

UNITED STATES PATENT OFFICE.

JAMES C. COLEMAN AND ELLIOTT TOXEY, OF MOBILE, ALABAMA.

PAPER-PULP.

SPECIFICATION forming part of Letters Patent No. 723,137, dated March 17, 1903.

Application filed June 11, 1902. Serial No. 111,216. (No specimens.)

To all whom it may concern:

Be it known that we, JAMES C. COLEMAN and ELLIOTT TOXEY, citizens of the United States, residing at Mobile, in the county of Mobile and State of Alabama, have invented new and useful Improvements in Paper-Pulp, of which the following is a specification.

This invention relates to pulp for the manufacture of paper, and has for its object to provide an improved pulp as a substitute for the ordinary wood-pulp now in extensive use in the art of paper-making, which improved pulp will not only be cheaper, owing to the utilization of parts which have heretofore been incapable of utilization, but which will also furnish a pulp from which a finer, denser, and tougher paper may be manufactured than can be manufactured from the wood-pulp ordinarily employed for the purpose.

To these ends our invention consists of pulp made from the materials and in the manner hereinafter described.

In carrying our invention into effect we utilize for the purpose entire cotton-plants—that is to say, the mature plants, including the stalks, roots, branches, staple, seeds and lint, and the like. In gathering the material for use the standing and mature plants are removed from the soil entire—that is to say, with the roots and bolls adhering to the stalks and branches. Preferably the plants are harvested when the leaves are off the plants. After the plants have been harvested in this condition they are placed in the usual fiber-breaking machine, and all parts are crushed, after which they are subjected to the usual ordinary and well-known treatment for reducing the crushed fibrous material to paper-pulp. During this operation any oil that is contained in the seeds and other parts and that would have a deleterious effect on the pulp will rise to the top during the operation of boiling usually employed in the process of making paper-pulp and may be skimmed off or otherwise suitably removed. After the pulp has been obtained from the material set forth and in the manner described it is to be employed in the manufacture of paper in the usual manner.

We are aware that prior to our invention it has been proposed to make paper-pulp from the bark of the stalks and roots and also from the stalks and roots themselves; but the pulp made from these materials is of an inferior

quality and lacks the necessary strength and density. In carrying our invention into effect, however, we employ the entire plant precisely as it is harvested from the field, including the stalks, roots, branches, seed-cotton, cotton-seed, and lint, preferably omitting the leaves, although this is not absolutely necessary, and all the parts enumerated are crushed together, and the resultant fibers of different characteristics are treated to form the pulp. The method employed for reducing the crushed fiber to pulp in condition for the manufacture of paper is not material, as any of the known processes for effecting this result may be successfully employed.

We have discovered in practice that by using the seed-cotton in connection with the cotton-stalks, roots, and woody fiber of the plant we are enabled to make a pulp from which paper of great strength and density can be manufactured without the employment of rags and similar substitutes that heretofore have been incorporated with such woody fibers to give the necessary density to the paper. The cotton staple or lint, as before explained, is employed in its virgin state and largely aids in giving the necessary toughness and resistance to tearing strain to the paper, as well as giving a finished surface to the latter. The cotton-seed hulls in themselves are valuable as constituting a desirable fiber in this art and with the addition of the other fibers in connection with the seed-cotton produce a highly-desirable product. We have discovered that the kernels of the seed are of such a nature that the interstices of the paper manufactured from the pulp prepared in the manner before described are completely filled up, thereby giving the finished paper product a very smooth surface.

Having described our invention, what we claim is—

Paper-pulp made from entire cotton-plants, including the stalks, roots, branches, seed-cotton, cotton-seeds and lint, substantially as described.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

JAMES C. COLEMAN.
ELLIOTT TOXEY.

Witnesses:

ALEX GIRBY,
GEO. E. GLOVEY.