

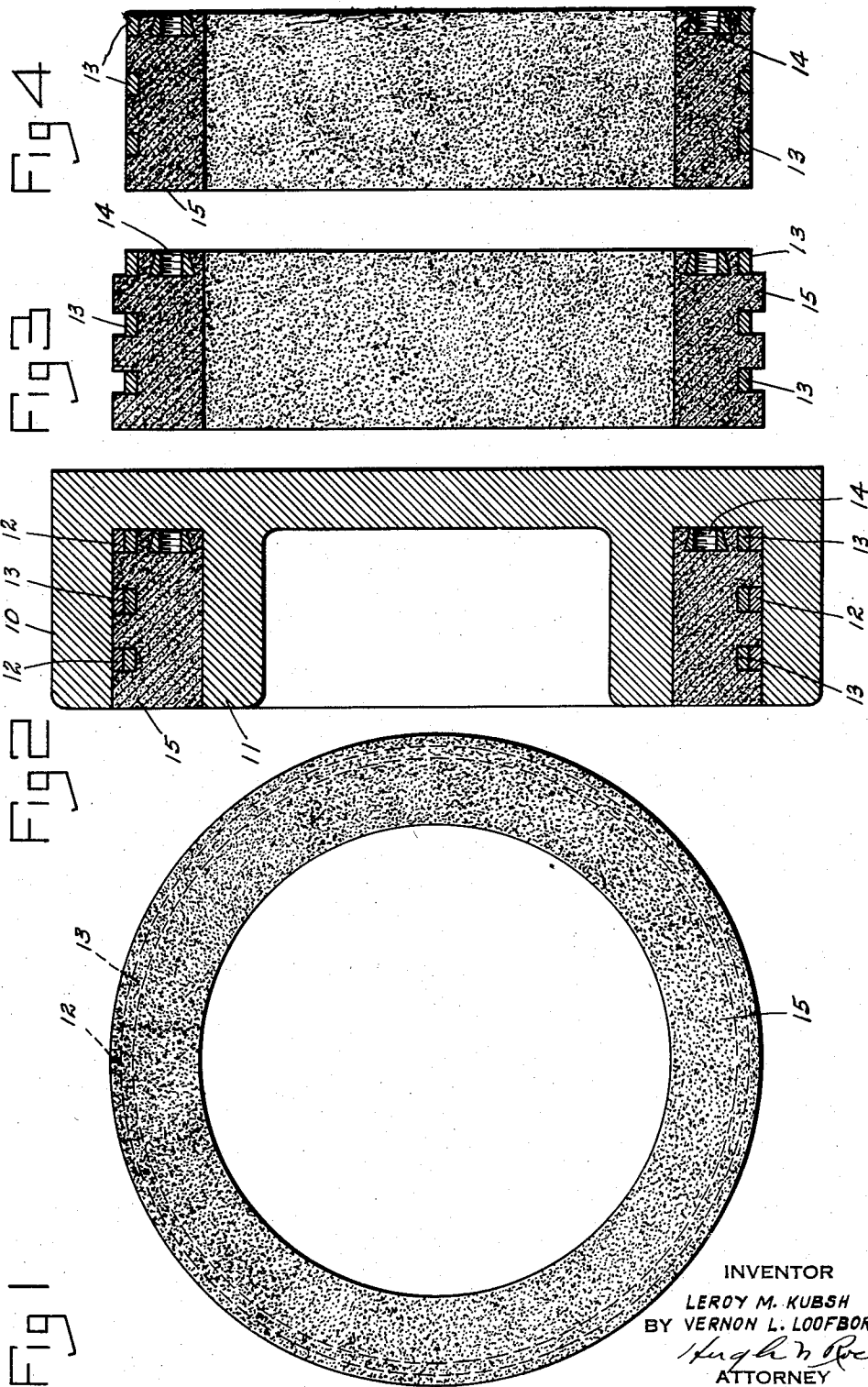
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REINFORCING CYLINDER-TYPE ABRASIVE WHEELS

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REINFORCING CYLINDER-TYPE ABRASIVE WHEELS

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2 Claims. (Cl. 51—293)

This invention relates to a method and means for reinforcing abrasive wheels of the cylinder type.

