or other convenient bit of wood by means of a cement formed of three parts of resin and one of beeswax, which is easily softened by heating. A little practice will show that a slow, equable motion with a certain steady pressure is most effectual in producing the desired flatness of surface. When all the roughnesses have been removed, which can be told after the chip has been dipped in water so as to remove the mud and emery, we place the specimen upon the square of plate-glass, and with flour-emery and water continue to rub it down until all the scratches caused by the coarse emery have been removed and a smooth polished surface has been produced.⁵⁴ Care should be taken to wash the chip entirely free of any grains of coarse emery before the polishing on glass is begun. It is desirable also to reserve the glass for polishing only. The emery gets finer and finer the longer it is used, so that by remaining on the plate it may be used many times in succession. Of course the glass itself is worn down, but by using alternately every portion of its surface and on both sides, one plate may be made to last a considerable time. If after drying and examining it carefully, we find the surface of the chip to be polished and free from scratches, we may advance to the next part of the process. But it will often happen that the surface is still finely scratched. In this case we may place the chip upon the Water of Ayr stone and with a little water gently rub it to and fro. It should be held quite flat. The Water of Ayr stone, too, should not be allowed to get worn into a hollow, but should also be kept quite flat, otherwise we shall lose part of the chip. Some soft rocks, however, will not take an unscratched surface even with the Water of Ayr These may be finished with putty powder, applied stone. with a bit of woollen rag.

The desired flatness and polish having been secured, and all trace of scratches and dirt having been completely removed, we proceed to a further stage, which consists in grinding down the opposite side and reducing the chip to the requisite degree of thinness. The first step is now to cement the polished surface of the chip to one of the pieces of common glass. A thin piece of iron (a common shovel

⁵⁴ Exceedingly impalpable emery powder may be obtained by stirring some of the finest emery in water, and after the coarse particles have subsided, pouring off the liquid and allowing the fine suspended dust gradually to subside. Filtered and dried, the residue can be kept for the more delicate parts of the polishing.