

# UNITED STATES PATENT OFFICE.

ROBERT LIDDELL, OF THOMPSONVILLE, CONNECTICUT.

## IMPROVED WATER-PROOF FABRIC.

Specification forming part of Letters Patent No. **42,953**, dated May 31, 1864.

*To all whom it may concern:*

Be it known that I, ROBERT LIDDELL, of Thompsonville, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Waterproofing Cloths; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention and improvement consists in the combination of a mixture of raw linseed-oil and plumbago or black-lead with the substance of the cloth, and afterward applying a varnish formed by mixing raw linseed-oil with Japan varnish, thus rendering the cloth water-proof, and at the same time preserving its pliability, as hereinafter more fully described.

In a trough or tub, the size of which will depend upon the quantity of cloth to be water-proofed, I mix linseed-oil and plumbago or black-lead in about the proportion of one quart of oil to one pound of plumbago or black-lead, into which I put the cloth. The cloth, when fully saturated, is taken out and run through a pair of rolls or rollers, the effect of which operation is to thoroughly incorporate the particles of the mixture with the substance of the cloth, and at the same time to render the cloth smooth. It is then hung up to dry. For some purposes it may be advantageous to repeat the process. When dry the cloth may be treated with a coating of varnish, prepared by thinning the common Japan varnish of the shops with raw linseed-oil, in about the proportion of one part of oil to three parts of varnish, the quantity of oil depending upon the thickness of the Japan varnish when obtained. Said varnish may be applied with a brush as varnish is usually applied. The time required for the cloth to dry will be, as a general rule, about three days after undergoing the first process and one day after being varnished.

Cloth thus prepared will be perfectly water-

proof; its flexibility will not be impaired, nor will it be liable to crack, thus being a much better article than the rubber cloth as now prepared, which is liable to crack and the rubber coating to peel off; but in my invention the ingredients are thoroughly incorporated with the materials or substance of the cloth, and, though the surface of the cloth should be worn smooth and threadbare, the cloth would still be water-proof. Should the cloth become torn in any way, it may be readily and easily repaired.

The uses of such cloth would be various. It might be made into overcoats for those who are necessitated to be out constantly in wet weather. It might be made into blankets for the soldiers, doing away with the use of rubber blankets and rendering it necessary for them to carry but one blanket. It might be made into tents, (shelter-tents or others,) and thus render that home of the soldier dry and comfortable even in the most stormy weather. When made of a coarser material, it might be made into blankets for horses; or it might be applied to many other purposes where protection from the action of water is required.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of linseed-oil and plumbago or black-lead with the substance or texture of the cloth, substantially as and for the purpose set forth.

2. The combination of a mixture of linseed-oil and Japan varnish with cloth saturated with a mixture of linseed-oil and plumbago or black-lead, substantially as and for the purpose set forth.

ROBERT LIDDELL.

Witnesses:

SETH GERRY,  
HENRY WOODWARD.