

(No Model.)

J. TAYLOR.

THREAD FORMING TOOL FOR BOTTLE NECKS.

No. 557,451.

Patented Mar. 31, 1896.

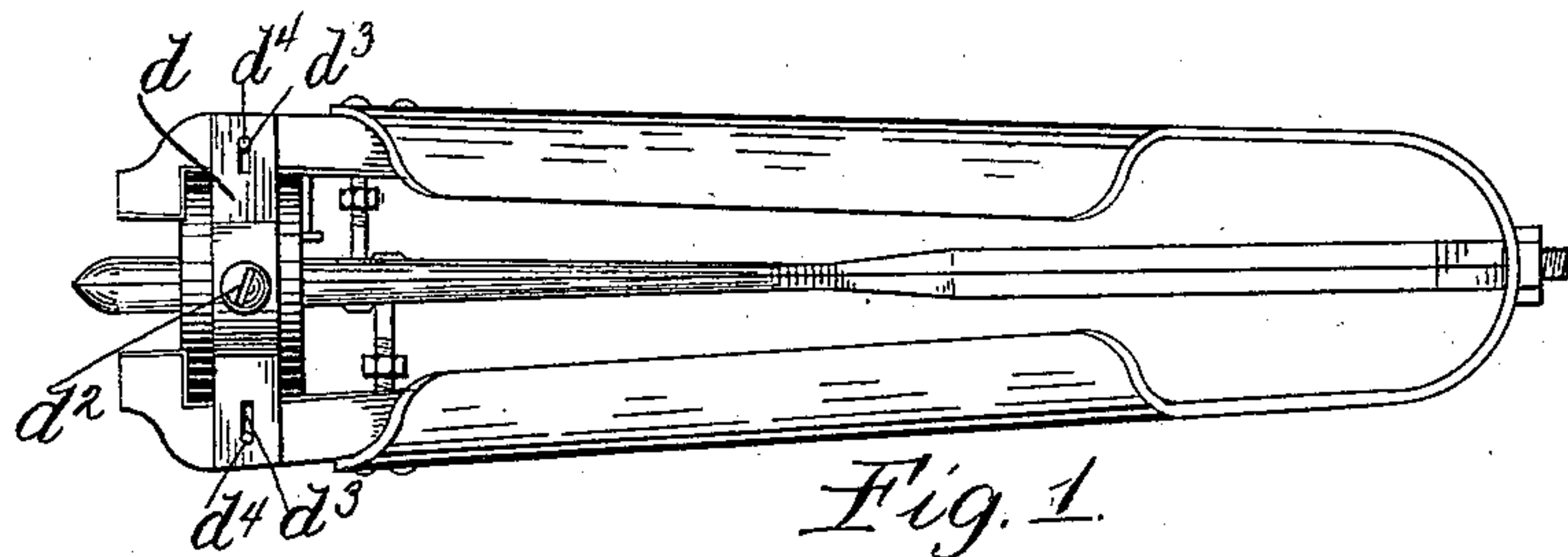


Fig. 1.

