**" Let 56** pounds of the aforeſaid choſen lime be flaked, by gradually ſprinkling on it, and eſpecially on the unfla­ked pieces, the cementing liquor, in a cloſe @@(κ) clean place. Let the flaked part be immediately (l) ſifted through the laſt-mentioned fine braſs-wired ſieve : Let the lime which paſſes be uſed inſtantly, or kept in air-tight veſſels, and let the part of the lime which does not paſs through the ſieve be rejected @@(m).—This finer richer part of the lime which paſſes through the ſieve I call *purified lime.*

“ Let bone-aſh be prepared in the uſual manner, by grinding the whiteſt burnt bones, but let it be ſifted, to be much finer than the bone-aſh commonly sold for making cupels.

“ The moſt eligible materials for making my cement be­ing thus prepared, take 56 pounds of the coarſe sand and 42 pounds of the fine sand ; mix them on a large plank of hard wood placed horizontally ; then ſpread the sand ſo that **it** may ſtand to the height of six inches, with a flat ſurface **on** the plank ; wet it with the cementing liquor ; and let **any** ſuperfluous quantity of the liquor, which the sand in the condition deſcribed cannot retain, flow away off the plank. To the wetteſt sand add 14 pounds of the putrefi­**ed** lime in ſeveral ſuccessive portions, mixing and beating them up together in the mean time with the inſtruments ge­nerally uſed in making fine mortar : then add 14 pounds of the bone-aſh in ſucceſſive portions, mixing and beating all together. The quicker and the more perfectly theſe ma­terials are mixed and beaten together, and the ſooner the cement thus formed is uſed, the better @@(n) it will be. This **I** call the *water-cement coarſe-grained,* which is to be applied in building, pointing, plaſtering, ſtuccbing, or other work, as mortar and ſtucco now are ; with this difference chiefly, that as this cement is ſhorter than mortar or common ſtuc­co, and dries ſooner, it ought to be worked expeditiouſly in all caſes; and in ſtuccoing, it ought to be laid on by sli­ding the trowel upwards on it ; that the materials uſed along with this cement in building, or the ground on which it is to be laid in ſtuccoing, ought to be well wetted with **the** cementing liquor in the inſtant of laying on the cement; and that the cementing liquor is to be uſed when it is ne­ceſſary to moiſten the cement, or when a liquid is required **to** facilitate the floating of the cement.

“ When ſuch cement is required to be of a finer texture, take 98 pounds of the fine sand, wet it with the cementing liquor, and mix it with the purified lime and the bone- aſh in the quantities and in the manner above deſcribed ; with this difference only, that 15 pounds of lime, or @@(o) thereabouts, are to be uſed inſtead of 14 pounds, if the greater part of the sand be as fine as Lynn sand. This **I** call *water-cement fine-grained.* It is to be uſed in giving the laſt coating, or the finiſh to any work intended to imitate the finer-grained ſtones or ſtucco. But it may be applied to all the uſes of the water-cement coarſe grained, and in the ſame manner.

“ When for any of the foregoing purpoſes of pointing, building, &c. ſuch a cement is required much cheaper and coarſer-grained, then much coarſer clean sand than the forego­ing coarſe sand, or well-waſhed fine rubble, is to be provided. Of this coarſe sand or rubble take 56 pounds, of the forego­ing coarſe sand 28 pounds, and of the fine sand 14 pounds ; and after mixing theſe, and wetting them with the cement­ing liquor in the foregoing manner, add 14 pounds, or ſomewhat leſs, of the @@(p) purified lime, and then 14 pounds or ſomewhat leſs of the bone-ash, mixing them together in the manner already described. When my cement is requi­red to be white, white sand, white lime, and the whiteſt bone-aſh are to be choſen. Grey sand, and grey bone-aſh formed of half-burnt bones, are to be choſen to make the cement grey ; and any other colour of the cement is obtain­ed, either by chooſing coloured sand, or by the admixture of the necessary quantity of coloured talc in powder, or of coloured, vitreous, or metallic powders, or other durable co­louring ingredients commonly uſed in paint.

“ To the end that ſuch a water-cement as I have deſcri­bed may be made as uſeful as it it poſſible in all circumſtances ; and that no perſon may imagine that my claim and right under theſe letters-patent may be eluded by divers va­riations, which may be made in the foregoing proceſs with­out producing any notable defect in the cement ; and to the end that the principles of this art, as well as the art itſelf, of making my cement, may be gathered from this ſpecification and perpetuated to the public ; I ſhall add the follow­ing observations ;

“ This my water-cement, whether the coarſe or fine grained, is applicable in forming artificial ſtone, by making alternate layers of the cement and of flint, hard ſtone, or

@@@(κ.) “ The vapour which ariſes in the flaking of lime contributes greatly to the flaking of theſe pieces which lie in its way ; and an unnecessary waſte of the liquor is prevented, by applying it to the lime heaped in a pit or in a veſſel, which may reſtrain the iſſue of the vapour, and direct it through the maſs. If more of the liquor ſhe uſed than is neceſſary to slake the lime, it will create error in weighing the flaked powder, and will prevent a part of it from paſſing freely thro’ the ſieve. The liquid is therefore to be uſed ſparingly, and the lime which has eſcaped its action is to be ſprinkled apart with freſh liquor.

@@@(l) “ When the aggregation of the lumps of lime is thus broken, it is impaired much ſooner than it is in the former state, becauſe the air more freely pervades it.

@@@(m) “ Becauſe it conſiſts of heterogeneous matter or of ill-burnt lime ; which laſt will slake and paſs through the sieve,**if** the lime be not immediately lifted after the flaking, agreeable to the text.

@@@(n) “ Theſe proportions are intended for a cement made with ſharp sand, for incruſtation in expoſed ſituations, where it is neceſſary to guard againſt the effects of hot weather and rain. In general, half this quantity of bone-aſhes will be found sufficient ; and although the incruſtation in this latter caſe will not harden deeply ſo ſoon, it will be ultimately ſtronger, provided the weather be favourable.

“ The injuries which lime and mortar ſuſtain by expoſure to the air, before the cement is finally placed in a quieſcent ſtate, are great ; and therefore our cement is the worſe for being long beaten, but the better as it is quickly beaten until the mixture is effected, and no longer.

@@@(o) “ The quantity oſ bone-aſhes is not to be increaſed with that of the lime ; but it is to be leſſened as the exposure and purpoſes of the work will admit.

@@@(P) "Becauſe leſs lime is neceſſary, as the sand is coarſer.