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PLATEN LUBRICATING MEANS

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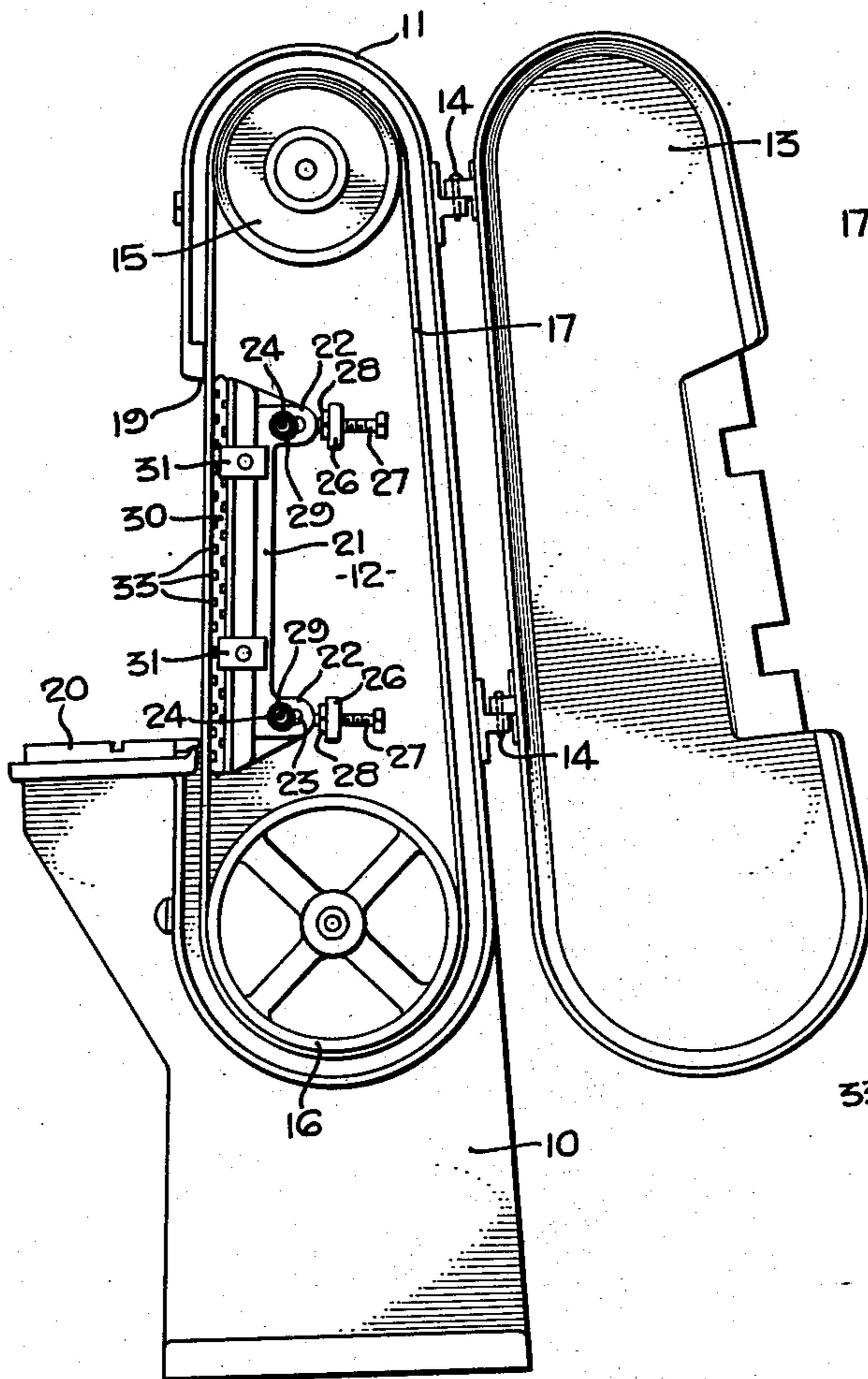


