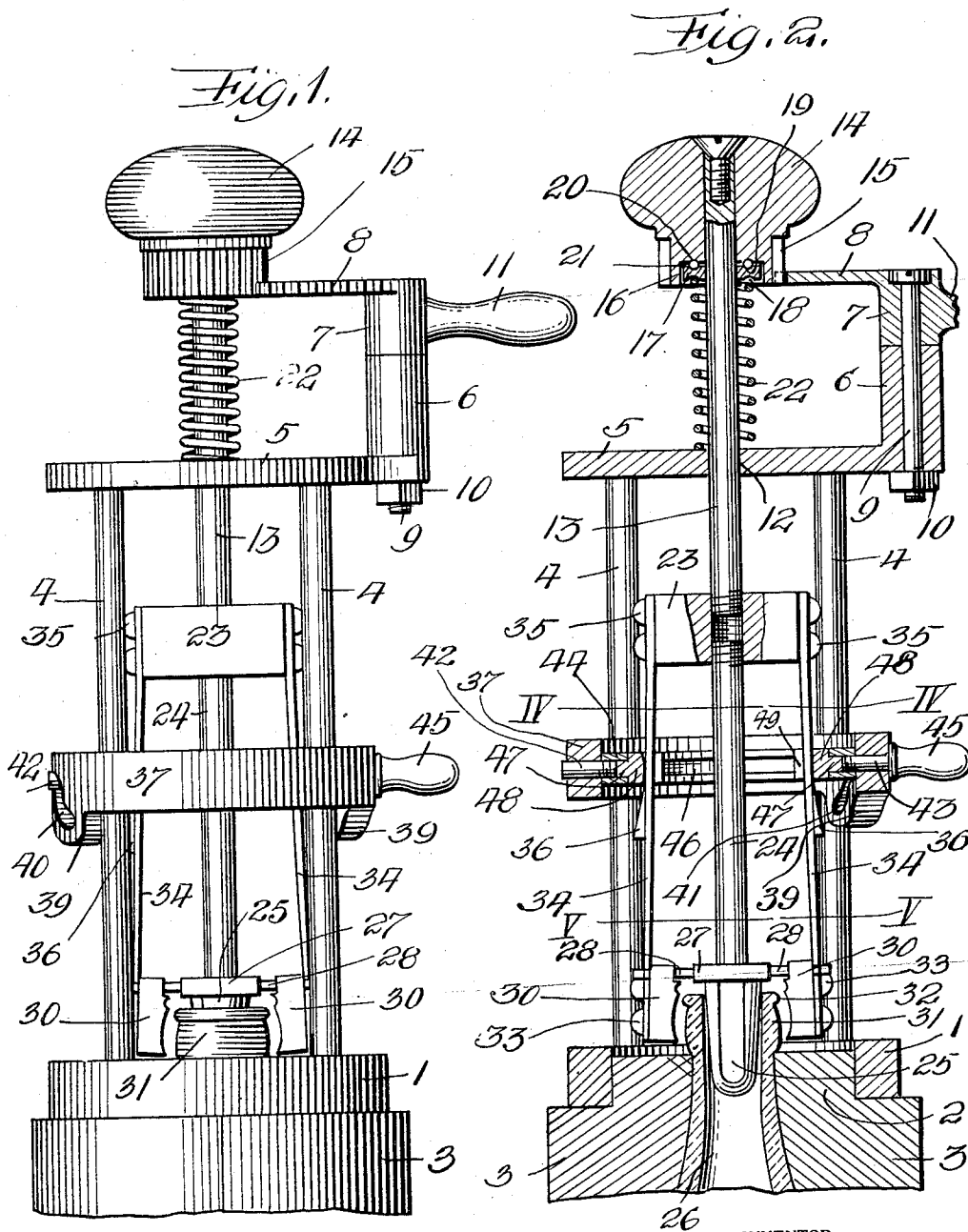


J. C. McKIM.
MACHINE FOR FINISHING BOTTLE NECKS.
APPLICATION FILED OCT. 30, 1911.

1,036,295.

Patented Aug. 20, 1912.
2 SHEETS—SHEET 1.



