

UNITED STATES PATENT OFFICE.

SAMUEL HENRY JOHNSON, OF STRATFORD, COUNTY OF ESSEX, ENGLAND.

FILTERING-PAPER.

SPECIFICATION forming part of Letters Patent No. 323,947, dated October 27, 1885.

Application filed August 2, 1882. Serial No. 63,303. (No specimens.) Patented in England November 3, 1881, No. 4,804.

To all whom it may concern:

Be it known that I, SAMUEL HENRY JOHNSON, a subject of the Queen of Great Britain, residing at Stratford, in the county of Essex, England, have invented certain new and useful Improvements in Filtering-Paper, of which the following is a specification.

For the process of manufacturing this improved paper Letters Patent of the United Kingdom of Great Britain and Ireland, No. 4,804, were granted to me under date of November 3, 1881.

My invention has for its object the production of filtering-paper by mixing animal or vegetable charcoal with paper-pulp and forming the product into sheets. I employ in making my improved paper animal or vegetable carbon; but the former, being more active, is usually to be preferred. The animal charcoal may be prepared either by calcining bones, blood, or other animal substances; and in the case of bone-charcoal it will be rendered much more active and suitable for the purposes of my invention to dissolve and wash out from it the phosphate of lime by means of hydrochloric acid, while in the case of carbon derived from blood its activity is very much increased by ignition of the blood with carbonate of potash. These methods of preparation of the carbon employed are well known and do not form part of my invention.

To obtain the best results such quantity of the carbon should be added to the paper-pulp as it will admit without unduly injuring its tenacity for the purpose of which it is intended to be employed. The sheets of paper so pre-

pared are not sized, and in all respects are prepared as is customary in the preparation of filtering-paper. The carbon which is most active for my purpose is that produced by drying down blood with carbonate of potash and igniting it in closed retorts.

Ordinary filtering-paper will remove mechanical impurities. The improved paper made by my process will also remove impurities held in solution, such as albuminous matters.

The finished paper should contain from five to twenty per cent. of the carbon by weight, and such quantities can be introduced into the pulp without unduly weakening the paper, and may be added after the pulp has been thoroughly washed in the beater-engine.

The best pulp for use in connection with my improvements is that with long fiber, as it retains a larger proportion of the carbon.

The usual process for the manufacture of filtering-paper is in other respects followed, and the paper may be made in various thicknesses, as at present is well understood.

Having thus described the nature and object of my improvements, what I claim herein as new, and desire to secure by Letters Patent, is—

As a new article of manufacture, filtering-paper made by mixing carbon with paper-pulp and forming it into sheets, substantially as described.

SAML. HENRY JOHNSON.

Witnesses:

ARTHUR TODD,

J. WALTER DOUGLASS.