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DEBURRING AND POLISHING BARREL

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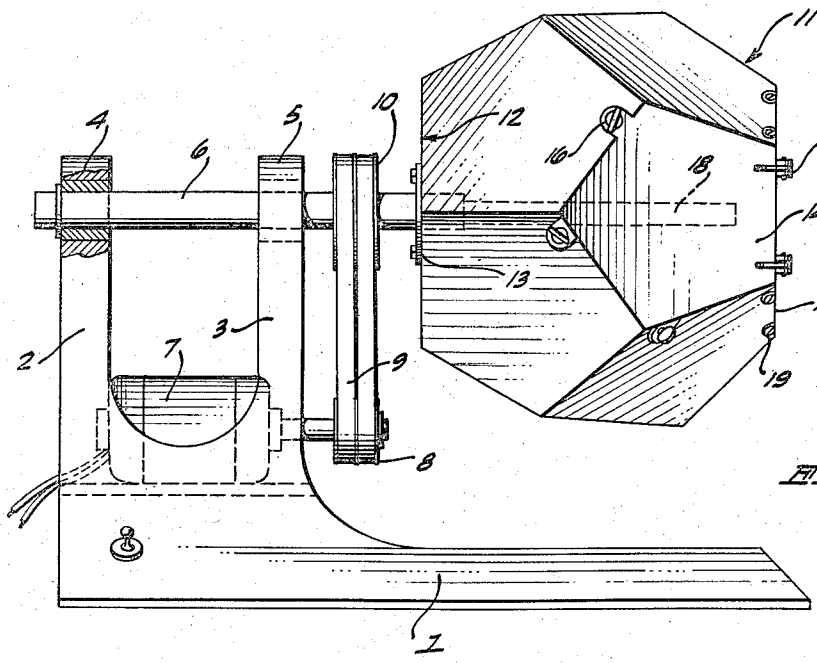


FIG. 1.

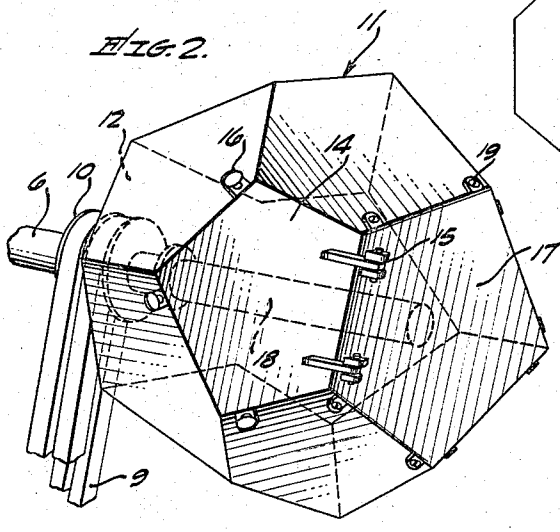


FIG. 2.

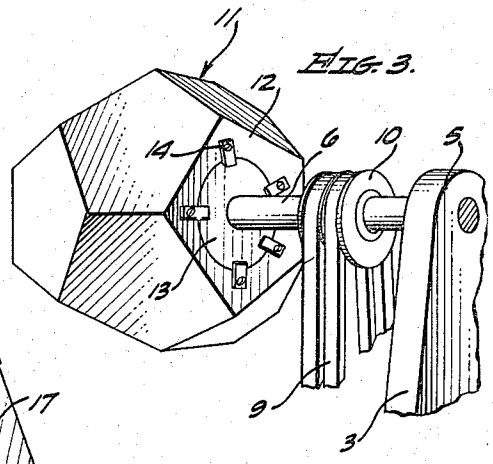


FIG. 3.

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DEBURRING AND POLISHING BARREL

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5 Claims. (Cl. 51—164)

This invention relates to a deburring and polishing barrel whereby various cast or molded objects can be placed and tumbled for a sufficient period of time to deburr and also to polish these cast objects.

An object of my invention is to provide a novel deburring and polishing barrel which is formed in the shape of a dodecahedron, this particular shape having an advantageous action imparted to the substances or parts which are placed in the barrel. The barrel, when rotated, imparts to the objects within the barrel a uniform, rhythmic, undulating or kneading action which will more effectively deburr and polish these parts.

Another advantage of the particular shape of the barrel is that the barrel can be mounted so that flat faces occur on the longitudinal axis of the barrel, thus eliminating possible corners or areas in which the contents of the barrel might be thrown and caused to remain in these corners so that they would not be effectively deburred or polished, that is, the parts in the barrel cannot accumulate at or near the axis about which the barrel rotates.

Still another object of my invention is to provide a novel deburring and polishing barrel of the character stated, in which an effective means is provided for loading, unloading and inspection of the contents.

Another object of my invention is to provide a novel deburring and polishing barrel in which the barrel is entirely supported from one side, which leaves the side opposite it through which the driving mandrel extends a free plate which can be opened when necessary to provide access to the barrel. Also this outer face of the barrel can be entirely removed for the purpose of inserting hangers onto the driving mandrel, these hangers accommodating parts as is usual in this type of equipment, and with my device the entire hanger or cage can be inserted and removed from the barrel with that cage entirely loaded with the parts which are to be worked upon.

Another feature of my invention resides in the position of the access door of the barrel which, in the filling position, is at the top where it is in full view of the operation and at an ideal angle to permit inspection of the inside of the barrel. Also in the unloading position when it is at the bottom it is again in full view, and the entire contents of the barrel can be spilled out of this door.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

In the drawing:

Figure 1 is a side elevation of my deburring and polishing barrel.

