H. BURGESS.

Separating Graphite from Foreign Matter.

No. 229,669. Patented July 6, 1880.

Fig. 1

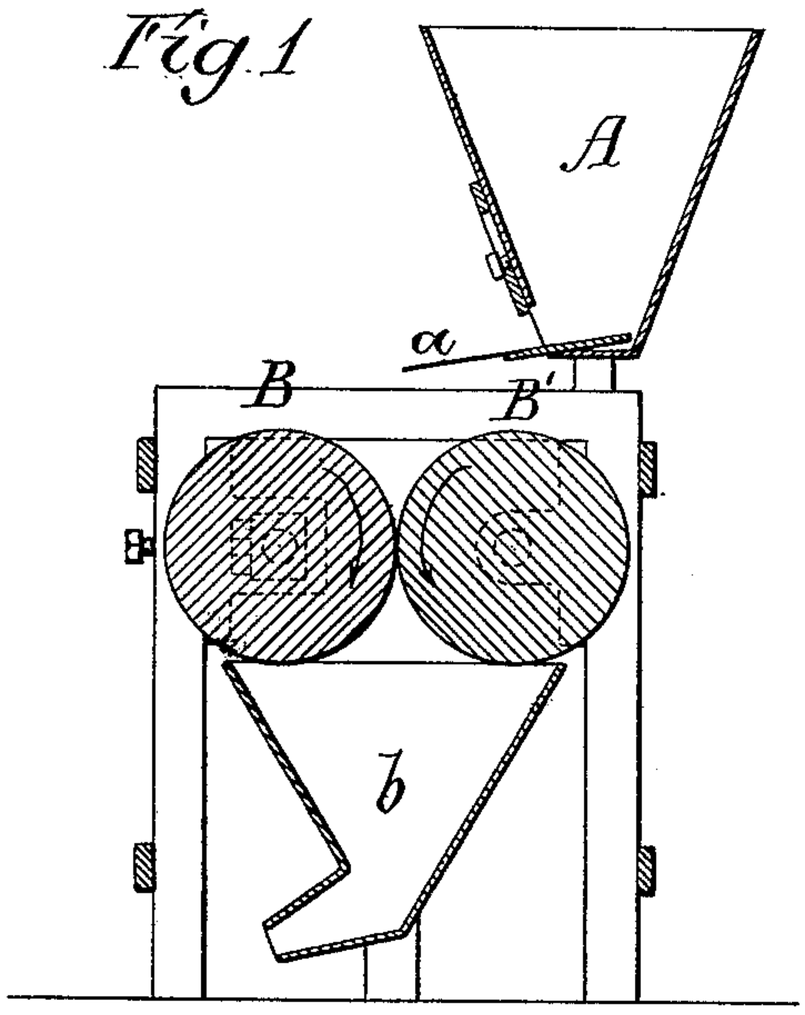
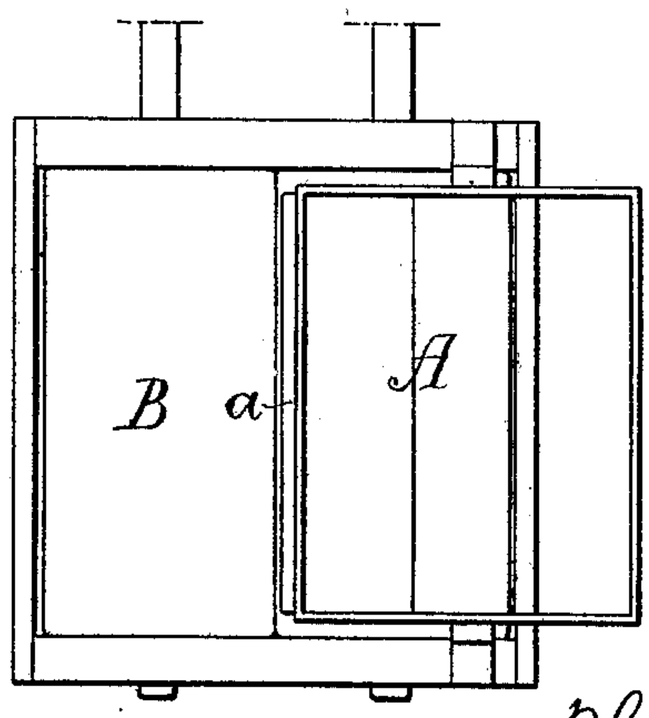


Fig. 2.



Witnesses.
Henry Howson Jr.
Harry Smith

Inventor
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by his Attorneys
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UNITED STATES PATENT OFFICE.

HUGH BURGESS, OF ROYER'S FORD, PENNSYLVANIA.

SEPARATING GRAPHITE FROM FOREIGN MATTER.

SPECIFICATION forming part of Letters Patent No. 229,669, dated July 6, 1880.

Application filed September 1, 1879.

To all whom it may concern:

Be it known that I, HUGH BURGESS, of Royer's Ford, Montgomery county, Pennsylvania, have invented a new and useful Improvement in Separating Graphite from Foreign Matter, (Case B,) of which the following is a specification.

My invention relates to a process of separating graphite from the foreign mineral which accompanies it, the said process consisting in first simultaneously flattening the graphite and pulverizing the foreign mineral, and then separating the two by a sifting process, all as explained hereinafter.

In many localities there are gravelly beds which contain a small percentage of small scales of graphite, but which have either been neglected or utilized by subjecting the gravel to tedious and expensive processes.

I avail myself of the difference in consistency and general character between the graphite and the foreign mineral with which it is found in effecting an economical separation of the two, the graphite being slightly plastic and compressible into thin flakes, while the foreign mineral is friable and easily pulverized under pressure.

Prior to subjecting the granular graphite-bearing mineral to my improved process it should be deprived, by washing operations, of sandy earth and fine grit or sand, and the gravel then kiln-dried, after which it is ready for the treatment which constitutes my invention.

Apparatus for carrying the process into effect is shown in the accompanying drawings, in which Figure 1 is a vertical section, and Fig. 2 a plan view.

The washed and kiln-dried gravel is placed in the hopper A, whence it is permitted to escape continuously in a thin stream down an inclined plane, *a*, whence it falls between the rollers B B′, which are caused to revolve in the direction of the arrows.

A gentle agitation of the inclined plane will insure the passage down and from the same of the gravel in a thin stream of the desired uniformity, providing the said inclined plane has a smooth surface.

The rollers are preferably made of cast-iron with chilled surfaces, and they are so adjusted that nothing can pass between them without being subjected to great pressure.

The action of the rollers on the gravel results in the compression, flattening, and enlarging of the scales of graphite into thinner flakes, while the foreign mineral is crushed into fine powder, which passes, with the said flakes of graphite, down the spout *b*.

It has not been deemed necessary to illustrate or describe any sifting apparatus, as different systems of sieves may be adopted.

In practice I use a rotating screen, into which the crushed gravel is directed from the spout *b*, the screen having meshes of such a size that the flattened flakes of graphite cannot pass through them, while the pulverized foreign mineral escapes freely.

I claim as my invention—

The process described of separating graphite from graphite-bearing mineral, the said process consisting in first flattening the particles of graphite simultaneously with the pulverizing of the foreign mineral, and then subjecting both to a sifting operation, all substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HUGH BURGESS.

Witnesses:

ALEXANDER PATTERSON,

HARRY SMITH.