bronze screens will perhaps help the millman; hitherto rust has eaten the Russia or tinned iron and potassium cyanide has clogged the brass. Cast steel cams are in almost universal use, and much trouble and delay is spared.

Deep mercury wells are employed to prevent loss, but they are simple affairs and need no comment.

The plates are now silver plated, and are carefully tended by experienced men. In some mills the apron plate is stepped; that is, two short plates are used, one being placed two inches above the other, so that there is a slight fall. This is done because it has been noticed that the largest deposit of gold occurs at that point where the pulp from the mortar strikes the plate; the stepping saves a higher percentage of gold, but is a trifle inconvenient. As many as six steps are used in some places.

The practice of sizing the pulp before it goes to the concentrators has been adopted in many places. The most common sizer is Rittinger's pointed box, either in its original form, or a slight modification. The apparatus is simple, and can be constructed by an ordinary carpenter, so that the experiment can easily be made. A large box, if well designed, will handle very satisfactorily a considerable volume of pulp, and increase the efficiency of the concentrators appreciably.

Concentrating Apparatus.—The belt vanner is, of course, the favorite, although in Colorado and Australia the shaking table is much used. Concentrating apparatus has been a favorite field for the inventor, and a number of mills have adopted some special machine. In the main, however, the two mentioned above rank easily first. Speaking generally, the vanner is perhaps the best machine for general work, and makes a good showing on either sized or unsized pulp. The shaking table is not so efficient in rough work; on sized pulp it gives good, clean concentrates, but can not handle slimes as well as its rival. The common practice is to use two vanners, or one shaking table to every five stamps. The corrugated instead of the plain belt in machines of the Frue type is a recent improvement, which is yet apparently in the experimental stage.

The cleanness of the concentrates will be purposely varied in different mills. In an establishment where they are sent to a distant smelter the purity becomes important; if, on the other hand, there is some plant for their treatment on the premises, the more perfect separation from the gangue is aimed at.