounted on said shaft, a lever loosely mounted on said shaft and having a yielding connection with said second arm, a set screw mounted in said second arm in the path of said lever, means for oscillating said lever to rock said shaft and arms and move said die into contact with the cap lining, and means for temporarily arresting movement of the caps during the branding operation.

5. The combination, with a way and means for feeding bottle caps thereto, of a rock shaft, an arm mounted thereon, a burner carried by said arm and having a branding die, a second arm mounted on said shaft, a lever loosely mounted on said shaft and having a yielding connection with said second arm, means for oscillating said lever to rock said shaft and arms and move said die into contact with the cap lining, said second arm having means in the path of said lever for positively returning said nozzle to its retracted position.

In witness whereof, I have hereunto set my hand this 25th day of September, 1911.

THOMAS NYGAARD.

Witnesses:

GENEVIEVE E. SORENSEN,
EDWARD A. PAUL.