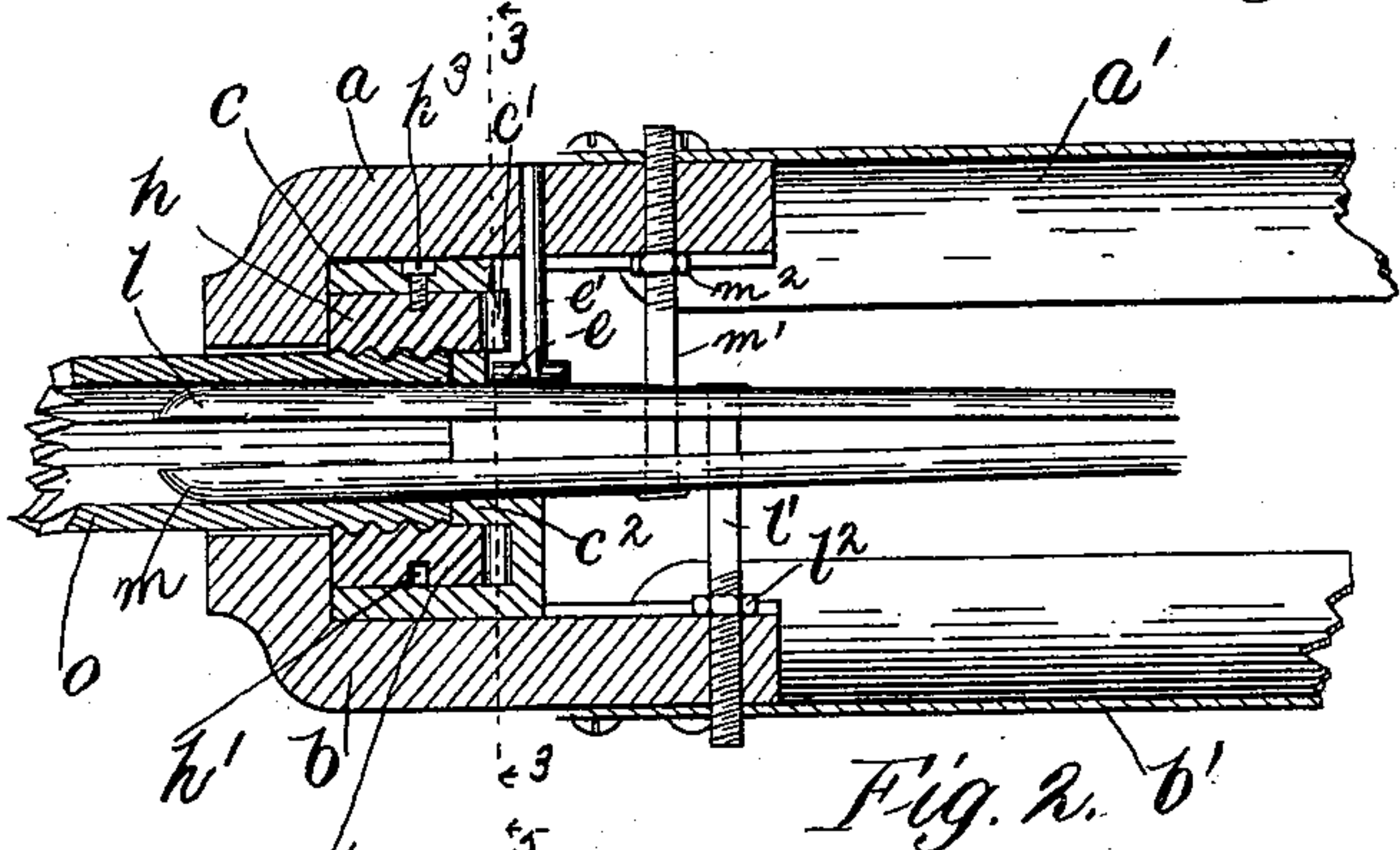


Fig. 2. b'