Fig. 1

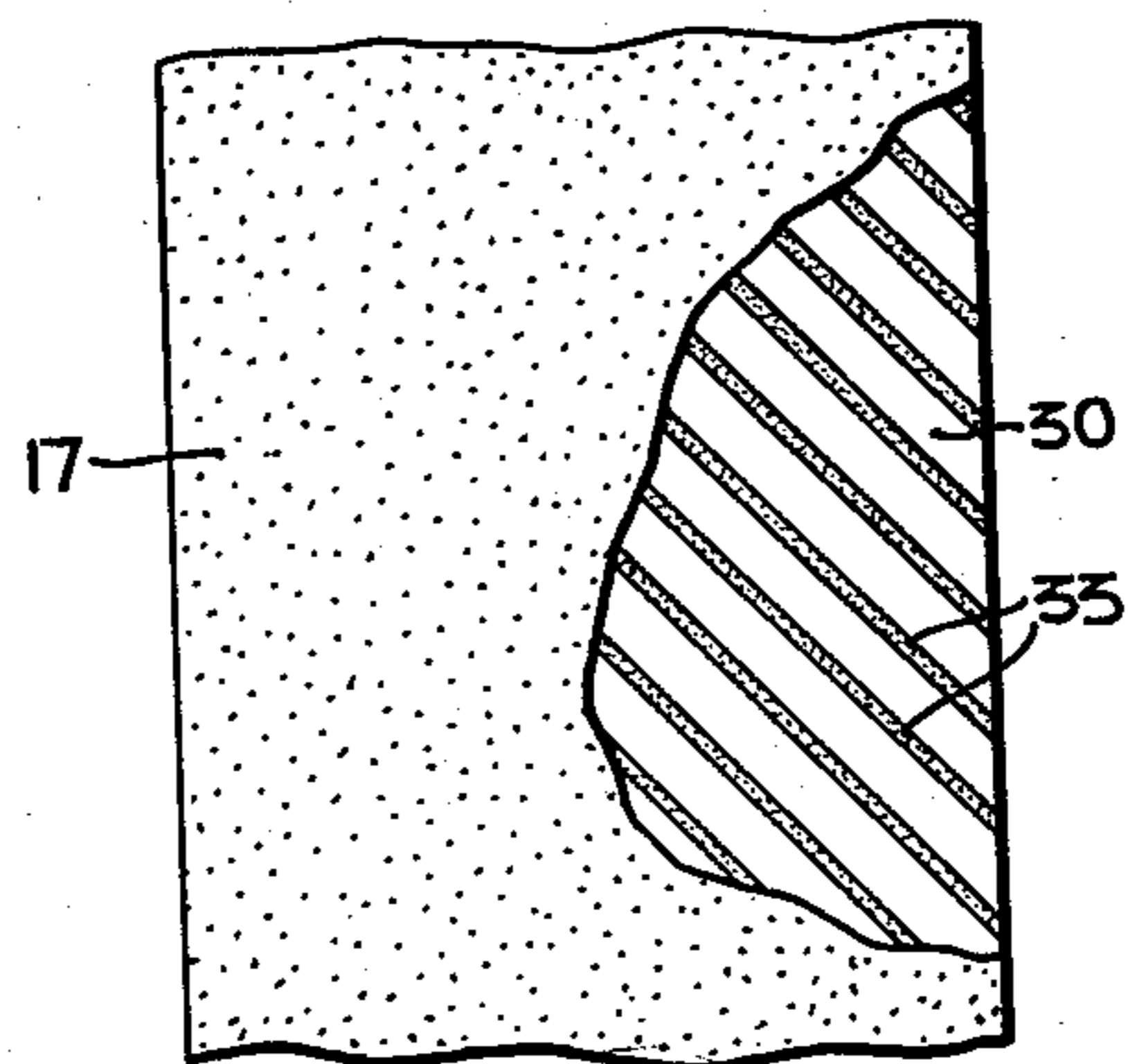


Fig. 2

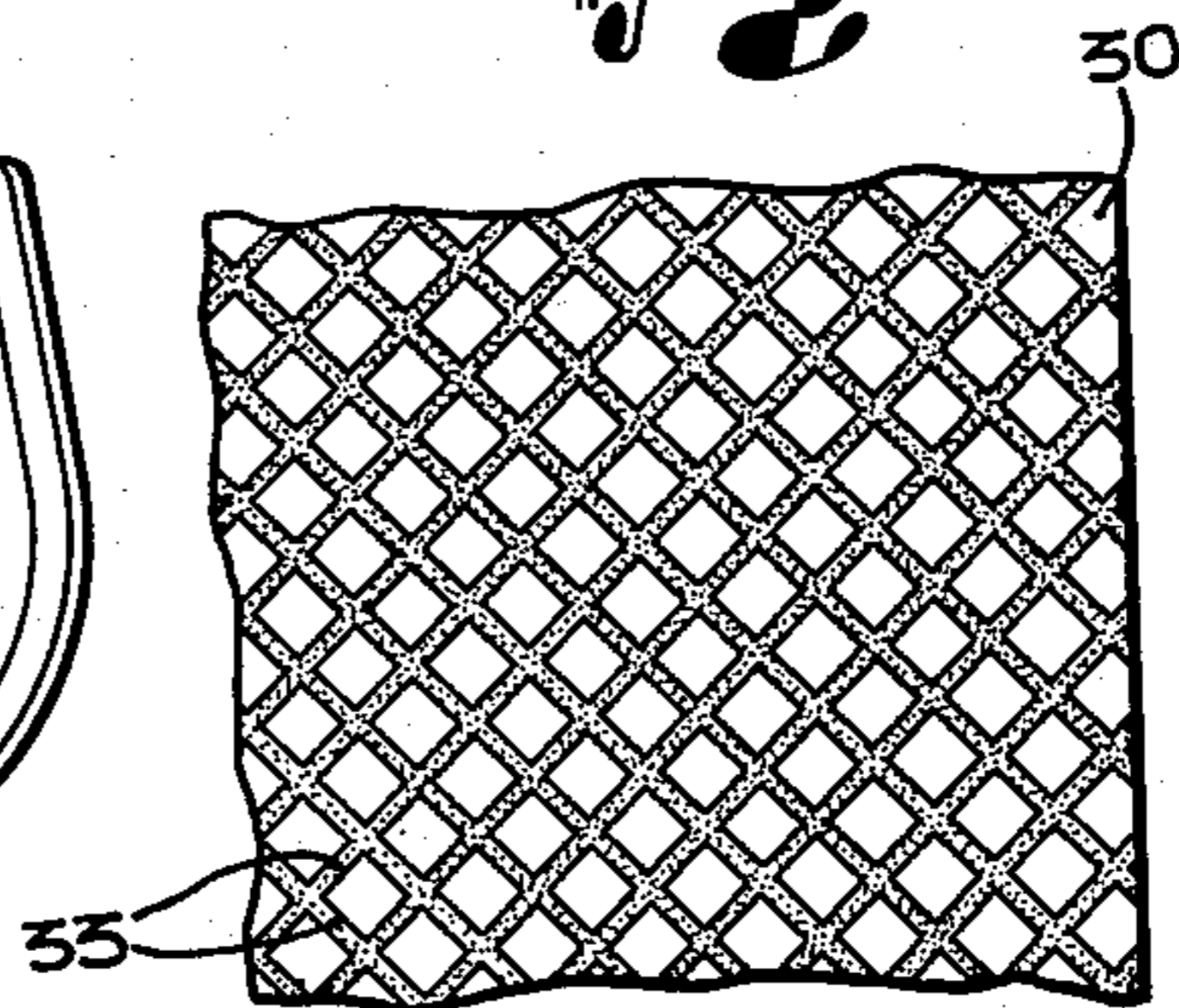


Fig. 3

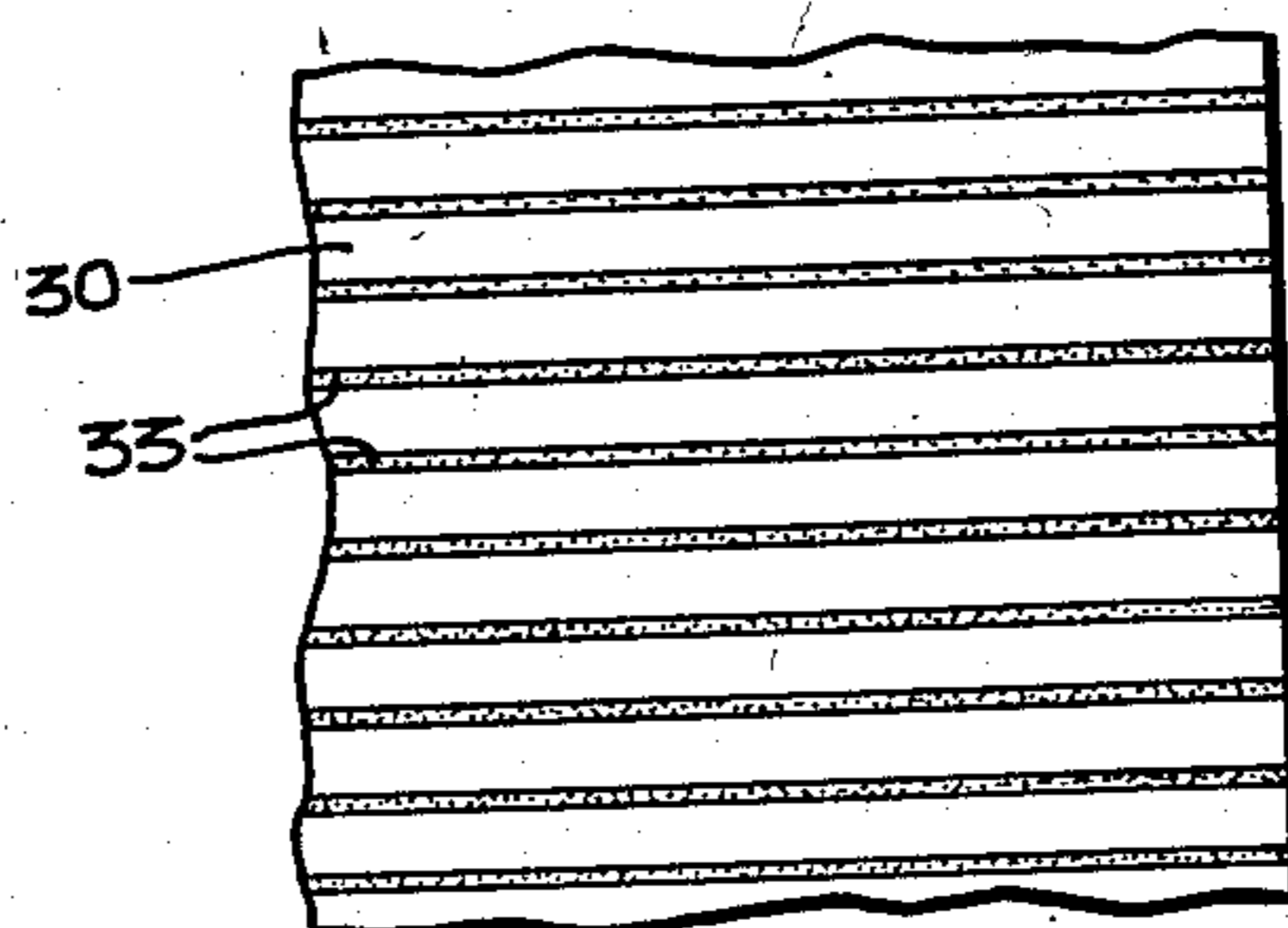


Fig. 4

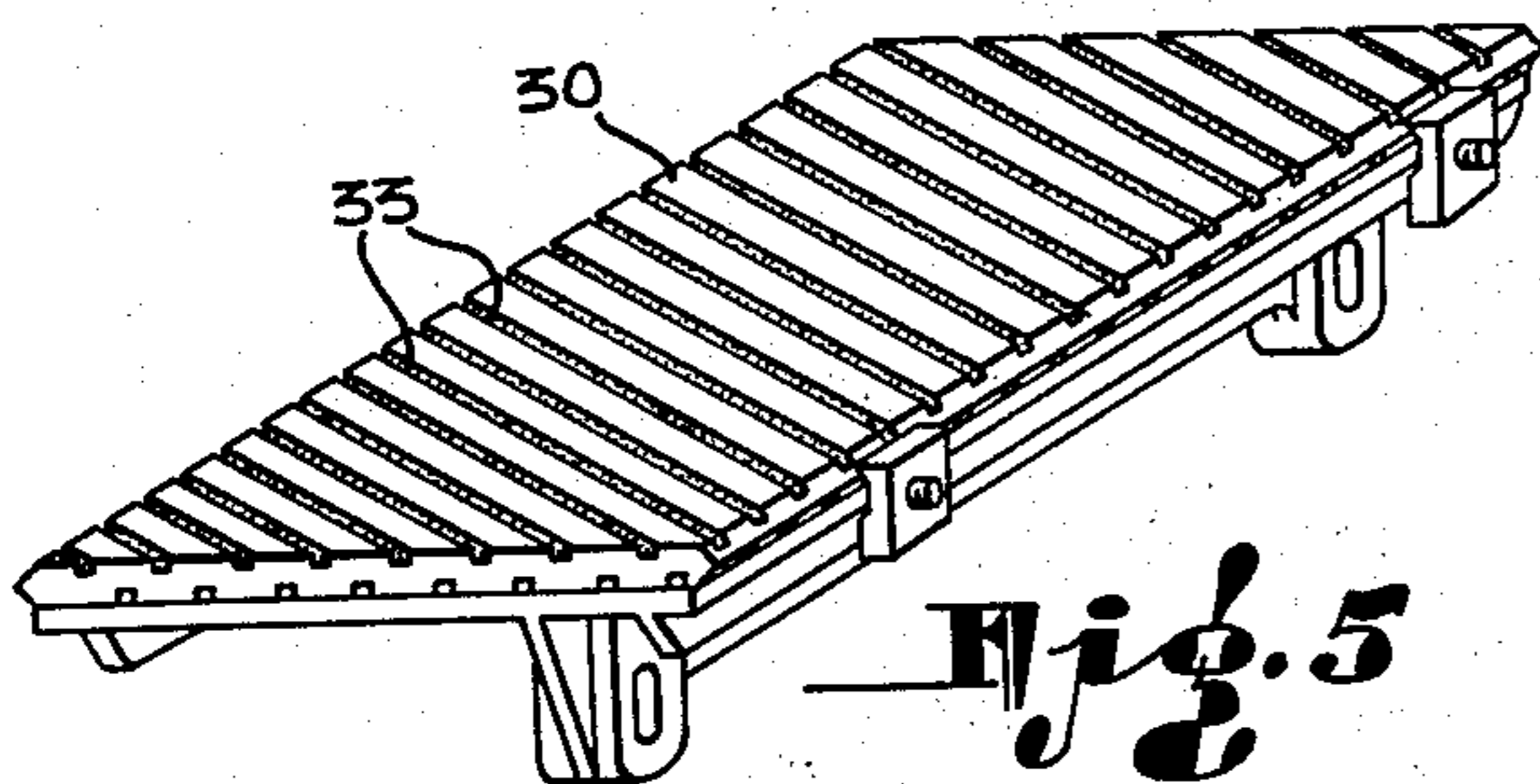


Fig. 5

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PLATEN LUBRICATING MEANS

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3 Claims. (Cl. 51-141)

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This invention relates generally to lubricating means and relates more particularly to lubricating means and method for abrasive machines.

Platens or backing plates on abrasive belt grinders or sanders and the like, are subjected to severe wear due to the friction between said platens or backing plates and the belt backing material which is somewhat abrasive in nature. In addition, the