S. B. PIERCE.

Ring Burrs for Turning Shafts.

No. 230,812. Patented Aug. 3, 1880.

FIG. 1

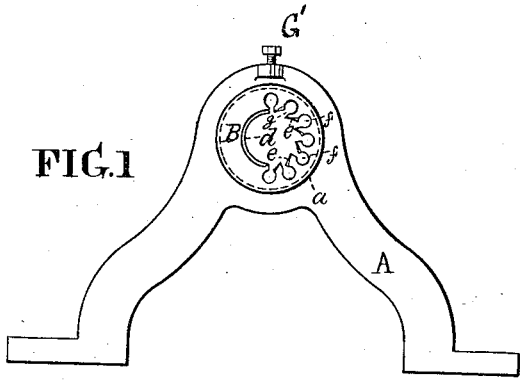


FIG. 3

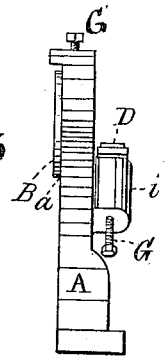


FIG. 2

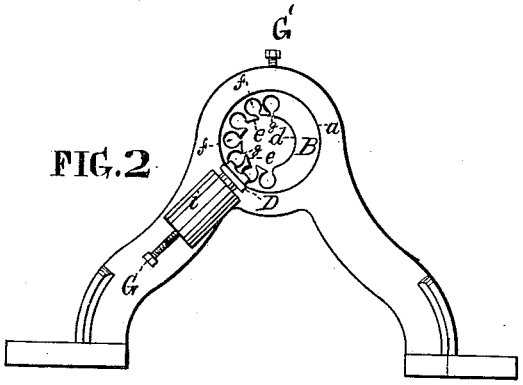


FIG. 4

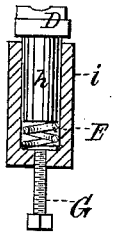


FIG. 5

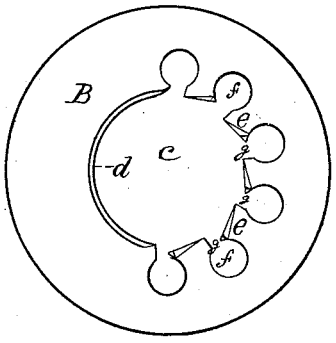


FIG. 6

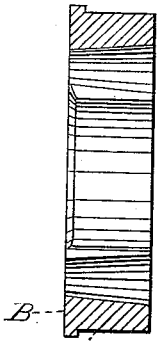
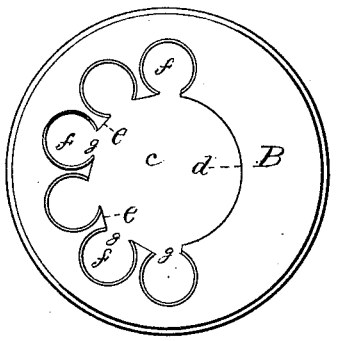


FIG. 7



Witnesses

Thomas J. Bawley.

William L. Morris.

Inventor.

Samuel B. Pierce.

Stephen Ustick, attorney.

UNITED STATES PATENT OFFICE.

SAMUEL B. PIERCE, OF LA CROSSE, WISCONSIN, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO CHAS. W. DILL, OF SAME PLACE.

RING-BURR FOR TURNING SHAFTS.

SPECIFICATION forming part of Letters Patent No. 230,812, dated August 3, 1880.

Application filed November 10 1879.

To all whom it may concern:

Be it known that I, SAMUEL B. PIERCE, a citizen of the United States, residing at La Crosse, in the county of La Crosse and State of Wisconsin, have invented a new and useful Improvement in Ring-Burrs for Turning Shafts, of which the following is a specification.

In the use of the ordinary ring-burrs for finishing the turning of shafts the teeth are liable to be clogged by the chips crowding between them.

To obviate this objection is the object of my invention.

My invention, in the first place, consists of a burr having a central opening to receive the shaft to be turned, and a plain surface at one side and teeth at the opposite side, in combination with a supporting-stand.

In the second place, the invention consists of a back-rest, in combination with said burr and stand, as hereinafter fully described.

In the accompanying drawings, which make a part of this specification, Figure 1 is a front-side elevation of the stand A and burr B with my improvement. Fig. 2 is a rear elevation of the same. Fig. 3 is an edge view of the same. Fig. 4 is a vertical section, on an enlarged scale, of the back-rest D and socket *i*, having a spring, E, and set-screw G. Figs. 5, 6, and 7 are, respectively, a rear, sectional, and front view of the burr B.

Like letters of reference in all the figures indicate the same parts.

A is a stand, which, in practice, is confined to a slide-rest of a turning-lathe, immediately in the rear of the ordinary chisel or cutter.

B is a burr in the opening *a*, at the upper part of the stand. It is confined firmly in its place by means of the set-screw G. The burr has a central opening, *c*, which surrounds the shaft to be turned. On one side of this opening is a plain surface, *d*, and opposite thereto are the peculiarly-formed teeth *e*. Between the teeth are channels for the passage of chips or shavings, to prevent the clogging of the teeth. They have narrow parts *g* between the points of the teeth, through which the chips or shavings, as they are made by the action of the teeth, slide into the enlarged parts *f*. The parts *g* are narrow to admit of the teeth being as close together as practicable for the complete operation of the burr.

Both parts, *f* and *g*, have a gradual enlargement from the front side of the burr to the rear side of the same, to admit of the free outward passage of the chips or shavings.

The parts *f* are preferably of circular form, as represented; yet other forms will answer, if desired.

The opening *a* of the stand is made sufficiently large to receive burrs turning various sizes of shafts.

D is a back-rest, having a stem, *h*, which fits the socket *i* on the rear side of the stand. The socket is provided with a spring, E, which holds the rest up against the shaft to be turned to keep it steady. The force of the spring is regulated by the set-screw G, there being a washer, *j*, between the spring and the set-screw.

The operation is as follows: As the slide-rest provided with the stand A, having the burr B, is moved along from one end of the shaft to the other, as the ordinary cutting-tool takes off a shaving the burr B operates immediately in the rear of said cutter and finishes the turning operation, during which the shaft is held against the plain surface *d* of the burr by the action of the spring G upon the rest D, pressing the latter against the side of the shaft opposite to the plain surface of the burr, to prevent lateral shaking of the shaft, the spring yielding to any inequalities of the shaft, to admit of the free movement of the latter.

I claim as my invention—

1. The burr B, having a central opening, *c*, to receive the shaft to be turned, provided with a plain surface, *d*, at one side and teeth *e* at the opposite side, with passages *g f* between the teeth, enlarged from the front side of the burr to the rear side thereof, substantially in the manner and for the purpose set forth.

2. The combination of the back-rest D, having a stem, *h*, with the stand A, having a socket, *i*, provided with a spring, E, and set-screw G, and with the burr B, having a central opening, *c*, with teeth *e* at one side and a plain surface, *d*, opposite thereto, substantially in the manner and for the purpose set forth.

SAMUEL B. PIERCE.

Witnesses:

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