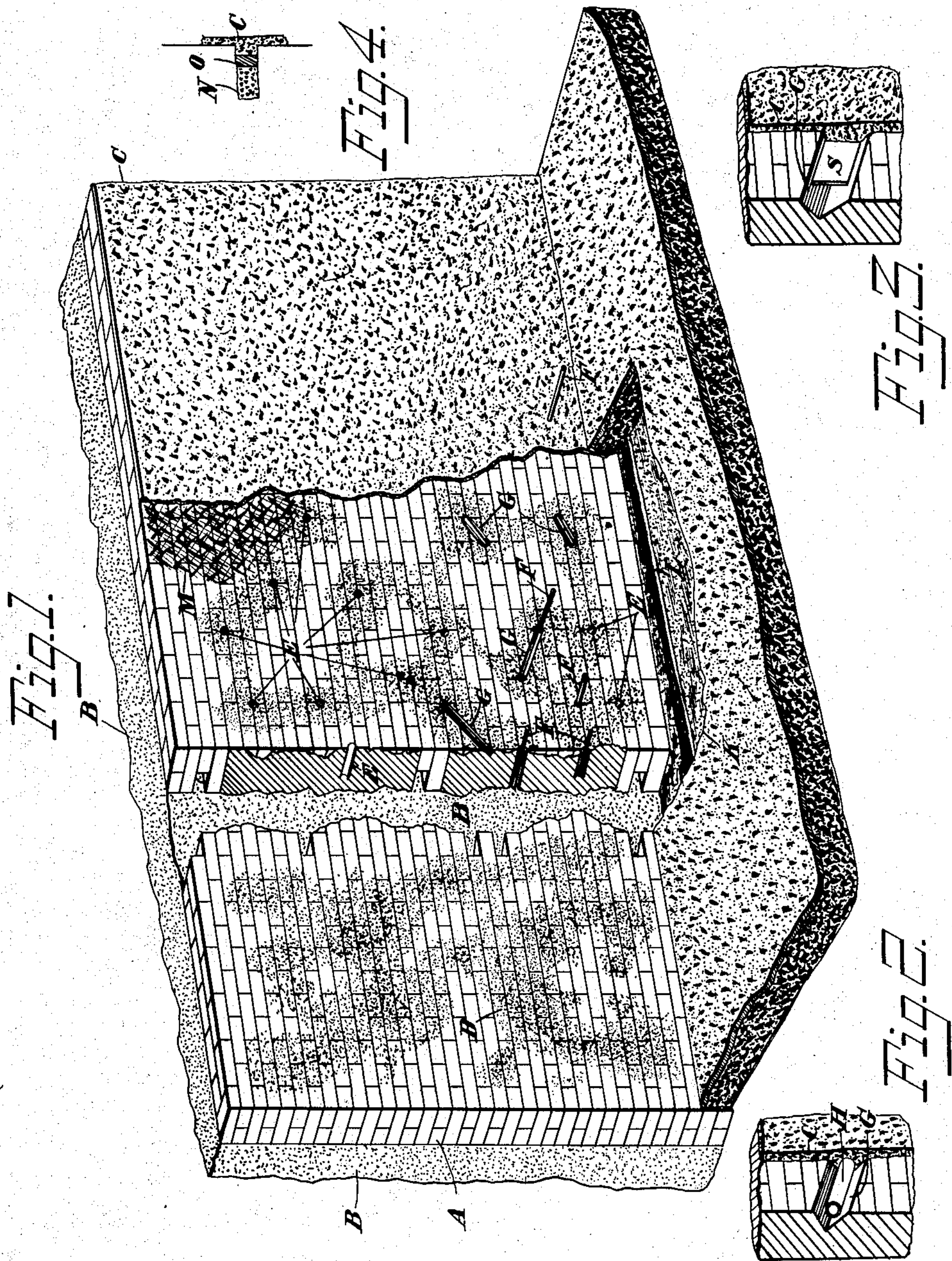


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E. J. WINSLOW.
PROCESS OF AFFIXING PLASTICS.

APPLICATION FILED MAY 15, 1905.



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PROCESS OF AFFIXING PLASTICS.

No. 815,886.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed May 15, 1905. Serial No. 260,460.

To all whom it may concern:

Be it known that I, EDWARD JARVIS WINSLOW, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Process of Affixing Plastics, of which the following is a specification.

My invention relates to the art of affixing plastic material, such as cement, to humid walls, so as to constitute a durable and efficient waterproofing even in cases of a very considerable hydraulic pressure.

