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 Orange Wheeler's

Improved
 Adjustable Tool Rest

116517

PATENTED JUN 27 1871

FIG. 1

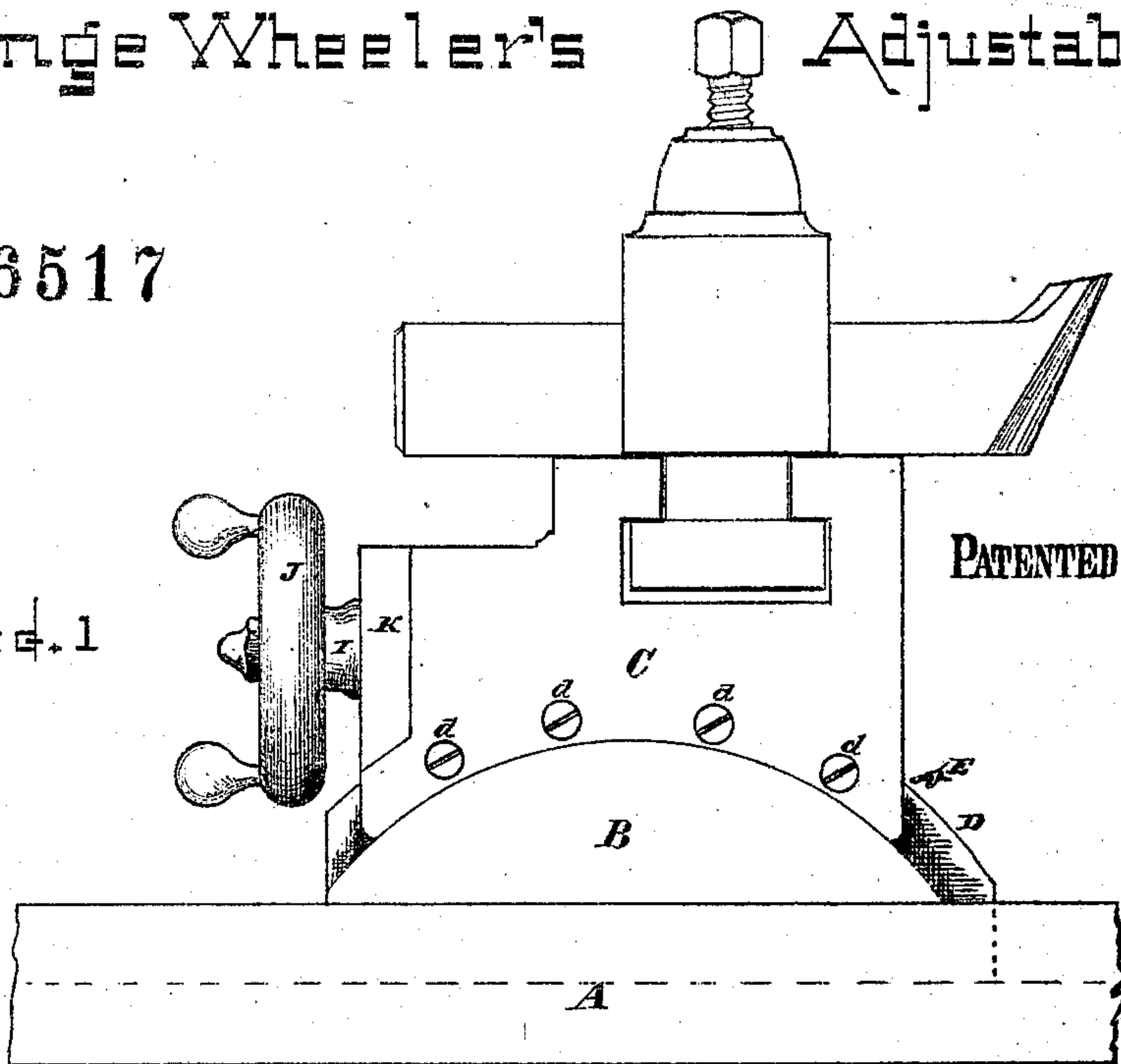


