A. Babbett,

Turning Irregular Forms.

No. 13,076. Patented June 19, 1855.

Fig: 3.

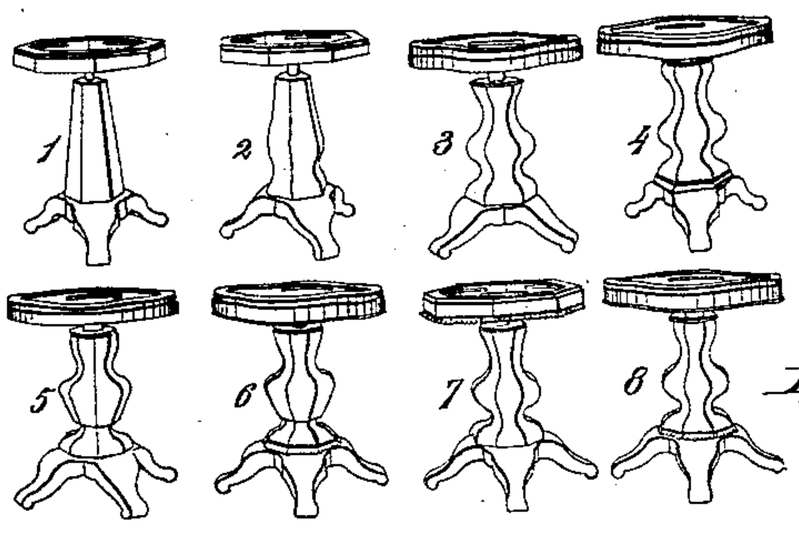

Fig: 1.

