(No Model.)

J. C. ANDERSON.

METHOD OF PREVENTING SALTPETER EXUDATIONS UPON FACING BRICK.

No. 271,591. Patented Feb. 6, 1883.

Fig. 1.

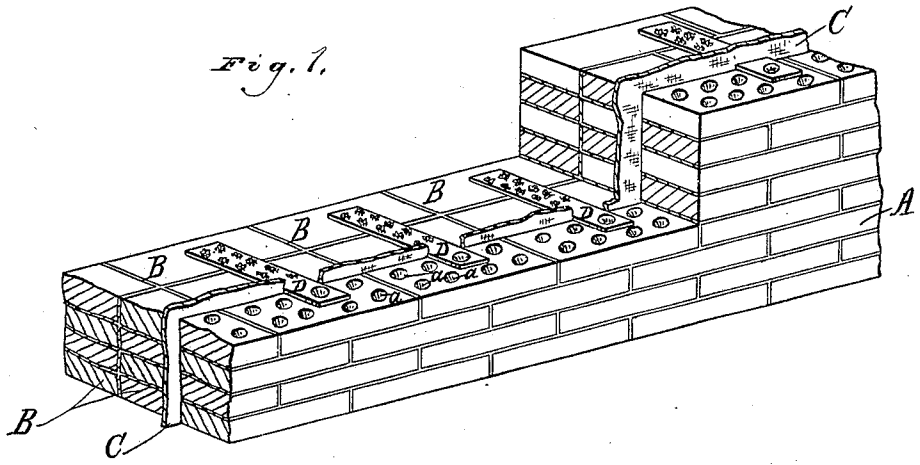


Fig. 2.

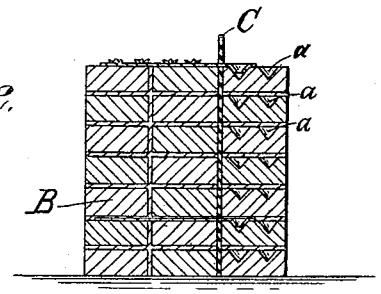
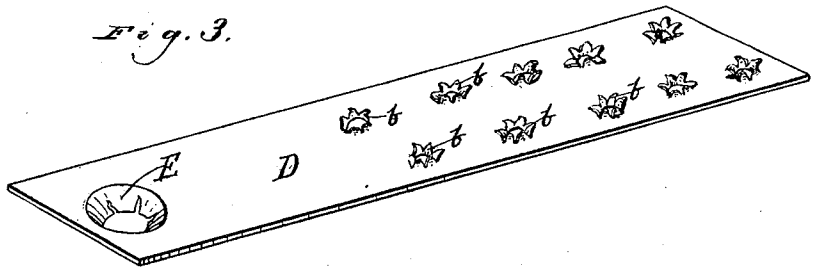


Fig. 3.



Witnesses.

Frank Queler,
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UNITED STATES PATENT OFFICE.

JAMES C. ANDERSON, OF HIGHLAND PARK, ILLINOIS.

METHOD OF PREVENTING SALTPETER-EXUDATIONS UPON FACING-BRICK.

SPECIFICATION forming part of Letters Patent No. 271,591, dated February 6, 1883.

Application filed August 28, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. ANDERSON, a citizen of the United States, residing at Highland Park, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Methods of Preventing Saltpeter Exudations upon Facing-Brick; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to a new and useful method of preventing saltpeter-exudations upon the facing-brick of buildings, which commonly appear in the form of unsightly whitish blotches on the surface or face of brick walls, and especially noticeable when such walls are constructed of an outer facing of fine pressed brick, and the inner or main wall of common brick. These blotches are due primarily to soluble alkalies and alkaline earths present as impurities in the lower grade of clays from which common brick are made, and to the lime and magnesia from calcareous pebble deposits present in most of these clays, and to the lime and magnesia of the mortar with which the common brick are laid, the evil being promoted by the faulty construction of the walls. These walls as heretofore constructed have been laid up with the outer or face course of about four inches, or one width of a brick, the other part of the wall being laid up of two or more courses to represent the full thickness of the wall desired, the outer or face course being composed of pressed brick. Such brick are commonly made of even, straight surface, and of suitable size to lay a close joint, while the common brick are made roughly, of uneven surface, and laid up with a wide, thick joint. In laying these walls the facing-course of pressed brick has been tied to the main wall of common brick by interlacing courses of common brick, called "headers," which are made to penetrate and overlap the longitudinal rows or stretchers of the face-brick at every fourth or fifth course. This overlapping or interlacing of the respective courses of pressed and common brick serves well for tying or binding the courses of the wall together, but is highly objectionable on account of the intimate capillary contact of the facing-course of pressed brick with the common brick and with the mortar of the common brick, thereby innoculating and supplying the effloresceing germs to the face-brick, as hereinafter more fully described. It has also been the common practice in laying up such walls to provide a mortar-paste for the front or facing course of brick, of bone or marble dust combined with sand and a suitable coloring-matter, such mortar being laid on sparingly, while the inner layers or courses of common brick are laid up with thick seams of common lime-mortar, the mortar being grouted into the joints and into the adjoining seam between the two contiguous courses of front and common brick, thus making the entire wall of pressed and common brick practically one body. It has also been the common practice to wet or fully saturate the common bricks with water just prior to laying them into the wall to prevent the too rapid absorption of the water from the mortar by the brick and thus causing the mortar to set too quickly. The substances of this wall-coating are, namely, sulphate of soda, sulphate of magnesia, and sulphate of lime, the first being commonly present in variable quantities in the clays, especially the drift-clays, being the result of igneous agencies and of chemical change. In the second case the magnesia in the brick-clay or magnesia in the lime of the mortar is converted into the sulphate of magnesia by the sulphur-acid fumes evolved in the process of burning in the kilns from iron pyrites present in the clays or the sulphur-fumes of the fuel or by the absorption of sulphurous vapors of coal-gases from the general atmosphere, and a like conversion takes place from the lime of the clay and mortar, which is converted into the sulphate of lime. These salts are readily dissolved by the water with which the common brick are saturated and the water of the mortar-paste, and is readily absorbed by the dry front or face brick of the wall, evaporating through the pores of such brick and effloresceing upon the surface thereof.

