

MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

ROMAN VAULTING.

Want of wood for scaffolding might be the cause why vaulting was so much disregarded by the Egyptians and Greeks. As to the Romans, they, says Winckelman, taking advantage of the solidity which the pouzzolane (a particular sand) acquires in a short time used more cement than stone in vaulting. When the frame was covered with carreaux or planks, they threw over cement, very small stones or bruised bricks, to a certain thickness (5 feet 4 inches in the Therma of Dioclesian). By this means a few men would build a large vault in a day. This construction appears at the Coliseum, the Baths of Titus, Caracalla and Dioclesian and particularly at Adrian's Villa, where are still seen the beds of the planks of the frame. As the ancients made their vaults very strong they endeavored to render them as light as possible. This they did by two methods. One was to fill the vaults with volcanic scoriae, some of which have been found at the Pantheon. The other consisted in using urns or vases of terra cotta, the apertures being placed at top. Within and around them they poured small stones and cement. Denon thus describes arches of this construction which he found at Vianisi, in Sicily. A sort of Phials, 8 inches long by 3 inches wide, without bottoms and filled with mortar, have their necks introduced into each other in a row, covered over again with a general coat of plaster, on which a brick was laid flat, then a fresh bed of mortar and another brick upon this, like the former. It was scarcely possible ever to destroy semi-circular arches fabricated in this manner, and it was with the utmost difficulty that Denon wrenched off a few fragments. Alberti says that this construction of phials was used on purpose to ease the weight, and that they had no bottoms lest water should collect in them and so render them heavy. But this construction must not be confounded with vases used on purpose to augment the sound. Evelyn saw a room covered with

a noble cupola, built purposely for music, the fillings up, or cove between the walls, being of urns and earthen pots for the better sounding.

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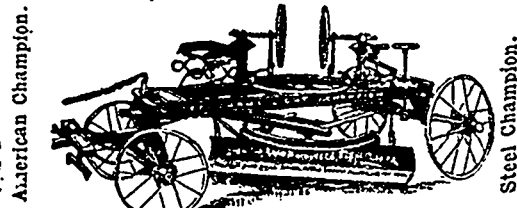
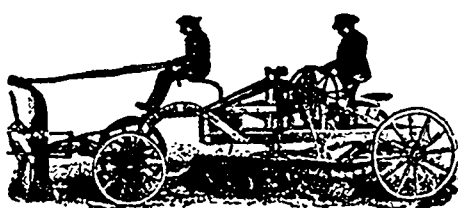
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