(No Model.)

G. W. VARNUM.

CENTERING TOOL.

No. 311,619. Patented Feb. 3, 1885.

Fig. 1.

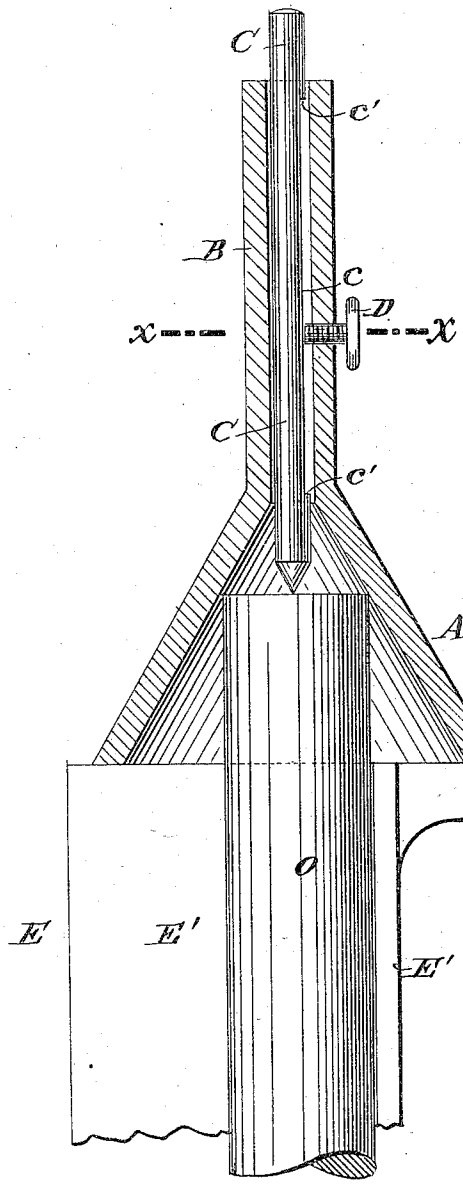


Fig. 2.

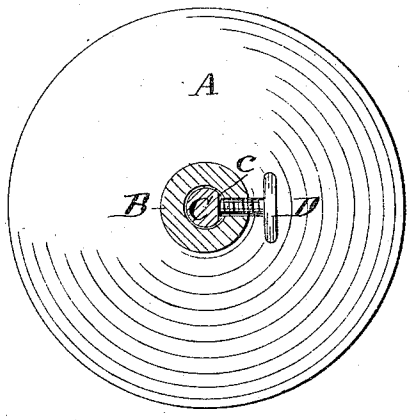
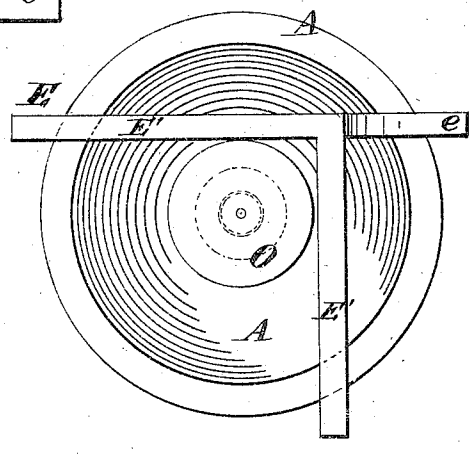


Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE W. VARNUM, OF MONTGOMERY CITY, MISSOURI.

CENTERING-TOOL.

SPECIFICATION forming part of Letters Patent No. 311,619, dated February 3, 1885.

Application filed March 17, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. VARNUM, of Montgomery City, in the county of Montgomery and State of Missouri, have invented a new and Improved Centering-Tool and Gage, of which the following is a full, clear, and exact description.

The object of my invention is to provide a simple, inexpensive, and easily-worked tool for center punching or marking the square or untrued ends of rods, bars, or the like preparatory to turning or drilling them.

The invention consists in the construction and arrangement of parts, as will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of the tool and gage as applied to use. Fig. 2 is a sectional plan view on line *x x*, Fig. 1, and Fig. 3 is an under side view of parts as shown in Fig. 1.

The centering-tool proper consists of a hollow cone-shaped piece, A, the inside of which inclines, preferably at about an angle of sixty degrees, as shown, and is finished truly to bear on the end of the square, round, or polygonal bar or rod O to be centered, and a neck, B, rising vertically from the apex of cone A and bored truly to receive by a sliding fit the center punch or tool C, which, preferably, is flattened along one side, as at *c*, leaving shoulders *c'* near each end, to prevent the punch from falling out either way by a contact of the shoulders with the end of a screw, D, threaded into the side of neck B, and extending into the bore of the neck against the punch. The principal office of the screw D is to bear upon the flat side of the punch C, so as to hold the punch from slipping out of its own weight, but permit it to easily be driven down by a light blow of a hammer to mark the work.

E is a gage or square adapted to serve as an auxiliary to the tool proper in center punching or marking work not dressed perfectly square on the end, said gage E preferably having an extension or side lip, *e*, in a true plane at the top with the tops of two right-angular sides, E' E', of the gage, which have sufficient length—say from one to six inches—to bear truly and firmly against and along two sides of the rod or bar O to be marked.

The function of the gage or square is to keep the centering-tool perpendicular to the center of the shaft to be acted upon. If the centering device or cone were inclined, the point of the punch would not strike the center of the rod or shaft; but when said centering device or cone rests upon the top of the square or gage, and the inside of the cone touches the outside of the rod or shaft to be acted on at any point, the punch may be struck, and said rod or shaft will be properly centered.

To operate the centering-tool, hold the square or gage on article to be centered with the left hand. Then set the cone on top of the rod and bring the cone and square together until the cone rests on the square and at the same time touches the rod at any point. Then strike the punch, and the center is found.

Both the tool proper, A B C, and the auxiliary gage E may be made of any suitable material and in various sizes suitable for action upon rods and bars, from the smallest up to six inches in diameter, or larger, if desired; and the devices may easily and cheaply be made, and will greatly facilitate the work of the latheman or drill-hand, and require no special skill to operate them with unfailing accuracy.

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

The combination, with the centering-tool A B C, constructed as described, of the auxiliary gage E, having two right-angular sides, E' E', and the lip *e*, the whole being adapted to center-mark the untrued ends of rods or bars, substantially as herein set forth.

GEORGE W. VARNUM.

Witnesses:

CHARLES P. EVERED,

HENRY KELLEY.