A. H. Brown,

Gage Lathe.

№ 14,787. Patented Apr. 29, 1856.

Fig. 1.

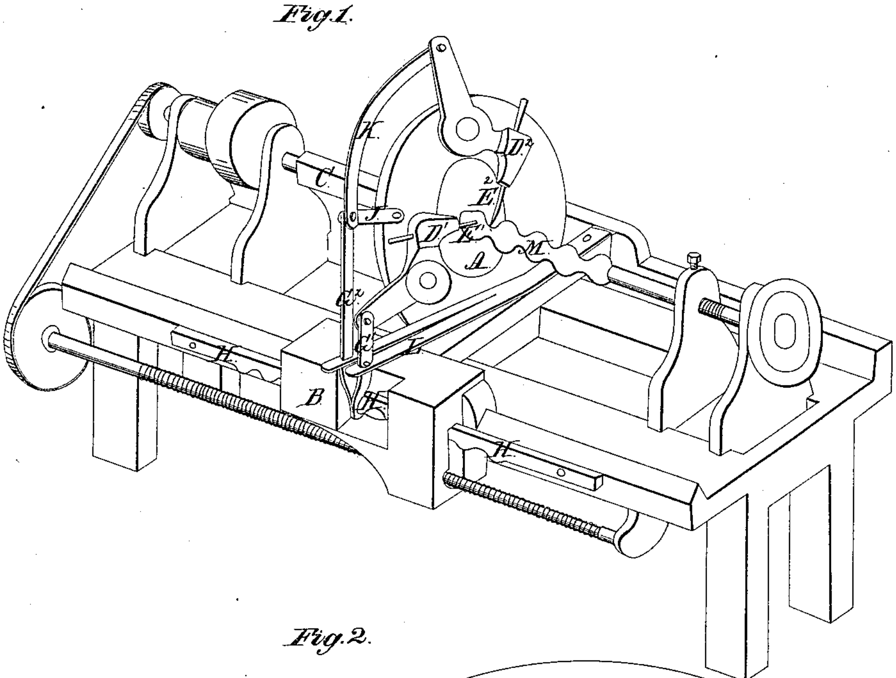
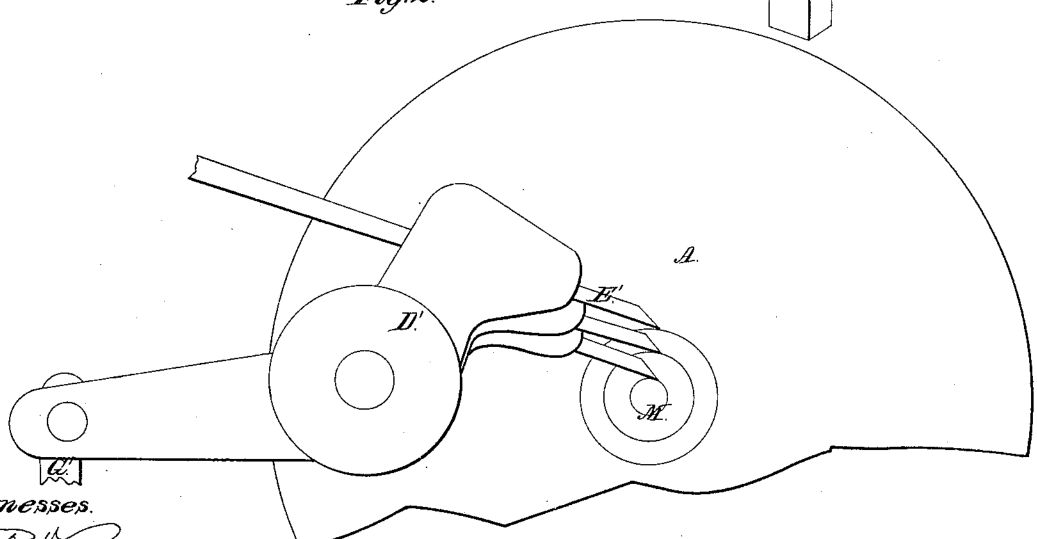


Fig. 2.



Witnesses.

Inventor.

Albert H. Brown.

UNITED STATES PATENT OFFICE.

ALBERT H. BROWN, OF ALBANY, NEW YORK, ASSIGNOR TO TINGLEY & VIELE, OF SAME PLACE.

LATHE.