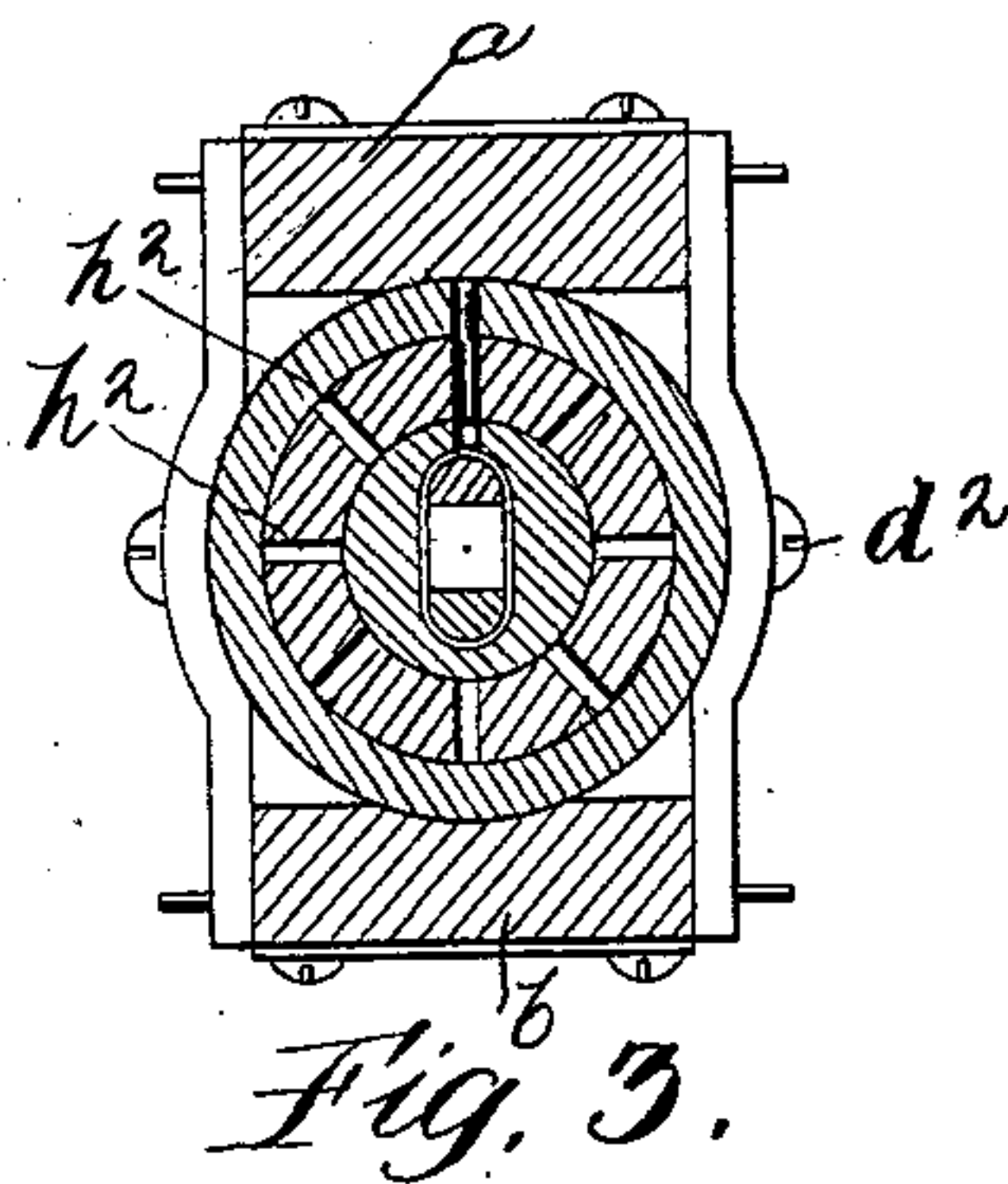


Fig. 3.

