

curved and placed under such tension as to force the longitudinal sides of the several laths one against the other, whereby they mutually support each other and render the



element self-supporting, whilst for convenience of transport the element can be rolled or folded into a body of relatively small compass.

Cement Production and Recovering Potassium Compounds. — A patent, No. 30498, has been taken out by Frederick William Huber and Frank Fredland Reath, both of California, U.S.A. In this process the original raw material is calcined in rotary kilns in the ordinary manner, thereby producing cement-clinker, and the flue-dust so produced is recovered, which dust contains most of the alkali metals and most of the oxide of sulphur contained in the original raw mix, and those derived from fuel. To this material is added a substance capable of readily liberating the alkali metals in a somewhat volatile state, such a material as finely divided calcium fluoride being, so far as has been found, the most effective material for this purpose. To the flue-dust then is added an amount of calcium fluoride substantially equivalent to the amount of alkali metals present in the flue-dust, together with sufficient argillaceous or calcareous material (or both) to bring the composition up to that of a normal cement raw mix. This mixture is then calcined and clinkered, for example, in the ordinary type of rotary kiln, and from this

burning there results a clinker and a second flue-dust. This clinker is in all respects a perfectly good cement clinker, although produced from materials extremely high in alkalis and oxides of sulphur. The flue-gasses are cooled, and the flue-dust produced (second flue-dust) is found to contain considerable quantities of sodium and potassium fluorides, some sulphites, sulphates, lime, and other materials. To recover the fluorine from this material it is preferred to add to the flue-dust (if it does not already contain a sufficient amount thereof) salts or other compounds of calcium, such as the oxide or sulphate of calcium or the like, and digest the whole mixture with water, preferably in a heated condition, until substantially all of the fluorine present has been converted into calcium fluoride, while substantially all of the potassium and sodium salts become dissolved, for example, as sodium and potassium sulphates. The solid is then separated from the liquid, for example, by filtration or sedimentation, the liquid evaporated for the recovery of the alkali metal salts, and

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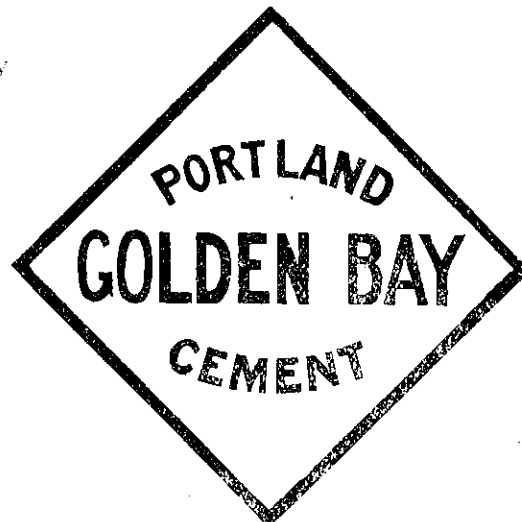
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