Heretofore existing methods of applying impervious coatings to wet walls have been of little service when the permanency of such coatings is dependent upon its adhesive qualities, since the thin films of water upon the surface of the wall seriously interfere with the formation of a sufficiently intimate union between the wall and the adherent coating applied thereto to result in a strong coalescence. This is especially true when any substantial quantity of water is oozing through the wall, particularly under the circumstance of an appreciable hydrostatic head. In such instances the flow of the fluid will wash away the contacting granular cement used before it has had an opportunity to set, and although the lack of proper coherence may not be immediately apparent the gathering of water in the interstices existing because of such imperfect union will in time cause the coating to crack and even flake off, and the latter will be wholly worthless for the purpose originally intended.

My invention has for its object to formulate an applying method that will eliminate all of the above-mentioned objections, and it aims at a construction that will at the same time be inexpensive.

More specifically, a further object is to devise a method particularly applicable to conditions in which the wall to be waterproofed lies underground, wholly or in part, and is made of ordinary materials of construction, such as stone or brick, while the impermeable facing is composed of any preferred setting plastic substance, such as Portland cement or other suitable compositions of matter. In some instances it may be desirable to apply tiling exterior to the cement, in which case the latter will also serve as a bond between the wall and the tiling.

As the invention may be better understood by reference to illustrations, drawings are appended as a part of this specification, and

upon referring to the same by means of reference-letters other objects and advantages will be emphasized.

In the figures of the drawings like letters of reference denote corresponding parts throughout the views, of which—

Figure 1 is a sectional perspective of a wall, showing the various steps forming parts of my method. Fig. 2 is a cross-sectional view of a trough construction such as I employ for connecting one or more of the drainage-holes. Fig. 3 is a modified form of trough construction.

The difficulty usually encountered when it is desired to waterproof walls resides in the fact that one can only have access to the outside face of such wall, the other being usually backed with earthy matter, from whence the water exudes. Thus in Fig. 1 the wall is represented by A, the earthy backing by B, and the waterproofing layer by C. It is the application of the latter in such a manner that it will resist all efforts of the water to seep through it that forms the subject of this invention. Water is usually able to readily ooze through walls of the common materials of construction—such as concrete, stone, and brick, and especially is this true in the case of the latter, in which the water will usually appear upon the surface in one or more places as irregular patches, depending upon the source of the fluid. This is shown by D on the drawings. The water may flow quite freely in some places and render necessary special preparation of the wall-surface, while in others the brick work may be comparatively dry and suitable for the direct application of the coating. Preliminary to carrying out my method of draining and drying such wall I prefer to first go over the surface of it with a sponge and absorb enough of the water on its surface to form an estimate as to the points of greatest flow. At such points, which I have designated as E, I drill to depths corresponding to the flow holes for the purpose of promoting the drainage of the wall. It is obvious that the water in following the lines of least resistance will flow out of said holes instead of seeping through the wall substance to the front surface of the same. It will be found in practice that many of such holes will flow more or less freely for awhile and then will finally cease to flow to any appreciable interfering extent, the stored water having been released. The surrounding wall-surface will now be found to be in perfect condition for

the application of the coating, which may be done after plugging up the holes in any preferred way with a suitable material, so that the strength of the wall will be entirely maintained. In other instances, however, it will be found that such holes continue to run, although the adjacent wall-surface has become sufficiently dry. In such cases it may be deemed expedient to provide such a drainage means for the holes that it can be maintained not only while the coating is being applied to the wall, but until it has become thoroughly set and permanently adherent to the wall. This I accomplish by means of small pipes fitting within the holes and protruding some little distance beyond the wall-face. Such pipes I have shown by F', and in practice I prefer to use the inexpensive porcelain tubes ordinarily employed as insulators. These tubes may be readily broken off after the coating is properly set in place and the opening then plugged up. I have devised a convenient way of plugging up the borings in the wall, and this I illustrate by Fig. 4. A quantity of gravel N is first introduced into the hole, and then a stopper O, of elastic material, such as cork, is rammed home, so as to leave a slight recess for the cement coating to sink into, so as to be able to adhere to the sides. This construction may be used where the flow is too small to warrant the use of the drainage-tubes above mentioned. Should it be preferred, channeling may be resorted to and the number of protruding tubes reduced. Thus one or more of the freely-running orifices may be connected to a central tubed hole, as shown by G in the drawings, by means of a suitable conductor, such as a small glass tube or a piece of rope, which will act capillary, located in the channel. This form of construction is clearly indicated by the section shown in Fig. 2, in which G is the V-shaped channel usually employed and H is the conductor-tube. Fig. 3 shows a substitute means in which I use a strip S of thin metal, which prevents the plastic coating from entirely stopping up the channel. These forms of construction have the advantage that they do not interfere with the adherent capacities of the waterproof composition, since the latter will partially fill the groove and adhere to the sides. In order that the coating may be made effective at the bottom, where the greatest opportunities for the escape of water occur, I open up the floor by an excavation adjacent to the base of the wall, (shown by K,) and in the latter I provide a trough L to carry away the excess water to some suitable drain or basin, from which it may be pumped. The wall having been thus prepared and a number of scores M cut into its face to render the adherence of the coating more positive, the latter may now be applied, extending it over the entire face and down to the bottom of the wall beneath the floor-surface. After a suffi-

