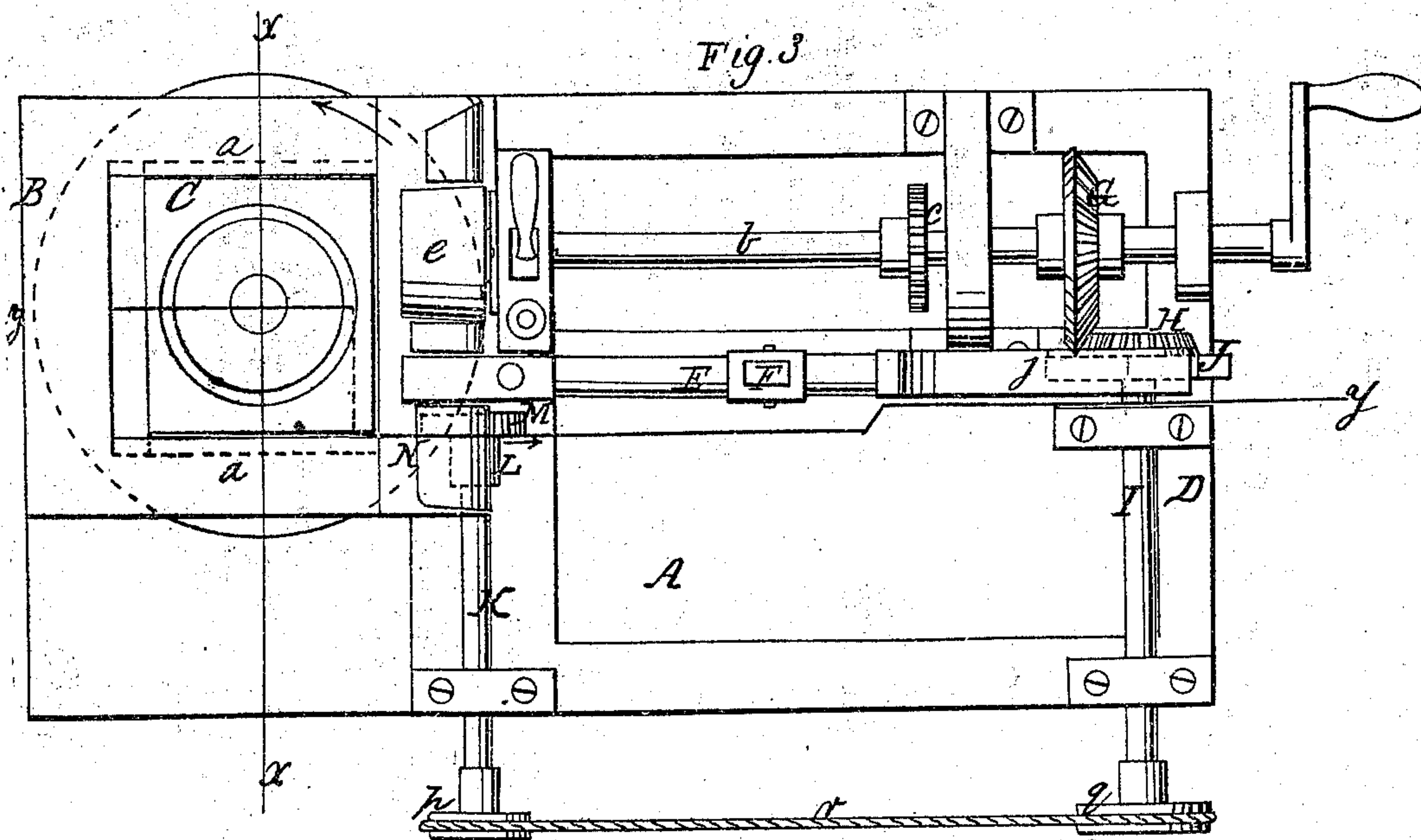
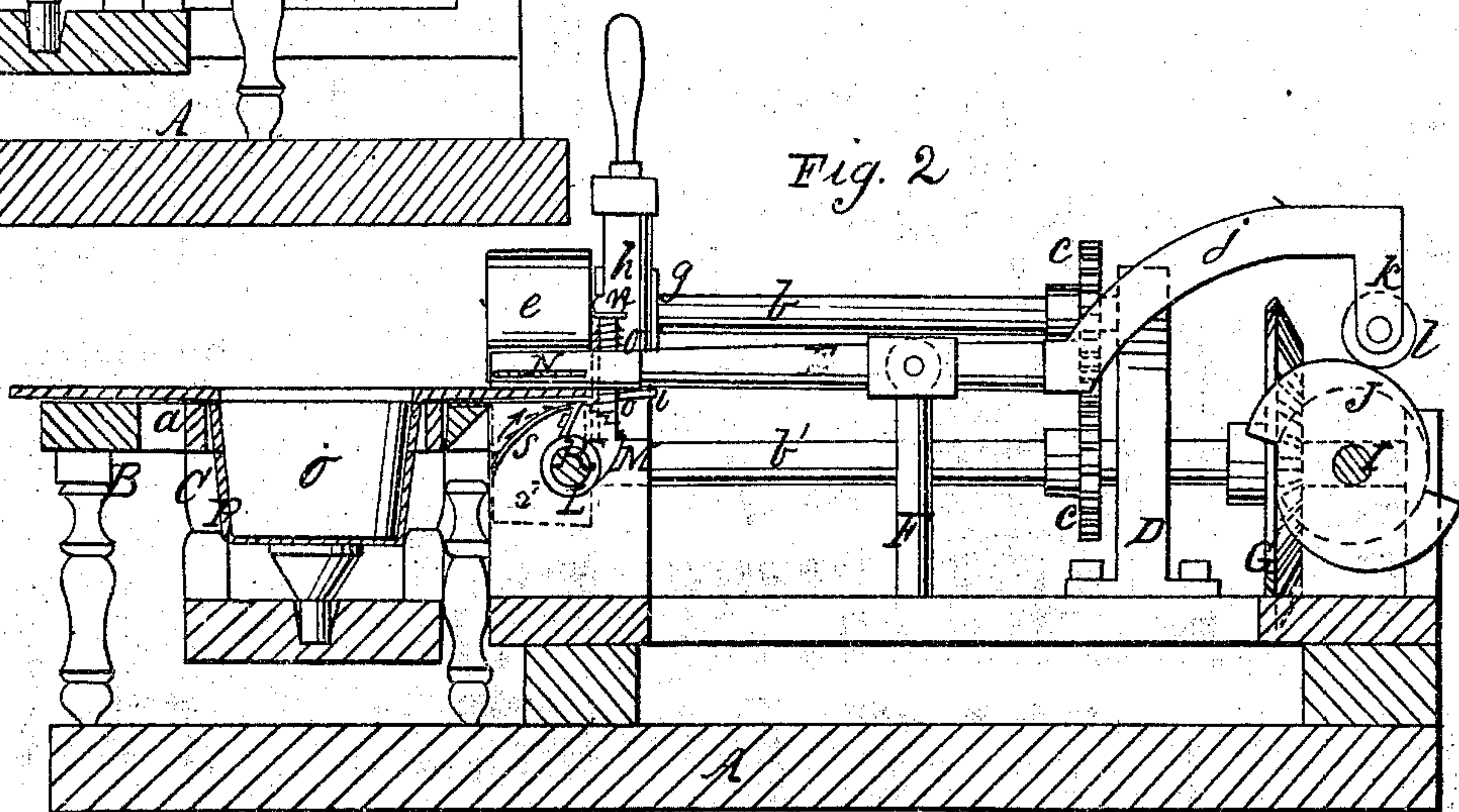
