

(No Model.)

F. H. MORSE.
POLISHING WHEEL.

No. 277,325.

Patented May 8, 1883.

Fig. 1

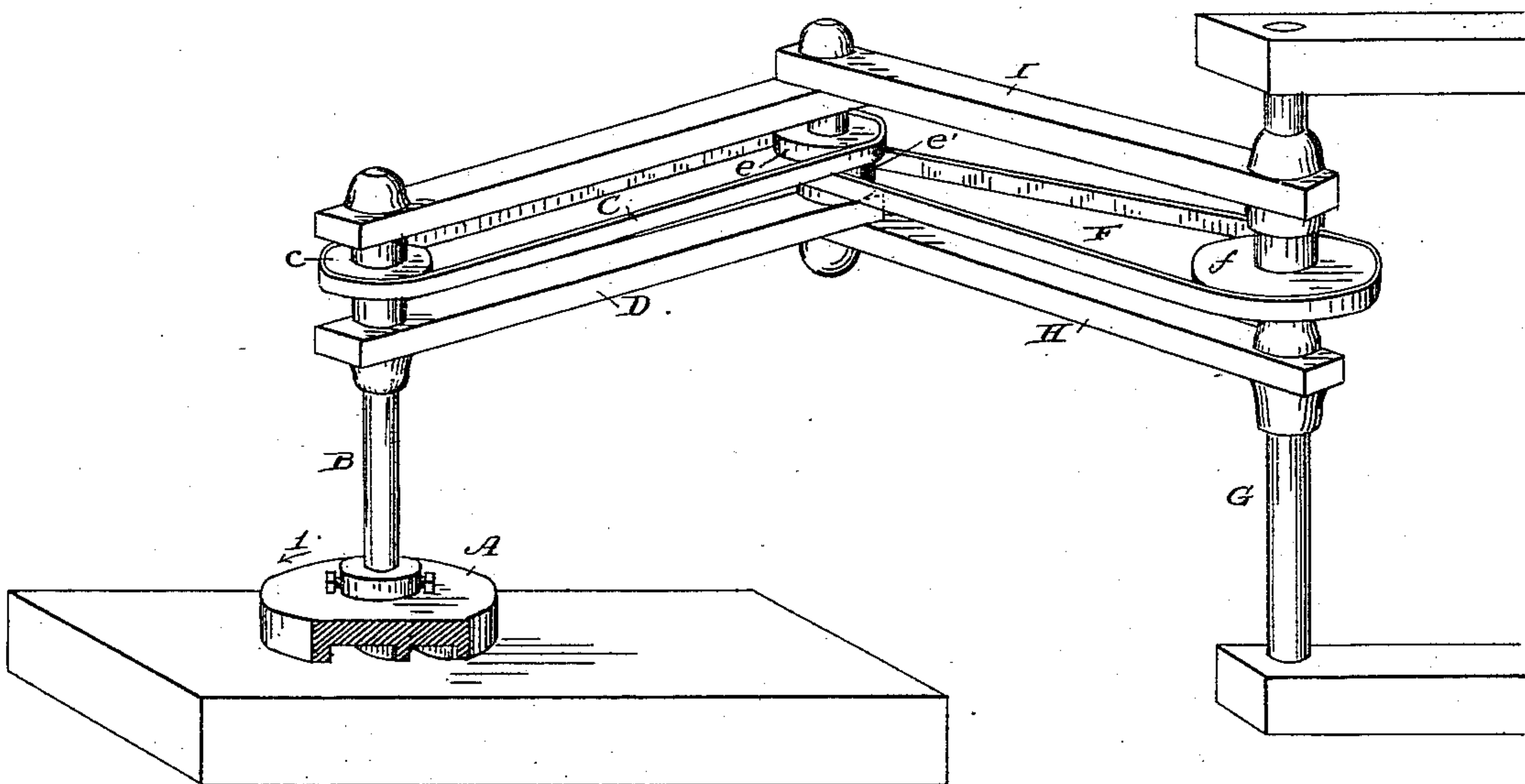
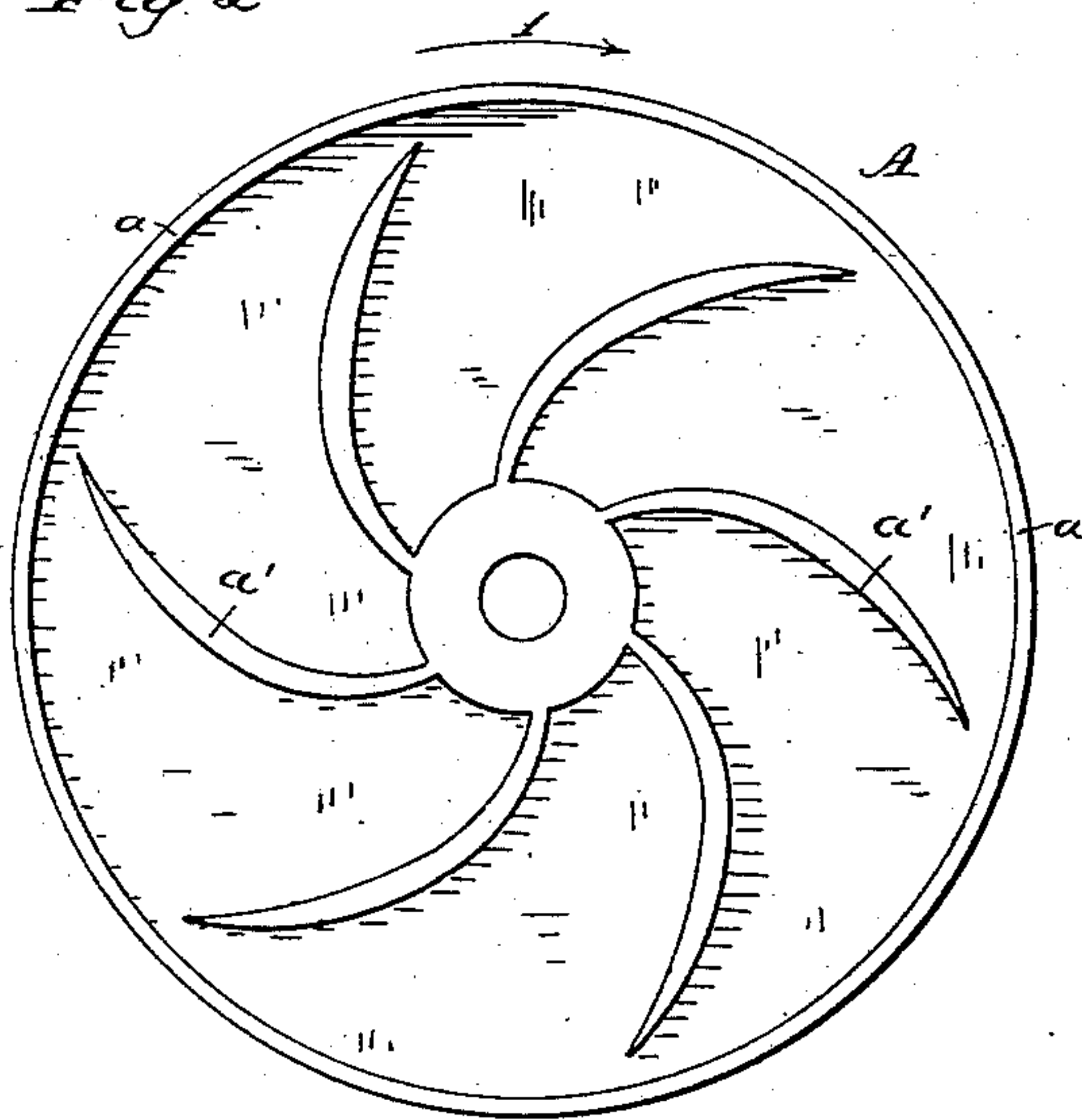


