L. Hale,

Polishing Metals.

No. 23,571. Patented Apr. 12, 1859.

Fig. 1.

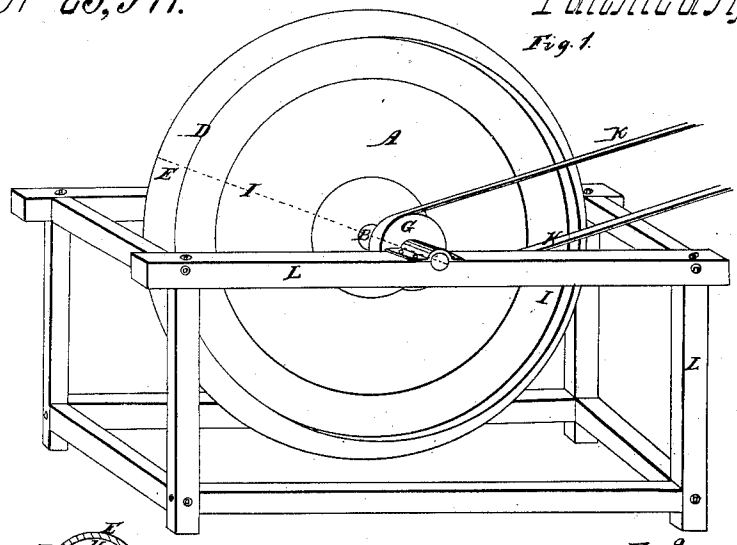


Fig. 3.

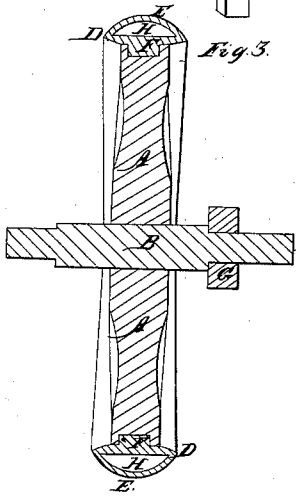


Fig. 2.

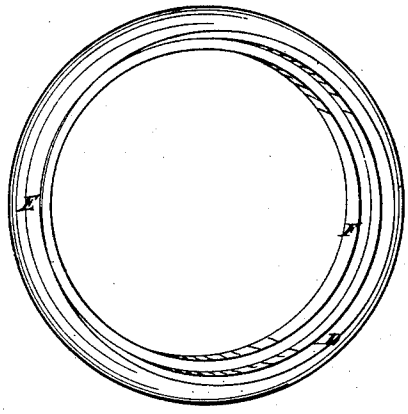
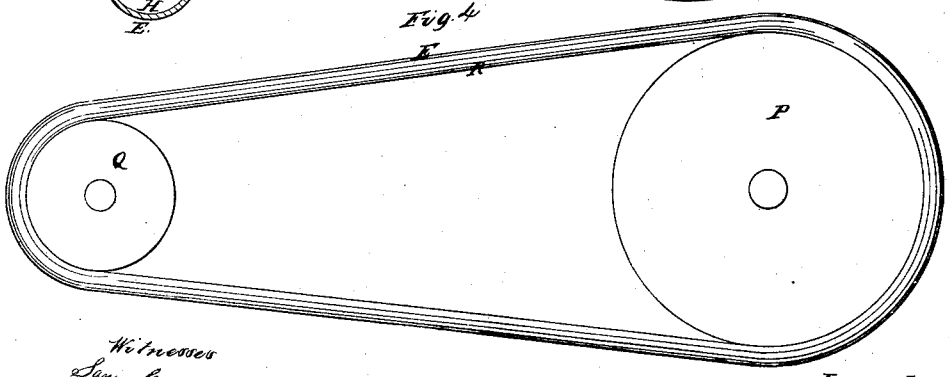


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

LOREN HALE, OF MILFORD, MASSACHUSETTS.

ELASTIC POLISHING-WHEEL.

Specification of Letters Patent No. 23,571, dated April 12, 1859.

To all whom it may concern:

Be it known that I, LOREN HALE, of Milford, in the county of Worcester and State of Massachusetts, have invented a new and Improved Buffer or Polishing Wheel for Scouring and Polishing the Surface of Articles of Leather, Wood, or Metal, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is a view of a scouring wheel with my improvements attached. Fig. 2, a view of one of the elastic inflated rings which forms the polishing surface of the wheel. Fig. 3, a section upon the line I I of Fig. 1. Fig. 4, a side view of one of my polishing rings aplied to an endless belt.

Elastic polishing wheels have been made by wrapping a number of layers of woolen or other cloth upon the periphery of a circular disk or wheel, and by covering the exterior layer or surface with sand or powdered emery. Such wheels have however not possessed the requisite degree of elasticity, and they are in consequence liable to scratch and otherwise injure the articles being scoured and to have the sand torn off their surface.

To remedy this inconvenience and to produce a surface that shall be more perfectly elastic, is the object of my present invention which consists in a hollow inflated polishing wheel of india rubber the surface of which is coated with sand or powdered emery and which is employed by stretching it over a wheel or cylinder, or even over an endless band carried by two drums or wheels.

To enable others skilled in the art to understand my invention I will proceed to describe the manner in which I have carried it out.

In Fig. 2 of the drawings is represented the hollow india rubber ring it is formed of india rubber vulcanized in a mold having a hollow cavity H, and a tongue F, upon its inner circumference. The exterior surface E, is covered with sand, powdered emery or ground glass of a fineness suited to the nature of the work to be done. The wheel A, to which the elastic ring is secured has a groove upon its periphery (Fig. 3) to receive the tongue F, and hold the ring in place. This wheel being secured to its shaft B is hung in bearings in the frame L and is revolved by power applied through the band K, and pulley G as seen in Fig. 1.

To enable the operator to apply the wheel more accurately to the inner angles of his work as for instance the angle between the sole and heel of a boot or shoe, the elastic ring is made wider than its carrying wheel and is caused to project upon each side of it as at D, (Fig. 3,) and for some varieties of work it may be desirable to make the hollow ring much wider than the one represented in the drawings and to stretch it over a cylinder.

In Fig. 4, is seen a modification of my polishing wheel calculated to operate upon plain surfaces, the polishing ring being stretched over two pulleys P and Q, and carried by the endless band R. With a wheel thus constructed much better and more uniform work can be done than with a wheel of the ordinary construction the tubular air cushion H causing the grinding surface to adapt itself to the irregularities of surface of the article being ground, while the extreme elasticity of the ring effectually prevents it from scratching the article or from grinding it concave as is the case with the ordinary polishing wheel.

To apply the ring it is distended and stretched over the wheel the tongue F, being allowed to fall into the groove on its periphery, and it is obvious that the same wheel may be made to answer for any number of rings of different degrees of fineness or of varying forms, it being necessary only to remove one ring and apply another which is the work of but an instant of time.

What I claim as my invention and desire to secure by Letters Patent as an improvement in wheels for grinding and polishing is—

The hollow elastic ring operating as set forth for the purpose specified.

LOREN HALE.

Witnesses:
SAM. COOPER,
P. E. TESCHEMACHER.