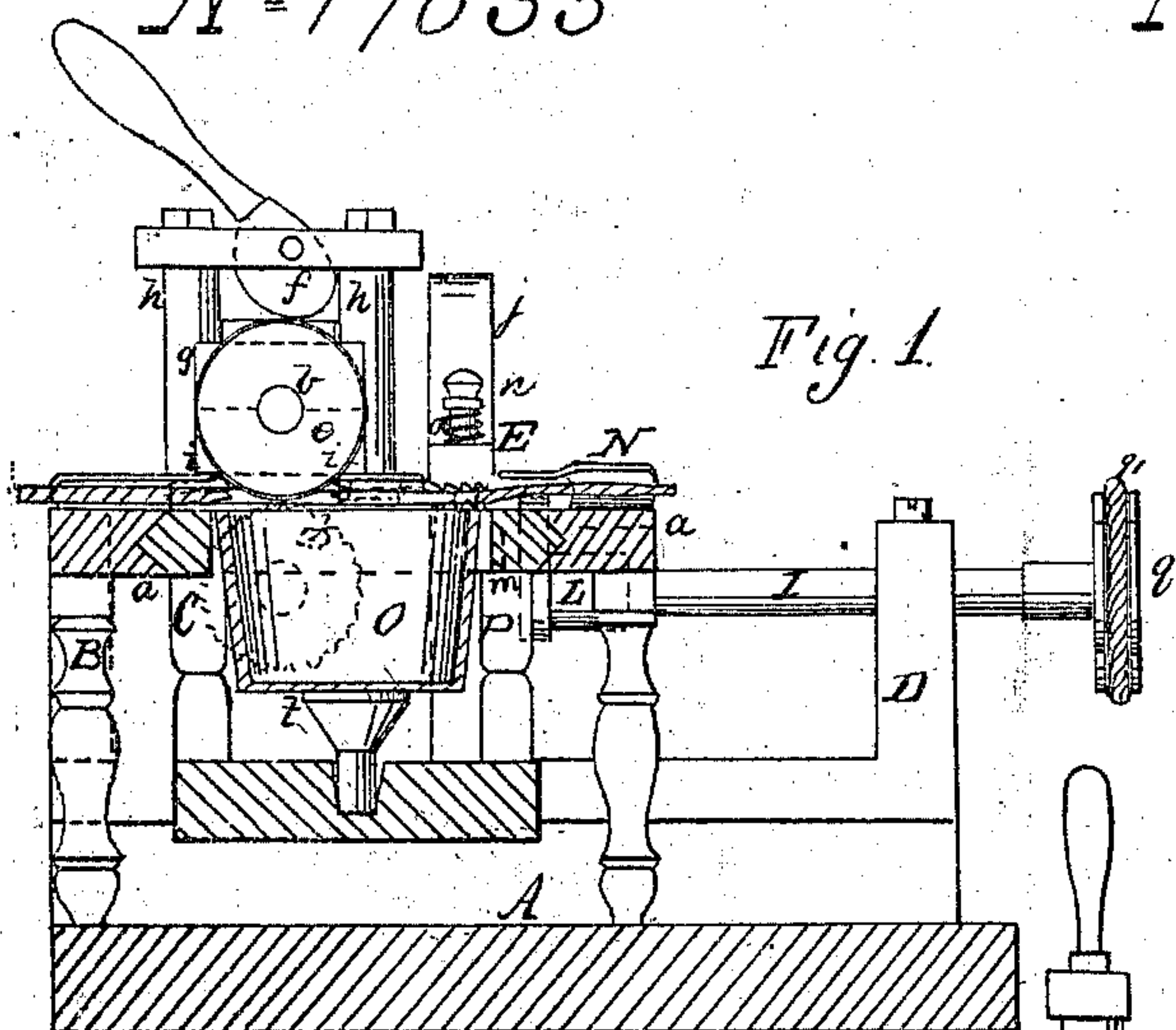


