

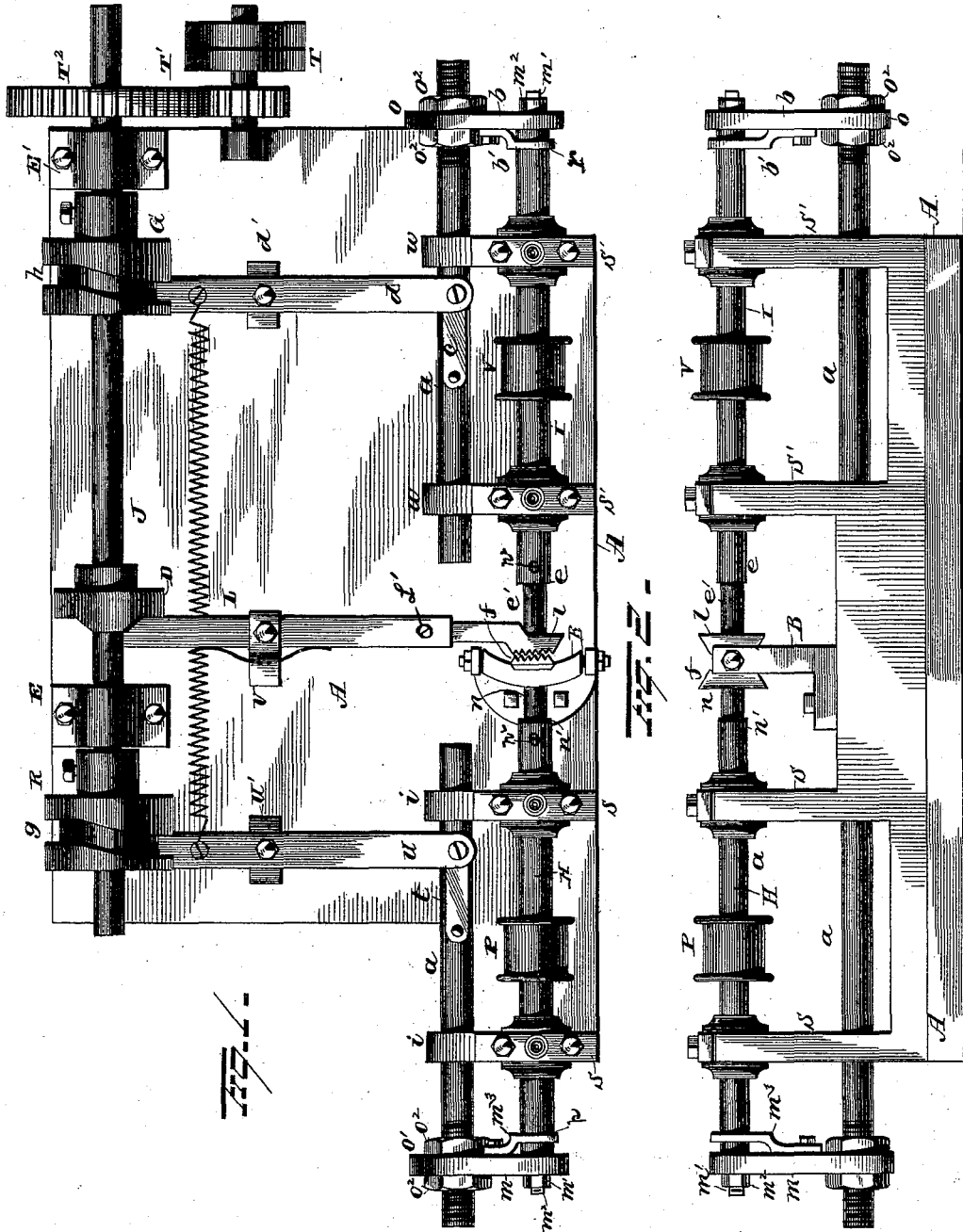
(No Model.)

2 Sheets—Sheet 1.

F. A. MERWIN.  
BUTTON LATHE.

No. 376,447.

Patented Jan. 17, 1888.



Witnesses  
*E. Nottingham*  
*Jas. C. Jones.*

Inventor  
*Frank A. Merwin.*

By his Attorney  
*H. A. Symons.*

(No Model.)