cient time has transpired for the coating to thoroughly set the tubes which protrude to allow of the escape of the exuding water (one of which is shown at F') are broken off and the exit stopped with a quick-setting cement. Of course some suitable connection will be made at the base of the wall with the floor, that shown by the drawings being a form I have frequently employed in practice. This forms a neat joint free from all unsightly and other objectionable seams and will be found to be quite effective for the purpose of waterproofing. Besides, it blends well with the wall-covering, which is likewise free from any projections.

Having thus described my invention, so that the same may be understood and put into practice by all those skilled in the art to which it appertains, what I claim, and desire to secure by Letters Patent, is—

1. The method of affixing plastic compositions to wet walls, comprising as successive steps, the tapping of the wall within super-saturated areas so as to drain same, and when sufficiently dry, the affixing of the composition.

2. The method of affixing plastic impervious coatings to the inner face of subterranean oozing walls, comprising the boring of holes in appropriate positions in a wall whereby it will be rapidly drained, the inserting of drain-pipes in certain of such borings, the applying of the coating to the drained wall around the protruding drain-pipes, and the removal of the latter and the closure of the orifices by a completion of the plastering.

3. In a method of securely affixing a setting waterproof composition to water-soaked walls, the drying of a wall to the requisite degree by making a plurality of holes or channels in a part or parts of said wall, connecting thereto drainage-tubes, then applying the adherent composition to such dried wall and maintaining the drainage during the setting of said composition.

4. A method of waterproofing permeable walls comprising a tapping of such walls at the points of greatest flow, allowing the accumulated water to escape through such tapplings, providing carry-away pipes for such tapplings as continue to run, connecting other tapplings thereto by means of counter-sunk conducting-passages, plastering over the prepared wall-surface, removing the protruding drainage-pipes and plastering over the mouths of the tapplings.

5. The method of affixing impervious plastic compositions to the inner faces of wet walls, comprising as successive steps the tapping of the wall within the wetted zones so as to drain the same and, when sufficiently dry, the affixing of the impervious composition.

6. The method of affixing plastic, impervious compositions to the inner face of oozing subterranean walls, comprising as successive

steps, the tapping of the walls within super-saturated areas so as to drain same, the affixing of the composition when said wall becomes sufficiently dry, and the sealing of said 5 tappings after the setting of the composition.

7. The method of affixing plastic, impervious coatings to the inner face of subterranean, oozing walls, comprising the boring of holes in appropriate positions in a wall, 10 whereby it will be rapidly drained, the inserting of drain-pipes in certain of such borings, the applying of the coating to the drained wall around the protruding drain-pipes, the removal of the latter after the permanent setting of the coating, and the closure of the 15 holes by a completion of the plastering.

8. In a method of securely affixing a setting waterproof composition to the inner face of water-soaked subterranean walls, the drying of a wall to the requisite degree by making a plurality of holes or channels in a part 20 or parts of said wall, connecting thereto

drainage-tubes, then applying the adherent composition to such dried wall and maintaining the drainage during the setting of said 25 composition.

9. A method of waterproofing the inner face of permeable subterranean walls comprising a tapping of such walls at the points of greatest flow, allowing the accumulated 30 water to escape through such tappings providing carry-away pipes for such tappings as continue to run, connecting other tappings thereto by means of countersunk conducting-passages, plastering over the prepared wall- 35 surface, removing the protruding drainage-pipes and plastering over the mouths of the tappings.

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

EDWARD JARVIS WINSLOW.

Witnesses:

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EDITH C. SARLES.