

UNITED STATES PATENT OFFICE.

WILLIAM ADAMSON AND CHARLES F. A. SIMONIN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO WILLIAM ADAMSON.

IMPROVEMENT IN PROCESSES OF OBTAINING VEGETABLE FIBERS.

Specification forming part of Letters Patent No. 117,852, dated August 8, 1871.

To all whom it may concern:

Be it known that we, WILLIAM ADAMSON and CHARLES F. A. SIMONIN, both of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented a Process of obtaining Vegetable Fibers, of which the following is a specification:

Our invention consists in subjecting fibrous stalks, leaves, husks, bark, &c., to the vapors of hydrocarbon, so that without injuring the fibers they may be set free and rendered available for textile manufactures.

Many different appliances may be used for carrying our invention into effect, but we prefer a closed vessel of any material which will resist the chemical action of the contents, and in which the process can be conducted under pressure. Across the vessel and at a short distance from the bottom we place a perforated diaphragm, and on the latter are deposited the fiber-bearing stalks, leaves, barks, or husks, which may fill or nearly fill the vessel. A supply of hydrocarbon, by preference, such as is of a volatile character—for instance, benzine, benzole, naphtha, or gasoline—is heated by a steam-coil, or otherwise, the vapor rising and permeating the substance under treatment, and finally passing to a condenser, whence it returns in a liquefied condition directly to the space below the perforated diaphragm to be again vaporized, or it may be returned into the vessel at or near the top of the same and pass through the mass of stalks until it reaches a point where it is again vaporized. The vapor rapidly removes the resinous and gummy matter from the substance operated upon, and brings the fibrous portion of the said substance to a condition to be readily separated from that which is non-

fibrous. This separation may be effected by washing in a weak alkaline or equivalent solution, or, in some instances, by mechanical means. The fibers are not injured by the action of the vapor, and are available for use as paper-stock or for textile manufactures. The rapidity with which the fibers can be set free will depend partly upon the character of the stalks or leaves, partly on the pressure, and partly on the length of time during which the process is continued. In treating stalks or husks the fibers of which are comparatively loose, or in which the fibers have been loosened by crushing or other preliminary treatment of the stalks, the process may be conducted without pressure, or even in an open vessel; but this latter plan is objectionable, owing to the necessary loss of the hydrocarbon. We therefore prefer in all cases to practice the process in a closed vessel, under pressure determined by the character of the substance operated on.

We do not claim or desire to confine ourselves to any apparatus or appliances wherewith to carry our invention into effect. We do not here claim, broadly, the use of liquid hydrocarbons for reducing stalks, leaves, &c.; but

We claim—

The mode, substantially as herein described, of obtaining vegetable fibers by the application of hydrocarbon vapors.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WM. ADAMSON.

CHS. F. A. SIMONIN.

Witnesses:

WM. A. STEEL,
LOUIS BOSWELL.