W. A. Fenn.

Blocking & Stretching Hats.

N^o 17033

Patented Apr. 14, 1857.



UNITED STATES PATENT OFFICE.

WILLIAM A. FENN, OF NEW MILFORD, CONNECTICUT.

MACHINE FOR FORMING THE BRIMS OF FELT HATS.

Specification forming part of Letters Patent No. 17,033, dated April 14, 1857; Reissued January 17, 1871, No. 4,235.

To all whom it may concern:

Be it known that I, WILLIAM A. FENN, of New Milford, in the county of Litchfield and State of Connecticut, have invented a new and useful Device for Forming the Brims of Felted Hats; 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, in which—

Figure 1, is a transverse vertical section of my improvemet, *x, x*, Fig. 3 showing the plane of section. Fig. 2, is a longitudinal vertical section of the same, *y, y*, Fig. 3, showing the plane of section. Fig. 3, is a plan or top view of the same.

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

My invention consists in the employment or use of a plain and a corrugated roller, vibrating clamp bar and stretching segment, arranged and operating conjointly as will be hereinafter fully shown and described, whereby the lower portion of the hat body is drawn or stretched out horizontally or at right angles with the crown and properly formed, the hat body being placed or fitted over the block, which is rotated by the rollers as the brim is formed. To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A, represents a horizontal bed or platform on which a framing B, is placed, said framing having ways or guides *a, a*, on its upper part in which the upper end of a smaller frame C, is fitted, a certain degree of play being allowed the frame C, within the framing B.