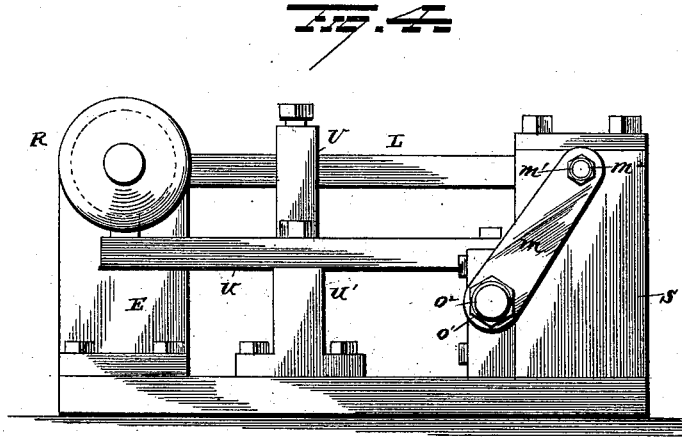
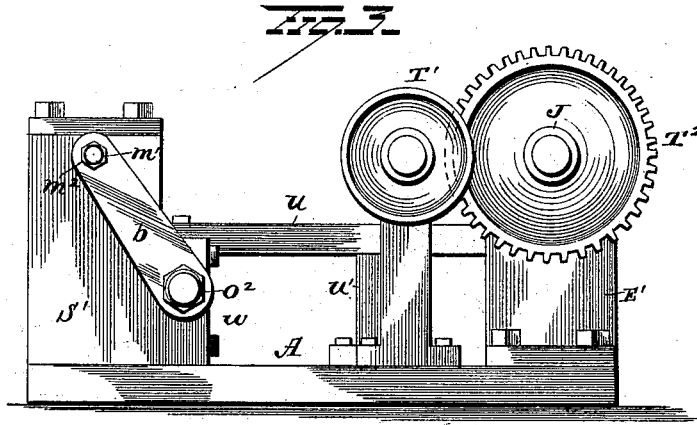
2 Sheets—Sheet 2.

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Witnesses  
*E. Nottingham*  
*Geo. E. Jones*

Inventor  
*Frank A. Merwin*

By his Attorney  
*H. A. Seymour*

# UNITED STATES PATENT OFFICE.

FRANK. A. MERWIN, OF NEW MILFORD, CONNECTICUT, ASSIGNOR TO ALFRED H. NOBLE AND GEORGE B. NOBLE, BOTH OF SAME PLACE.

## BUTTON-LATHE.

SPECIFICATION forming part of Letters Patent No. 376,447, dated January 17, 1888.

Application filed March 28, 1887. Serial No. 232,729. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK. A. MERWIN, of New Milford, in the county of Litchfield and State of Connecticut, have invented certain new and useful Improvements in Button-Lathes; and I 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 appertains to make and use the

same.

My invention relates to an improvement in button-lathes, the object of the same being to simplify and render efficient as a power-machine the button-lathe patented to Samuel L. Otis, May 5, 1885, numbered 317,183.

With this end in view my invention consists in certain features of construction and combinations of parts that will be hereinafter described, and pointed out in the claim.

Referring to the drawings making a part of this specification, Figure 1 is a plan view of the button-lathe. Fig. 2 is a front elevation of the device. Fig. 3 is an elevation of the lathe at its geared end. Fig. 4 is an elevation of the opposite end of the lathe.

A is the base-plate of the lathe, on the front portion of which the standards S S S' S' are mounted, and furnished with boxes upon their upper portions to support the mandrels H I. The mandrels H I are cut with grooves at the points *p r*, near their outer ends, and have fixed pulleys V P secured in place upon them between the upright supporting-standards S S'.

Upon the inner edge of the standards S S' fixed brackets *i w* are integrally formed, and are provided with perforations to receive the slide-bars *a a*, that have the arms *b m* attached to their ends *o o'* by jam-nuts *o''*. The opposite ends of the arms engage the ends of the mandrels H I by means of center points, *m'*, which are adjusted by the nuts *m''* to have a proper contact with the ends of the mandrels and permit their rotation. The latches *m'' b'* are made to engage grooves cut in the mandrels H I and move them endwise when the slide-bars *a a* are made to reciprocate. The inner end, *e*, of the mandrel I is provided with a removable cutter-head, *e'*, secured in place by screw *n''*, or other device. This cutter-head

fits a longitudinal socket made in this mandrel, and is preferably used as a tool to reduce to form the button-blank and give it the correct shape for the reverse side of a button.