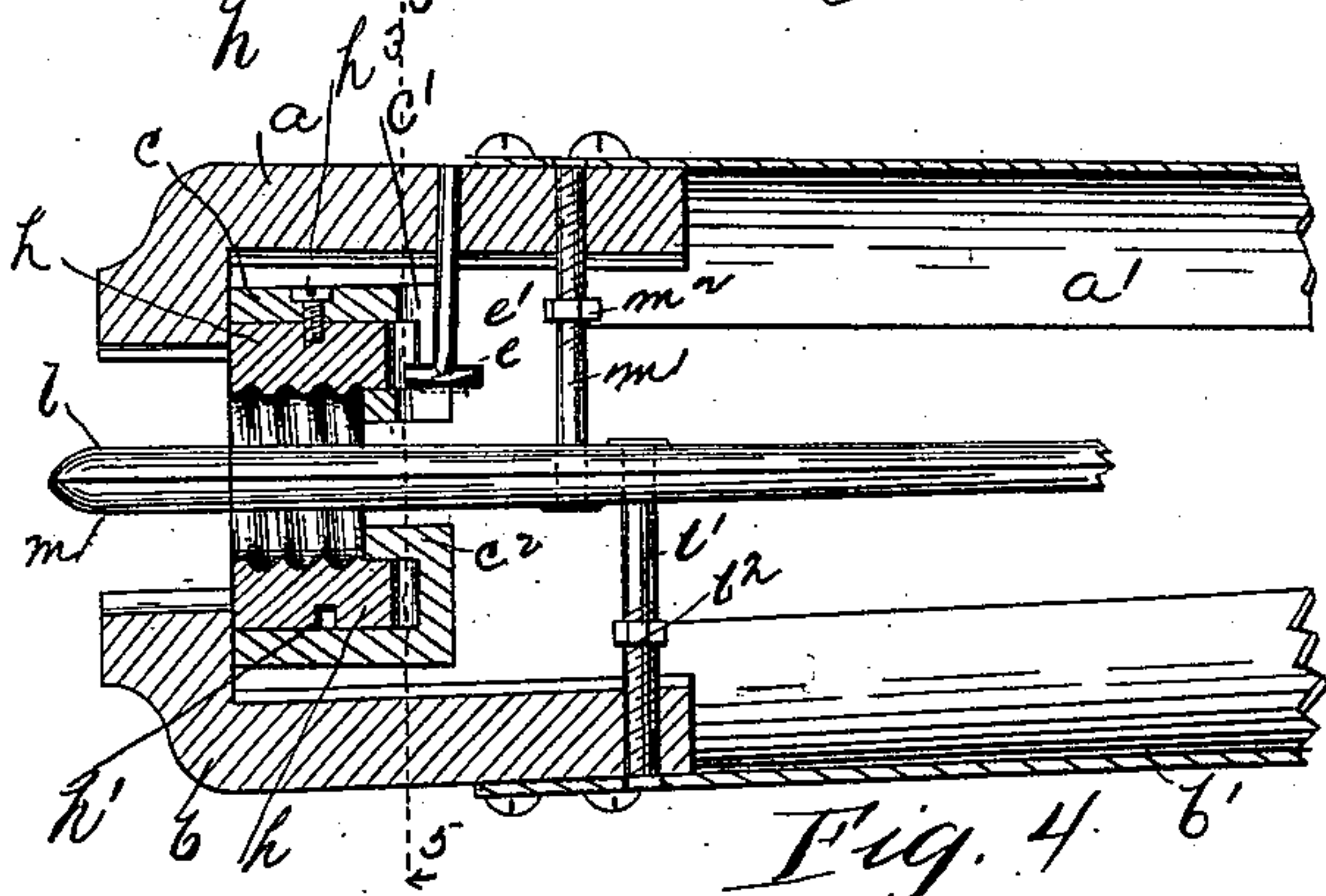


Fig. 4. b'