D, represents a framing also placed on the bed or platform A, adjoining the framing B. In the framing D, two shafts *b, b¹*, are placed, the shafts being in the same plane, one above the other, and connected by gear-wheels *c, c*. To one end of the lower shaft *b¹*, a conical roller *d*, is attached, said roller having a toothed or corrugated periphery, and to the corresponding end of the upper shaft *b*, a conical roller *e*, is attached, said roller having a plane or smooth periphery. The roller *e*, is placed directly over the roller *d*, and is pressed down upon it, when necessary, by a cam *f*, which is placed over and acts upon the bearing *g*, of the shaft *b*, the bearing being fitted be-

tween guides *h, h*, and resting upon springs *i, i*, placed on said guides.

E, represents a bar or lever which is pivoted to the upper end of an upright F, in the framing D, one end of this lever is curved as shown at *j*, Fig. 2, and has a pendent *k*, attached, said pendent having a friction roller *l*, placed in its lower end. The opposite end of the bar or lever E projects over a bed *m*, the upper surface of which may be corrugated longitudinally and the under surface of the bar E, corrugated in a similar manner. A vertical rod *n*, passes through the bar E, said rod serving as a guide. The rod *n*, has a spiral spring *o*, upon it, said spring having a tendency to keep the end of the bar up free from the bed *m*. On the lower roller shaft *b¹* a beveled toothed wheel G, is placed, and this wheel gears with a pinion H, on a shaft I, placed in the framing D and at right angles to the lower roller shaft *b¹*. On the shaft I, and adjoining the pinion H, a cam J, is placed, the form of which is shown clearly in Fig. 2. The friction roller *l*, in the pendent *k*, is made to bear upon the periphery of the cam J, by the spring *o*.

K, is a shaft which is fitted in the framing D, parallel with the shaft I, and at the opposite end of the framing. The shaft K has a pulley *p*, on its outer end and a pulley *q*, is placed on the outer end of the shaft I, a belt *r*, passing around the two pulleys. On the inner end of the shaft K, a collar L, is placed, and this collar has a segment M, attached to it, said segment having a serrated periphery, and a serrated plate *s*, attached to it. This serrated plate is shown clearly in Fig. 2.

N, represents a guide or looped plate which is attached to the upper part of the framing B, the loops extending over the framing B, and having spaces cut out from it, so that it will not interfere with the operation of the bar E, rollers *e, d*, and segment M.

The operation is as follows—The hat block O, is placed within the smaller frame C, the body P, shown in red, being previously stretched over the block O. The tip of the block rests upon a point *t*, which is allowed to rotate or turn freely at the bottom of the frame C. The lower part of the body P, of which the brim is formed is

placed over the inner edge or part of the framing B, and within the looped or guide plate N, the body passing over the serrated segment M, between the end of the bar E, and bed *m*, and between the rollers *d*, *e*. Motion is given the lower roller shaft *b*¹, in any proper manner and the rollers *d*, *e*, rotate the hat body P, and block O. The bar or lever E, has a vibrating motion given it by the cam J, and the segment M, as well as the rollers *d*, *e*, have a continuous rotary motion. Each time the end of the bar or lever E is depressed, the brim of the body P, is clamped between the end of the bar or lever and the bed *m*, and the movement of the brim is checked for an instant, and as the rollers *d*, *e*, have a constant movement, it follows that the brim is not only rotated by the rollers, but also stretched circumferentially, the stretching operation being intermittent in its action to allow the brim to be rotated by the rollers *d*, *e*. The serrated segment M, with plate *s*, attached stretch the brim in a radial direction, the segment rotating in the direction indicated by the arrows, see Figs. 2, and 3. The frame C, may be moved farther from or nearer to the rollers *d*, *e*, and the other working parts, so that brims of different widths may be formed.

By the above machine, hat brims may be

formed in an expeditious manner. A machine of this kind is much needed at the present time, for laterly hat-bodies are all felted by machinery and the fibers are knitted more compactly together than when they are felted by hand. At present, the forming of the brims by hand is extremely tedious, owing to the cause above stated. My machine would be valuable even if the bodies were felted by hand, as formerly, because the operation is so very much facilitated.

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

1. The employment or use of the rollers *d*, *e*, vibrating bar E, working over the bed *m*, and the serrated segment M, with plate *s*, attached, arranged and operating conjointly, as shown for the purpose set forth.

2. I further claim in combination with the rollers *d*, *e*, segment M, and clamp formed of the lever E, and bed *m*, the adjustable frame C, which receives the block O, the frame C, being fitted within the frame B, as shown and described.

WILLIAM A. FENN.

Witnesses:

THEODORE BURK,
JOHN S. TURRILL.