ever present abrasive dusts acting on the dry platens or backing plates contribute substantially to their excessive wear. This wear makes frequent resurfacing of the platens or backing plates necessary, and repeated resurfacings render them unfit for service after a comparatively short period of use. Therefore, the maintenance and replacement of these platens or backing plates represent a serious item of expense in all operations requiring belt grinders or sanders equipped with platens or backing plates.

It is therefore an object of the present invention to provide means and method for overcoming, to a very large extent, the wear above referred to, so that the platens or backing plates will have a life many times longer than heretofore.

Another object of the invention is to provide means and method to minimize the abrasive action on the platens or backing plates of belt grinders or sanders.

Still another object of the invention is to provide lubrication of the platens or backing plates through the use of solid lubricating elements.

A further object of the invention is to provide lubricating means as an integral part of the platen or backing plate assembly.

Another object of the invention is to provide for increased productivity and wear of backing plates or platens.

Still another object of the invention is to provide for decrease in time loss per unit of production on belt grinders or sanders or the like.

A further object of the invention is to reduce the maintenance cost per unit of reduction on belt grinders and sanders and the like.

Other objects and advantages of the invention will appear in the following part of the specification.

Referring to the drawings, which are for illustrative purposes only,

Fig. 1 is a side elevation of a belt grinder or sander having a platen or backing plate embodying the present invention;

Fig. 2 is an enlarged view showing the belt engaging surface of a platen or backing plate

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embodying the lubricating arrangement of the present invention;

Fig. 3 is a fragmentary view of the surface of a platen or backing plate showing an alternative arrangement of the lubricating means;

Fig. 4 is a fragmentary view of the surface of a backing plate or platen showing another alternative arrangement of the lubricating means; and

Fig. 5 is a perspective view of an auxiliary backing plate.