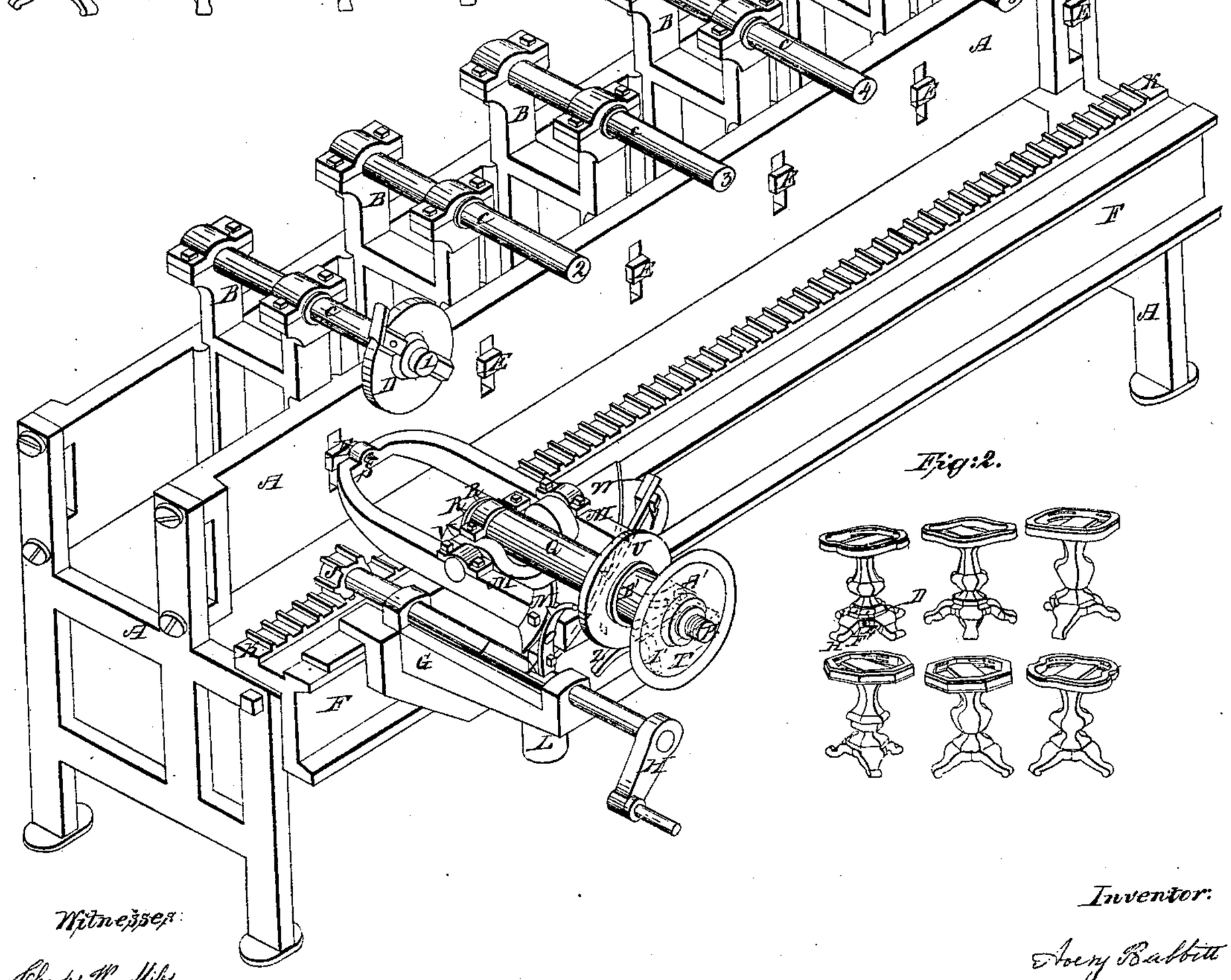

Fig: 2.

Witnesses:

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UNITED STATES PATENT OFFICE.

AVERY BABBETT, OF AUBURN, NEW YORK.

MACHINE FOR CUTTING IRREGULAR FORMS.

Specification of Letters Patent No. 13,076, dated June 19, 1855.

To all whom it may concern:

Be it known that I, AVERY BABBETT, of Auburn, of the county of Cayuga and State of New York, have invented a new and useful Machine for Producing Angular Irregular Forms; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and the letters of reference marked thereon.

The nature of my invention consists in working a series (two or more) of rotating cutters of any form, in combination with a carriage and joints so arranged as to enable the workmen to present the material to be wrought upon, to the action of said cutters in any desirable position, alternately.

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

A, A, A, A, Figure 1 is an iron frame work supporting the several parts; B, B, B, B, B, B, are six frames, having each a shaft C, C, C, C, C, C. Boxed on the top of each and projecting toward the front side of the machine, and on the ends of said shafts so projecting, are designed to be placed disks and knives, one of which is shown at D, showing the manner of holding and making the same. The several frames B, B, &c., are made adjustable vertically by means of the slots through which pass the bolts E, E, E, E, E, E, corresponding to those or other slots and bolts on the back side,—said bolts serving to secure the frames B, B, &c., to the main frame A, A, A, A.

On the front of the machine, Fig. 1, F, F, are the ways, on which the carriage G, G, slides, by means of the crank H, shaft I, pinion J, and rack K. The vertical shaft L (the lower end of which is shown at L) extends upward from this point and terminates in a joint on each side of the frame M, M,—allowing said frame work to vibrate by means of said joint, and is held in a horizontal position by means of the index N, and spring O.

The shaft P, extends through the shaft Q, and terminates in a plate into which is inserted the two spurs R, R. Between said spurs and the point S, is placed the material to be wrought, and by means of the hand wheel T, the spurs R, R, are driven forward into it, thus securing it in a fixed position relatively to the shaft Q.

The index U, is keyed fast to the shaft Q, and extends through the bearing toward R, R, and from the lower side of said shaft, is projected a plate V, on which the material to be wrought is rested to prevent it from turning or changing its position relating to the shaft Q, while in the process of being wrought. The index W, is made fast to the shaft L, close under the frame M, M, and is held firm in position by means of the spring Y. The index U, is held in position by means of the spring Z, extending to the right of Z, as shown by dotted lines behind the hand wheel T, and is secured to a stud A′, (also shown in dotted lines;) said stud is bolted fast to the under side of the frame M M at B. The three indexes M, U, W, are spaced and marked into degrees corresponding to their respective radi, in the full size machine, and when the springs O, Z, Y, are each placed at 0°, in their respective indexes (or the point from whence the degrees are numbered,) the shaft Q, and the point S, being on the same line, are horizontal, and at right angles to the ways F, F, and parallel to the cutter shafts C, C, C, C, C, C.