Specification of Letters Patent No. 14,787, dated April 29, 1856.

To all whom it may concern:

Be it known that I, ALBERT H. BROWN, of Albany, State of New York, have invented a new and Improved Automatic Cutter Apparatus for Use in Lathes Intended to Turn Either Regular or Irregular Forms; and I declare the following specification, with the drawings connected therewith as part of the same, to be a complete description thereof.

Figure 1 represents in perspective a lathe with my apparatus attached. Fig. 2 is a diagram of the movable cutter rest with cutters to show the varied position of the cutters upon the material to be turned.

Similar letters in both figures indicate the same parts of the apparatus.

The lathe with its frame, pulley, adjusting screws, feeding apparatus, &c., is in the usual form and requires no specific description.

My improvement is principally connected with the slide-rest and is as follows: The slide-rest is shown at A and it is attached to the guideblock B, which runs upon the front slide, and is moved by the feed screw, when turning, from right to left hand. The rest is a plate with the usual shifting central pieces having in them openings of various sizes to suit the dimensions of the piece to be turned. Attached to the front of this plate is a cutter in the usual way, to pare down the stick C, to a cylinder of the outside dimensions of the article and fit it to pass snugly through the opening in the plate.

Attached to the rear of the plate rest, near its outer margin in such convenient position as experience may require, are two cutter-stocks D′ D² pivoted against the rest. They are in the bell crank form, the inner ends holding the cutters E′ E². The outer end of D′ is attached to rod G′ which passes down perpendicularly just outside of the lathe-frame, and at its lower extremity is hooked under the pattern H, by movement along whose lower surface, the proper movement of the cutter is guided.

L is a spring attached to G′ to keep it pressed upward so that its hook may act constantly against the pattern's edge.

Cutter stock D² is arranged in a manner similar to D′, only being out of the line of convenient direct action, the connection between the lever, and the rod G² is effected by a radial transfer bar J and link rod K.

The pattern H H is affixed to the outer edge of the lathe, in front of the article to be turned; and is shaped along its lower edge, to show an outline section of the article, when finished. The guide-block B passes over it, having a hollow recess into which the lower ends of the rods G′, G², pass in order to hook under the pattern.

The cutters are attached to their stocks, in the line of direction, regarding the surface of the material to be operated on, as shown in diagram Fig. 2. It will be plainly understood from the drawings, how the movements of the rods G′ and G² rising and falling upon the uneven surface of the pattern H will give a similar movement to the cutters and produce the desired form in the article turned. It will also be seen that by proportioning the outer and inner arms of the cutter stocks to each other the proportions of the work to the pattern can be varied. If the distance from the center of motion of the stock D′ to the point of the cutter E be greater than the distance from the center to the attachment of the rod G′, the work will be of larger proportions, than the pattern, and vice versa.

M represents the turned part of the stick C and is supposed to be of dimensions equal to that indicated by the pattern, the outer arm of the cutter being equal to the inner arm and the cutter together.

The cutter E² being set a very little short of the intended finished surface, gives the true shape to the work, while E′ being adjusted at the true surface, finishes the work as smoothly as can be done by hand turning.

It is obvious that for heavy turning, more cutters may be needed and attached to the rest, and operated like D² by using radial transfer rods like J, to transfer the movements of the hook under the pattern, to the cutter. It is also manifest that the cutter stocks may be varied in form, and I do not confine myself to the forms shown in the drawings, but make them so as to operate mechanically to the best advantage in their position on the slide-rest.

The practical advantages which I claim to belong to this mode of constructing and operating the cutters, is that from the arrangement and position of the cutting apparatus, in reference to its movement upon the pattern, as well as in reference to the adjustment of the angle at which the cutters meet the surface of the material to be turned, and

the maintenance of that angle as the material becomes turned down; it enables the lathe to produce such perfect work, as it has not as yet been possible heretofore to produce by automatic cutters.

I claim—

The form and arrangement of the cutter stocks with the cutting tools attached so as to partake of the curvilinear motion of the stock and pivoting them upon the slide rest in combination with the apparatus for transferring the lines of the pattern by the motion of the stocks, to the cutters so as to produce a turned surface of which the edge of the pattern is a sectional representation, substantially as the same is set forth and described in the above specification.

ALBERT H. BROWN.

Witnesses:
H. G. Ten Eyck,
R. V. De Witt.