

WILLIAM T. VOSE.

Improvement in Emery-Wheel.

No. 126,597.

Patented May 7, 1872.

Fig. 1.

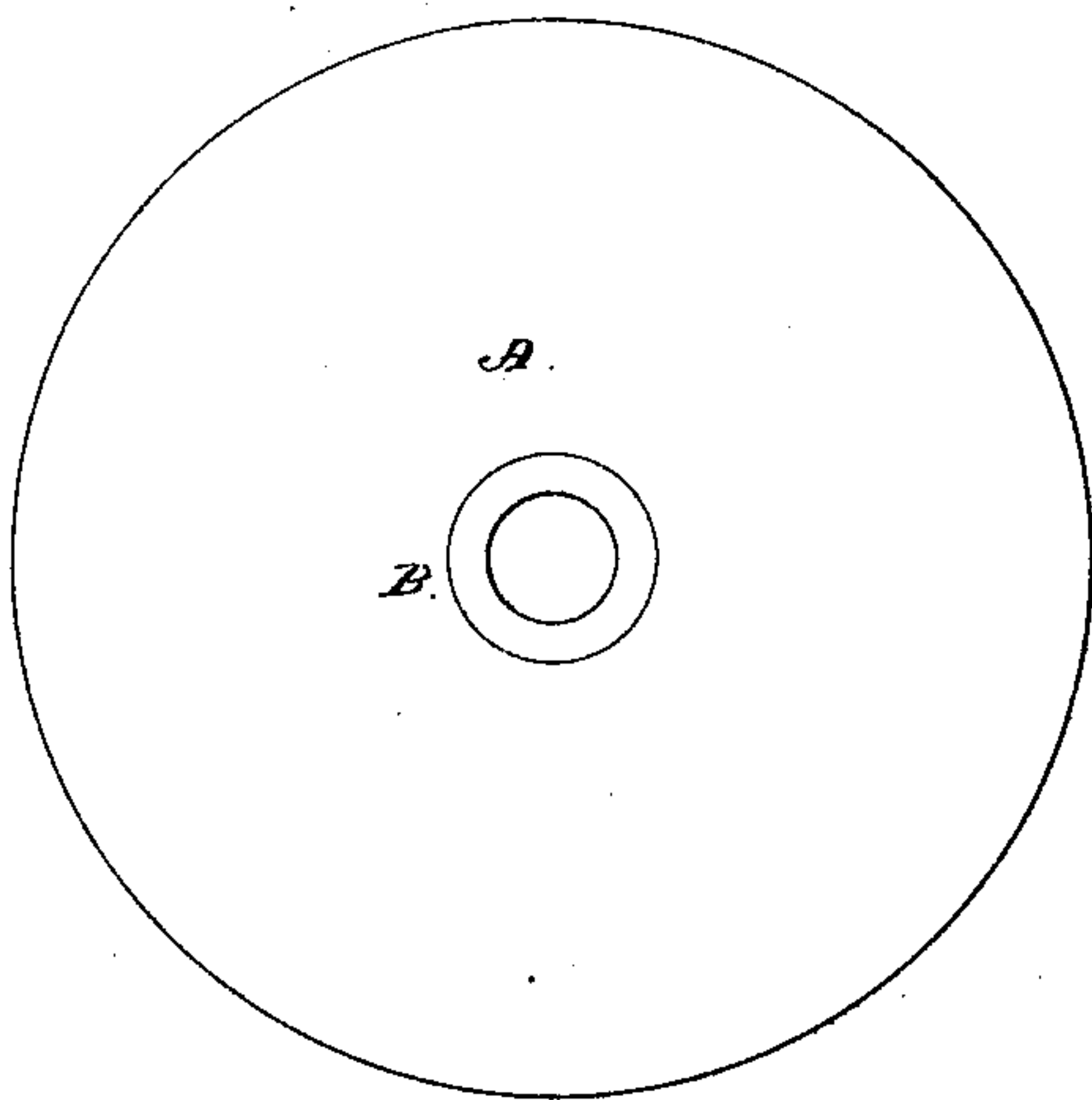


Fig. 2.