The usual method of reinforcing this type of wheel is to bind it with bands made by wrapping wire tightly around the wheel after it has been molded and trued, and soldering the ends of the wire while the wire is under tension. The disadvantage of the wire reinforcement is that the wire must be removed as the wheel wears to the point of reinforcement.

An improved method of reinforcing this type of wheel consists in embedding a wearable reinforcing ring in the center of the wheels. The disadvantage of this type of reinforcement is that it interferes with the continuity of the abrasive material. Other disadvantages are: the reinforcing means is not subject to inspection, it does not provide maximum reinforcing, and it does not provide reinforcement at places where it is most needed.

It is therefore an object of this invention to provide an improved wearable reinforcing means for abrasive wheels.

Another object is to provide a method of applying a wearable reinforcing means for an abrasive wheel as a part of the manufacturing process of the wheels.

Another object is to embed one or more reinforcing rings of wearable material in the peripheral surface of an abrasive wheel whereby to provide maximum reinforcement for the entire wheel against the centrifugal forces acting on the wheel during rotation.

Figure 1 is a plan view showing the split steel bands with the smaller concentric glass rings as they are inserted in the mold.

Figure 2 is a sectional elevation showing the arrangement in the mold of the abrasive, steel bands and fiber glass rings.

Figure 3 is a sectional elevation showing the grooves left in the wheel after the removal of the steel bands.

Figure 4 is a sectional elevation showing the finished fiber glass rings embedded in the wheel after the truing operation.

Numerals 10 indicate an abrasive wheel mold. 11 is a center member which determines the size of the center hole in the abrasive rings. 12 is a split steel ring having an outer diameter the same as the inner diameter of the mold 10. 13 is a fiber glass ring inserted inside each steel ring. 14 are mounting nuts set in the bottom of the mold 10. The steel bands and the fiber glass bands are placed in the mold and abrasive material 15 is added to the mold 10 up to a predetermined point. At this point, another steel band and glass ring are inserted fol-

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lowed by alternate additions of abrasive, steel rings and glass rings until the mold is filled.

The wheel is then cured in the mold by heating or drying. After the curing process, the wheel is removed from the mold and the steel rings are removed from the wheel leaving the glass rings embedded in the abrasive substantially below the peripheral surface of the wheel. The wheel is then trued by means of a suitable tool to make it round and reduce it to the proper diameter.

The glass rings embedded in the abrasive provide the same or a greater degree of reinforcement than the wire band formerly used. The glass rings also wear at the same rate as the abrasive and continue to reinforce the wheel as long as they last, whereas, wire bands must be removed as soon as the abrasive is worn to that point.

By keeping the reinforcing bands near the peripheral surface of the wheel, a more continuous solid body of abrasive is provided. Furthermore, reinforcing rings near the periphery of the wheel provide a more substantial reinforcement for the entire wheel than similar rings embedded in the interior of the abrasive.

We claim:

1. The method of making a reinforced abrasive wheel of the cylinder type which consists of placing a pair of concentric ring-like members in a mold, the outer member being removable after the wheel is molded, the inner ring being solid and made of a wearable material, adding a predetermined amount of abrasive mixture, inserting in the mold another pair of concentric ring-like members similar to said first mentioned ring-like members, adding another predetermined amount of abrasive material and continuing the addition of successive ring-like members and abrasive material until the mold is filled, curing the wheel by heating or drying, removing the wheel from the mold, removing the outer ring-like members and truing the periphery of the wheel to a predetermined size where the periphery of the wheel is flush with the inner ring-like members.

2. The method of making a reinforced abrasive wheel of the cylinder type which consists in placing a pair of concentric ring-like members in a mold, the outer member being removable after the wheel is molded, the inner ring being solid and made of a wearable material, adding a predetermined amount of abrasive mixture, inserting in the mold another pair of concentric ring-like members similar to said first mentioned ring-like members, adding another predetermined amount of abrasive material and continuing the addition of successive ring-like members and abrasive material until the mold is filled, curing the wheel by heating or drying, removing the wheel from the mold, removing the outer ring-like members and trimming the periphery of the wheel to a predetermined size.

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