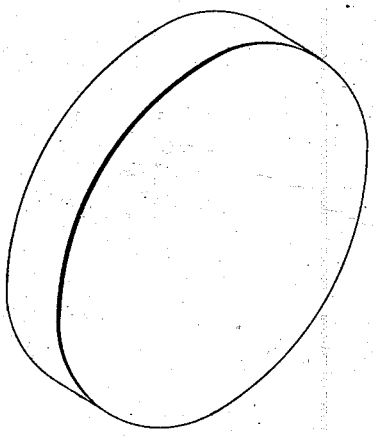
I. P. BROWN Jr. & A. A. SANBORN.

EMERY GRINDING WHEELS.

No. 187,593. Patented Feb. 20, 1877.

Fig. 1

Fig. 2.



Witnesses
J. G. Skidmore
A. H. Bright

I. P. Brown Jr. and
A. A. Sanborn
by their attorneys.
Howson and Son.

UNITED STATES PATENT OFFICE.

ISAAC P. BROWN, JR., AND ALBERT A. SANBORN, OF NEWARK, NEW JERSEY, ASSIGNORS TO THEMSELVES AND CHARLES P. ZIMMERMAN, OF SAME PLACE.

IMPROVEMENT IN EMERY GRINDING-WHEELS.

Specification forming part of Letters Patent No. **187,593**, dated February 20, 1877; application filed January 22, 1877.

To all whom it may concern:

Be it known that we, ISAAC P. BROWN, Jr., and ALBERT A. SANBORN, both of Newark, New Jersey, have invented a new and useful Improvement in Grinding-Wheels, of which the following is a specification:

Our invention relates to an improvement in the manufacture of emery or corundum wheels, with a base of celluloid or other equivalent composition, which will yield to the action of a solvent; and the object of our invention is to make superior wheels of this class more readily than heretofore.

In the accompanying drawing, Figure 1 represents a series of thin disks, from which the wheel is formed; and Fig. 2, a perspective view of the wheel.

In manufacturing celluloid grinding and polishing wheels, it has been the practice to dissolve pulverized celluloid in spirits of camphor, and to mix intimately with it pulverized emery or corundum, then to press the plastic composition in a mold of the desired shape of the wheel, and finally to dry the latter. The drying process is a very tedious one, the thicker the wheels, the longer being the time required to dry. Even when apparently dry and hard, the inner portions of the wheel are frequently soft, and this, of course, detracts from the durability of the wheel.

To obviate these difficulties we make the wheel of a series of united disks or layers, in the following manner: For a wheel of one inch thick, or thereabout, we use, say, four layers, each one-quarter of an inch thick, or five, or even six, layers of lesser thickness, each layer consisting of a disk of the same diameter as the wheel to be produced, as seen in Fig. 1, and each disk being made by compression in a mold, in the usual manner. We then dry the separate disks, and this drying may be readily accomplished, owing to their thinness. After this we face each disk, either by flattening it on a steam-heated table, or by turning it in a lathe by means of a diamond tool, and then we soften those faces of the disks which have to be united, by applying thereto spirits of camphor or other equivalent solvent, and then subject the collection of disks to a slight pressure.

The result of this will be a perfectly dry, hard, and homogeneous emery or corundum wheel, in the manufacture of which much time has been saved, owing to the drying of the disks before they are united to form the wheel.

Although we have alluded above to celluloid as the base of the wheels, it will be evident that our invention is applicable to the manufacture of wheels of any composition which will yield to a solvent after they are dry, and thereby enable us to effect a complete junction of a number of disks.

We claim as our invention—

The mode herein described of manufacturing an emery or corundum wheel—that is to say, by preparing and drying thin disks, and subsequently uniting the same, in the manner described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ISAAC P. BROWN, JR.
ALBERT A. SANBORN.

Witnesses:
HORACE W. LINES,
R. J. D. DUNN.