Referring more particularly to Fig. 1, there is shown, by way of example, a belt grinder or sander, comprising a frame 10 which includes a housing 11 providing a chamber 12 having a cover 13 hinged to the housing portion 11 by hinges 14.

Within the housing are upper and lower pulleys 15 and 16 respectively, on which an abrasive belt 17 is operably mounted. The mechanism is operated by a motor or the like, not shown, which is connected to the pulley 16.

The abrasive surface of the belt 17 is exposed through an opening 19 in the front wall of the housing, and a table 20 is located adjacent the lower end of the opening 19 upon which articles being worked upon may rest. Backing means for the abrasive belt is provided at the inner side of said belt and opposite the opening 19, said means being shown as comprising a plate 21 having ears 22 with slots 23 therein for reception of bolts 24, whereby the plate 21 may be adjusted relative to the portion of the abrasive belt passing through the opening 19. Supports 26 are provided in the chamber 12 for reception of adjusting bolts 27, the inner ends of which are adapted to engage the free ends of the ears 22. Lock nuts 28 are provided on the bolts 27 for securing same in adjusted positions, and nuts 29 are received on the bolts 24 for engagement with the ears 22, whereby the plate 21 may be secured in adjusted positions.

A backing plate 30 is secured to the plate 21 by means of clamps 31, so that the backing plate 30 may be disposed in a position to back up the portion of the abrasive belt 17 exposed through the opening 19. The backing plate 30, Figs. 1 and 2, is provided with a plurality of grooves within which is disposed lubricating material 33.

One type of lubricating material which can be used is No. 1 Racer Graphite Leads which are on the market. However, other materials with similar physical characteristics may be satisfactorily used.

Where preformed leads are used they may be

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secured in the slots by a suitable thermal setting bonding cement, various types of which are on the market. The bonding cement is applied in the grooves, and the graphite strips inserted. The assembly is then heated to the required temperature to produce a bond between the backing plate or platen and the lubricators. Thereafter, the platen or backing plate surface may be ground so that the lubricator strips are flush with the face thereof.

Alternatively, the lubricant may be introduced into the groove in the form of a paste which will harden in position. Other methods of securing the lubricating material in the grooves may be used.

One pattern for the lubricating strips is shown in Figs. 2 and 5. In this arrangement the grooves are arranged diagonally of the backing plate. In Fig. 3 the grooves are arranged in a grid-like pattern, and in Fig. 4 the grooves are arranged transversely of the plate. In Figs. 2, 4 and 5 the grooves, and hence, the lubricating strips, are spaced apart in parallel relationship.

In the platen or backing plate shown in Figs. 1 and 5, both surfaces of the plate are grooved and provided with the lubricating material, and this arrangement may also be used in connection with the patterns shown in Figs. 3 and 4. With this arrangement the platen or backing plate, may be reversed, and thus used for a much longer period of time than where only one surface is provided with the lubricating strips.

However, it is to be understood that if desired, only one surface of the backing plate may be provided with the lubricant, and it is also to be understood that if desired, the plate may be provided with lubricating strips in its backing surface.

The pattern arrangement for the lubricating elements will depend on the work for which the machine is primarily designed, and it is to be understood that other pattern arrangements may be used than those herein disclosed. The lubricators should be of such size, shape, location and pattern so that both the lubricator elements and

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the exposed portion of the platen or backing plate will be engaged by the back surface of the abrasive belt.

I claim:

1. In an abrasive grinding machine: a pair of spaced pulleys; an abrasive belt operably disposed on said pulleys; a backing plate positioned in contact with the inner side of said belt, the outer side of said belt being provided with abrasive material, said backing plate having a backing surface over which a pattern is formed by grooves; solid lubricating material secured in said grooves and filling same to provide a smooth and uninterrupted solid pressure resisting surface; and supporting means for said backing plate.

2. In a backing plate for an abrasive grinding or sanding machine, comprising a belt backing surface having a pattern formed by grooves in said surface; and solid graphite lubricating material in said grooves and filling same to present a smooth and uninterrupted solid pressure resisting surface.

3. In a backing plate: a belt backing surface having grooves therein; and solid lubricating material filling said grooves and providing a substantially level uninterrupted pressure resisting surface.

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