decomposition of protosulphate of iron with an equivalent of chlorid of calcium or chlorid of sodium. In preparing the solution, hereinafter designated as the bath, we may proceed as follows :

3. One hundred and twenty (120) pounds of sea salt, or onehundred and twelve (112) pounds of dry chlorid of calcium, or its equivalent of hydrated chlorid, are to be dissolved with two hundred and eighty (280) pounds of protosulphate of iron, (green copperas,) in one hundred (100) imperial gallons of water. In place of the above salts we may substitute an amount of protochlorid of iron prepared by any other method, containing fifty-six (56) pounds of To the bath prepared in either way, two hundred metallic iron. (200) pounds of sea salt are then added, when the solution is ready for use, and will be found capable of chloridizing and dissolving about ninety (90) pounds of copper. The power of brine to dissolve the dichlorid of copper formed increases greatly with the strength · and temperature. The proportions above given are convenient, but in the case of poor ores, a solution of one-half the strength may be used with advantage.

4. In the treatment of copper ores by this process, they may be divided into two classes, non-sulphuretted and sulphuretted ores.

5. The first class or non-sulphuretted oxydized ores, includes the native oxyds of copper, the carbonates, and the oxychlorid. To prepare these for treatment they should be finely pulverized, and the earbonates may with advantage be gently calcined before or after grinding, in order to expel earbonic acid. The red oxyd, if alone or greatly predominating, should also be gently calcined after grinding to convert it into protoxyd; but if it be mixed with a considerable proportion of protoxydized ore this is not necessary.

6. The pulverized oxydized ores thus prepared are to be digested in the above bath, with frequent agitation. Heat is not necessary, but it accelerates the solution of the oxyd of copper, which in practice should not be more than sufficient to yield sixty or seventy pounds of copper to the above bath of one hundred gallons. When the solution is complete and the liquid drawn off, the insoluble residue should be lixiviated with a small volume of hot strong brine. The liquid is then digested with metallic iron, by which the copper