and is now almost entirely abandoned. Although well suited for assays, and for the treatment of rich ores and residues, the Chilian mill is not adapted to the working of large amounts of quartz containing only a moderate proportion of gold. For this purpose stamps are more generally had recourse to."

"There are two systems of stamps in use in Nova Scotia—those with square heads and those with round and rotating heads—but in both cases the stamp mill consists of one or more batteries, each consisting of a series of vertical rods, carrying at their lower ends the stamp heads, which are of cast iron, or, in some cases, shod with steel, and destined to pulverise the mineral in a rectangular box or mortar. This box is generally of a single piece of cast iron, and when of wood (which is preferable if, as is here the case, mercury is used in the batteries), requires for its bottom a heavy plate of iron. These stamps are raised by means of a horizontal shaft furnished with cams, which act upon collars fixed to the rods, causing these to rise vertically, and then, the cams ceasing to act, to fall by their own weight from a height of ten or twelve inches upon the mineral, which is introduced to the box by means of an opening placed behind the battery. Plates or dies of cast iron or of steel, round or square, according to the shape of the stamp heads, are fixed in the battery, beneath each stamp. During the operation a quantity of water sufficient to aid the pulverization and amalgamation, and to carry out the pulverized mineral, is supplied to each stamp, by means of tubes furnished with stop-cocks. In front of each battery is a rectangular opening, which is closed by means of a frame or moveable sash, covered with a fine screen or grating. Through this grating, the liquid mud formed by the pulverization of the mineral under water, and projected from the boxes by the blows of the stamps, passes out and flows over a series of fixed or oscillating tables, slightly inclined, and placed the one below the other, at different levels, before being conveyed as waste or refuse to a place of deposit without. The metallic gratings in front of the batteries have generally from 160 to 200 holes to the square inch. The finer the grating the less the amount of material stamped in a given time, but the more complete the treatment. I am inclined to believe that many of the mill workers, not taking into account the smallness of the particles of gold, often invisible, do not pulverize to a sufficient degree of fineness. One of the exceptions to this, however, is found in the battery of the Provincial Company at Wine Harbour, which yields a material of great fineness, while it reduced with eight stamps only six tons in twenty-four hours."

"The frames which support the gratings are generally fixed vertically; although a slight inclination outwards, to favor the escape of the projected matters, is to be preferred. The stamp mills which I saw in the various districts of Nova Scotia have generally eight stamps, arranged in two batteries of four stamps each. In the Sherbrooke district, the mill of the Hayden and Derby Company consists of one single battery and two united, each of five stamps, and that of the Palmerston Company of one of four and two each of three. In the Waverley district the mill of Mr. Bürkner has twenty-four stamps, and that of the De Wolf Company sixteen, arranged in four batteries of four each. The duration of a stamp mill, and the regularity of its work, depends, in part, upon the solidity of its base; and I may remark, in passing, that the last mentioned mill, erected under the supervision of Dr. Krakowitzer, is peculiarly well constructed in this as in other respects, and has a foundation built of granite, from which it results that the trembling motion so apparent in many stamp mills, is scarcely perceptible in this."

"The stamp mill of the Ophir Company, in the Renfrew district, recently constructed by Mr. Peter Monteith, is particularly worthy of mention. The stamps, which are round, rotating, and shod with steel, present many advantages over square non-rotating cast iron stamps. It is maintained that the effect of a round stamp, which preserves in falling the rotatory motion communicated to it during its upward movement, is much greater than that of a square stamp falling without that motion. Experience has shewn that with the former a greater amount of rock is pulverized in a given time, and with less wearing of the stamp heads. The mill of the Ophir Co. has twenty-four stamps, arranged in six batteries of four, placed side by side. The weight of each stamp, with the rod, is six hundred pounds, the fall ten inches, and the number of blows from sixty-five to seventy in a minute. The liquid mud from the pulverization, passing from the battery through the grating, flows over four fixed tables, placed one below the other. The first, or uppermost table is the shortest, and is trapezoidal in form; the dimensions of the two parallel sides