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E. LAVERDISSE
GLASS POLISHING TOOLS
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Fig. 1.

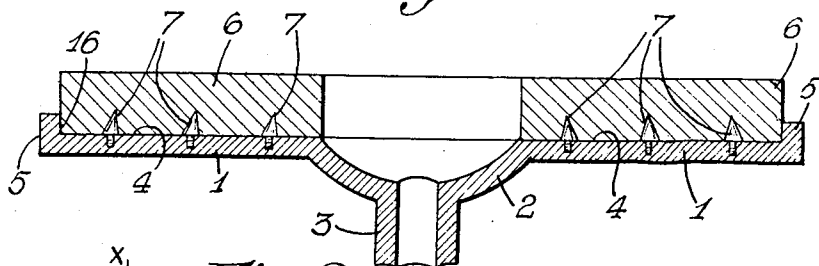


Fig. 2.

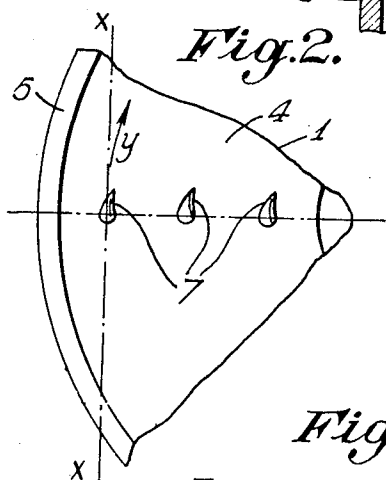


Fig. 3.

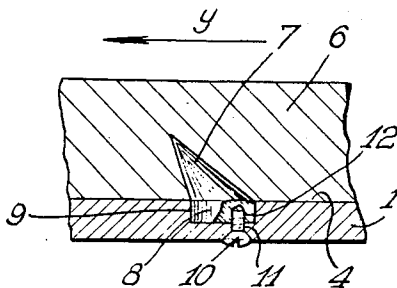


Fig. 4.

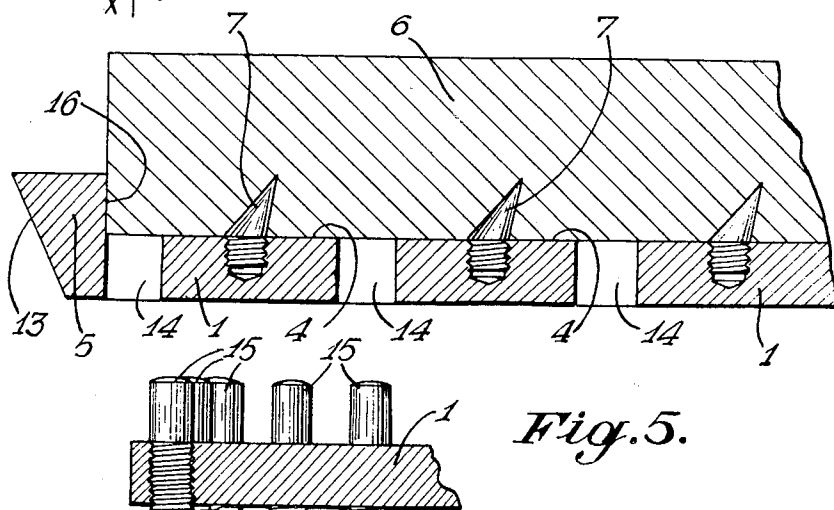
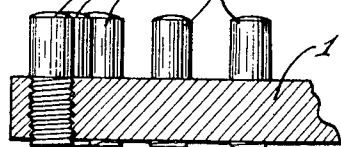


Fig. 5.



1

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GLASS POLISHING TOOLS

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2 Claims. (Cl. 51—195)

This invention relates to a glass polishing tool.

The tools employed for the mechanical polishing of glass generally consist of a plate, often circular, and which is secured at its central portion to a driving shaft perpendicular to the plate. The plate is covered by a disc or a plate consisting of felt or another material suitable for the polishing, for example rubber or plastic, and of appropriate shape. In polishing on two faces, the polishing tools are fed with a polishing composition, and applied with a predetermined pressure to opposite faces of the glass. The glass is usually advanced longitudinally between the tools.

The plate or disc is generally secured to the plate, normally of metal, by a binder, for example cement, asphalt or other appropriate binder, and/or by a steel ring which grips the felt on the peripheral edge of the plate.

This attachment involves serious disadvantages in the case of the simultaneous polishing of both faces of a glass ribbon, because in this type of polishing the lower tools serve not only to polish but also to support the glass ribbon. Thus if the ribbon breaks the overhanging forward edge of the ribbon sags by several centimetres, abuts the peripheral face of the succeeding lower polishing plate, slides on this face and generally penetrates into the weak portion of the tool, namely between the surfaces by which the felt is connected to the plate of the tool. This causes separation of these surfaces from one another and tears the felt from the tool.

Another disadvantage is that the water carrying the abrasive progressively penetrates into the felt and ultimately reaches the binder to impair the properties thereof, so that after several days of service the felt is generally detached from its support.

