UNITED STATES PATENT OFFICE.

LUDWIG FRANZ, OF ADMONT, AUSTRIA-HUNGARY.

PROCESS FOR THE TREATMENT OF PEAT FIBER AND ITS MANUFACTURE INTO PAPER, &c.

945,313. Specification of Letters Patent. Patented Jan. 4, 1910.

No Drawing. Application filed July 28, 1908. Serial No. 445,736.

To all whom it may concern:

Be it known that I, LUDWIG FRANZ, engineer, a subject of the Emperor of Austria-Hungary, residing at Admont, Styria, Austria-Hungary, have invented a new and useful Improved Process for the Treatment of Peat Fiber and Its Manufacture into Paper and Cardboard; and I do hereby declare the following to be a full, clear, and exact description of the same.

The present invention relates to a mechanical process for disintegrating peat and working the same up into paper and cardboard, which differs advantageously from processes of this kind heretofore known, in that therein the peat fiber is treated much more gently, resulting in greater strength of the paper produced from the product finally obtained.

The process consists in pressing the cut natural peat into a continuous strand and cutting it into disks of approximately equal thickness. It is thereupon, with the addition of water, dissolved into its separate fibers, then freed from the coarser foreign portions, and thereupon cleaned of its finer impurities and earthy portions. The product thus obtained, by defibrating, is worked up into "half-stuff," which, after sorting is mixed with half-stuff made of waste paper, with wood-branch cellulose, or the like, for the finished paper material.

The process begins by feeding the freshly cut natural peat through a hopper into a press with a rotating worm. This worm presses the peat through a mouth-piece in a continuous strand, which by means of a knife rotating in front of the mouth-piece, is cut into disks of approximately equal thickness. These disks are conducted to a rotating shearing-worm, which, with the aid of water, dissolves the peat disks into separate fibers. These latter, for the purpose of being separated from their coarser foreign portions, such as wood, or the like, then reach a centrifugal preliminary sorter, and are thereupon brought into a rotating riddling drum provided with an internal sprayer and conveyer worm, in which the peat fibers are purified from the finer impurities and earthy portions.

The washed, pure fiber obtained in the manner above described is now subjected to treatment in a defibrating machine (system of Dietrich, Wurster, or the like), until the fiber appears worked up in the gentlest manner possible into half-stuff. This half-stuff is fed to a centrifugal sorter, and after leaving this to a mixing engine, in order to be mixed with half-stuff from paper refuse, or with wood-branch cellulose or the like, for obtaining the paper pulp ready for the machine. The further working-up of the pulp into paper or cardboard takes place according to the well-known process of paper-making.

The gentler treatment of the peat which produces a product assuring an excellent quality of the paper, is chiefly due to the fact that, in accordance with the invention, the peat fibers, before any washing whatever or disintegration, are cut into pieces of equal length, whereby, naturally, the washing and disintegration of the peat fibers are substantially aided. Processes are known which also provided for a comminution of the peat fibers into pieces of equal length, but, in the process the comminution is undertaken after first crushing and washing the peat fiber, with the disadvantage that the washing and disintegration is protracted and defective and, consequently, practically useless.

Having thus fully explained my invention, what I claim is:

A mechanical process for disintegrating peat fiber for the purpose of working the same up into paper and cardboard, consisting in the following steps:—(*a*) cutting the strands into disks of approximately the same size; (*b*) adding water thereto and dissolving the disks into separate fibers; (*c*) freeing the fibers from the coarser foreign portions and separating the fibers from the finer impurities and earthy portions; (*d*) working up the product obtained through disintegrating into half-stuff and sorting the same, and (*e*) mixing the sorted half-stuff with half-stuff obtained from paper refuse, or with wood branch cellulose, or the like, for the finished paper pulp.

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

LUDWIG FRANZ.

Witnesses:

ALFRED KLOS,

ROBERT W. HEINGARTNER.