A. H. LORTON.
Blackboard.

No. 212,613. Patented Feb. 25, 1879.

Fig. 1.

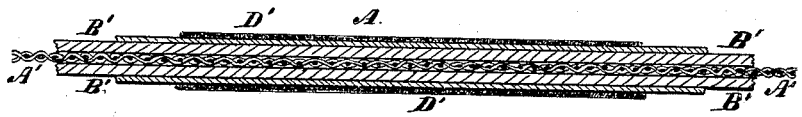


Fig. 2.

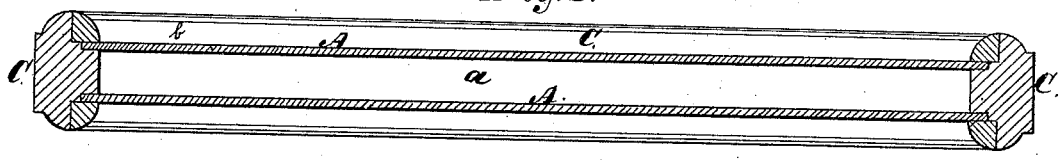
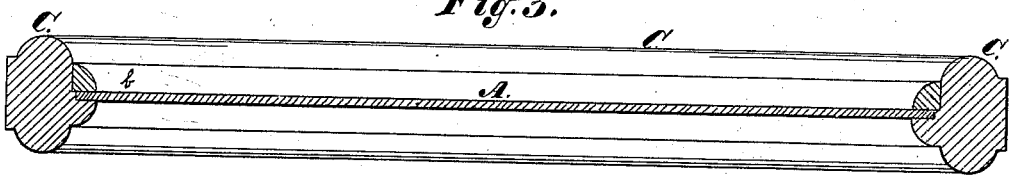


Fig. 3.



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UNITED STATES PATENT OFFICE.

ALFRED H. LORTON, OF NEW YORK, N. Y.

IMPROVEMENT IN BLACKBOARDS.

Specification forming part of Letters Patent No. **212,613**, dated February 25, 1879; application filed November 27, 1878.

To all whom it may concern:

Be it known that I, ALFRED H. LORTON, of the city, county, and State of New York, have invented certain Improvements in Blackboards, &c., of which the following is a specification:

This invention is designed for use as a "blackboard," so termed, and also, when made of minor size, as a child's slate. It is intended to provide an article for the purpose indicated which will have much less weight than any hitherto in use, which will possess a surface more easily and clearly marked upon by chalk or crayon, and which will afford a slight yielding of its surface under the traveling pressure of the chalk or crayon, and thereby cause less fatigue to the hand in marking, and also afford more clearly-defined lines than is possible with the hard or unyielding surfaces of ordinary blackboards and slates. The combined strength and lightness of this improved blackboard, moreover, enables it to be used or handled more readily than ordinary blackboards or slates of corresponding size.

The invention comprises a novel material for the purpose indicated, composed of a central sheet of woven or textile material, to each side of which are cemented one or more sheets of strong paper, externally surfaced with a black size or coating, said new material for said purpose being very strong, light, and cheap, and affording a finer, more uniform, and in all respects better surface for the action of chalk or crayon than is possible with the ordinary blackboard or ordinary slate.

The invention further comprises a novel combination of a sheet of woven material, having one or more sheets of paper surfaced with black cemented thereto, with a suitable straining and supporting frame; also, a novel combination of two sheets of woven fabric, having cemented thereto paper surfaced with black, with a frame which strains and supports the two sheets of material parallel with each other, but with a space between, the hereinbefore-specified object being by this means fully secured.

Figure 1 is a sectional view, on a greatly exaggerated scale, of the material. Fig. 2 is a sectional view of a blackboard made according to my invention, and Fig. 3 is a like view of the same in a modified form.

In making the material I take a sheet, A′, of muslin or other suitable woven fabric, and two sheets, B′, of strong and tough Manila paper, the sheets of muslin and of paper being of a size proportioned to the frame C of the blackboard to be made from the material. Both the muslin and the paper are first well dampened, and then, by means of glue, paste, or other appropriate cementing substance, the two sheets of the paper are cemented to the opposite sides of the muslin, care being taken to stretch or strain the muslin (as much as is possible without rupturing it) during the cementing operation. The paper is, of course, to be very firmly pressed upon the muslin, in order to insure the perfect adhesion of the former to the latter. I then cement upon one or both sides of the material as thus far completed (according as one or both sides are to be marked upon) a sheet or sheets, D′, of smooth or glazed paper, to obviate the roughness of the Manila paper.

While the material is yet damp I cement or glue its edges upon the frame C, so that, in drying, it will shrink with a uniform tension, somewhat analogous to that of a strained drum-head.

When the whole is quite dry I apply upon the outer surfaces of the smooth or glazed paper a coating of ivory-black, ground extremely fine, in "gold size," so called, taking care that no oily matter is allowed to get into the mixture. I then permit this coating to become hard, and then rub it with pumice-stone, or with very fine sand-paper, down to the glazed paper until the black surface is rendered very smooth. This done, I "flow" a second coat of the ivory-black solution upon the surface, and when this is dried there remains a very smooth, velvety surface, which easily receives a clear white mark from chalk or white crayon, the uniformity of the surface, moreover, obviating those inequalities in the lines which, in ordinary blackboards, very frequently arise from imperfections in the surface marked upon.

The compound material, formed as described, is marked A in Figs. 2 and 3, wherein it is shown attached to the frame B. In some cases the blackboard is made with two sheets of the

said material A, as represented in Fig. 2, in which case one of said sheets is fixed and dried upon the frame before the other is applied, as otherwise vapor from the moist material would pass into the space *a* between the sheets and impair the cement joint between the material and the frame. This construction is especially applicable to large blackboards, as the air within the space *a* serves as an elastic medium to enable the two sheets of material to mutually support each other against pressure. In this form of the invention it is, of course, necessary only to provide the black coating upon one surface of each sheet. When, however, but one sheet of the material is used, as represented in Fig. 3, both sides, of course, require the black coating. In any case, it is desirable that a cleat, *b*, be tacked upon the cemented edges of the material, to protect them against abrasion.

What I claim as my invention is—

1. The herein-described material for blackboards and similar articles, composed of a sheet of woven fabric having sheets of paper cemented upon the opposite sides thereof and surfaced with black, all substantially as and for the purpose herein set forth.

2. A material for blackboards composed of a sheet of woven fabric having sheets of paper cemented thereto and surfaced with black, in combination with a frame, C, the said material being strained upon the said frame, all substantially as and for the purpose herein set forth.

3. Two sheets of woven material having cemented thereto paper surfaced with black, in combination with the frame C, for straining and supporting said sheets, with a space, *a*, between, substantially as and for the purpose set forth.

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Witnesses:

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