Figure 2 is a perspective view of the barrel showing the outer faces thereof.

Figure 3 is a perspective view of the barrel showing the driving end thereof.

Referring more particularly to the drawing, the numeral 1 indicates a base or foundation structure of sufficient size and weight to support the deburring equipment. The base 1 includes a pair of spaced arms 2—3 which are provided with bearings 4—5 at the upper end thereof

to receive a drive shaft or mandrel 6. This shaft is driven preferably in the following manner: An electric motor 7 mounted in the base 1 drives appropriate pinions 8, which pinions receive the drive belts 9, or other suitable power transmitting means. The belts 9 also encircle pulleys 10 on the drive shaft 6 so that that shaft or mandrel is rotated at the proper speed. A barrel 11, formed as a dodecahedron, is fixedly mounted on the outer end of the mandrel 6 in the following manner:

One of the flat faces 12 of the barrel is arranged at right angles to the mandrel 6 and the mandrel projects through this face of the barrel. A flange 13 on the mandrel bears against the face 12 of the barrel, and suitable detachable fasteners 14 extend through the plate 13 and into the face 12 of the barrel to detachably secure that barrel to the flange 13, thus permitting the barrel to be entirely removed when necessary for purposes of repair, or to change the size of the barrel, or for other reasons. Thus it will be evident that the entire barrel 11 can be removed or replaced on the mandrel 6, as might be necessary. On the outer portion of the barrel 1 one of the faces 14 is hingedly mounted, as shown at 15, to an adjacent face of the barrel, thus providing an access door through which the barrel can be loaded and from which the barrel can be unloaded. Appropriate detachable fasteners 16 secure the door 14 in its closed position. The adjacent face 17 to which the door 14 is hingedly mounted is directly opposite the driving face 12 of the barrel and is parallel to those driving faces. The inner portion 18 of the mandrel is thus positioned at right-angles to the face 17, and is also directly opposite that face so that when the face 17 is removed, the mandrel projection 18 will be readily accessible so that a rack or basket can be readily mounted thereon. Certain articles require special handling and for this purpose they are placed in a basket with bails or handles thereon. If required, the bails or handles of such a basket can be hung on the extension 18 to support the basket within the barrel 11. The entire face 17 of the barrel can be removed, and there are suitable detachable fasteners 19 on the face 17 which permit that face to be entirely removed when it is necessary to insert a rack, a basket, or the like into the barrel, also the projection 18 is thus readily accessible to mount a basket thereon.

Due to the dodecahedron shape of the barrel 11 the access door 14 is positioned on the outer side thereof and will be readily accessible and viewable in both the loading and discharge positions. Also this shape of the barrel permits the removable face 17 to be arranged parallel to and opposite the driving face 12 of the barrel, thus permitting ready access to the inside of the barrel for the purpose of inserting a rack or basket, or for purposes of repair when necessary. Furthermore, the dodecahedron shape permits the driving face 12 and the removable face 17 to be opposite and parallel to each other, thus eliminating any pockets, corners, or sharp angles adjacent to the drive shaft or mandrel 6, or the extension 18 thereof. Thus eliminating the possibility of objects within the barrel being moved into small corners or pockets where these objects would remain without being exposed to the proper amplitude of movement to properly deburr and polish the same. In my barrel construction the objects therein are exposed to the full amplitude of movement within the barrel, and also the mass of objects are caused to fold and shift from side to side as the barrel is rotated.

Having described my invention, I claim:

1. A deburring and polishing barrel formed as a dodecahedron and with two opposite sides thereof parallel, a drive shaft extending into one of said parallel sides, means securing said shaft to said side, means detachably securing the other of said parallel sides to the adjacent

sides of the barrel to provide a removable door, and an extension of said shaft projecting into the barrel.

2. A deburring and polishing barrel formed as a dodecahedron and with two opposite sides thereof parallel, a drive shaft extending into one of said parallel sides, a flange on the drive shaft, means detachably securing the flange to said parallel side, means detachably securing the other of said parallel sides to the adjacent sides of the barrel to provide a removable door, and an extension of said shaft projecting into the barrel.

3. A deburring and polishing barrel formed as a dodecahedron and with two opposite sides thereof parallel, a drive shaft extending into one of said parallel sides, means securing said shaft to said side, means detachably securing the other of said parallel sides to the adjacent sides of the barrel, and an extension of said shaft projecting into the barrel, one of the sides of said barrel adjacent said last named side forming a door, means hingedly mounting the door to the last named side, and detachable fastenng means on said door to hold the door in closed position.

4. A deburring and polishing barrel formed as a dodecahedron and with two opposite sides thereof parallel, a drive shaft extending into one of said parallel sides, a flange on the drive shaft, means detachably securing the flange to said parallel side, means detachably securing the other of said parallel sides to the adjacent sides of

the barrel, and an extension of said shaft projecting into the barrel, one of the sides of said barrel adjacent said last named side forming a door, mean hingedly mounting the door to the last named side, and detachable fastening means on said door to hold the door in closed position.

5. A deburring and polishing barrel formed as a dodecahedron and with two opposite sides thereof parallel, a drive shaft extending into one of said parallel sides, a flange on the drive shaft and on the end adjacent said one parallel side, a plurality of detachable fasteners on said one parallel side, the other detachable fasteners engaging the flange to secure the flange to said one parallel side, means detachably securing the other of said parallel sides to the adjacent sides of the barrel, an extension of said shaft projecting into the barrel and partially therethrough, one of the sides of said parallel adjacent said last named side forming a door, means hingedly mounting the door to the last named side, and detachable fastening means on the door to hold said door in closed position.

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