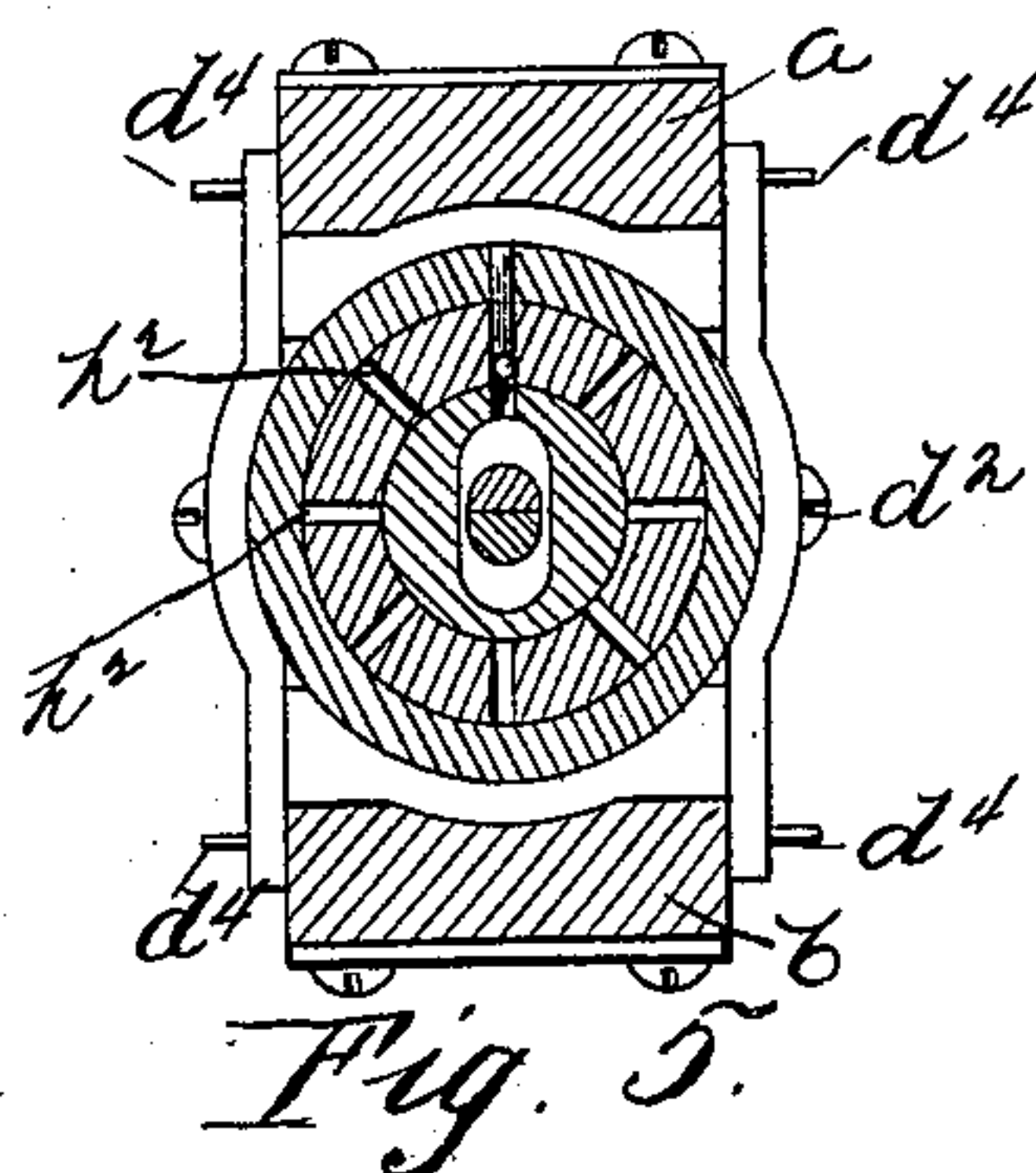


Fig. 5.

