UNITED STATES PATENT OFFICE.

THADDEUS SELLECK, OF GREENWICH, CONNECTICUT.

METHOD OF EMPLOYING FRANKLINITE PIG METAL FOR MAKING GRINDING AND ABRADING SURFACES.

Specification forming part of Letters Patent No. **28,107**, dated May 1, 1860.

To all whom it may concern:

Be it known that I, THADDEUS SELLECK, of Greenwich, in the county of Fairfield and State of Connecticut, have invented, made, and applied to use a certain new and useful Improvement in Grinding or Abrading Surfaces; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same and of the benefits derived therefrom.

Sand and emery paper have heretofore been extensively used for the purposes of abrasion or grinding, and emery-wheels are common for grinding and polishing. In all these cases the fine particles of sand or other mineral substance are very liable to crack and break in use, and the surface wears smooth. My said invention does not therefore relate to the forming of a grinding-surface of a mass of mineral particles, nor to any method of securing such mineral particles, nor to any particular article formed with the abrading-surface; but my said invention does relate to the material made use of for such grinding or abrading surface.

I have discovered that the metal known as "franklinite," and found in the State of New Jersey, and known in commerce as "franklinite pig metal," is capable of pulverization, and that a grinding or abrading surface formed of this material is very efficient in use, durable, and cheap, and can be used as a substitute for sand or emery paper, for coating grinding-wheels, for forming, with any suitable cement, grinding-surfaces for grist-mills or other purposes, for files, rasps, &c. In order to pulverize this franklinite metal, I first heat the same to a sufficiently high temperature, and then suddenly cool it by immersion in water or otherwise. This operation not only renders the metal exceedingly hard, (being excelled in hardness probably only by the diamond,) but also makes said pig metal exceedingly brittle, so that the same can be reduced to granules by blows in a suitable mortar or other article. The mass, after being pulverized, is to be sifted so as to assort the particles in sizes, and then the said granules are to be attached to the desired article by glue or other cement, or may be made up into a mass by the use of suitable cement. The surface formed by this metal is exceedingly durable, because the particles are themselves so very hard, and present a constant cutting-edge, although the surfaces of the particles may be worn smooth, and the particles themselves are not liable to be crushed or broken in use, as are all sand, emery, or other mineral matters heretofore applied for this purpose. This pulverized franklinite pig metal may be used as aforesaid on any article that is exposed to wear and form a coating or covering for the same.

Having thus described my said invention, what I claim therein as new, and desire to secure by Letters Patent, is—

The method herein described of employing franklinite pig metal as a grinding or abrading surface, as specified.

In witness whereof I have hereunto set my signature this 4th day of February, 1860.

THADDEUS SELLECK.

Witnesses:

LEMUEL W. SERRELL,
CHAS. H. SMITH.