WITNESSES

Samuel Payne.
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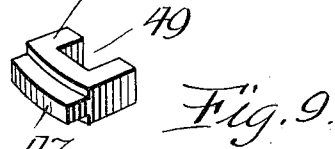
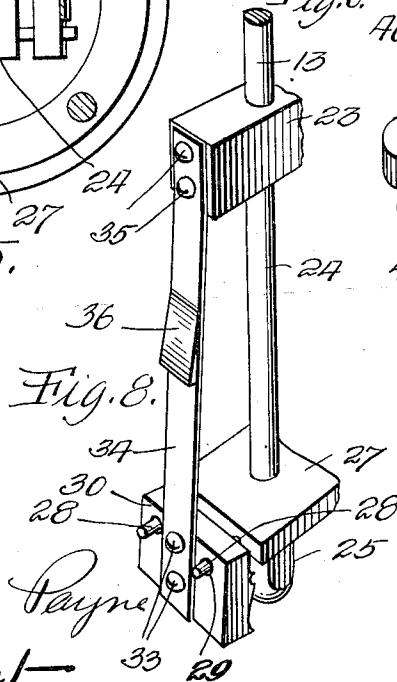
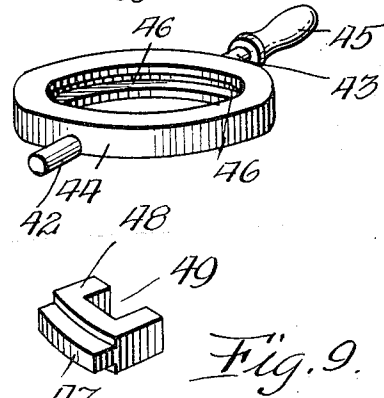
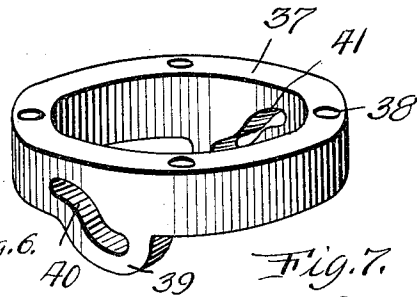
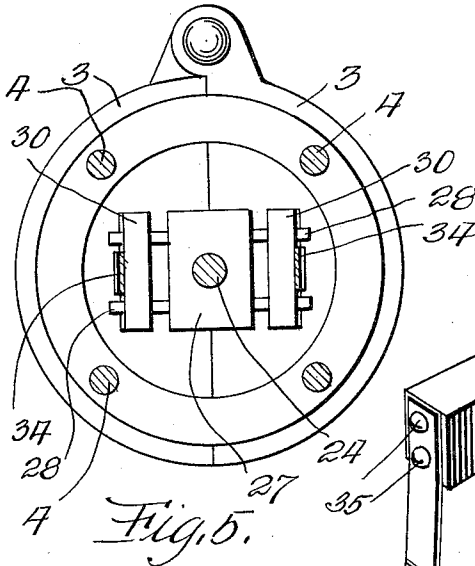
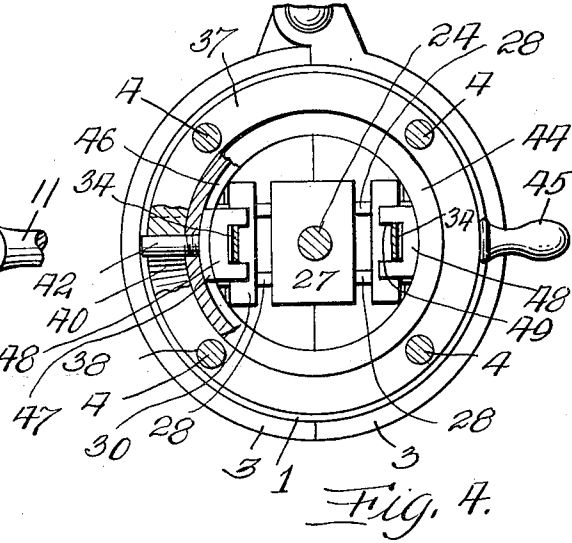
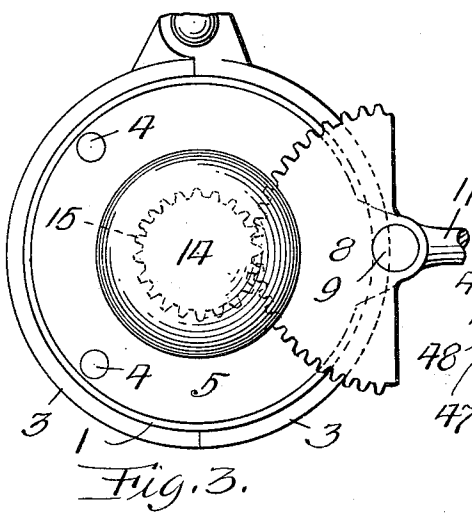
INVENTOR

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BY *H. C. Evert & Co.*
ATTORNEYS

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UNITED STATES PATENT OFFICE.