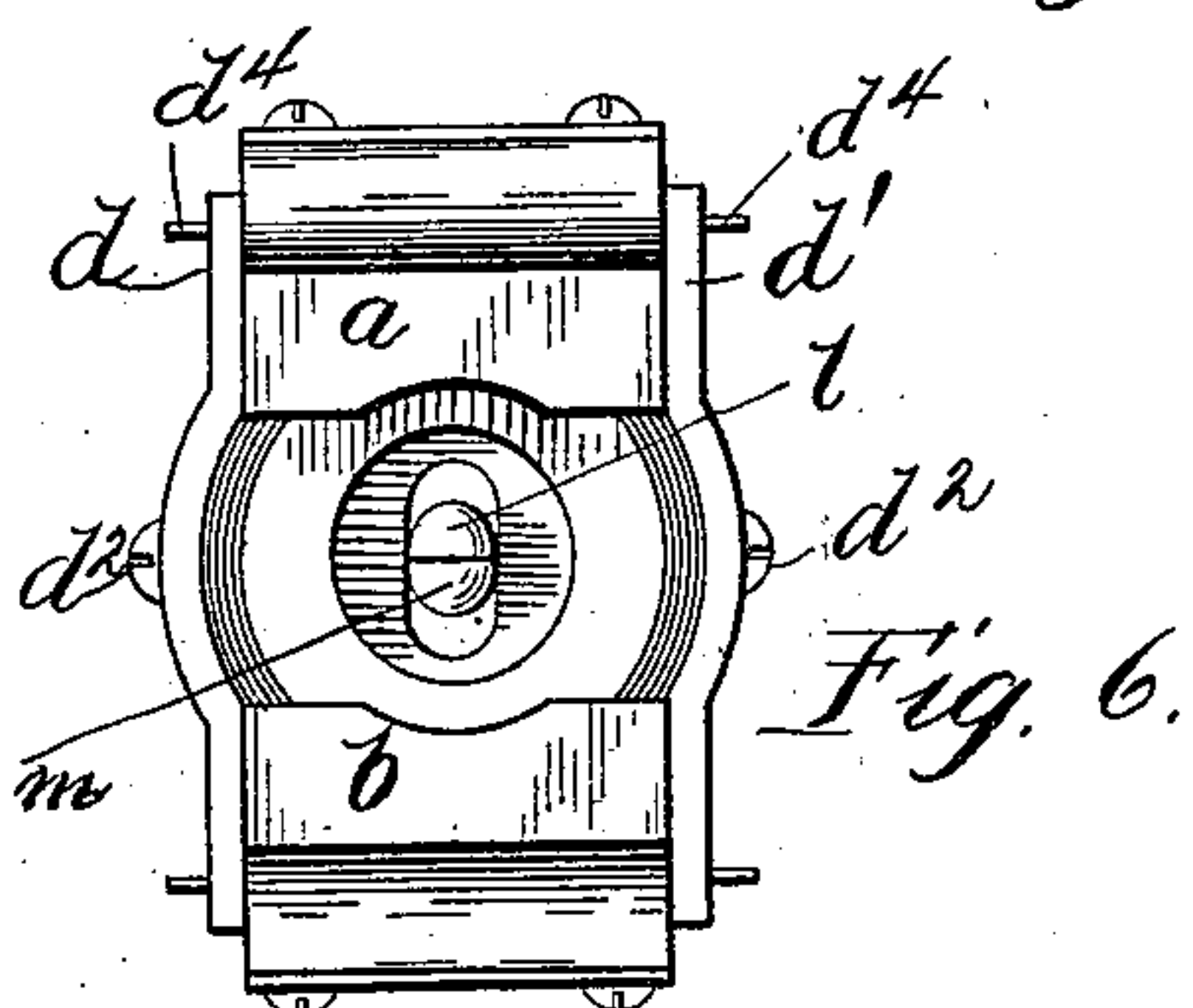


Fig. 6.

