No. 654,768. Patented July 31, 1900.

J. M. THOBURN.

BOTTLE FINISHER.

(Application filed May 3, 1900.)

(No Model.)

Fig. 1

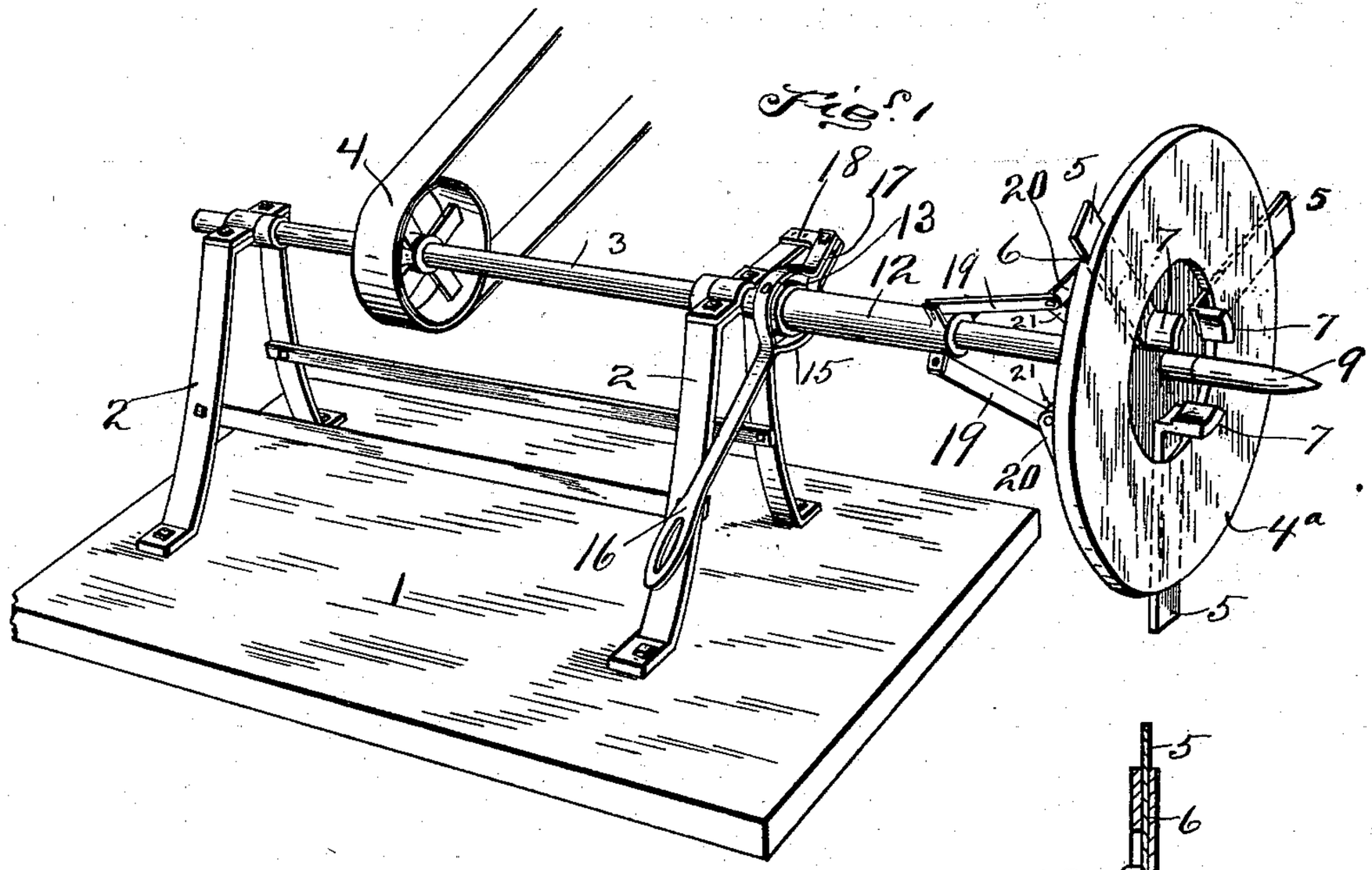


Fig. 2

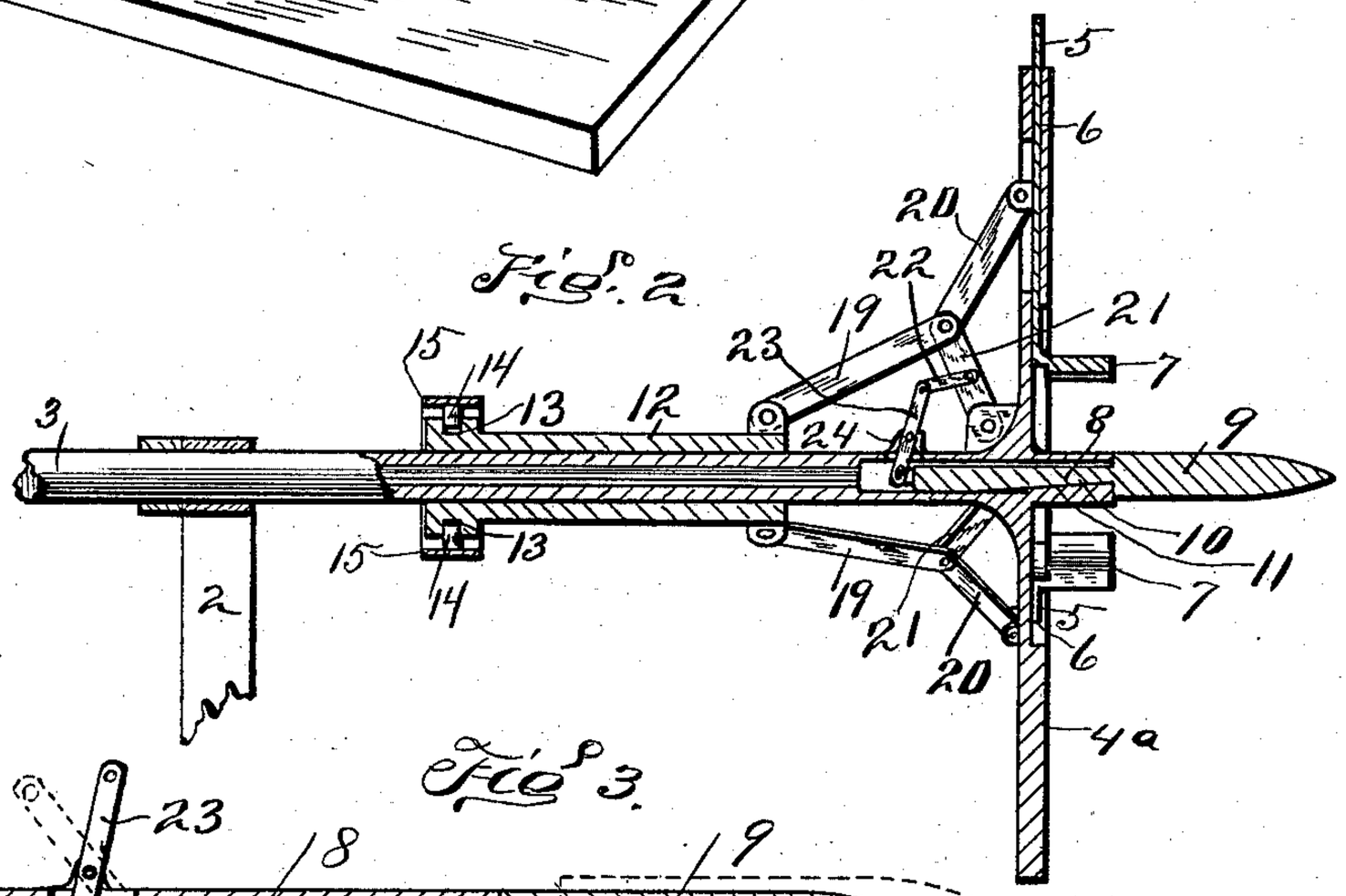
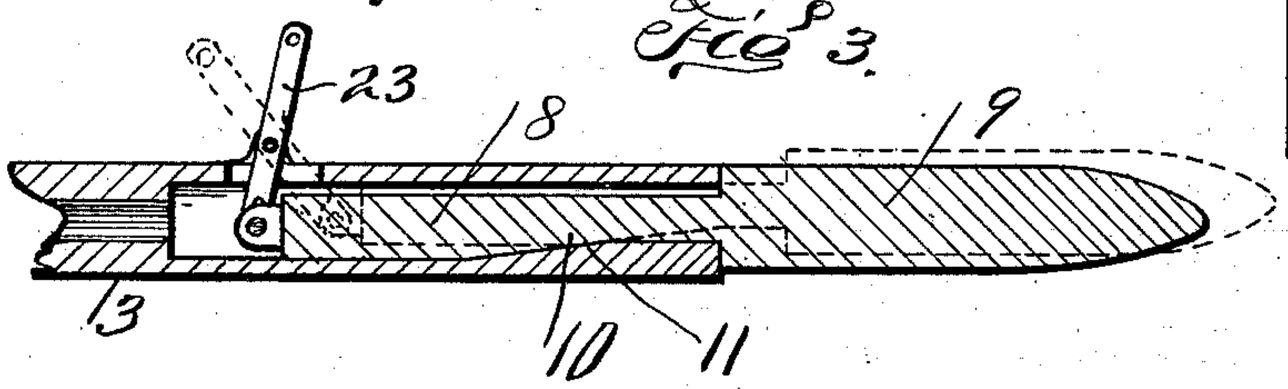


