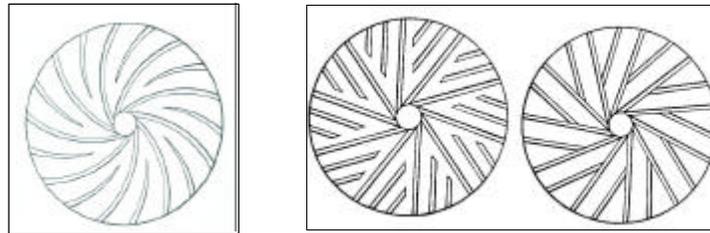


V. Dressing of Millstones



In examining a set of millstones, one will see that the bottom surface of the runner stone and the top surface of the bed stone are grooved or “furrowed,” in a pattern which causes the meal to flow away from the center of the stones to their outer edge. The layout of the furrows is referred to as the “dress” which is generally one of two patterns: (a) *the sickle dress* or (b) *the quarter dress*. Both stones in the McCormick Mill have a quarter dress. See next page.



The millstone Dress

Left - Sickle dress (Adapted from: Howell, C. and A. Keller. 1977. *The Mill at Philipsburg Manor Upper Mills and A Brief History of Milling*. Sleepy Hollow Restorations. Tarrytown, NY).

Right - Two styles of quarter dress. (Adapted from: Hughes, W. C. 1859. *The American Miller and Millwright's Assistant*. H.C. Baird. Philadelphia Pa.).

The furrows are laid out in exactly the same way on both stones at the McCormick Mill, so that when the runner is turned over for dressing, the design on the grinding faces of both stones are identical. Therefore, as the runner stone revolves, the furrows cross each other to create a shearing action, like a pair of scissors. The furrows are generally 6.4-19.1 mm (1/4 to 3/4 in.) deep and gradually tapering off to the edge of the stone.

The area between the furrows are known as “lands” and are dressed with fine lines called “cracks” or “stitches.” In a French stone, which was used for grinding wheat flour, it was possible for an experienced stone dresser to insert up to sixteen cracks to the inch. In millstones like the ones in the McCormick Mill, particularly the corn stone, three to six cracks per inch is all

that is necessary. The more stitches per inch, the finer the grind. It also meant that the stones would need sharpening more often.

The area around the eye of the stone is “faced” off so that when the lands are almost touching the stones at this point would be slightly concave or farther apart. This relief permits the grain to enter between the stones around the eye for initial breaking before being ground finer at the edge or “skirt” of the stone.



To turn the runner stone over for dressing, the wooden crane is used. As mentioned earlier, this is equipped with a screwjack and a pair of large iron tongs or bails, the ends of which are fitted with pins that fit into holes drilled on opposite sides of the stone (left). Once the bails are attached to the runner stone, it is lifted by means of the screwjack. Once the stone is high enough over the bed stone, it is turned over on the back for dressing. It is necessary to put blocks under the runner in order for it to lie level during the dressing process. While the stones are dressed the crane can be removed and pushed to the side, out of the way.

The tools used for dressing or sharpening the grinding faces of the millstones are called “mill bills” or “mill picks.” The mill bills are shaped like a double-ended wedge and made from cast steel that is tempered so the chisel like edges cut stone. Today, bills with carbide tips are available. Bills are 17.8-22.9 cm (7-9 in.) long and have a hole in the center for fitting a wooden handle allows it to be used like a hammer.



When dressing the stone, the stone dresser usually half-reclines over a cushion made of a sack of meal or bran. The cushion, sometimes referred to as a “bist,” also steadies the hands so that the lines or cracks can be cut straight. It is a tedious job.

It is necessary to dress the stones when they become worn to a point that the meal or flour becomes extremely hot and cakey. As the stones become dull, it requires more power to operate them. Dull stones tend to mash the grain rather than cutting off the bran; therefore making sifting a problem. In making white flour, the miller wants very sharp stones in order that the bran is flaked off and removed in the bolting process. Dull stones result in darkened flour due to the small pieces of bran that come through the silks. Therefore, the time between dressing the stones depended on the volume of grain and the type of grain that was put through the stones. For the purposes at the McCormick Mill, demonstrations may be frequent, but an overall dressing of the stones will not be regularly necessary.

The story must be told of how a miller could tell if a stone dresser seeking a job was experienced. The miller would ask the job seeker to “show his metal” before hiring him. The man would bare his left hand and forearm. If there were many small bluish spots showing where minute particles of steel from the bills had embedded themselves in the flesh, the miller knew he had an experienced stone dresser.



To test the grinding surface of the stones, a wooden paint-staff is used (arrow at left). The bottom side of the paint-staff is brushed with a composition of red oxide powder and water. The painted staff is then rotated around the grinding surface of the stones. This will mark high places in the stone. When properly dressed, the stones should be marked evenly all over. Many paint-staffs are made of laminated wood to prevent them from warping. The paint-staff in the McCormick Mill is an example of an early staff made of one piece of hardwood, probably oak.

Also found in the mill is the proofing staff. This is a heavy cast iron plate used to test the accuracy of the paint-staff. A small amount of oil rubbed between the proofing staff and paint-staff will reveal any unevenness in the surface of the paint staff. The proofing staff is sometimes equipped with a bubble level (see arrow). The proofing staff can then be used to make sure that the bedstone is perfectly level. If it is found to be out of level, it becomes necessary to adjust it by means of three wedges that are underneath the stone and accessed from the first level of the mill.



Lastly, in dressing the stones it is necessary to check the millstone spindle to make sure it is completely perpendicular to the surface of the bedstone. This is done with the use of the “quill staff.” The quill staff is a triangular shaped piece of wood that fits over the end of the millstone spindle. The pointed end away from the spindle has a small hole in which a quill or pencil can be inserted. The spindle is then turned with the quill, marking the surface of the bedstone. If the spindle is true, a perfect circle will be drawn on the bedstone. If the track of the quill staff is elliptical, the spindle will need to be adjusted or “trammed.”





This adjustment is made on the first level of the mill by adjusting two wedges around the “trampot (arrow at left).” The trampot is the housing for the foot bearing of the millstone spindle. It is cast iron and sits on the bridge tree.