UNITED STATES PATENT OFFICE.

HARLESTON CORBETT GESNER, OF NEW YORK, N. Y., EXECUTRIX OF GEORGE W. GESNER, DECEASED.

FILTER.

No. 815,417. Specification of Letters Patent. Patented March 20, 1906.

Application filed June 26, 1905. Serial No. 267,322.

To all whom it may concern:

Be it known that GEORGE W. GESNER, deceased, late a citizen of the United States, did invent a certain new and useful Improvement in Filters, of which the following is a specification.

In United States Letters Patent No. 604,580, granted May 24, 1898; No. 642,320, granted January 30, 1900, and No. 670,775, granted March 26, 1901, to the said GEORGE W. GESNER are described and claimed certain processes of making alloys of iron and hydrogen, the product being in the form of a pig or ingot, powder, or scale. According to these patents articles consisting of the alloy may be produced by remelting the pigs, powder, or scale and pouring the liquid alloy into molds, by forging or rolling heated masses of the alloy, or by heating the powder or scale and welding and shaping it by forging or rolling. In application, Serial No. 268,749, of even date herewith, are described and claimed an article consisting of particles of the alloy of iron and hydrogen agglomerated into a strong coherent body and a process of making such articles by compressing the powdered alloy into a body and heating the body to a temperature sufficient to cause the particles to frit or partially fuse together, the said article and process being the invention of the said GEORGE W. GESNER, deceased.

The present invention is a filter consisting of a porous body of an alloy of iron and hydrogen. This alloy offers extraordinary resistance to oxidation and corrosion. It is unaffected by chlorin, mineral acids, or caustic alkalies. It is therefore a material which is well suited for the production of filters for various uses, whether for filtering water or corrosive chemical solutions.

The filtering-body preferably consists of a rigid plate or tube of the desired porosity interposed as a partition in a vessel of any usual or desired construction. The body is preferably produced by the process of the specified application, its porosity being determined by the size of the particles into which the alloy is divided, the temperature of the heating-furnace, and the duration of the firing. The thickness of the body may also be suited to the desired completeness and rate of filtration.

The term "filter" as used in the description and claims is intended to include an electrolytic diaphragm.

I claim as the invention of the said GEORGE W. GESNER—

1. A filter, consisting of a porous body of an alloy of iron and hydrogen, as set forth.

2. A filter, consisting of a rigid, porous plate or tube of an alloy of iron and hydrogen, as set forth.

3. A filter, consisting of a porous, coherent body of agglomerated particles of an alloy of iron and hydrogen, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HARLESTON CORBETT GESNER,
Executrix of George W. Gesner, deceased.

Witnesses:
HENRY Q. HOWE,
GEORGE S. CARR.