

UNITED STATES PATENT OFFICE.

CARL GEIGE, OF DUSSELDORF, GERMANY.

PROCESS OF MAKING CHEMICALLY-PREPARED PEAT FIBERS.

SPECIFICATION forming part of Letters Patent No. 579,572, dated March 30, 1897.

Application filed March 28, 1896. Serial No. 585,230. (No specimens.)

To all whom it may concern:

Be it known that I, CARL GEIGE, a subject of the King of Prussia, German Emperor, residing at Dusseldorf, Germany, have invented certain new and useful Improvements in Processes of Making Chemically-Prepared Peat Fibers, of which the following is a specification.

My invention relates to a process for the manufacture of chemically-prepared peat fibers—that is to say, of such as are freed from all substances that injuriously affect their capacity for absorption.

This process is as follows: The peat when cut is placed into a weak alkaline bath which is continuously agitated for several hours. By this means the humic acid is removed from the peat. The peat is then dried and disintegrated (reduced to fibers) by means of opening-machines generally employed in the cotton-spinning industry for picking, scutching, or tearing apart the matted masses. The peat fibers thus produced are now placed into a warm bath which contains dilute acid—*e. g.*, sulfuric acid, acetic acid, &c.—in order to transform the vegetable albumen (the starch and the like) present in the fibers into glucose. Then the peat fibers thus treated are placed in a second bath containing a ferment, for instance, malt, yeast, or the like, in which the glucose is decomposed into alcohol, carbonic acid, &c.

The peat fibers prepared as above described are then washed in clean water, so as to remove the decomposed products. After this treatment the peat fibers are subjected to the action of hot ether, benzene, ligroin, or other fat-removing agent or solvent under pressure in closed vessels, the fat-removing agent being kept in constant circulation until a sample shows that the resins, oils, and fats present in the fibers have been sufficiently dissolved. Then as soon as the contents of the vessels have become cool the fat-removing agent or solvent is drawn off charged with the fatty constituents of the peat. The fat-removing agent or solvent is separated by distillation in the usual manner from the fatty substances which it has taken up. These fatty substances can be further treated to

produce lubricant, soap, &c. The peat fibers, now free from fat, are removed from the vessels and thoroughly washed in clean water, then boiled with dilute acids or alkalis, whereby the last traces of tannic acid are removed. The fibers are then again washed, and, if desired, are bleached in the usual manner.

Peat fibers after treatment according to the process hereinbefore described are chemically pure, completely neutral, soft, pliable, and flexible, and can be spun into the finest yarn. Wadding manufactured from these chemically-pure neutral fibers makes an excellent wadding or lint for surgical purposes, and when thrown upon water sinks at once, thereby proving that it has been freed from all substances that would interfere with its capacity of absorption. When placed upon the skin of the human body, especially in the case of invalids suffering from gout and rheumatism, this wadding exerts such an intense suction that it becomes in a short time not merely moist, but wet. Yarn or threads made from this wadding and textile or woven fabrics produced from said yarn or threads possess an enormous capacity for absorption and have, further, the property of readily giving up again the moisture and gases they have taken up. The wadding may also be mixed with wool, flax, &c., and may also be impregnated with antiseptic materials and medicinal substances of all kinds.

Peat fibers prepared as described can be felted together exceedingly easy, alone or in combination with other fibrous matters. Felt produced of these fibers possesses, likewise, an enormous capacity for absorption. Finally, it may be remarked that the prepared fibers, owing to the fact of their being freed from all substances that affect their capacity for absorption, have acquired the property of taking up cleanly and brightly light or dark colors of every kind.

Having fully described my invention, what I desire to claim and secure by Letters Patent is—

A process for the manufacture of chemically-prepared peat fibers consisting in lixiviating raw peat with alkalis, then drying and disintegrating the same, then placing the

fibers into a warm bath containing acid and
then into a bath containing ferments, and
then after washing the fibers, treating the
same with a fat-removing agent, and then
5 again washing the fibers, then boiling them
with dilute alkalies and again washing the
same, substantially as described.

Signed at Dusseldorf, Germany, this 12th
day of March, 1896.

CARL GEIGE.

Witnesses:

EMMA LIEBER,

WILLIAM ESSENWEIN.