Now let it be supposed that the cutter shafts were fitted with cutters and running as follows: Shaft No. 1, with cutters suitable to produce the form between figures 1—2, and 1—2, Fig. 2, the bottom of the cutter disk running to the left. Shaft No. 2, with cutters of suitable form to cut the edge of the facet between the lines E′, F′, bottom of cutter disk running toward the right. Shaft No. 3, with cutters suitable in form to produce the top of the foot, from the lower end of the pillar, as shown by the line D′, to the end thereof at H′, lower edge of disk plate running toward the left. Shaft No. 4, with cutters the same in form as No. 2, but the disk plate running in the opposite direction, lower edge to the left. Shaft No. 5, with cutters suitable to produce the form of the under side of the foot—the lower edge of disk running toward the left. Shaft No. 6, with cutters suitable to cut the form of the edges, from F′ to H′, lower edge of disk running to the left. In Figs. 2 and 3 will be found samples of work. The column, or pillar terminates at the joint out of which springs the line D′,—all below this joint is the work of the machine above described.

H′ is one of the four feet. They are

jointed together as represented at Fig. 2,—the line over the letter E′, represents one of said joints.

Commencing with the carriage between the cutter shafts Nos. 2, and 3, with a suitable piece of material secured in its proper place as above specified, the mode of operation will be as follows. Lifting the spring Y, from the index W, the end of the frame M, M, opposite to the one in which the material to be wrought is placed, (which will be after this called the front end) must be carried around to the left 23° where it will be held firm by said spring. Then the spring Z should be raised out of its notch from the under side or edge of the index U, and by means of a handle I′, secured to the index, (shown in dotted lines behind the hand wheel T,) the said index should be turned so as to place the spring to the left of 0° a distance equal to 90°. Then by means of the crank H, the carriage should be moved under the cutter shaft No. 2, and a like form as that represented in Fig. 2, between the lines over the letters E′, and F′ will be produced on the opposite edge of the foot H′, Fig. 2. The ovolo, and horizontal space between it and the vertical edge of the foot, between the figures 1—2 and 1—2, is the next in order. To accomplish this, the frame work M, M, see Fig. 1, should be carried 39° 45′ from 0°, on the index W, to the right. The index U, should be set 18°, 20′ from 0°, to the left, and the index N should be set 5°, 45′ from 0°, by raising the front end of the frame work M, M, this distance. The indices thus set will bring the parallel lines between the figures 1—2, over the letters E′, F′ (see Fig. 23) parallel to the ways F, F, Fig. 1, and when the work is passed under the cutters on the shaft No. 1, the refuse wood is cut away and the form produced, on the side over the letters E′, F′. To cut the opposite side the frame M, M, Fig. 1 should be carried around toward the right by setting the index 39°. 45′ to the left of 0°. and the index U, should be changed from 18°, 20′ on the right of 0°, to 18°, 20′ on the left, and the work moved back under the same cutter shaft, and the opposite side will be cut.

To cut the top of the foot, all the indices must be restored to 0° and the work passed under the cutter shaft No. 3, which will cut the whole of the form of the top, bringing the same quite under the pillar (see Fig. 2).

The vertical curved surface included between the two vertical lines over the letters E′, F′, is next (see Fig. 2). To accomplish this the frame M M should be moved to the right 23°, by means of the index W, from 0°, and the lower edge of the index U, should be turned to the left of 0°—90° and the work passed under the cutter shaft No. 4. To cut the bottom or under side of the foot, the index W, should be set at 0°, the index N, at 0°, and the index U at 90° from 0°, and the work passed under the shaft No. 5. To cut the two edges from the line over F′ to the end of the foot at H′, is the last (see Fig. 2). To accomplish this the indices N, and W are placed at 0°, and the index U, set at 90° from 0°, and passed under the cutter shaft No. 6, and then turned to the opposite side of 0°, the same distance and the work is completed.

From the above it will be seen that a great variety of angular, irregular forms, may be produced by the machine above specified, by simply changing the form of the cutters or knives and varying the setting of the indices.

What I claim as new, and desire to secure by Letters Patent is—

The machine herein specified for the purpose of producing angular irregular forms substantially as herein set forth.

AVERY BABBETT.

Witnesses:
CHARLES W. MILES,
C. D. MCDOUGALL.