A. M. Sawyer.

Grindstone.

No. 85,537. Patented Jan. 5, 1869.

Fig. 1.

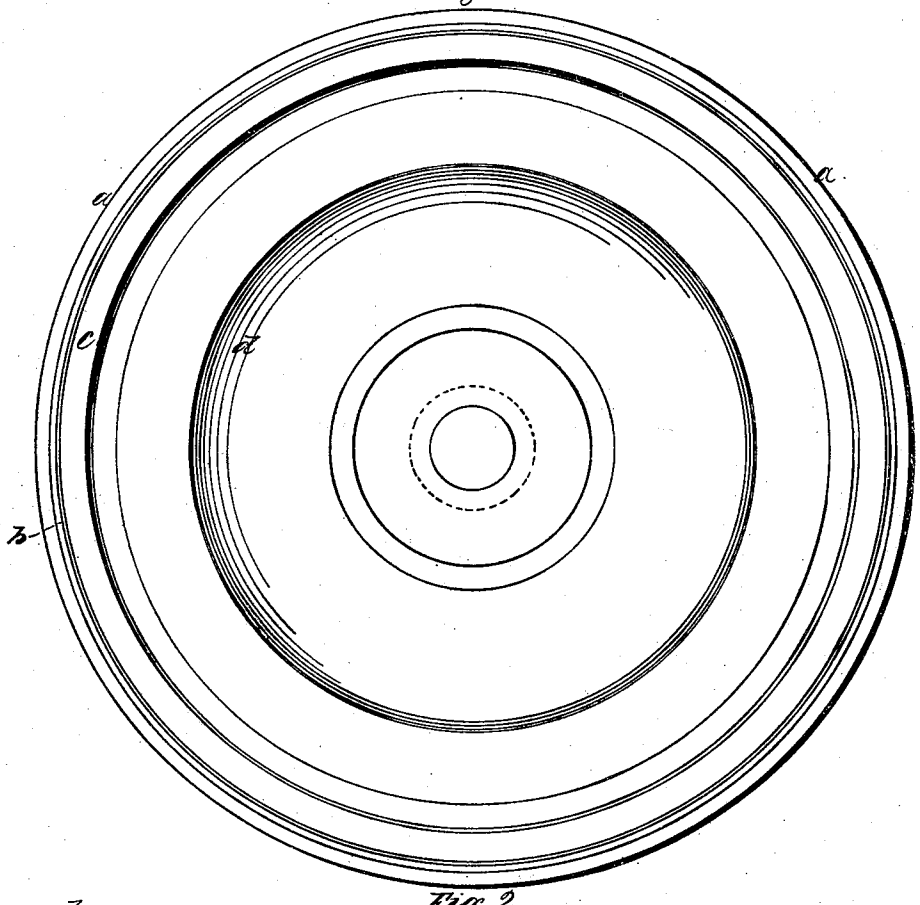


Fig. 2.

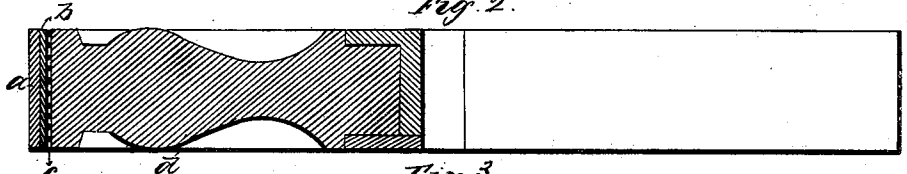
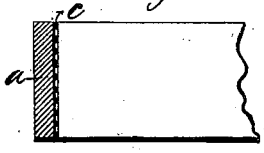


Fig. 3.



Witnesses:
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H. A. Fay

Inventor:
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United States Patent Office.

ADDISON M. SAWYER, OF ATHOL, MASSACHUSETTS.

Letters Patent No. 85,537, *dated January* 5, 1869; *antedated December* 26, 1868.

IMPROVEMENT IN EMERY-WHEELS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ADDISON M. SAWYER, of Athol, in the county of Worcester, and State of Massachusetts, have invented a new Mode of Constructing a Polishing-Band, or appliance for polishing and grinding metals and other materials; and I do hereby declare that the following is a full, clear, and exact description of the same, taken in connection with the accompanying drawings, making a part of this specification, in which—

Figure 1 is a sectional elevation of the band, as applied to a polishing-wheel;

Figure 2 is an edge view of a polishing-wheel with one-half in section, showing a cross-section of the band; and

Figure 3 is a sectional view, showing a modification of the band, which will be hereafter described.

The subject-matter of my invention relates to a new mode of forming a polishing-band, or appliance for polishing and grinding metals and other materials, and is designed to be used for covering polishing-wheels and other instruments for polishing; and consists in forming the band of a polishing-compound composed of emery and soft rubber, as will be described, united to a strip of cloth or other material that will be practically inelastic in the direction of its length, by which the elasticity of the rubber is counteracted in that direction, and by which the band can be more readily secured to the wheel or other implement upon which it is to be used.

The method of making the band is as follows:

I first make a compound of emery or other grit and the ordinary soft rubber, ground together by mastication, between rollers, in the usual way, as is described in Letters Patent heretofore granted to me for such compound, excepting that when the compound is used in a fixed form, as upon a polishing-wheel, for instance, where no flexibility is required, the proportion of emery may be increased to an extent limited only by the capacity of the soft rubber to hold it firmly.

When the ingredients are properly mixed, I roll the mass into a sheet of the thickness desired, from which a strip is cut, of the proper length and width to form the acting surface of the wheel or other polishing-implement. I then take a strip of canvas, well stretched, of the proper length, and cover one side of it with rubber cement, worked into the body of the cloth. I then wrap this around a former, of the diameter desired to be given to the interior of the band, with the cemented side outward, and join the ends by lapping, or by a patch upon the outside. Upon the outside of this I place a thin layer of soft rubber, ready for vulcanizing, and upon the outside of this the layer of emery compound first described, nicely joining the ends of each with cement.

The whole is then put into a mould, which gives form to both the inside and outside of the band, and is then vulcanized or cured by heat in the usual way.

The band thus formed is applied to the wheel by being forced on to it snug, and further secured by glue, shellac, mastic, or other appropriate cement, interposed between the surfaces.

A wheel thus made is shown in figs. 1 and 2 of the drawings, where *a* represents the compound of emery and rubber; *b*, the layer of soft rubber; *c*, the canvas; and *d*, the wheel.

The band thus made has a slight degree of elasticity beyond what is due to the rubber compound, by the use of the thin layer of soft rubber *b*, but it may be made without this, in which case a thick layer of rubber cement would be interposed between the canvas and the emery compound, as is shown in fig. 3, and then vulcanized in a mould, as before stated.

Instead of the cloth foundation, leather well stretched, or other material that will not stretch, and will stand the heat of vulcanizing, and to which the rubber will adhere, may be used, but the mode of construction that I have described I deem the best, and have shown it as an embodiment of my invention.

I do not herein claim the composition of soft rubber and emery to form a polishing-compound, nor the employment of a backing or cushion of soft rubber, in combination therewith, as both of these have already been secured to me by the Letters Patent before mentioned; but

What I now claim, and desire to secure, is—

The use of the lining of cloth or other practically-inelastic material, that will unite with the rubber, and counteract its elasticity, and facilitate the attachment of the band to the wheel, or other instrument upon which it is used, substantially as described.

Executed, May 22, 1868.

A. M. SAWYER.

Witnesses:

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