UNITED STATES PATENT OFFICE.

JOSIAH S. ELLIOTT, OF CHELSEA, AND JOHN F. WOOD, OF EVERETT, MASS.

IMPROVEMENT IN MACHINES FOR GRINDING WOOD-PULP FOR PAPER, &c.

Specification forming part of Letters Patent No. 126,041, dated April 23, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that we, JOSIAH S. ELLIOTT, of Chelsea, in the State of Massachusetts, and JOHN F. WOOD, of Everett, in said State, have invented an Improvement in Machines for Grinding Wood-Pulp; and we do hereby declare the following to be a full and correct description of the same.

It is with considerable difficulty that natural stones can be selected for pulp-grinding machines which will wear uniformly. A properly-made artificial stone, however, will always have the same grinding properties. Such a stone may be prepared as follows: We first reduce to a coarse powder a stone of the requisite hardness and grit—preferably emery—observing the instructions set forth in the several Letters Patent of the United States granted Stanislas Sorel for improvements in the manufacture of artificial stones and cements, viz., Letters Patent No. 53,092, dated March 6, 1866, Letters Patent No. 100,944, dated March 15, 1870, and Letters Patent No. 100,945, dated March 15, 1870. We use oxide of magnesium as a base, and mix with it, in a dry state, the coarse powder above mentioned, substantially in the manner indicated in the first of the above-named patents, and afterward moisten the mixture, as in said patent directed, with chloride of magnesium or with any of the equivalents thereof, as set forth in the last of the above-named patents; or the oxide and chloride of zinc may be substituted for the oxide and chloride of magnesium, in which case we mix with the powdered stone in a dry state from about ten to about twenty per cent. in weight of the oxide of zinc, and moisten the mixture with the chloride of zinc until it will hold the shape given it by compressing in the hand. This mixture or cement may then be molded or tamped, sufficient force being used, to the form of natural stones which are frequently used in pulp-grinding machines; or it may be applied by a trowel, or by tamping, to the roughened surface of metallic cylinders or cones sometimes used in such machines, the grinding-surface thus prepared and applied being much more uniform in wear and much more durable than roughened metallic grinders or natural stones; and not only are such grinding instruments durable and uniform in wear, but, by regulating the size of the grains of powder to which the emery or other stone is reduced, as aforesaid, the grinding instrument may be adapted to the kind of wood to be reduced to pulp and do away with the necessity of straining the pulp, more or less.

We claim—

The use of an artificial stone in a pulp-grinding machine to grind the wood, prepared and applied substantially as described.

The above specification of our said invention signed and witnessed at Boston this 30th day of March, A. D. 1872.

J. S. ELLIOTT.
JNO. F. WOOD.

Witnesses:
WILLIAM W. SWAN,
JOHN F. BRENNAN.