To overcome the objections above stated is the main purpose of my present invention.

Referring to the drawings which form a part

of the specification, Figure 1 is a view in perspective of a wall constructed according to my plan. Fig. 2 is a vertical cross-section of the same. Fig. 3 is a view in perspective of a binding or tying strip.

A designates a front layer or wall of pressed brick of the best quality, being free from sulphate of soda. I lay these brick in continuous courses as "stretchers," without the use of headers, as is commonly done in the construction of walls. These bricks are provided with depressions or cavities *a* for holding the mortar, and also for holding one end of the binder-strip, as will more fully hereinafter appear.

B represents the rear portion of the wall, and is built of one or more courses of common brick in the ordinary way with headers and stretchers. The front course or face-layer of brick are separated from the rear portion by a strip or strip of tarred felt, C, or analogous material, so as to separate or isolate the two walls, and thus prevent the sulphate of soda, &c., contained in the common brick and the mortar of the rear wall from penetrating the face-layer and causing the unsightly appearance heretofore referred to.

D are binders or strips of galvanized sheet metal, for tying the front course of bricks to the rear course or courses. These binders, as before mentioned, are made by preference of galvanized sheet metal, and of the requisite length to suit a thick or thin wall. They may may also be made of any suitable or desirable width. The rear portion of the binders are provided with burrs, *b*, or rough projections struck up or punctured from the body of the metal. This end of the binder is laid in the mortar joints of the common brick, the punctured holes and burrs forming a firm hold or grip upon the mortar, while the front end of the binder is provided with a downwardly-projecting burr, E, which engages with depressions *a* in the top of the face-brick A, by which means the facing and rear walls are held and bound firmly together.

It will be observed that by my construction the face of the wall will present a uniform appearance, the bricks therein being laid lengthwise, or as stretchers without the unsightly appearances of headers, and thus the æsthetic effect of the building is greatly increased and the more substantial benefits already mentioned are secured.

I am aware that it is not new to use building paper or felt within the walls of buildings as a non-conducting medium to prevent cold and moisture from penetrating the walls from without and entering the building; but I am not aware that any such intervening medium has ever been used between the walls of a building to prevent the capillary injection of soluble alkaline salts from the inner to the outer or face walls of a building, nor do I believe that such absorption of the salt efflorescing germs by the facing-brick from the inner walls was known to take place, and to be the main cause of the evil prior to my discovery, in view of the fact that it is notorious that these unsightly blotches exist everywhere upon the surface of the fine brick walls, to the annoyance of every one interested in the beauty of such walls, and that the remedy has not been applied.

I am also aware that hollow walls have been provided with binders for connecting the separate walls without the use of headers commonly used.

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

1. A building or other wall consisting of a front wall with a rear wall contiguous thereto, but separated therefrom by an interposed wall of saturated felt or other suitable material lying in a vertical line between said walls, substantially as described.

2. A building or other wall consisting of a front wall of stretcher-bricks, with a rear wall contiguous thereto, but separated therefrom by an interposed wall or layer of saturated felt, and suitable metallic or other binders for anchoring or holding the front and rear walls in a vertical position, as set forth.

3. A building-wall consisting of the facing-bricks A, provided with the cavities *a*, in combination with the binders D, and rear wall, B, as set forth, said binders being provided with upwardly and downwardly projecting burrs *b* and E, for the purpose specified.

4. The combination of the front wall, A, of stretcher-brick with the rear wall, B, binders D, and interposed wall of saturated felt, as set forth.

5. The binders D, provided with the downwardly-projecting burrs E and upwardly-projecting burrs *b b*, as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

J. C. ANDERSON.

Witnesses:
F. A. WADSWORTH,
J. F. ANDERSON.