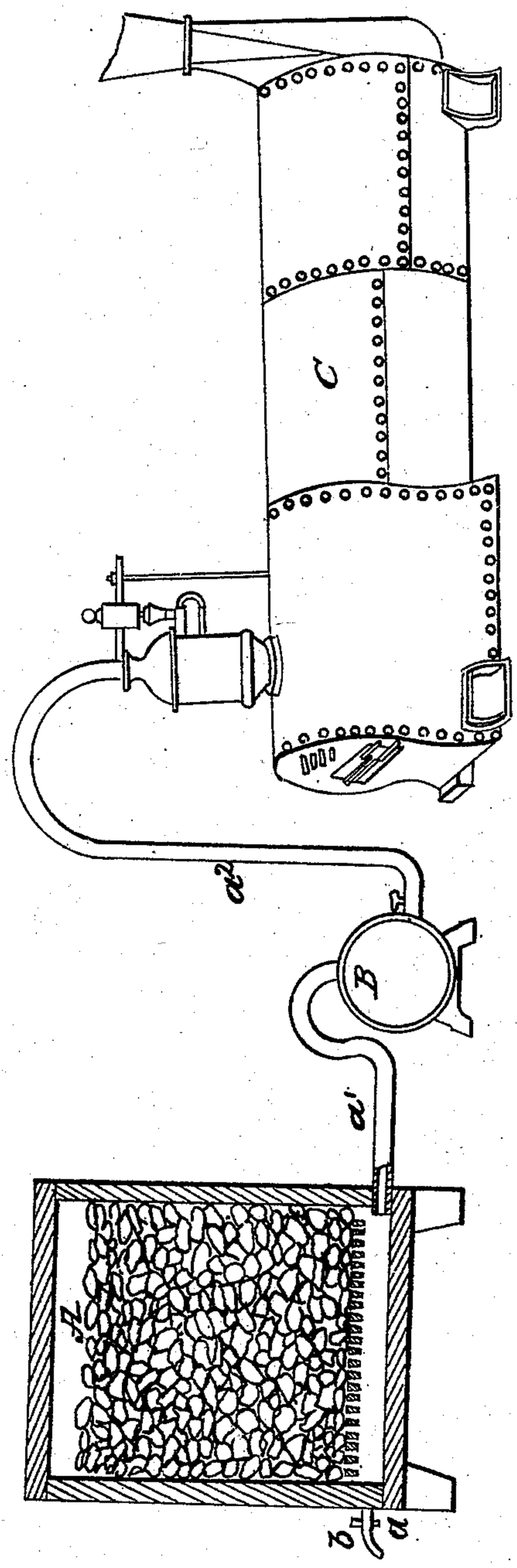
J. J. STORER.

Purifying Coal.

No. 32,012. Patented April 9, 1861.



Witnesses.
P. M. Henry
Thomas A. Selden

Inventor,
Jacob J. Storer
by his atty
Chas. Everitt

UNITED STATES PATENT OFFICE.

JACOB I. STORER, OF PHILADELHIA, PENNSYLVANIA.

IMPROVEMENT IN DESULPHURIZING COAL AND ORES.

Specification forming part of Letters Patent No. **32,012**, dated April 9, 1861.

To all whom it may concern:

Be it known that I, JACOB I. STORER, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in the Process of Desulphurizing Coals and Ores; and I do hereby declare that the following is a full, clear, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification.

The nature of my invention consists in treating the coals and ores to be desulphurized with salts of ammonia, in the manner to be hereinafter more fully described.

For the sake of illustration, I shall proceed first to describe an apparatus suitably arranged for the proper conducting of my process, here, however, premising that I do not desire to confine myself to any particular apparatus, as differently constructed and arranged apparatus may be equally well adapted to conduct the operation properly. The coals or ores to be desulphurized are placed in a suitable receptacle, A, into which a pipe, *a*, is fitted, provided with a cock, *b*. Another pipe, *a'*, connects A with a vessel, B, in which the chemical ingredients which I use in my process are to be placed. A steam-boiler, C, is connected by the pipe a^2 with the receptacle B. By means of the pipe a^2 the steam is conveyed into B to act upon the materials placed therein.

The chemical ingredients which I use for desulphurizing coals and ores are the carbonate and muriate of ammonia, to which I usually add carbonate of potash and quicklime. The proportions which I usually employ are as follows: Four parts of carbonate of ammonia, one part of sal-ammoniac, one part of carbonate of potash, one part of quicklime. These chemical ingredients, as before stated, are placed in the vessel B, and as the steam passes through said vessel it carries with it small quantities of the substances contained therein. The steam thus impregnated passes then into the receptacle A, and saturates the coals or ores, when, by the action of the steam, in connection with the chemical ingredients, their desulphurization rapidly progresses. After the operation has continued for some time, the cock *b* may be opened to allow the escape of an excess of steam in the receptacle A, which done, the cock may be again closed.

This my improved process of treating coals and ores by means of ammonia presents the highly-important advantages of being not only more efficient, but also cheaper than any other heretofore known plan of desulphurizing coals or ores.

What I claim as new, and desire to secure by Letters Patent, is—

The employment, in the manner herein specified, of ammonia in connection with steam in the process of desulphurizing coals and ores.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

JACOB I. STORER.

Witnesses:

J. R. SHREVE,

H. A. CHADWICK.