

UNITED STATES PATENT OFFICE.

JUDD M. COBB, OF BELOIT, WISCONSIN.

IMPROVEMENT IN THICK PAPERS.

Specification forming part of Letters Patent No. **147,903**, dated February 24, 1874; application filed July 17, 1873.

To all whom it may concern:

Be it known that I, JUDD M. COBB, of Beloit, in the county of Rock and State of Wisconsin, have invented a new and useful Improvement in Thick Paper; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same.

My invention has for its object to produce a thick cheap paper for use as a floor-covering in place of oil-cloth and carpeting, as a covering for the interior walls and ceilings of buildings in place of laths and plastering, and as a soft pliable wrapping or express paper to protect machinery, furniture, and other heavy articles during transportation. To this end the invention consists in a new article of manufacture, to wit, a thick paper or board laid up in webs in such a manner that the fine surfaces shall be upon the outside, and the coarse surfaces within the body of the paper, as I will now proceed to describe.

Thick paper made upon a cylinder-machine, in continuous lengths, from straw or rags, or from a combination of both, is formed with two surfaces of different degrees of fineness, the surface next the cylinder-mold being the coarsest. In the process of manufacture, the water within the cylinder is exhausted somewhat, so that its level shall be below the level of the pulp, in which the cylinder rotates. The water from the vat, rushing into the cylinder through its wire covering, carries with it, first, the long and coarser fibers of the pulp, and causes them to adhere to the wire covering. This forms a coating of coarse fibers upon the cylinder, and decreases the force of the water in its passage to the interior, so that it will carry only the finer and lighter particles against the coarser ones. This continues until the water can no longer attract or carry the finest particles. As the cylinder rotates, the coucher takes off the web of paper, and delivers it to the felt with the fine surface next the latter, and the coarse surface upon the outside. In

my invention, I join with the web of paper thus formed one or more additional webs, in such a manner that the surfaces of the paper or sheet thus built up shall be formed by the fine sides of the two webs, or of the two outer webs, where more than two of the latter are used.

For convenience of description, I will describe the process of forming my improved paper with two webs. The first web being laid upon the felt with its coarse side outward, as above described, the second web is carried to and laid upon it in the following manner: Immediately after being delivered to the felt of a second cylinder by its coucher, the second web passes between two wet press-rolls, arranged so that the upper side of the felt shall pass between them. The upper one of these rolls, acting as a kind of second coucher, takes the web from the felt, and carries it upward, from which point it is directed back over the first coucher to the first cylinder, and laid, with its fine side outward, upon the first web, or the one formed by the first cylinder. The two webs thus united then continue on to the ordinary wet and dry press-rolls. By this arrangement the secondary coucher of the second cylinder serves to turn the second web, so that it shall be laid on the first web with its fine side outward—in other words, the two webs are laid together, to form one continuous sheet of thick paper, with the fine surfaces of the two outermost.

I am aware that thick paper has been made by running several distinct webs upon one another; but this I do not claim.

What I do claim is—

As a new article of manufacture, thick paper or board consisting of two or more webs having their fine sides outward and their coarse sides within the body of the paper, substantially as described, for the purposes specified.

JUDD M. COBB.

Witnesses:

MELLVILLE CHURCH,
E. A. ELLSWORTH.