Fig. 2



Witnesses

H. A. Low
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UNITED STATES PATENT OFFICE.

FRED. H. MORSE, OF MOHAWK, NEW YORK, ASSIGNOR OF ONE-HALF TO
JERRID PETRIE, OF SAME PLACE.

POLISHING-WHEEL.

SPECIFICATION forming part of Letters Patent No. 277,325, dated May 8, 1883.

Application filed February 6, 1883. (No model.)

To all whom it may concern:

Be it known that I, FRED H. MORSE, a citizen of the United States, residing at Mohawk, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Polishing-Wheels, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a perspective view of my improved polishing-machine, a portion of the polishing-wheel being broken away to show its construction, and Fig. 2 is a plan view of said wheel from the lower side.

The object of this invention is to construct a polishing-wheel which may be driven at a more rapid rate of revolution than those in use without throwing off the sand, emery, or other polishing substance by centrifugal action.

In the drawings, A is the wheel, mounted at the lower end of a vertical shaft, B, and adjusted thereon by any of the well-known contrivances which are used for that purpose. Shaft B carries a belt-pulley, c, and is supported in bearings fixed to the outer ends of arms D D, which are pivoted at their inner ends to a second shaft, E, carrying two belt-pulleys, e e', pulley e being connected with pulley c by a belt, C. Belt-pulley e' is connected by belt F with pulley f on shaft G, shafts E and G being also connected by parallel arms H I. This method of supporting and imparting motion to a revolving shaft, B, is common in polishing-machines, and therefore need not be further described, it being of course understood that the shaft is driven by some suitable motor.

The upper face of wheel A is, by preference, flat, its under or lower face being provided with a rim, a, and with a series of ribs, a'. These ribs are by preference epicycloidal in plan, and are tapering, their outer ends being thinner than their centers. By an examination of Fig. 2 it will be seen that the outer ends of these ribs are in advance of their inner ends in the direction of travel of the wheel, and it will be readily understood that their form and relative arrangement are such that when in operation they tend to overcome the centrifugal action of the wheel upon the sand

or other grinding material, and hence maintain a substantially uniform distribution of the grinding material over the entire space which is inclosed between the hub and rim of the wheel; but if, under any circumstances, material becomes massed or banked up against the rim of the wheel temporarily, its forward movement will be checked by reason of the spaces between the ends of the ribs and the rim, and it will be caught by the next or succeeding rib or ribs and thrown inward toward the hub, this operation assisting materially in maintaining a proper distribution of the grinding material. The inner ends of these ribs extend to within a short distance—say three inches—of the center of the wheel, their outer ends being from one-fourth to one-half of an inch from the rim a. The lower edges of the ribs and of the rim are in a common plane. For a wheel of two feet in diameter, I prefer to make the rim and the ribs project about two inches from the body of the wheel. As the wheel is driven in the direction indicated by the arrow 1, Fig. 2, these curved ribs, engaging with the sand, emery, or other polishing materials, will overcome the centrifugal action of the revolving wheel, and thus prevent said material from being driven off in tangential lines from the rim of the wheel. Therefore it (the wheel) can be driven at a comparatively high rate of speed without undue waste, and practically without scattering the material by its own centrifugal action.

While I regard the curved form of ribs shown as being the best for practical use, yet I do not wish to be limited thereby, as some other form—such as arcs of circles—may be employed with practically the same results.

Under some circumstances the ribs may be formed on lines tangential to a smaller circle—say one of one-half or two-thirds the diameter of the wheel—and effect a great saving in scattering and waste of material. Under some circumstances I may change the form of the ribs, making them straight and tangential, without departing from the spirit of my invention.

The wheel may be made of soft cast-iron, lead, tin, spelter, bronze, or other suitable material, and is by preference cast in one piece.

What I claim is—

1. A polishing-wheel provided on its under surface with a circumferential rim and a series of ribs, the outer ends of which terminate a short distance from the rim, thereby permitting the polishing material to pass around the outer ends of the ribs, substantially as set forth.

2. A polishing-wheel having its under side constructed with a circumferential rim and a

series of circular or curved ribs, arranged with their outer ends in advance of their inner ends relative to the direction of rotation of the wheel, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FRED. H. MORSE.

Witnesses:

SETH JOHNSON,
JAMES JOHNSON.