In accordance with the present invention, these disadvantages are effectively remedied by providing the plate with a raised peripheral edge which protects the surface by which the felt is connected to the plate from penetration of the forward edge of a broken glass ribbon and at the same time increases the junction surface between the felt and the plate.

Moreover, in accordance with the invention, detachment of the felt may be prevented, or the strength of attachment of the felt to the corresponding surface of the plate of the tool can be considerably increased, to counteract the influence of the water on the binder, by providing the surface in question with an appropriate number of suitably distributed points or spikes projecting from the said surface, so that their end penetrating into the felt extends, for example, in the direction of rotation of the tool or vertically.

In the accompanying drawings:

FIGURE 1 illustrates diagrammatically by way of example an axial section through a polishing tool constructed in accordance with the invention,

FIGURE 2 is a fragmentary plan view of the tool according to FIGURE 1,

FIGURE 3 is a vertical section along the line III—III of FIGURE 2, and

FIGURES 4 and 5 are vertical sections through modified constructions.

In a polishing tool designed in accordance with the invention, the plate 1 is fixed at its central portion 2 to

2

the hollow shaft 3, through which the polishing composition is fed to the tool and the excess composition is returned. The plate 1 is also provided on the periphery of its upper edge 4 with an upwardly projecting edge 5, which may be formed in any appropriate manner, for example by casting, machining or by securing a ring of appropriate height to the peripheral portion of the upper surface 4 of the plate 1. In the cavity thus formed a felt disc 6 is fixed to the surface 4 of the plate 1 and to the inner surface 16 of the edge 5 by an appropriate cement.

The attachment of the felt disc 6 to the plate 1 and edge 5 is strengthened to compensate for the reduction in strength of the adhesive caused by the penetration of the polishing liquid. This is achieved by providing spikes 7 on surface 4, the spikes being of metal or of synthetic resin, which in FIG. 2 are shown inclined in the direction of rotation Y of the tool and slightly towards the center of the latter, as seen in FIGURES 2 and 3.

The spike 7 may be of any appropriate shape and may be secured to the plate 1 and distributed thereon in any appropriate manner. In accordance with FIGURE 3, each spike 7 has a cylindrical base portion 8 housed in a recess 9 of corresponding shape which is formed in the plate 1. Each spike may be secured by means of a screw 10 penetrating through a hole 11 in the plate 1 into a screwthreaded hole 12 in the cylindrical base 8, the holes 11 and 12 being situated eccentrically in relation to the axis of the said base 8, so that when they are secured to the plate 1 each spike 7 is automatically oriented in the desired direction.

It is obvious that the present invention also includes the many modified constructions to which it lends itself. Thus, for example:

The projecting protective edge 5 may have any shape suitable for directing the edge of a broken glass ribbon in a desired direction. A conical shape on the external peripheral face 13 is illustrated in FIGURE 4.

The plate 1 may be formed with apertures 14 for facilitating the discharge of excess liquid.

The projecting protective edge, instead of being formed in a manner corresponding to that illustrated in FIGURES 1, 2 and 4, may be attached to the plate 1, and may consist for example of bolts 15 fixed to the plate 1 in the peripheral zone of the latter, at an appropriate distance apart, as illustrated by way of example in FIGURE 5.

I claim:

1. A glass polishing tool comprising a circular plate adapted for rotation, a peripheral edge on said plate and projecting therefrom, a polishing pad in face-to-face relation with the circular plate along a contact surface which is bounded by the edge, said pad projecting from the plate in the same direction as the edge to a height exceeding the edge to provide a smooth outer pad surface effective to perform a polishing function, said edge including an inner surface which extends substantially perpendicular to the plate and an outer surface extending from the plate in diverging fashion relative to the inner surface whereby said edge increases in thickness as the edge extends from the plate, said edge including a radial surface extending parallel to said plate and defining an acute angle with said outer surface, a plurality of spikes on the plate extending therefrom in the same direction as the edge and penetrating into said felt to secure the latter to said plate, said spikes extending from the plate inclined in the angular direction of travel of the plate and also inclined radially inwards.

2. For supporting an advancing glass ribbon and for simultaneously polishing the same, a tool comprising a circular plate having opposite surfaces and including a peripheral edge thereon extending above at least one

of the surfaces and defining therewith a cavity, the plate being adapted for rotation, a polishing pad supported in said cavity and in face-to-face relation with said one surface of the circular plate and in contact with said edge, said polishing pad projecting from the plate above the edge to provide a smooth outer polishing surface adapted to support and polish an advancing glass ribbon, means securing said polishing pad to said plate and in said cavity comprising a plurality of spikes on said plate and extending above said one surface of the plate for penetrating into said polishing pad, said spikes being of point shape and being inclined radially inwardly and also inclined in the direction of rotation of the plate, said edge including an outer surface which is inclined outwardly with respect to the surfaces of the plate in a direction extending from said one surface to provide increased thickness of the edge in the latter direction, said edge in-

5

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cluding a radial surface extending parallel to the plate and forming an acute angle with the outer surface of the edge, the outer surface of the edge being effective thereby to displace downwardly and away from said polishing pad a broken sagging glass ribbon which contacts said outer surface.

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