Fig. 3.



Witnesses:
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J. R. Bond.

Inventor.
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UNITED STATES PATENT OFFICE.

JAMES M. THOBURN, OF CANTON, OHIO.

BOTTLE-FINISHER.

SPECIFICATION forming part of Letters Patent No. 654,768, dated July 31, 1900.

Application filed May 3, 1900. Serial No. 15,329. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. THOBURN, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Bottle-Finishers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the figures of reference marked thereon, in which—

Figure 1 is a perspective view showing the different parts properly assembled. Fig. 2 is a horizontal section. Fig. 3 is an enlarged view showing a portion of the power or driving shaft, also showing the movable blade designed for forming the export part of the bottle.

The present invention has relation to machines for finishing the necks of bottles; and it consists in the different parts and combination of parts hereinafter described, and particularly pointed out in the claims.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, 1 represents the base, which may be substantially of the form shown, or it may be of any other desired form, inasmuch as its only object is to provide a support or bench for the machine proper.

To the base 1 are securely attached the standards 2, to the top or upper ends of which is properly joined the driving-shaft 3, which driving-shaft is provided with the pulley 4, around which pulley is located the belt, which leads to any source of power.

To the working end of the shaft 3 is securely attached in any convenient and well-known manner the disk 4^a, which disk is provided with the reciprocating radial bars 5, which bars are located in grooves or ways 6, formed in the disk. The inner ends of the bars 5 are each provided with the right-angled portions 7, the inner faces of which are concave and are so formed for the purpose of properly fitting around the outer periphery of the neck of the bottle.

Within the working end of the power-shaft 3 is located the stem or shank 8 of the blade 9, which stem or shank is provided with the inclined face 10, which inclined face moves back and forth, as hereinafter described, upon the inclined face 11, formed upon the inside of the power or driving shaft 3.

