ination, a large number (several hundred) of both gold and silver coins, are tested by weighing in mass. These same coins are subsequently melted in large crucibles, and a portion of this "mass-melt" tested for fineness.

If one should look in at the Mint at this stage of the operations, he would see the busy Commissioners seated around a long table, anxiously counting, recording, checking, and labeling the gold and silver coins which seem to flow to them from bottomless coffers. Although this is merely clerical work, yet the importance of having an absolutely perfect record of the coins received necessitates the utmost care; for an error of record at this stage might render the final results valueless.

But the serious character of this work cannot altogether render one indifferent to the novelty of the situation. It is not often that an assayer has to deal with bullion with a government stamp on it; and it is difficult to realize that these brilliant coins, so lavishly distributed, represent just so much work to be done, suggesting, as they do, so completely the idea of compensation.

The weighing is done on a carefully-adjusted Becker balance, such as is used in the analytical laboratory, and standard weights, duly verified, are used to counterbalance each coin. The gold dollar should weigh 25.8 grains, and the double eagle 516 grains. The variation allowed by law from the normal weight of gold coins, plus or minus, is one-fourth of a grain in the dollar, quarter-eagle, three-dollar piece, and half-eagle, and one half of a grain in the eagle and double-eagle. In the silver coins the permissible variation in weight is one and a half grains in the single pieces, and when weighed in mass, two one-hundredths (2-100) of an ounce in one thousand dollars, in half dollars or quarter dollars, and one one-hundredth (1-100) of an ounce in one thousand dimes.

It is not often that the Commissioners find the legal limit exceeded. The trial of the coinage of 1884 was quite exceptional in that a silver dollar from the Carson City Mint was found to be 1 51-100 grains below the standard weight; that is to say, the legal limit was exceeded by one one-hundredth (1-100) of a grain.

In the fineness of the coins, however, there is a greater chance for error, on account of the tendency of alloys to separate into their component metals when in the fluid condition, or when about to solidify. This tendency is more marked with the alloy of silver and copper, than with the alloy of gold and copper; and the test sample of the "mass-melt" of the silver coinage is, therefore, always taken (after stirring well the molten contents of the crucible) by pouring a small quantity into water. This sudden cooling prevents any separation of the metals, and the alloy thus granulated represents fairly the contents of the crucible. It is very seldom that any but the most minute variations from standard fineness are found in the "mass-melt" of the gold and silver coins, while the individual coins may show considerable variation within the limits allowed by law.

The fineness of both gold and silver coins is 900; that is, the gold coins contain in 1000 parts by weight 900 parts of pure gold. The remaining 100 parts are copper, or copper and silver, "but the silver shall in no case exceed one-tenth of the whole alloy." In the silver coins, 900 parts are pure silver, and 100 parts copper. The law permits a variation of fineness in gold coins, plus or minus, of one one-thousandth, and in silver coins, of three one-thousandths; that is to say, a gold coin may be 899 or 901 parts fine without rejection, and a silver coin 897 or 903 parts fine.

To return to the work of the Commissioners: The committee on assaying chip off a piece from each of the coins in their possession, roll it out to a thin strip under heavy rolls, and stamp this strip with its proper number. The gold coins which form the "mass-melt" are put into a black-lead crucible, covered with borax, and melted down in a crucible furnace. When thoroughly melted, the metal is well stirred, and cast into an ingot, from which a piece is clipped off and rolled out into a strip, as in the case of the separate coins. The "mass-melt" of silver is formed in like manner, except that