JAMES CORTLAND McKIM, OF CHARLEROI, PENNSYLVANIA.

MACHINE FOR FINISHING BOTTLE-NECKS.

1,036,295.

Specification of Letters Patent.

Patented Aug. 20, 1912.

Application filed October 30, 1911. Serial No. 657,567.

To all whom it may concern:

Be it known that I, JAMES CORTLAND McKIM, a citizen of the United States of America, residing at Charleroi, in the county of Washington and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Finishing Bottle-Necks, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a machine for finishing bottle necks, and the primary object of my invention is to expeditiously and economically round off and remove irregularities from the neck of a bottle, particularly the mouth and rim thereof.

Another object of this invention is to provide a machine that can be easily and quickly placed upon the neck rings of a blow mold for finishing the protruding end of a bottle within said mold, the machine embodying means for frictionally engaging the protruding end of the bottle while said means is revolved.

Another object of this invention is to provide a finishing machine that is durable, easy to operate and highly efficient for the purposes for which it is intended.

With the above and other objects in view, the invention resides in the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawings, wherein like numerals denote corresponding parts throughout the several views, in which:—

Figure 1 is a front elevation of the machine, Fig. 2 is a vertical sectional view of the same, Fig. 3 is a plan of the machine, Fig. 4 is a horizontal sectional view taken on the line IV—IV of Fig. 2, Fig. 5 is a similar view taken on the line V—V of Fig. 2, Fig. 6 is a perspective view of a detached bearing ring, Fig. 7 is a similar view of a detached locking ring, Fig. 8 is a perspective view of a portion of the finishing tools, and Fig. 9 is a perspective view of a detached clamping block.

A machine in accordance with this invention comprises a base ring 1 adapted to fit over the neck 2 of an open and shut blow mold 3 of the ordinary and well known type used in the production of hollow glass ware, as bottles. The base ring 1 is provided with four equally spaced uprights 4 and connect-

ing the upper ends of said uprights is a circular platform 5. One edge of said platform is provided with an off-set vertical bearing 6 for the hub 7 of a sector-gear 8. The hub 7 is retained upon the bearing 6 by a bolt 9 and a nut 10, and said hub has a handle 11 whereby the sector-gear 8 can be swung in a horizontal plane.

The platform 5 has a central opening 12 and loosely arranged in said opening is a push rod 13. Mounted upon the upper end of said push rod is a knob 14 having an integral gear wheel 15 meshing with the sector-gear 8. The lower side of the gear wheel 15 has an annular recess 16 in which is movably mounted a circular bearing 17 having a central opening providing clearance for the push rod 13. The bearing 17 has the lower and upper faces thereof provided respectively with annular grooves 18 and 19, the latter serving as a ball race and confronting an annular recess 20 in the top of the recess 16. Anti-friction balls 21 are arranged in said races.

Encircling the push rod 13, between the platform 5 and the bearing 17, is a coiled compression spring 22 having the upper convolution thereof engaging in the groove 18. The bearing 17 permits of the gear wheel 15 and the knob 14 revolving without twisting or interfering with the spring 22. The object of the spring 22 is to retain the knob 14 normally in an elevated position.

Mounted in the lower end of the push rod 13 is a rectangular head 23 and mounted in the lower side of said head is the upper end of the stem 24 of an interior finishing tool 25. The finishing tool 25 gradually tapers and is adapted to extend into the neck 26 of a bottle within the open and shut mold 3. The finishing tool 25 has a head 27 provided with sets of outwardly projecting guide pins 28, said pins extending through openings 29 provided therefor in exterior finishing tools 30. The confronting faces of the tools 30 are shaped to finish off the bead 31 and the rim 32 of the bottle 26. Connected to the outer sides of the finishing tools 30, as at 33 are resilient arms 34 having the upper ends thereof secured, as at 35 to the rectangular head 23. The outer sides of the arms, at a point intermediate the ends thereof, are provided with wedge members 36, for a purpose that will presently appear.