FIG. 2

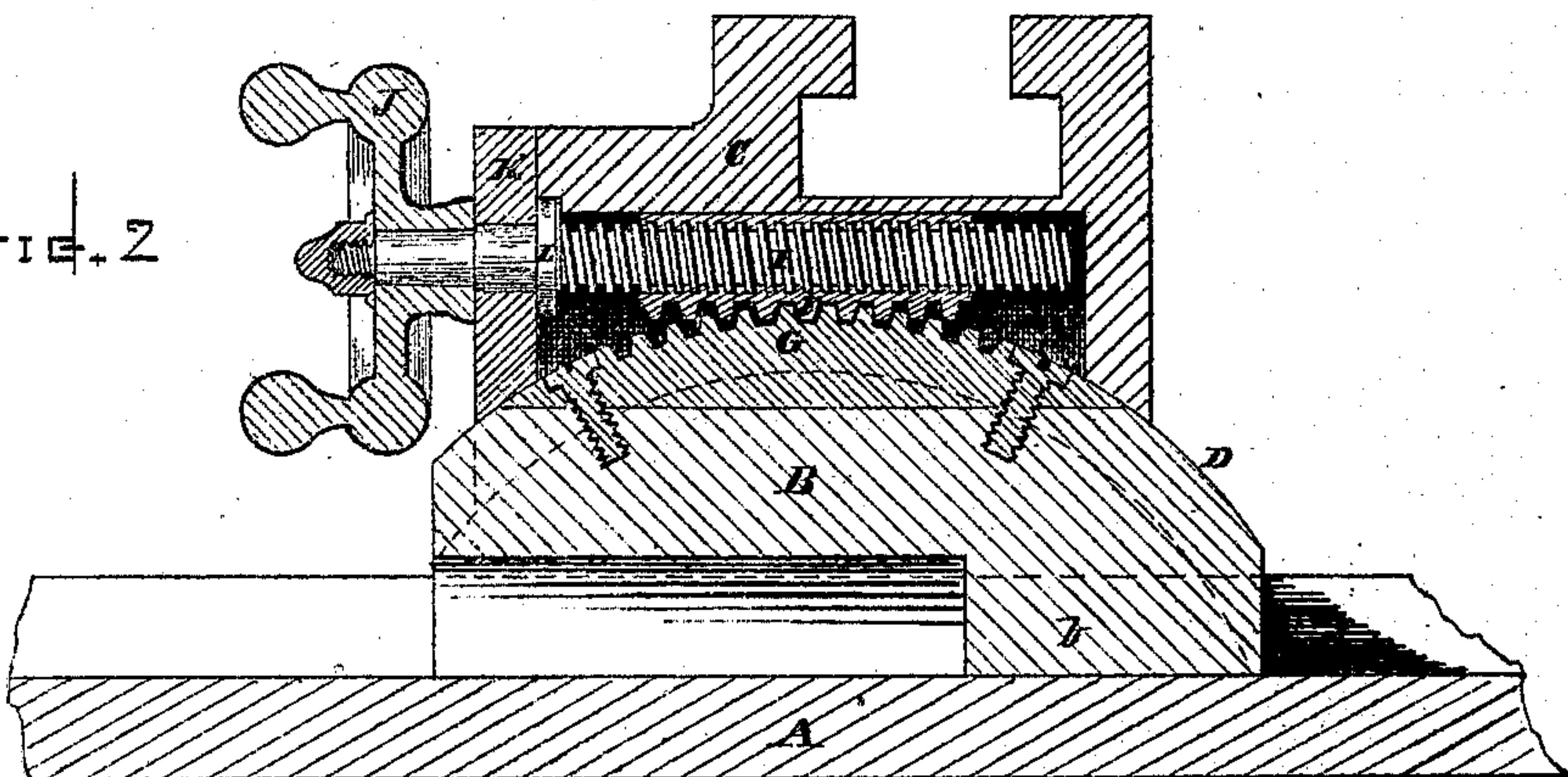
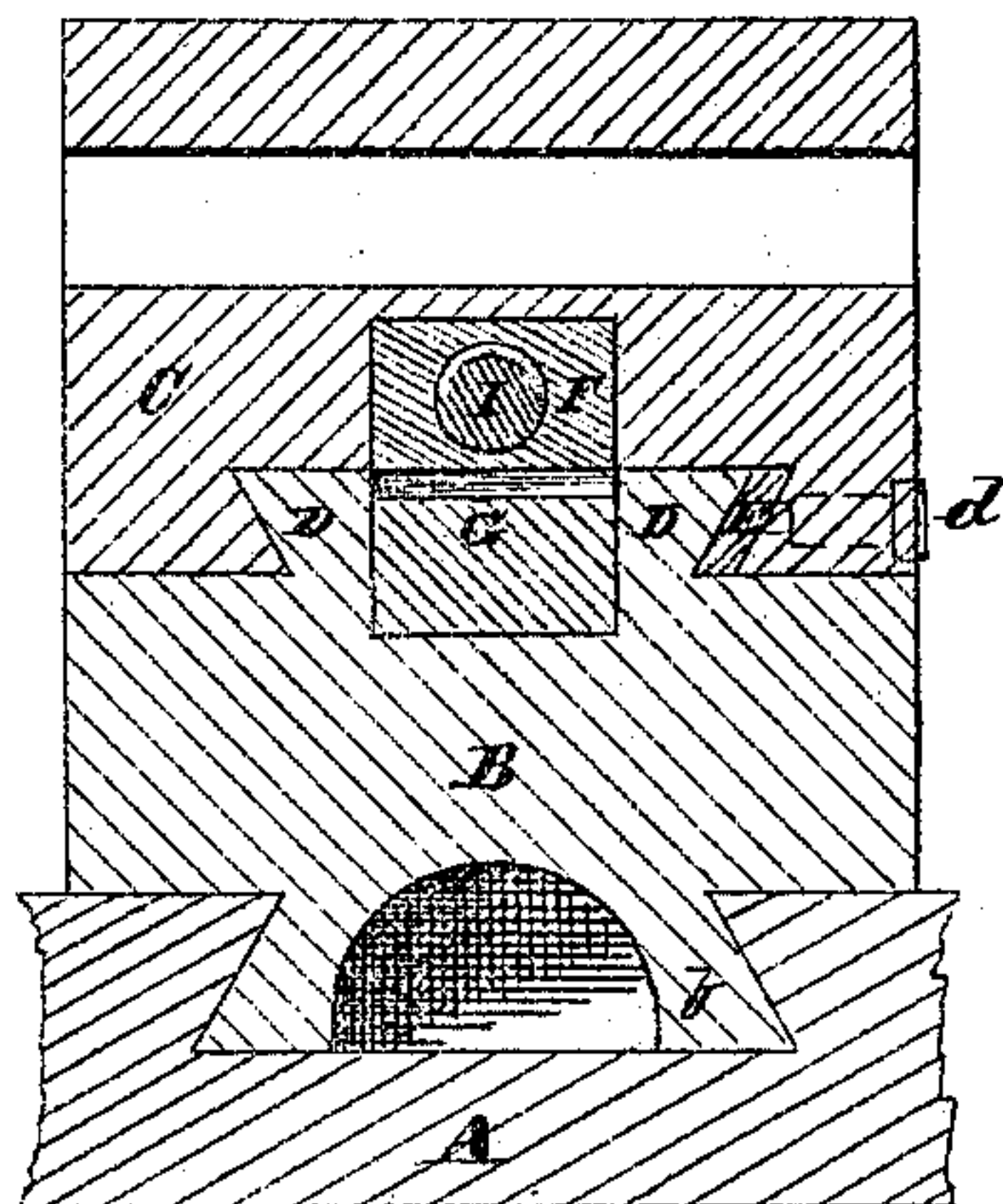