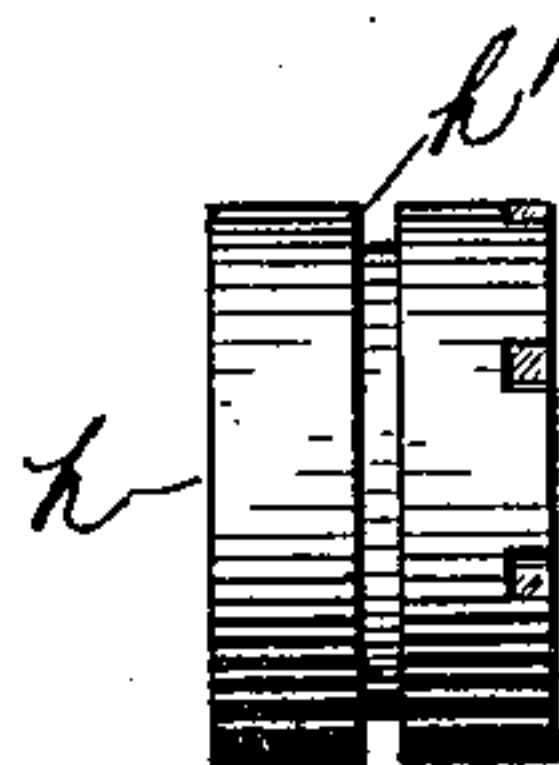


Fig. 7.

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# UNITED STATES PATENT OFFICE.

JOB TAYLOR, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF TO  
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## THREAD-FORMING TOOL FOR BOTTLE-NECKS.

SPECIFICATION forming part of Letters Patent No. 557,451, dated March 31, 1896.

Application filed June 13, 1895. Serial No. 552,665. (No model.)

*To all whom it may concern:*

Be it known that I, JOB TAYLOR, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a certain new and useful Improvement in Thread-Forming Tools for Bottle-Necks, (Case No. 1,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to a bottle-threading tool, its object being to provide a tool of simple construction and efficient operation for forming threads upon the necks of glass bottles and the like.

In Letters Patent No. 463,575, granted November 17, 1891, is illustrated a form of bottle-threading tool in which is provided a rotatable annulus carrying internal threads, into which annulus the end of the bottle-neck is inserted while the material is in a plastic condition, a pair of outwardly-moving fingers or arms being provided for insertion into the bottle-neck to press the glass or other material into the threads formed on the annulus. By the use of this tool the end of the bottle-neck was left in an unfinished condition and required grinding in order to complete the bottle. This method of finishing the bottle-neck by grinding is objectionable, as it removes the enamel finish which it is desirable to retain.

In accordance with the present invention the internally-threaded rotatable annulus and the outwardly-spreading fingers or arms are employed, and, in addition, an abutment is provided, against which the end of the bottle-neck is adapted to bear during the thread-forming operation, the end of the bottle-neck being thus finished and enameled during the thread-forming operation.

I will describe my invention more particularly by reference to the accompanying drawings, in which—

Figure 1 is a view in elevation of a thread-forming tool embodying my invention. Fig. 2 is a partial longitudinal sectional view thereof, the bottle-neck being shown in position and the spreading-arms moved into position to press against the interior of the bottle-neck. Fig. 3 is a transverse sectional view on line

3 3 of Fig. 2. Fig. 4 is a partial longitudinal sectional view showing the spreading inside arms closed together. Fig. 5 is a transverse sectional view thereof on line 5 5 of Fig. 4. Fig. 6 is an end view. Fig. 7 is a view of the rotatable annulus.

Like letters refer to like parts in the several figures.

Blocks or jaws *a b* are mounted upon the ends of arms *a' b'*, whereby the jaws may be moved toward or from one another. Between the jaws *a b* is a ring *c*, to the sides of which are secured the distance-pieces *d d'* by means of screws *d<sup>2</sup> d<sup>2</sup>*. In the distance-pieces are provided slots *d<sup>3</sup> d<sup>3</sup>*, in which pins *d<sup>4</sup> d<sup>4</sup>*, provided upon the jaws *a b*, are adapted to move, the pins and slots thus limiting the movement of the jaws. A radial slot *c'* is provided in the ring *c*, within which a pin *e* is adapted to move as the jaws are opened and closed, the pin *e* being carried upon the end of the rod *e'*, which is mounted upon one of the jaws *a*. Within the ring *c*, and rotatable relatively thereto, is an annulus *h* carrying internal screw-threads and having upon its outer periphery a slot *h'* adapted to receive the end of a screw *h<sup>3</sup>* carried in the ring *c*, the rotation of the annulus *h* being thus permitted, but its longitudinal removal from the ring *c* prevented.

