May 9, 1939. G. E. VANCE 2,157,779

METHOD OF MANUFACTURING GRINDING WHEELS OF ABRASIVE MATERIAL

Filed Jan. 28, 1936

Fig. 1

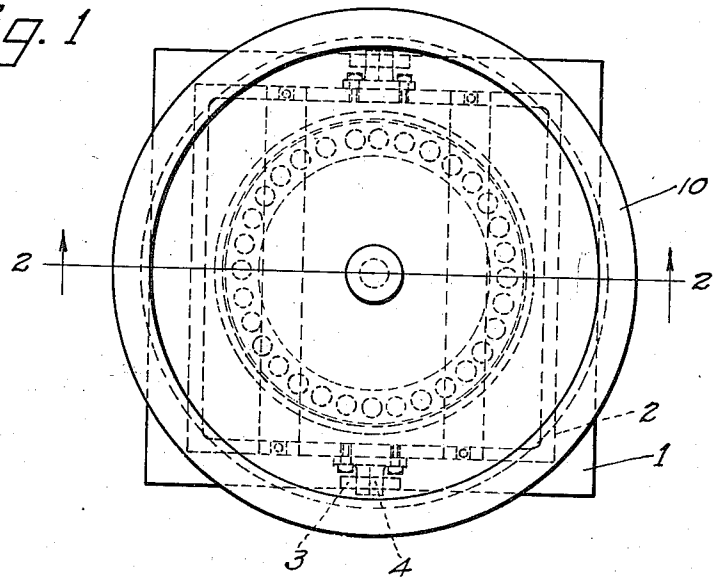


Fig. 2

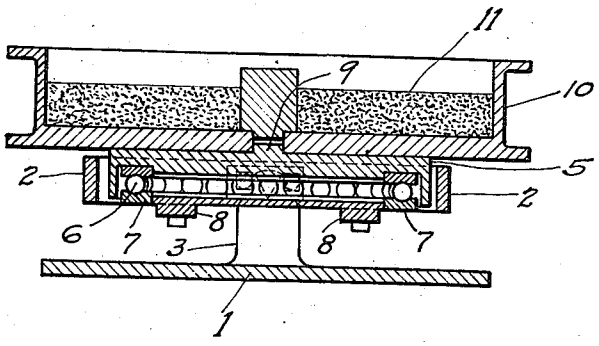


Fig. 3

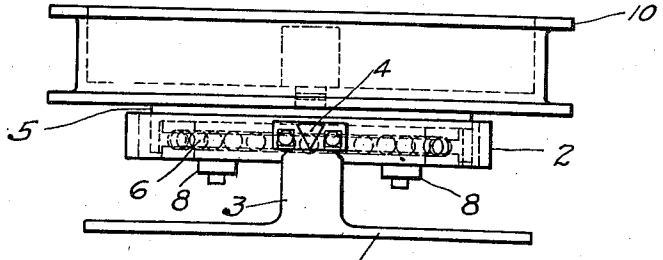
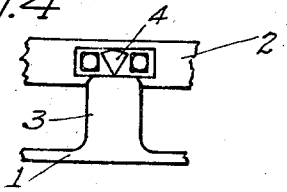


Fig. 4



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METHOD OF MANUFACTURING GRINDING WHEELS OF ABRASIVE MATERIAL

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2 Claims. (Cl. 51—278)

This invention relates to a method of making grinding wheels of abrasive material.

In the manufacture of grinding wheels the abrasive material is pressed into a mold and then baked. It often happens, however, that by this process of manufacturing the wheels generally are out of balance and it has been customary to balance the wheels after being baked by chipping away portions of the heavy side of the wheel, which is unsatisfactory, as it is very difficult to balance the wheels in this fashion and it is essential that the wheels should be in as perfect balance as possible.

The object of this invention is to provide a method whereby the wheel is balanced before it is baked after the green abrasive material has been placed in the mold and before being compressed in the mold.

In the accompanying drawing:

Fig. 1 is a top plan view of an apparatus for carrying out the method.

Fig. 2 is a section on the line 2—2 of Fig. 1.

Fig. 3 is a side elevation of the apparatus.

Fig. 4 is a detail of a portion of the base and a portion of the mold supporting frame, showing one of the knife edge bearings.

Referring to the drawing, 1 represents a suitable supporting base and 2 is a frame which is tiltably mounted upon standards 3 projecting upwardly from the frame by two oppositely arranged knife-edged bearings 4. A turn-table 5 is rotatably mounted upon the frame 2 through the medium of ball bearings 6, the lower race 7 of which is carried by cross members 8 secured to the frame 2. The turn-table has a centrally arranged spindle 9 upon which is rotatably mounted the mold 10 which receives the abrasive material represented at 11. By reason of the fact that the supporting frame is mounted upon the base by the oppositely arranged knife-edged bearings it will be seen that the mold will be tiltably mounted upon the base. In operation the frame is first balanced upon the supporting base by any suitable means such as applying weights of any suitable character to the light side thereof which would bring the turn-table into balance and the mold is then balanced in position by likewise applying weights of any suitable character to the light side thereof. The mold is then filled with green abrasive material and after the material has been placed in the mold, if the mold tilts due to the fact that one portion is heavier than the other, the next step is to remove abrasive material from the heavy portion and place it on the light portion until the mold is in perfect balance. The next step is to remove the mold from the turn-table and compress the green material in the mold, and the next step is to then bake the material which can be accomplished by either baking it in the mold or preferably removing it from the mold.

As a result of this method the wheel after being baked is in perfect balance and obviates any necessity of chipping away portions of the baked wheel for balancing purposes.

If desired, any suitable scale indicating mechanism may be used in connection with the apparatus employed for carrying out the method, which mechanism will be operated by the turn-table in any suitable way, when the table is rotated. If indicating mechanism is not desirable, the turn-table may be omitted and the mold tiltably mounted upon a spindle carried by the base.

While the apparatus used in connection with carrying out this method has been described as including a turn-table upon which the mold is mounted so that the mold may be turned to different positions in order to better determine the heavy and light sides, this turn-table is not absolutely necessary, but the mold may be mounted upon a stationary spindle upon which it can be rotated to determine the heavy and light sides. Further, the particular form of balancing device described is not absolutely essential but any well known form of horizontal balancing may be employed.

Having thus described my invention, I claim:

1. The method of manufacturing a grinding wheel of abrasive material consisting in placing the green abrasive material in a balanced tiltable mold, rotating the mold to determine the heavy and light sides thereof if any exist, then removing abrasive material from the heavy portion of the mold to a lighter portion to balance the mold and material, then pressing the material in the mold, and thereafter baking the material.

2. In an apparatus for manufacturing a grinding wheel, a base, a pair of oppositely arranged standards on said base, a supporting frame mounted on said standards by knife-edge bearings, and a mold supporting turn-table rotatably mounted upon said supporting frame.

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