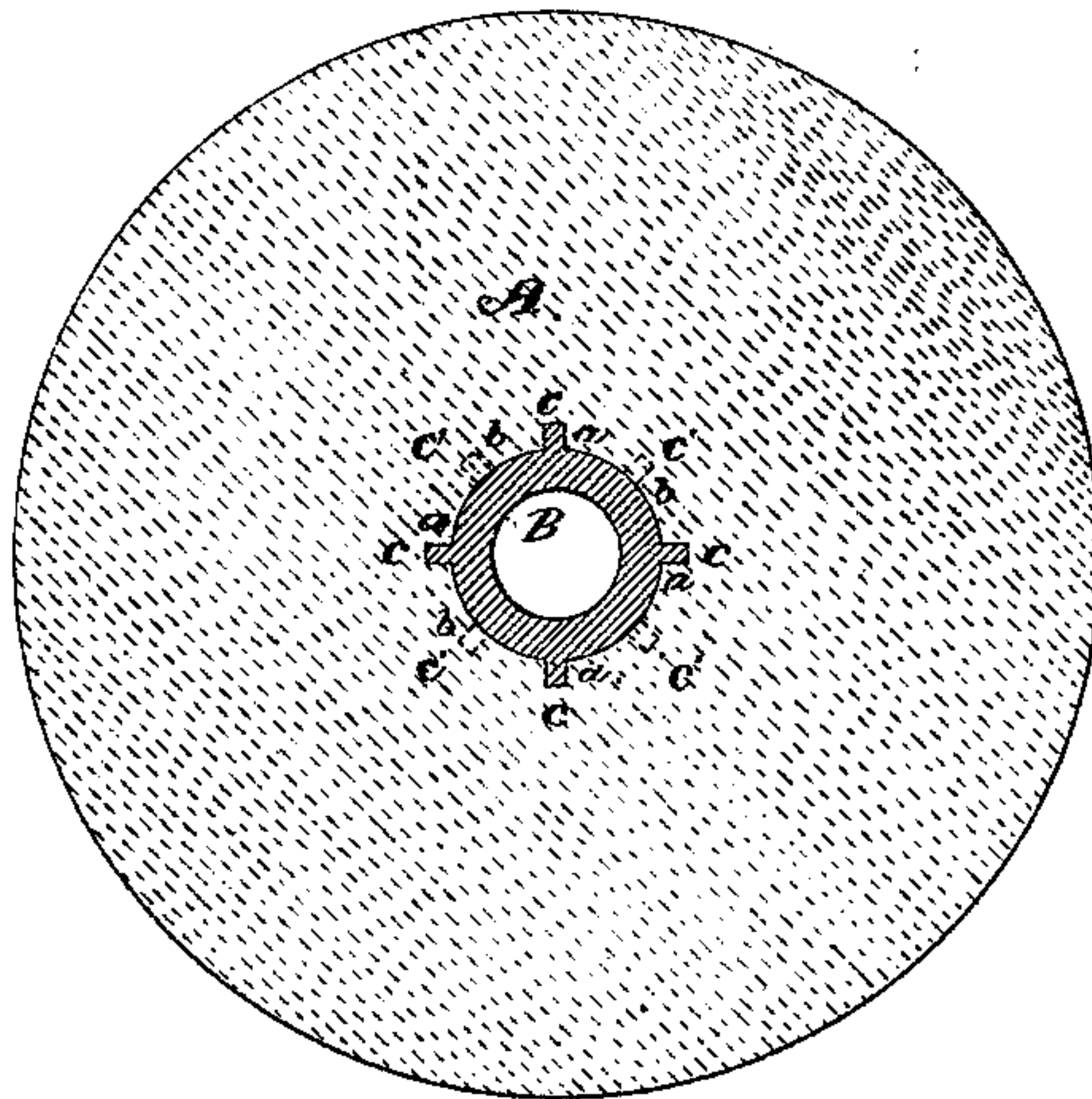
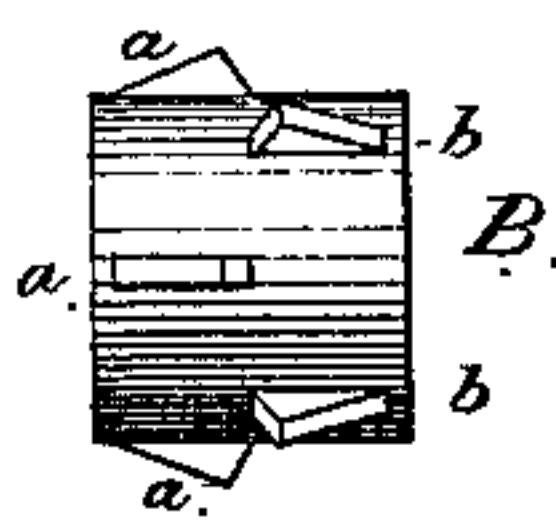


Fig. 3.



