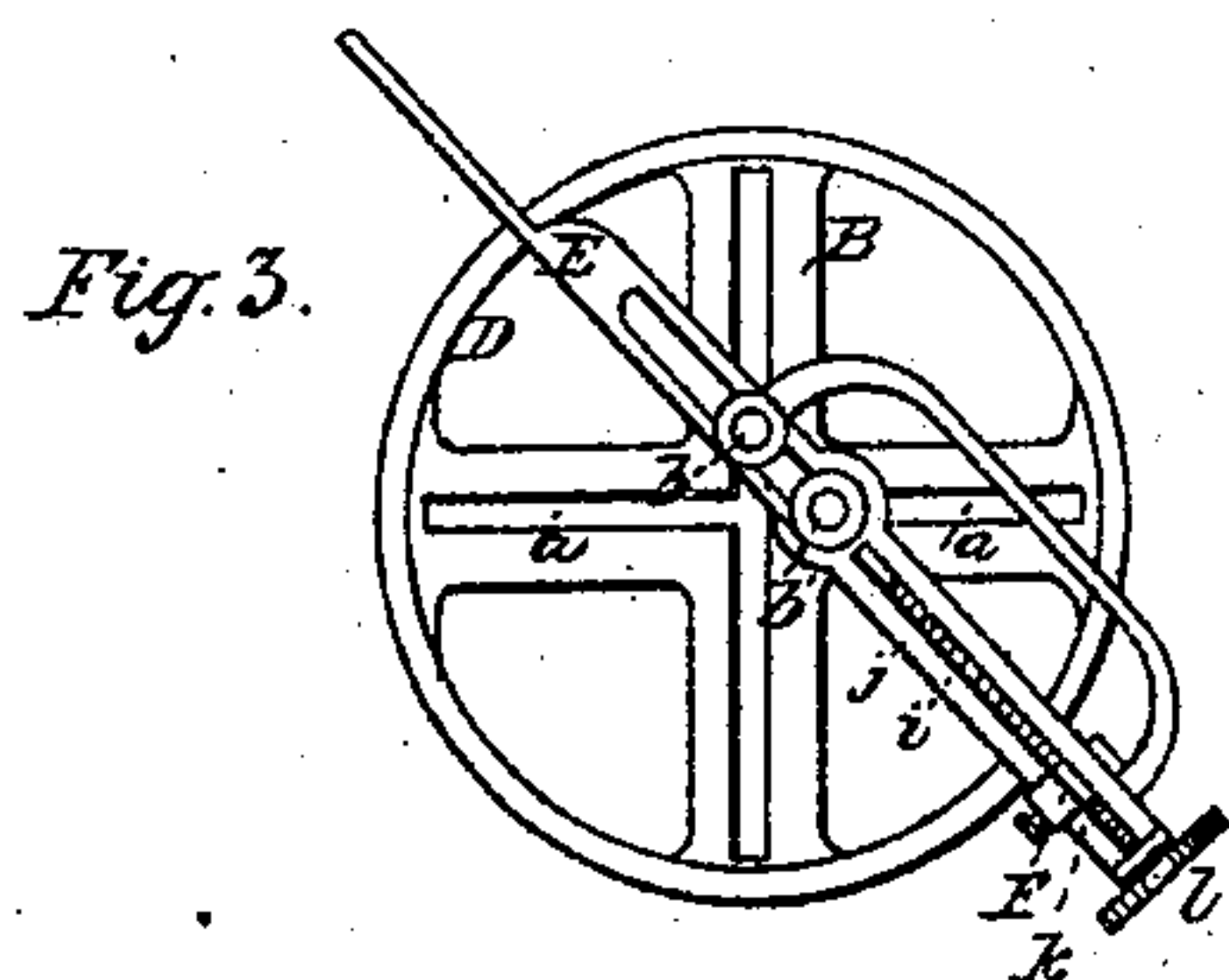
