

UNITED STATES PATENT OFFICE.

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PROCESS IN MAKING CLUTCH RINGS.

No Drawing.

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To all whom it may concern:

Be it known that I, LESTER KIRSCHBRAUN, a citizen of the United States, residing in the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Processes in Making Clutch Rings, of which the following is a specification.

This invention relates to improvements in process in making clutch rings, and refers more particularly to a clutch ring adapted for use in a motor car or the like, either as clutch rings of a riveted or floating type.

The invention also relates to the manner in which the stock from which the rings are cut is formed, and particularly as to the constituents of such stock, whereby the process of making the ring is facilitated and a better ring produced.

A process may be carried out as follows:

I make up a pulp consisting of say 70 parts by weight of asbestos fibre, 20 parts by weight of paper stock and 10 parts by weight of a mineral fibre such as mineral wool, copper wool or steel wool. This pulp may then be formed into sheets on a standard wet board machine, and the sheet treated in the usual manner to remove the water and then pressed to the desired size. The rings may then be cut out and subjected to a saturating bath, as for example, asphalt and gas oil, such as that procured by the distillation of crude petroleum having a Baumé gravity of from 28 to 32°, in proportion of 4 parts of asphalt to 1 part of gas oil. The saturated rings are then put into a suitable oven and baked to a sufficient temperature to thoroughly harden and oxidize the rings. If desired, an oxidizing agent as for example resinate of lead may be dissolved in the saturant. This baking may take place at a temperature of approximately 500 degrees F., with the result that the paper content is burned out or carbonized, leaving the ring in a more or less porous condition, so that the asphaltic content therein can be more thoroughly oxidized.

The ring then may, if desired, be again

resaturated in a similar solution and then rebaked. It is of course apparent that the ring will be in prime condition after the first baking for resaturation due to this more or less porous character. This will permit of a much larger percentage of saturant being contained in the ring than would otherwise be possible, and also permits of a more effective cure. Rings made in this way will have a Brinell hardness in excess of 15, and a tensile strength in excess of 2,500 pounds per square inch. The mineral fibres also tend to give a strengthening effect to the finished article, and in fact produce a sort of a metallic reinforcement for the ring.

I claim as my invention:

1. A process of making a clutch ring consisting in forming a stock of asbestos, combustible fibre and a metallic filament, cutting out the rings from such stock, saturating them in a bath of a fusible binder and an oxidizing agent, subjecting them to a baking operation at a sufficient temperature to burn out the combustible fibre and oxidize the fusible saturant.

2. A process of making a clutch ring consisting in forming a stock of asbestos, combustible fibre, cutting out the rings from such stock, saturating them in a bath of a fusible binder and an oxidizing agent, subjecting them to a baking operation at a sufficient temperature to burn out the combustible fibre and oxidize the fusible saturant.

3. A process of making a clutch ring consisting in forming a stock of asbestos, combustible fibre and a metallic filament, cutting out the rings from such stock, saturating them in a bath of a fusible binder and an oxidizing agent, subjecting them to a baking operation at a sufficient temperature to burn out the combustible fibre and oxidize the fusible saturant, and then subjecting the rings to a second saturation and a baking treatment.

4. A process of making a clutch facing consisting in forming a stock of asbestos, combustible fibre, cutting out the rings from such stock, saturating them in a bath of a fusible binder containing an oxidizing agent, subjecting them to a baking operation at a

sufficient temperature to burn out the combustible fibre and oxidize the fusible saturant, and then subjecting the rings to a second saturation and a baking treatment.

5 5. A process of making a clutch ring consisting in forming a stock of asbestos, combustible fibre and a metallic wool, cutting

out the rings from such stock, saturating them in a bath of fusible binder containing an oxidizing agent, subjecting the rings to successive baking operations at a sufficient temperature to carbonize the combustible fibre and oxidize the fusible saturant. 10

LESTER KIRSCHBRAUN.