March 3, 1936. W. C. HERMAN 2,032,362

SEGMENTAL GRINDING WHEEL

Filed April 23, 1934

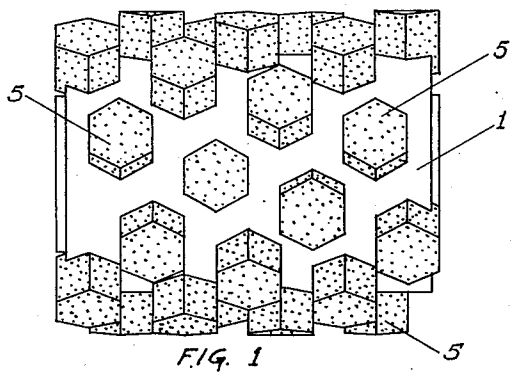


FIG. 1

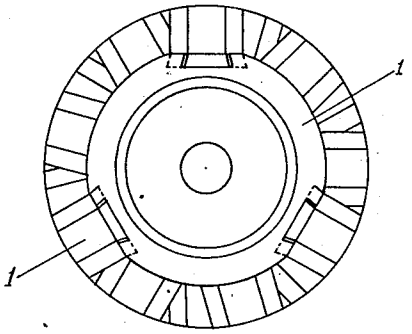


FIG. 2

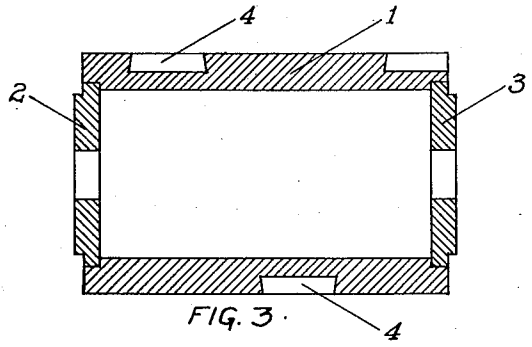


FIG. 3

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SEGMENTAL GRINDING WHEEL

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4 Claims. (Cl. 51—206)

This invention relates to new and useful improvements in segmental grinding wheels.

It is one of the principal objects of my invention to provide for stonework and other uses, a grinding wheel embodying a drum which carries at its periphery blocks that are so staggered and spaced as to permit the free circulation of water between them.

It is another important object of my invention to provide for insertion in pockets in the wheel drum, abrasive blocks which are preferably of hexagonal shape so that they will engage the face surface of the stone with their points first. The edges of the abrasive blocks then cut their way through the surface of the stone by a shearing action. A solid grinding wheel, on the other hand, engages the surface of the stone with a braking action, without producing a shear of any kind.

Another object of the invention is to provide a grinding wheel which, because of the abrasive-inserts it carries, will require materially less power to operate, since there is much less surface in contact with the stone than is the case when a solid wheel is used. In fact, where my grinding wheel is employed, the feed is approximately twice as much with the same power consumption as with the old type of wheel. Withal, my grinding wheel shears its way through the surface of the stone or the object being finished with greater efficiency and less power consumption.

In the accompanying drawing illustrating my invention, Figure 1 is a perspective view of my improved grinding wheel, showing the abrasive-inserts therein. Figure 2 is an end view of the same. And Figure 3 is a longitudinal sectional view taken through the center thereof.

Referring to the accompanying drawing for a detailed description of my invention, the numeral 1 designates a cast iron drum whose ends are closed by hub discs 2 and 3. Provided in the periphery of the drum 1 are spaced dovetailed pockets or sockets 4 which receive abrasive-inserts 5 preferably of hexagonal shape. These abrasive blocks are inserted in their tapered sockets 4, which are cast in the drum, by dropping them in those sockets and then pouring molten lead around them. These abrasive blocks are so positioned by their sockets, when fixed within them, as to engage, first with their points and then with their edges, the surface of the stone to finish it with a shearing action.

The arrangement of the abrasive blocks 5 is also such that a line drawn circumferentially around the drum at any point between the centers of the extreme end blocks will pass through an equal linear surface of abrasive, thereby causing the wheel to wear straight. From the centers of the extreme end abrasive blocks to the edges of the drum, there is purposely provided less linear inches of abrasive in order that the drum will wear slightly more on its extreme ends, thereby preventing an overlap of the wheel from showing on the finished work.

It will now be seen that my grinding wheel, whose abrasive-inserts make an edge contact with the surface of the object to be finished, is rotated with less power and performs its work with greater efficiency than the present solid type of wheel.

Having described my invention, I claim:

1. A grinding wheel comprising a metal drum, and spaced and staggered abrasive-inserts attached to the periphery of said drum, said abrasive-inserts being so spaced and so staggered that a line drawn circumferentially around the drum at any point between the centers of the extreme end inserts, will pass through the same linear surface of abrasives as any other line similarly drawn.

2. A grinding wheel comprising a metal drum formed with spaced and staggered tapered sockets in its periphery, and hexagonal abrasive inserts fixed in the sockets in the drum for projection beyond its periphery to engage a surface to be finished.

3. A grinding wheel comprising a metal drum formed with spaced and staggered, tapered sockets in its periphery, and hexagonal abrasive-inserts fixed in said sockets, said inserts being positioned by said sockets to engage a surface first by their points and then with their edges to shear their way across said surface.

4. A grinding wheel comprising a metal drum formed with spaced and staggered tapered sockets in its periphery, and hexagonal abrasive inserts fixed in the sockets in the drum for projection beyond its periphery, said abrasive inserts being so spaced and so staggered that a line drawn circumferentially around the drum at any point between the centers of the extreme end inserts will pass through the same linear surface of abrasives as any other line similarly drawn.

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