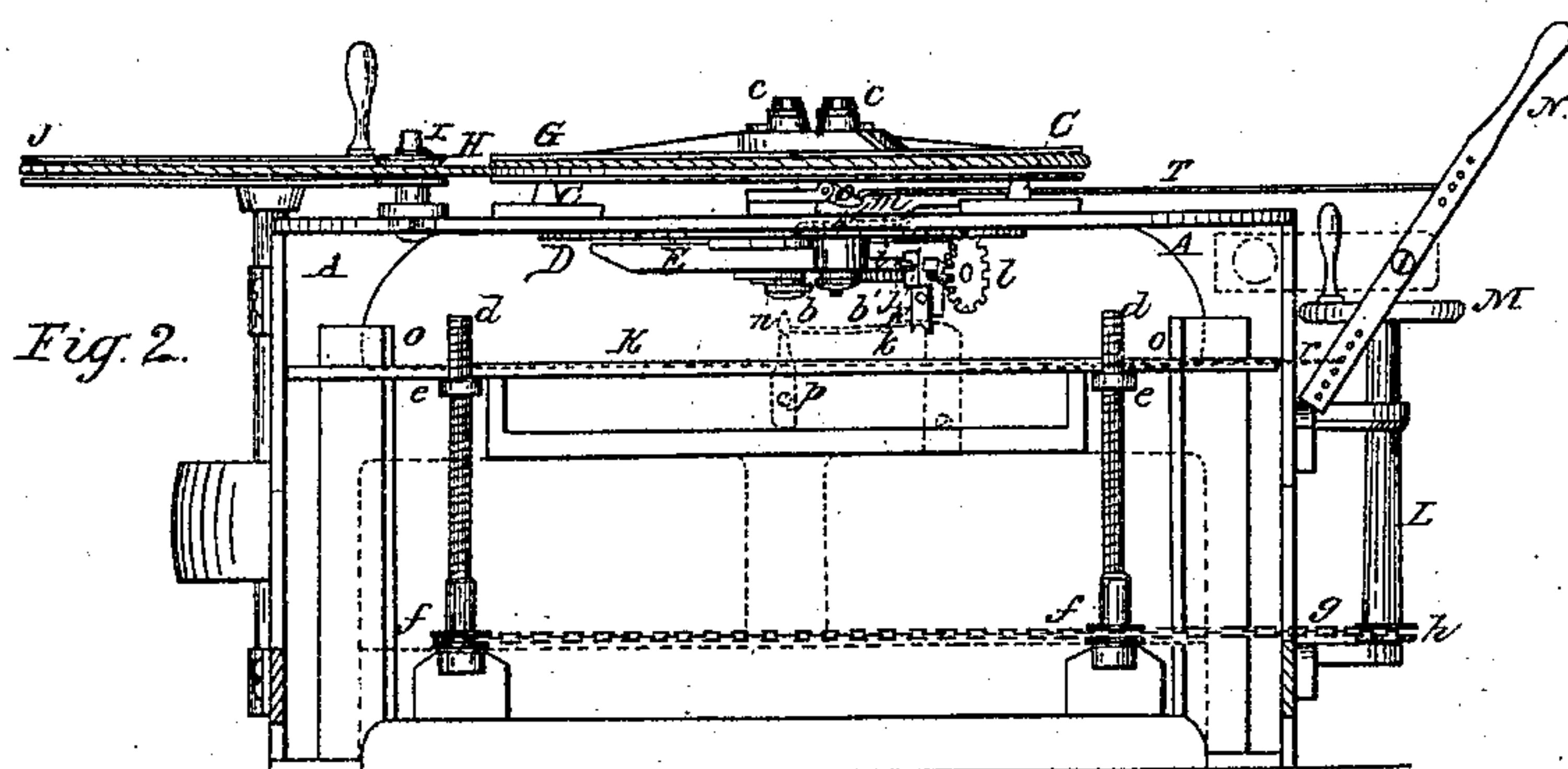