The annulus *h* is provided at the rear with a number of radial slots *h<sup>2</sup> h<sup>2</sup>*, into one of which the pin *e* is adapted to pass when the jaws *a b* are separated, the annulus being thus locked in position and the rotation thereof relatively to the ring *c* prevented. When the jaws are moved together, the pin *e* is moved from engagement with the slots *h<sup>2</sup>*, the annulus being thus free to rotate. Outwardly-spreading arms or fingers *l m* are adapted to extend through the bore of the annulus, a rod *l'* being mounted upon the finger *l*, and extending through an aperture provided in the finger *m*, and through an opening provided in the jaw *b*, a nut *l<sup>2</sup>* being provided upon the rod *l'*, so that when the jaw *b* is moved inward the finger *l* will be moved away from the finger *m*. Likewise the rod *m'* is mounted upon the finger *m*, and extends through an aperture in the finger *l*, and through an open-



ing in the jaw *a*, a nut *m*<sup>2</sup> being provided whereby the inward movement of the jaw *a* moves the finger *m* away from the finger *l*.

The neck *o* of the bottle upon which threads  
5 are to be formed is inserted in the annulus *h* while the jaws *a b* are separated, the end of the neck being thrust against the hub or central portion *c*<sup>2</sup> of the ring *c*. The jaws are then pressed together, thus moving the pin *e*  
10 from engagement with the annulus *h* and moving the fingers *l* and *m* into contact with the interior of the bottle-neck. The bottle is then rotated and carries with it the annulus *h*, the engagement of the fingers *l* and *m* with  
15 the interior of the bottle-neck serving to press the plastic material of the bottle against the interior of the annulus to form threads thereon. The central portion or hub *c*<sup>2</sup> of the ring *c* remains stationary during the operation,  
20 and the frictional engagement of the end of the bottle-neck with the face of said hub finishes the end of the neck and imparts an enamel thereto. The rotation of the bottle is then stopped and the jaws *a b* separated, thus  
25 moving the fingers *l m* together and moving the pin *e* into engagement with one of the slots *h*<sup>2</sup> of the annulus *h*, the annulus being thus locked against rotation. The bottle may then be unscrewed from the annulus and the  
30 operation is completed.

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

35 1. In a bottle-threading tool, the combination with a ring provided with an annular channel in its face, and having an inwardly-

projecting arm or hub, of a rotatable annulus carrying an internal screw-thread, and adapted to fit in said annular channel, said annulus having on its rear face a series of radial  
40 slots, a radial slot being provided through the rear wall of said ring, and a pin or lug moving in the radial slot in said ring and adapted to engage any one of the slots in said annulus, to lock the annulus to the ring; substantially  
45 as described.

2. In a bottle-threading tool, the combination with an internally-screw-threaded annulus, of a ring having an annular channel provided in the face thereof, said annulus conforming to said channel and adapted to be  
50 rotated therein, said ring being provided with an inwardly-projecting rim or hub against which the end of the bottle-neck is adapted to abut, a slot being provided through said  
55 hub, outwardly-moving arms or fingers for pressing the glass while being formed against the interior of said annulus, said fingers passing through the slot in said hub and conforming to the shape of the ends of the slot to prevent the plastic glass from passing through  
60 the slot, a pin or lug adapted to move in a radial slot provided in said ring, said annulus being provided upon its inner face with a series of radial slots adapted to be engaged by  
65 said pin or lug; substantially as described.

In witness whereof I hereunto subscribe my name this 10th day of June, A. D. 1895.

JOB TAYLOR.

Witnesses:

J. A. OAKS,

WM. H. THORNTON.