

UNITED STATES PATENT OFFICE.

FRANK WHEATON, OF BROOKLYN, NEW YORK.

PAPER MADE FROM THE FIBER OF THE COTTON-PLANT.

SPECIFICATION forming part of Letters Patent No. 254,747, dated March 7, 1882.

Application filed January 25, 1882. (No specimens.)

To all whom it may concern:

Be it known that I, FRANK WHEATON, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Paper Made from the Fiber of the Cotton-Plant; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The stalk of the cotton-plant possesses a fiber which has heretofore proved of no practical or beneficial use, if not altogether useless, for making a valuable paper, for the reason that its qualities have not been understood. I have discovered that this fiber, with its long thread and strong and light staple, when disintegrated from the bark, pith, and wood of the stalk and properly treated as hereinafter shown, will make a fine, clear, white, durable, and handsome paper at a reduced price. Not knowing this, there have been efforts made to make paper from the bark of the root or the bark of other fibrous parts of the cotton-plant, but not from the fiber separated from the bark; also, from combinations of stalks, leaves, pith, &c., with the fibrous parts of the cotton-plant; and also, in some instances, by introducing other substances in connection with different integuments, under a misconception that they were necessary, the only result being a common, coarse, and useless article. Accordingly these efforts have been of no utility, and practically proved a failure. The parts so used really destroyed the value which the cotton-stalk fiber itself, when wholly separated and properly treated, possesses.

In reducing my discovery to practice I take the stalks and branches in their green state, or after maturity, cutting off the stalks near the ground, and strip the leaves therefrom immediately thereafter; and so soon as possible the stalks and branches are passed through rollers in order to crush them, or they may be retted in any of the ordinary ways of retting flax, hemp, or jute, so that the bark can easily

be separated from the pith and woody or ligneous portions of the stalk. I then take the bark in a dry state—i. e., after drying it in the sun two or three hours or in a house or inclosure for one day or more—and pass it through corrugated rollers, in order to scutch or break the outer covering from its fibrous parts. Then by carding or hackling I get the fiber. Having prepared the fiber in the way and manner specified and described to the end now to be stated, I steep it in a solution of caustic ammonia, one pound to each one hundred and fifty pounds of clear water, kept at a temperature of about 100° Fahrenheit, for thirty hours. Any other alkaline solution may be used being of suitable strength; or I boil in a solution of caustic soda, six to eight per cent. caustic to water, keeping the same at a temperature of about 150° Fahrenheit, for twelve hours or more. Caustic potash, lime, or resin-soap may be substituted for the caustic soda. After cleansing the same by washing, the fiber will then be in the proper state for the cutting, beating, or grinding process—such as is used to make pulp of rags—by which I work it into a pulp fit and ready for the “finishing-engine,” so called, ordinarily used in the manufacture of paper, whereby I make it into paper.

The advantages, among others, of this improvement are cheapness, strength, quality, fineness, and durability, combining the strength, length, and tenacity of flax or hemp with the small cost of cotton-stalks.

Having thus described my invention, what I claim as new is—

Paper made from the fiber of the cotton-plant separated from the bark and stalk and prepared and steeped or boiled, cut, beat, or ground, and finished substantially as set forth.

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

FRANK WHEATON.

Witnesses:

WALDO HUTCHINS,
AUG. S. HUTCHINS.