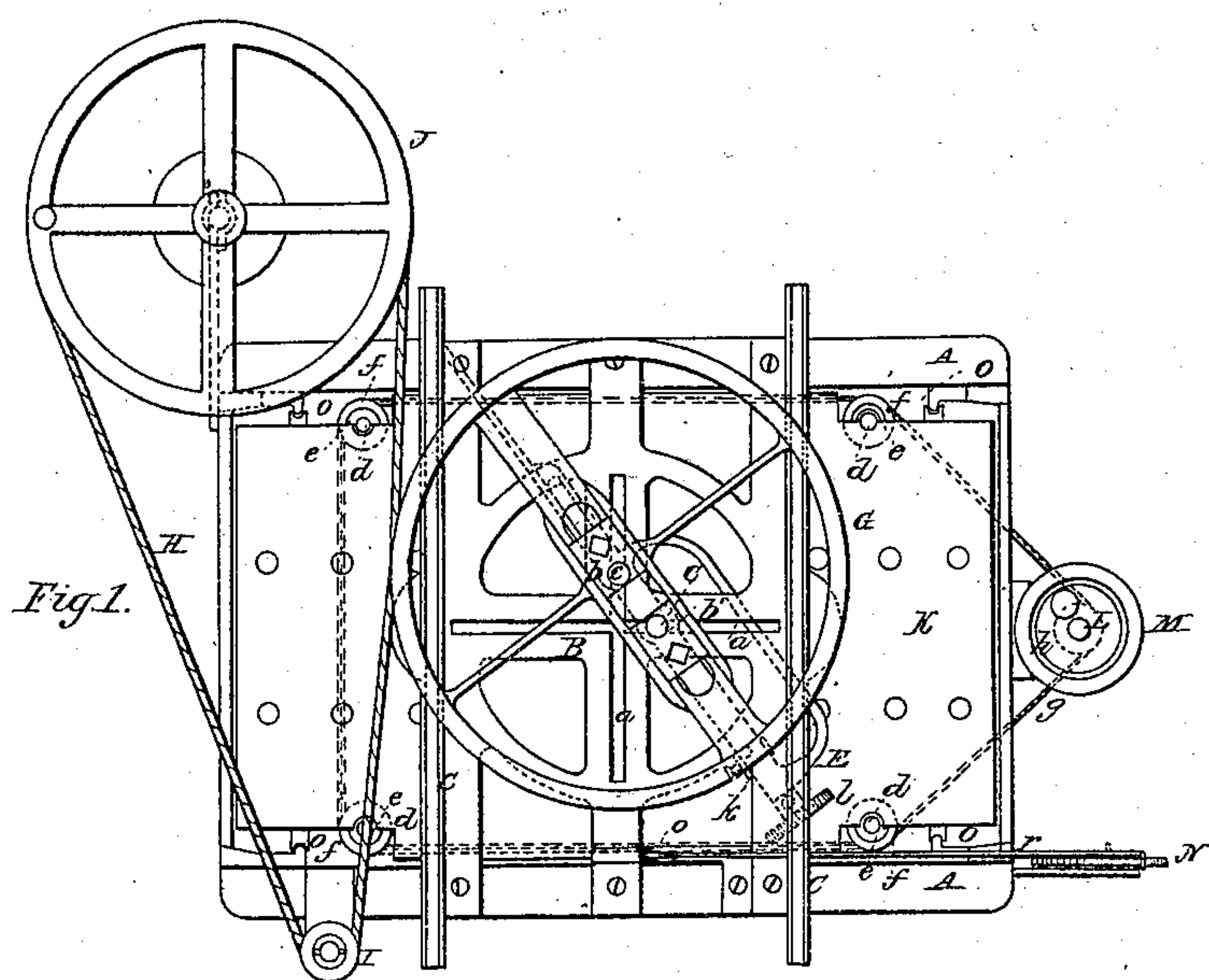


