

padlocked, thus preventing the stealing of amalgam, which, as we are all too well aware, has been practised too often in the past.

Thus the amalgamation process stands to-day the result of development from the old "streaming for gold" mill to the stamp mills, and mills of Crawford type; from the process of Vanoccio Biringuccio to the Patio, Barrel or Freiberg, and Pan or Washoe process. The use of chemicals seems to have received a fair share of consideration, although we are a little startled by the statement made in an anonymous Latin account of amalgamation similar to the Patio in which ground horns, bricks, and sulphur are added to the usual complement of chemicals, and said to have been practised in Guatemala by the writer; the sulphur astonishes us when we know the dire results of its coming in contact with either the gold or mercury in the amalgamation process. The applications in November, 1864, by Dr. Wurtz, of New York, and in February, 1865, by Mr. Crookes, F.R.S., of London, for the patent for the use of sodium amalgam in the amalgamation process, Wurtz for America, and Crookes for Britain, revealed the fact that both had been experimenting on the same principle for the benefit of science without the knowledge of the other. This is at least one point of general interest in the amalgamation process; but although extensively tried both in California and Australia, the results obtained differed greatly, and it was not used as much as had been expected, although up to the present it has its partisans, and to a certain extent, it had a beneficial influence. I have noticed that mill men prefer mercury that has been formerly used which is known to contain gold or silver amalgam, as it is supposed to be more effective in absorbing the metals than the clean mercury. The amalgamation process, according to some, has reached its zenith; whether this is so or not is hard to say, whether more brilliant inventions and discoveries will be made in the application of the amalgamation process remains to be seen. Time alone will tell. One thing is apparent to all, namely, that other chemical processes are gradually gaining ground and recognition, although our dear old friend is holding the ground bravely, and it may be said in conclusion that it can look back at its past and honorable history, as a nobleman looks back over his long line of descent, and may treat with scorn the upstart claimants of a day for the honorable position of the Amalgamation Process in Metallurgy.

NOTE.—A number of attempts have been made to apply electricity in the amalgamation process by means of sending electric currents through amalgamated rifles, terraces and aprons; noticeable among others was the machine invented by one Charles M. Dobson in 1887, in Toronto,