FIG. 3



Witnesses.

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UNITED STATES PATENT OFFICE.

JOSHUA S. WHEELER, ASA N. WHEELER, AND ORANGE WHEELER, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN ADJUSTABLE TOOL-RESTS FOR LATHES.

Specification forming part of Letters Patent No. 116,517, dated June 27, 1871.

To all whom it may concern:

Be it known that we, JOSHUA S. WHEELER, ASA N. WHEELER, and ORANGE WHEELER, all of the city and county of Worcester and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Adjustable Tool-Rests for Engine-Lathes; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing which forms a part of this specification, and in which—

Figure 1 represents a side view of our improved tool-rest. Fig. 2 represents a longitudinal central section, and Fig. 3 represents a transverse central section.

To enable those skilled in the art to which our invention belongs to make and use the same, we will proceed to describe it more in detail.

The nature of our invention consists in certain improvements in adjustable tool-rests, as hereinafter described.

In the drawing, the parts marked A represent the carriage, which is supported upon the bed of the lathe, and is arranged and operated in the ordinary manner. B indicates the base of the puppet-block, and is arranged to slide back and forth upon the carriage A, to which it is attached by means of a dovetailed projection, *b*, that fits into a longitudinal groove of corresponding shape formed in the upper part of the carriage A. The top of the base-piece B is formed arching, and is provided with a dovetailed projection, D, of corresponding curvature at its central part throughout its entire length, as shown. C indicates the puppet-block, which is fitted upon the upper arched portion of the base-piece B, and retained by the dovetailed projection D in such a manner that it can be moved backward and forward over the arched surface to raise and depress the point of the cutting-tool and adjust it to the proper height and position. A strip of packing, E, is arranged between the side of the dovetailed projection D and the block C, which strip can be clamped up against the side of the projection D by means of screws *d*, set in the side of the block C, as shown in Figs. 1 and 3. The puppet-block C is grooved out at its under side, and in its interior is fitted a rack, F, which meshes with a segment-gear, G, secured rigidly to the upper part of the base-piece B, as illustrated. I indicates an adjusting-screw, which is arranged lon-

gitudinally through the rack F and block C, and is provided with a suitable hand-wheel, J, or crank upon its outer end, by means of which it can be conveniently operated. The screw-spindle I has its bearing in and is supported by the end plate K of the block C, and it is held from any longitudinal movement independent of the puppet-block C by a collar, L, at the inner side of the plate, and the hub of the hand-wheel J at the outside of the plate. As the screw I is turned the relative position of the rack F within the block changes, but the teeth of the rack, being interlocked with the teeth of the stationary segment G, prevent the rack from moving longitudinally, and the result is that the block C receives the motion and is carried along the curved surface of the base-piece B, thereby elevating or depressing the point of the cutting-tool, according to the direction in which the screw I is revolved. When the puppet-block C is swung over to the front or rear, the rack F rolls down upon the segment G, so that the same number of teeth will be in mesh between the two at whatever position the block may be adjusted. The block is provided with a lateral groove at its top to receive the puppet and tool, which parts may be constructed and arranged in the ordinary manner, and consequently require no description. It will be observed that when the point of the tool is elevated the puppet-block is drawn backward, and when the point of the tool is depressed said block is moved forward over the arch of the base-piece B, thereby changing the inclination at which the tool stands, and thus always preserving the proper relative position or angle between the cutting-point of the tool and the surface of the work, whether the latter is of large or small radius or curvature. By arranging the concave puppet-block upon the top of the convex base piece, all dust, dirt, chips and other clogging matter falling upon the puppet-block will not be liable to work in and clog the operative parts of the tool-rest, since the tendency of such clogging substances is to slide off or drop from the puppet-block; the latter serving as a roof to shelter and protect the internal mechanism. It will also be seen that our adjustable tool-rest is simple in its construction and arrangement, and not liable to become deranged or get out of order. All of the internal parts are closely incased by the outer shell, so as to preclude the

entrance of chips and dirt to the interior. The rest supports the tool rigidly and firmly in any of its positions, and can be securely held at such adjustment by turning in the packing-screws *d*, and thereby clamping the packing-strip against the side of the projection D. The segment-gear G may be made in a separate piece from the base B, and set in and secured by screws, as shown in the drawing; or the base may be cast full and the gear-teeth cut directly upon its upper surface.

Having described our improvements in adjustable tool-rests for engine-lathes, what we claim therein as new and of our invention, and desire to secure by Letters Patent, is—

1. The combination, with the base-piece B, provided with a stationary segment-gear, G, of

the puppet-block C, rack F, and adjusting-screw I, substantially as and for the purposes set forth.

2. The arrangement of the concave puppet-block upon a convex or arched base-piece, substantially as shown and described, whereby dust and dirt and other clogging substances are prevented from dropping or falling upon the working-parts of the tool-rest, or from working in so as to clog the same while in use.

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Witnesses:

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