Mounted upon the uprights 4, intermediate the ends thereof, is a horizontal bear-

ing ring 37 having openings 38 to receive said uprights. The bearing ring 37 has the lower edge thereof provided with diametrically opposed enlargements 39 and said ring 5 and said enlargements are provided with cam slots 40 and 41, the slot 40 being the reverse of the slot 41. Movably mounted in the slot 40 is the pintle 42 and movably mounted in the slot 41 is a pintle 43. The 10 pintles 42 and 43 are carried by locking ring 44, the pintles 42 and 43 being detachably connected to said ring whereby the parts can be readily assembled, the pintle 43 having a suitable handle 45 whereby said pintles can 15 be shifted in the cam slots 40 and 41 to raise or lower the locking ring 44. The inner wall of this ring has an annular groove 46 for the tongues 47 of guide blocks 48. The blocks are oppositely disposed and are channel-shaped in plan. The vertical slots 49 of said blocks receive the resilient arms 34. 20

Operation: After the neck rings have been removed from the top of the blow mold, the machine is placed in position upon the neck 25 2 of the blow mold. The knob 14 is then gripped and the rod 13 pushed downwardly until the interior finishing tool 25 enters the bottle neck, the head 27 of said tool resting upon the rim 32. The locking ring 44 is then shifted by grasping the handle 45. 30 The shifting of the locking ring 44 is such that the pintles 42 and 43 will be removed from the upper ends of the cam slots 40 and 41 to the lower ends of the cam slots 40 and 41, this moving of the locking ring lowering 35 the same and forcing the arms 34 inwardly by reason of the guide blocks engaging the wedge members 36. When the lower ends of the arms 34 are forced inwardly, the exterior finishing tools 30 are shifted into engagement with the head 27, the rim 32 and the bead 31. The handle 11 is now gripped and the sector-gear 8 shifted back and forth 40 over the gear wheel 15 to revolve the push rod 13, the stem 24, head 23, arms 34 and the finishing tools. The guide blocks 48 ride in the groove 46 and by moving the finishing tools upon the bottle neck, any roughness or 45 irregularities are removed from the bottle neck thereby finishing the same. 50

The machine is removed by elevating the locking ring 44 to release the arms 34 and the finishing tools 30, and then by lifting the machine bodily from the mold 3.

55 The machine can be made of light and durable metal and equipped with various

kinds of finishing tools, whereby various kinds of vitreous ware can be operated upon.

What I claim is:—

1. A finishing machine of the type described comprising a base ring, uprights carried thereby, a platform supported by said uprights, a spring supported push rod arranged in said platform, a head carried by the lower end of said rod, an interior finishing tool carried by said head, yieldable exterior finishing tools carried by said head, means supported by said uprights for adjusting said yieldable exterior finishing tools, said means including a bearing ring, a locking ring movably supported by said bearing ring, and guide blocks movably arranged in said locking ring. 60 65 70

2. A finishing machine of the type described comprising a base ring, uprights carried thereby, a platform supported by said uprights, a spring supported push rod arranged in said platform, a head carried by the lower end of said rod, an interior finishing tool carried by said head, yieldable exterior finishing tools carried by said head, means supported by said uprights for adjusting said yieldable exterior finishing tools, said means including a bearing ring, a locking ring movably supported by said bearing ring, guide blocks movably arranged 80 in said locking ring, and means arranged above said platform and including a gear wheel, a sector-gear for revolving said push rod, the head and the finishing tools carried 90 thereby. 95

3. A machine of the type described embodying a revoluble push rod, a finishing tool carried by the lower end thereof, oppositely disposed yieldable finishing tools carried by said rod and coöperating with the first mentioned finishing tool, and means encircling said rod for adjusting said yieldable tools. 95

4. A finishing machine of the type described comprising a revoluble push rod, a finishing tool carried by the lower end thereof, yieldable finishing tools carried by said rod and coöperating with the first mentioned finishing tool, and means located at the end 100 of said rod for revolving said rod. 105

In testimony whereof I affix my signature in the presence of two witnesses.

JAMES CORTLAND McKIM.

Witnesses:

N. LOUIS BOGAN,
MAX H. SROLOVITZ.