Into the end *n'* of the mandrel H the cutter-head *n* is inserted and secured by screw *n''*, or other device. It is also made removable to permit an exchange of tools to give different forms to the face side of the buttons, as may be desired.

Between the cutter-heads *e' n* an upright standard, B, is rigidly secured upon the base-plate A. This standard B is of proper height to permit the perforated grip-die *f* that is mounted upon it to line axially with the longitudinal centers of the cutter-heads *n e'*, it being understood that the mandrels H I are located in the same horizontal plane. The die *f*, that is intended to engage one side of a button-blank, is circular, and has a slightly conical outer face that is serrated or otherwise roughened to catch on the edge of the blank when it is brought in contact therewith.

At the rear side of the base-plate A the upright standards E' E are fixed. These standards support the shaft J and permit its rotation in the boxes formed on their upper ends. Near the inner surface of the standards E E' the cam-grooved hubs R G are fixed rigidly to the shaft J. The cam-head D is also secured upon this shaft, the pulley T and gear-wheels T' T'', that are fixed and supported as shown, being intended to transmit motion from a source of power to the cams through a belt that is placed upon this pulley T.

At a proper point on the plate A an upright post, U, is placed, which is designed to support a clamping-lever, L, that is pivoted to vibrate in a horizontal plane. This lever L has a bend at its rear end that is made to engage the side face of the cam-head D. A spring, K, which is connected to the standard U and body of the clamping-lever L, tends to hold the end in close contact with cam-head D. The free end of the lever L is longitudinally perforated to receive the shank of the die *l*, adjustably secured therein by set-screw L', or other device.

The face of the die *l* is made of similar conformation to that of the opposing die *f*, and

it is also perforated to permit the cutter-head *e'* to penetrate it and engage the button-blank, which is held between the cupped rough edges of the fixed die *f* and vibrating die *l*, when the latter-named die is actuated by its cam and thus made to have bearing-contact upon an interposed button-blank.

The slide-bars *a a* are connected pivotally to the links *c t*, that are also pivoted at their opposite ends to the vibrating levers *u d*, which have support upon the upright posts *u' d'*, and are adapted to have limited lateral vibration upon the posts as a center, suitable bolts being inserted to hold them pivotally thereon. The rear ends of the levers *u d* are connected to the cam-grooves *g h* in the hubs *R G*, to receive motion therefrom; and it will be seen that from the connections established between the cams on the shaft *J* and the mandrels *I H* a revolution of the shaft will cause periodical limited longitudinal movement of the mandrels, to which rotary motion is also communicated by belts placed upon the pulleys *V P*.

In operation the button-blank is inserted between the clamping-dies *f l*, when the motion of the shaft *J* has caused the die *l* to recede from contact with its mated die *f*. The return of the die *l* grips the blank between the fixed and movable die. The relative position of the cam-slots *h g* in the hubs *G R* is such in regard to the cam-head *D* that the rapidly-rotating mandrels *H I* will simultaneously be advanced to engage the secured blank and instantly reduce it to shape on each side

of the same, the length of the shanks of the cutters *e' n* being so proportioned to the thickness of the fixed and movable gripping-dies that the ends of the mandrel in which they are placed will check their advance at a proper point to produce buttons of a uniform thickness.

This machine is automatic in its operation as regards the cutting of buttons, and simply requires the attention of cheap labor to feed the blanks successively as the finished buttons drop from the clamping-dies.

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

In a button-lathe, the combination, with a base-plate, standards mounted thereon, a pair of rotary and longitudinally-sliding mandrels, a rotary cam-shaft journaled in said standards, and a slide-bar connected to each mandrel, of a fixed and a movable clamping-die, a vibrating lever to which the movable die is adjustably secured, and the slide-bar-operating levers pivotally connected to the sliding bars, all of these levers having connection with the cam-shaft, whereby they are given periodical vibratory motion, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

FRANK. A. MERWIN.

Witnesses:

GEORGE D. NOBLE,  
CHARLES C. BARLOW.