(No Model.)

C. F. & C. LENG.

BOTTLE FINISHING MACHINE.

No. 423,482. Patented Mar. 18, 1890.

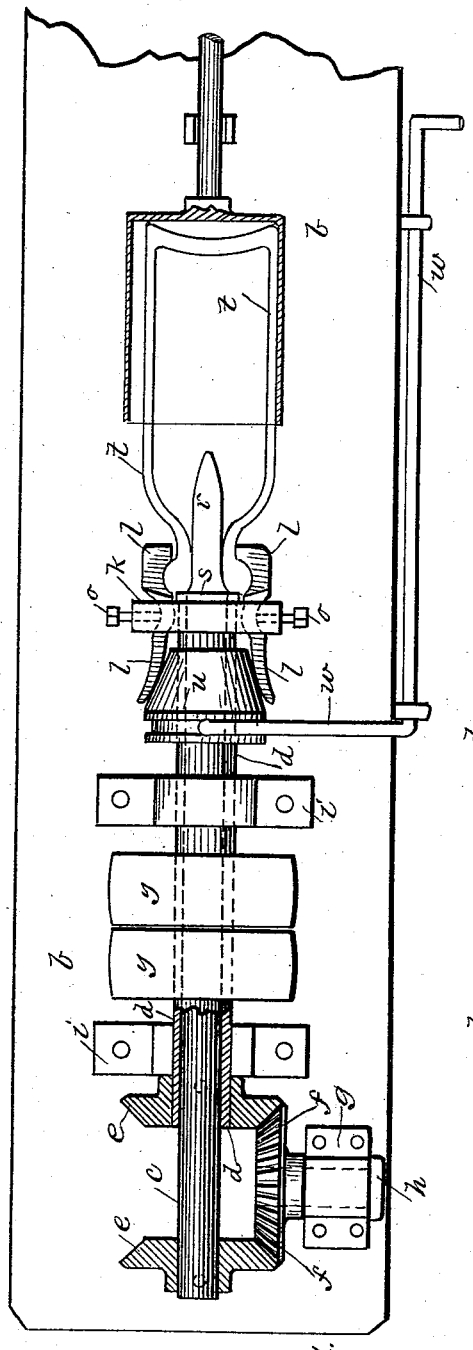

Fig. 1.

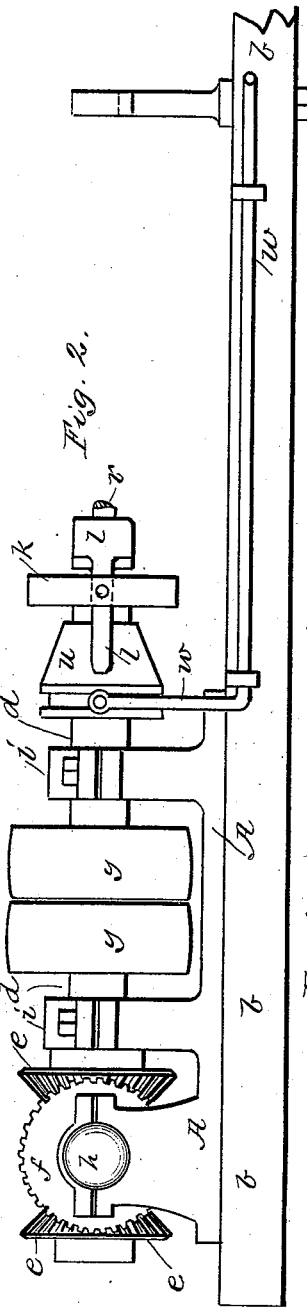

Fig. 2.

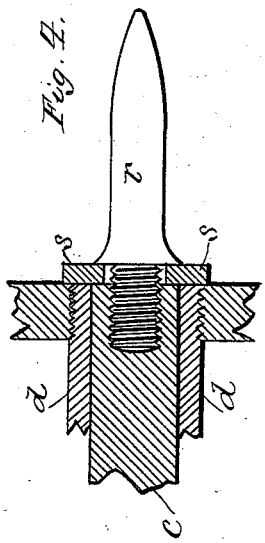

Fig. 4.

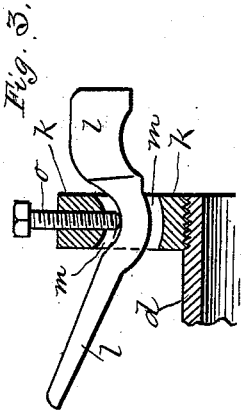

Fig. 3.

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UNITED STATES PATENT OFFICE.

CHRISTIAN F. LENG AND CHARLES LENG, OF PITTSBURG, PENNSYLVANIA.

BOTTLE-FINISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 423,482, dated March 18, 1890.

Application filed June 11, 1888. Serial No. 276,769. (No model.)