Upon the shaft 3 is located the sliding sleeve 12, which sliding sleeve is provided with an annular groove 13, which annular groove is for the purpose of receiving the pins or lugs 14, said lugs being securely attached to the collar 15, said collar being provided upon one side with the operating-lever 16 and upon the opposite side with the arm 17, which arm is pivotally connected to the bar 18 or its equivalent. It will be understood that as the lever 16 is moved back and forth it will impart a reciprocating movement to the sleeve 12, which reciprocating movement is for the purpose hereinafter described.

To the sliding sleeve 12 are pivotally attached the links 19, which links are pivotally connected at their opposite ends to the links 20, said links 20 being pivoted to the sliding bars 5.

It will be understood that as the lever 16 is moved toward the disk 4^a the links 19 will be carried with said sleeve, by which movement the links 20 will be forced toward the disk 4^a at their lower ends, thereby causing the bars 5 to move away from a common center by reason of the intermediate links 21, said intermediate links 21 being pivotally connected at a common center with the pivotal connection with the links 19 and 20.

It will be understood that as the links 21 rock or move upon their fixed pivotal points their free ends will describe the arc of a circle as the sleeve 12 is moved back and forth, by which arrangement a reciprocating movement will be imparted to the bars 5, and thereby carry the concave angle portion 7 to and from a common center, thereby providing a means for adjusting the right-angle flanges or jaws to different-sized necks.

For the purpose of producing a bottle the outer end of the neck portion of which is provided with a passage having a diameter less than the diameter of the inner portion or that portion next to the bottle proper the blade 9 is provided, which blade when in its normal position is in practical alinement with the power-shaft.

In use when it is desired to finish the neck

of a bottle the bottle while in a hot state is placed over the blade 9, after which the bars 5, together with their flanges or jaws, are brought toward each other until they come in contact with the outer periphery of the neck. As the bars 5, together with the flanges 7, are brought toward a common center the blade 9, by reason of its inclined shaft 10, resting upon the inclined lever, will be moved laterally, as illustrated in the dotted line, Fig. 3, by which arrangement a passage of greater diameter is formed in the neck of the bottle that comes in contact with the blade after said blade has been moved laterally.

For the purpose of moving the blade 9 laterally at the same time the bars 5 are moved toward each other the links 22 and 23 are provided, said links being pivotally connected together, the link 22 being pivoted to one of the links 21 and the link 23 being pivotally connected to the flange 24, formed upon the power-shaft 3, and to the end of the shank 8. It will be understood that the movement of the link 21 will impart a rocking movement to the link 23 through the link 22, by which arrangement the blade 9 is moved back and forth, and as the blade is moved outward it will be moved laterally, thereby throwing the rocking edge of said blade farther away from a common center, by which arrangement the inner portion of a neck when finished is provided with a passage having a larger diameter.

The object and purpose of providing the neck of a bottle with different diameters and the larger diameter located in the inner portion of the neck are to allow the cork or stopper to expand at its inner end, thereby preventing any accidental displacement thereof.

It will be understood that for the purpose of supplying air the power-shaft should be formed hollow, as illustrated, the air being supplied in the usual manner.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a power-shaft, a disk connected thereto reciprocating radial bars connected to the disk and provided with right-angled portions, a blade provided with a shank having an inclined edge, an inclined face formed upon the power-shaft and means for imparting reciprocating movement to the bars and to the blade, substantially as and for the purpose specified.

2. The combination of a power-shaft, a disk connected thereto, and rotatable therewith, bars carried by the disk, a sleeve mounted on the shaft, a blade on the shaft provided with a shank, links pivoted to the sleeve and connecting bars and blade and means for moving the blade laterally at a time when said blade is moved longitudinally, substantially as and for the purpose specified.

3. The combination of a power-shaft, a disk provided with reciprocating bars having flanges at their inner ends, said power-shaft provided with a blade, and means for imparting longitudinal and lateral movement to the blade, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JAMES M. THOBURN.

Witnesses:
J. A. JEFFERS,
F. W. BOND.