Witnesses.

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# UNITED STATES PATENT OFFICE.

WILLIAM T. VOSE, OF NEWTONVILLE, MASSACHUSETTS.

## IMPROVEMENT IN EMERY WHEELS.

Specification forming part of Letters Patent No. 126,597, dated May 7, 1872.

*To all whom it may concern:*

Be it known that I, WILLIAM T. VOSE, of Newtonville, in the county of Suffolk and State of Massachusetts, have invented an Improved Metallic Center for Emery Wheels; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 denotes a side view of an emery wheel having its box or bearing applied thereto in accordance with my invention; Fig. 2, a longitudinal and vertical section taken through one series of the holding-ribs, to be hereinafter described. Fig. 3 is a side view of the box after being cast in the wheel, as it appears detached therefrom.

Similar letters of reference in the accompanying drawing denote the same parts.

In the application of metallic centers to stone wheels two objects must always be effected—viz.: first, the center must be fixed in the eye of the wheel so that it will not work endwise; and, secondly, it must also be so fixed that it will not turn in the eye. In small wheels, such as emery wheels, if the center be cast with a rib upon its periphery fitting into a groove running around the eye, the thin edges of stone on each side of the metal rib will soon chip off and destroy or injure the setting of the center-piece and if the center-piece be made square or with ribs running across the stone, the latter is apt to crack at the corners of the eye and fly into pieces.

The object of my invention is to set the metallic center securely in the eye in such a manner that the stone will not chip off at the edges of the eye nor be liable to crack from the corners of the eye. To this end the invention consists in chipping out angular recesses in the eye on each side of the stone, cutting from the edge to or past the middle and arranging the recesses so that those on one side alternate with those on the other, and then casting in the soft-metal center, the form and arrangement of the notches, when filled with the metal, preventing the wheel from turning on the center and preventing the center from working endwise, while, at the same time, preventing the stone from chipping or cracking.

In the drawing, A is the emery wheel, and B is the soft-metal center or bearing cast into the eye of the wheel. The eye is made round, so as to avoid sharp angles, which, in practice, cause the cracking of the wheel, as above described. If the metal be cast into a round eye, the adhesion of the metal and stone will not be sufficient to prevent them from turning independently of each other nor to prevent the bearing from working endwise. If notches be cut in the eye across the stone, they will not prevent the bearing from working endwise, and if they are angular notches the stone will crack from them. If a groove be cast in the eye around the axis of the stone and then be filled in with metal, this will not prevent the stone from turning on the metal, though it will, for a while, prevent the bearing from working out, but the edges of the stone on each side of the groove will chip off, as I have above described. Hence neither the groove around the eye nor the eye made square or recessed across the wheel will accomplish both purposes at once. I therefore extend my recesses only part way across the wheel, so as to get the full strength of the latter on the opposite sides, and thus prevent cracking from that point. To the same end, I cut the recess from the edge into the stone, deepening the cut as it extends inward. The stone on the outside is continuous, showing only a circular eye, the recesses being inside of the eye. Thus I get the whole strength of the stone on both sides and prevent the tendency to crack. Cutting from the edge into the stone, as described, a thin edge of stone is left over the recess, but there is no tendency in this to chip off, first, because it is so narrow that it is effectually supported from both sides, and, secondly, because it has to resist very little lateral strain, the latter being nearly all taken up against the butt ends of the recesses formed on the other side of the wheel. When the wheel is pressed to one side it is held by the enlarged butt ends of the metal ribs on that side, and when pressed to the other side it is held by the butt ends of metal on the latter side. The inclined outer sides of the metal ribs scarcely act at all in this matter, and hence do not chip off the stone which lies in contact with them. Thus the ribs of metal,

constructed and arranged as described, perfectly accomplish both objects desired, securing the bearing firmly in the eye without either chipping or cracking the stone in use.

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

The soft-metal bearing B for emery wheels,

provided with two series of ribs, *a a*, constructed in the form and arranged in the manner described, for the purposes set forth.

WM. T. VOSE.

Witnesses:

F. P. HALE,

F. C. HALE.