To all whom it may concern:

Be it known that we, CHRISTIAN F. LENG and CHARLES LENG, citizens of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Bottle-Finishing Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Our invention relates to an improvement in bottle-neck-finishing machines; and it consists in a set of revolving dies for finishing the outer portion of the neck and a tapering guide-bar having a rotary movement in an opposite direction to that of the dies for finishing the inner portion of the bottle-neck, together with certain details of construction and combination of parts, as will be fully set forth hereinafter.

In the accompanying drawings, Figure 1 is a plan view of our improved bottle-finishing machine, partly shown in section, the better to show its working parts. Fig. 2 is a side elevation of the same. Fig. 3 is an enlarged sectional elevation through a portion of the face-plate, showing the manner of securing and adjusting the dies. Fig. 4 is an enlarged detail sectional elevation showing the manner of attaching the guide-bar and face plate in position.

To put our invention into practice we provide a frame A of suitable size and form of construction, and firmly attach the same to a bench *b*. Mounted on this frame A and secured in proper bearings *i* are two shafts *c d*, the one *c* centrally located within the other *d*. At the rear extremity of each of these shafts *c d* are secured bevel-pinions *e*, each of which meshes with a pinion *f*, properly mounted in a suitable bearing *g* on a short shaft *h*. This arrangement of gearing serves to revolve the two shafts *c d* in opposite directions. Secured to the forward end of the outside shaft *d* is a disk or face plate *k*, in which two finishing-dies *l* are secured by passing the same through openings *m* in the disk *k* and adjusting the same by means of set-screws *o* placed through the perimeter of the plate *k*. Attached to the forward end of the inner shaft *c*, by means of a screw-thread, is a tapering guide-bar *r*, which serves to enter the bottle *t* properly into the dies *l* and to finish the inner portion of the neck of the same. A small rectangular plate *s*, loosely secured between the bar *r* and face-plate *k*, prevents the dies *l* from closing more than necessary to finish the neck of the bottle. At the rear of the face-plate *k* is a loosely-fitting conical-shaped clutch *u*, which, when moved forward on the outside shaft *d* by means of a rod *w*, presses the dies *l* together over the neck of a bottle *t* placed between the same. A tight and loose pulley *y*, secured to the outside shaft *d* between the bearings *i* of the same, affords a means for operating the machine. These dies *l*, guide-bar *r*, and the rectangular plate *s* may be detached from the machine and others of different shape substituted, or the same dies *l* may be adjusted toward or away from each other by the set-screws *o*, to finish the necks of large or small bottles. By this construction and operation the bottle *t* is prevented from turning in the dies *l* when finishing the same. The guide-bar *r*, revolving in one direction and the dies *l* in an opposite way, equalize and counteract the friction of each other, thereby preventing a round bottle from turning and obviating the necessity of a device for clamping the same.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a machine for the purpose set forth, the combination of the two shafts *c d*, the one centrally located within the other, and a means for revolving the same in opposite directions, the dies *l*, adjustably attached to the face-plate *k*, secured to the forward end of the outside shaft *d*, and a device for opening and closing the same, the guide-bar *r*, and rectangular washer *s*, secured to the inner shaft *c*, substantially as and for the purpose described.

2. In a machine for finishing the necks of bottles, the combination of the oppositely-rotating concentric shafts and the dies carried

by one of said shafts for finishing the exterior surface of the neck of the bottle, substantially as and for the purpose described.

3. In a machine for finishing the necks of bottles, the combination of the oppositely-rotating concentric shafts, the finishing-dies carried by one of said shafts, and a guide carried by the other shaft to center the neck of the bottle between said dies, substantially as and for the purpose described.

4. In a machine for finishing the necks of bottles, the combination of the concentric oppositely-rotating shafts, a face-plate carried by one of the shafts, the finishing-dies movably mounted in said face-plate, and a sliding device for simultaneously adjusting said dies, substantially as and for the purpose described.

5. In a machine for finishing the necks of bottles, the combination of the concentric oppositely-rotating shafts, a face-plate fixed to one of said shafts, the finishing-dies loosely mounted in the face-plate, a conical sliding sleeve adapted to impinge against all of said dies to simultaneously adjust the same, and a stop for limiting the inward movement of the dies upon the neck of the bottle, substantially as described.

6. In a machine for finishing the necks of bottles, the combination of the concentric rotary shafts, a forwardly-projecting guide carried by one of the shafts, a face-plate fixed to the other shaft, the finishing-dies loosely fitted in apertures in said face-plate, and adjusting-screws for moving the dies laterally of one another, substantially as described.

7. In a machine for finishing the necks of bottles, the combination of the concentric rotary shafts each having a pinion secured thereto which mesh with another pinion, a face-plate fixed to the hollow shaft and carrying the movable finishing-dies, a sliding conical sleeve for simultaneously adjusting the dies, and a tapered guide fixed to the inner shaft and projecting forwardly beyond the face-plate to center the neck of the bottle between the dies, substantially as described.

In testimony that we claim the foregoing we hereunto affix our signatures this 16th day of May, A. D. 1888.

CHRISTIAN F. LENG. [L. S.]
CHARLES LENG. [L. S.]

In presence of—
O. D. LEVIS,
P. B. REILLY.