W. G. MERRELL.  
MACHINE FOR TURNING OVALS.

No. 10,412.

Patented Jan. 10, 1854.





# UNITED STATES PATENT OFFICE.

WM. G. MERRELL, OF AUBURN, NEW YORK.

## MACHINE FOR CUTTING ELLIPSES.

Specification of Letters Patent No. 10,412, dated January 10, 1854.

*To all whom it may concern:*

Be it known that I, WILLIAM G. MERRELL, of Auburn, in the county of Cayuga and State of New York, have invented a new and Improved Machine for Turning or Cutting Ovals; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1, is a plan or top view of the machine. Fig. 2, is a side elevation of ditto. Fig. 3 is an inverted plan of the trammel plate and cutter stock.

Similar letters of reference indicate corresponding parts, in each of the several figures.

The trammel plate is an instrument that has been long known and used by joiners, draftsmen, and various artisans for drawing ovals; it is merely a plate having two slots through it crossing each other at right angles, a stock having two pins through it fit in the slots in the trammel plate—a pin in each slot and to the end of the stock is attached the pencil. By turning the stock the pencil will scribe an oval in consequence of the slots causing the pins to work in right lines.

This improvement hitherto has never been successfully used for turning or cutting ovals in consequence of the difficulty attending the application of quick speed to the stock. It is necessary that the stock should work steady and firm without play or tremor; I overcome the above difficulties and effect the desired object by a simple arrangement of the cutter stock and a driving pulley as will be presently shown, and which arrangement constitutes my invention.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

A, represents a frame constructed in any proper manner and on the upper part of the frame is placed a trammel plate B, having two slots *a, a*, through it and crossing each other at right angles see Figs. 1, and 3.

On the upper part of the frame are two transverse ways C, C, which intersect the edges of the trammel plate B, at opposite points, the ways being parallel to each other and projecting upward a suitable height above the plate B.

Under the trammel plate B, there is a circular ledge or projection D, see Figs. 2, and 3. This ledge or projection is secured to or it may be cast with the trammel plate. It projects downward a suitable distance below the trammel plate as seen in Fig. 2.

E, is the cutter stock at one end of which is secured the cutter F. The stock has two pins or screws *b, b'*, which pass upward through the slots *a, a*, one through each slot and also pass through a driving pulley G, which rests or bears on the ways C, C, as seen in Fig. 2. The pins or screws *b, b'*, have nuts *c, c*, on their upper ends; by turning these nuts the pulley G may be made to bear firmly upon the ways C, C, and the cutter stock E, against the circular ledge or projection D, on the under side of the trammel plate.

A band H, passes around the pulley G, and around the pulleys I, J; power being applied to the pulley J, and communicated by the band H, to the pulley G; the pulley I, merely causing the band to have an entire bearing around the pulley G.

The cutter F, as the stock E, and pulley G, rotate will cut in an oval form and the cutter as it is moved will not be subject to any vibration or tremor because the cutter stock E, works firmly against the ledge or projection D, and the pulley G, on the ways C, C.

K, is a bed on which the stuff to be cut in oval form is secured. The bed is placed horizontally beneath the cutter stock and is supported by four screw rods *d*, which pass through nuts *e*, attached to the bed. See Figs. 1, and 2. Each screw rod has a pulley *f*, at its lower end and a chain *g*, passes around them and also around a pulley *h*, on a shaft L, which is surmounted by a hand wheel M. By operating this hand wheel the chain *g*, will turn the screw rods *d*, and as the rods *d*, work through nuts *e*, on the bed, the bed may be raised or lowered as desired and the stuff or work which is secured on the bed may be fed toward the cutter and lowered from it when desired. O, are guides which steady the frame as it is raised or lowered.

The cutter F, is fitted in a stock *k*, which works on a projection or cleat *i*, on the cutter stock and a screw rod *j*, passes through the stock *k*.

On the outer end of the screw rod *j*, there is a small toothed wheel *l*, which as the stock



E, revolves catches into either of the spring spurs *m*, *n*, attached to the frame A, see Fig. 2. These spurs are elevated or depressed so as to act upon the wheel *l*, by means of dogs *o*, *p*, attached by rods *r*, *r*, to a lever N. By moving the top of the lever N, toward the frame, the upper dog *o*, will be depressed and the upper spur *m*, will be forced downward sufficiently to catch the teeth of the wheel *l*, and move the cutter outward on the stock a certain distance every time the wheel *l*, passes the spur. By moving the lever N, in an opposite direction the reverse takes place, the lower dog *p*, will raise the spur *n*, which will catch the wheel and turn it so as to move the cutter inward. By this arrangement the cutter may be moved either in or out on the stock E, as desired.

The above machine may be used for cutting ovals, or turning moldings in oval frames; different tools or cutters being employed according to the character of the work.

I do not claim the employment of the trammel for that is well known as an old device, neither do I claim the method of raising and lowering the bed, that being also an old device, but

What I do claim and desire to secure by Letters Patent is—

The manner in which the driving pulley G, and cutter stock E, is made to rotate firmly on the trammel plate B; viz: having the ways C, C, on the upper surface of the trammel plate B, and a circular ledge or projection D, on the under surface, and causing the pulley G, and cutter stock to press firmly against the ways and ledge or projection by means of the pins or screws *b*, *b'*, and nuts *c*, *c*, as herein shown and described.

W. G. MERRELL.

Witnesses:

JAMES H. BOSTWICK,  
JOHN H. HINMAN.