

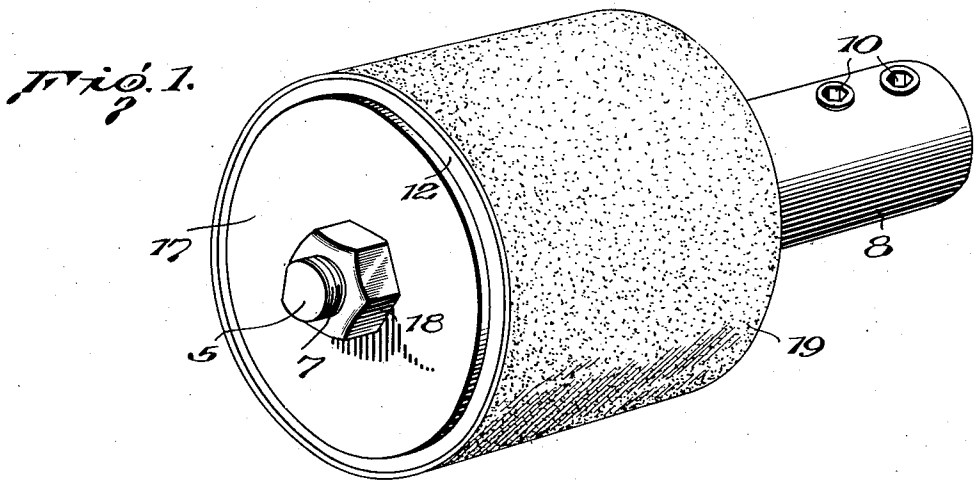
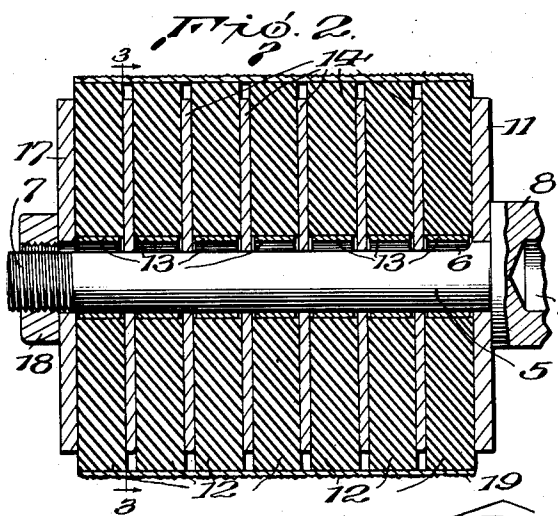
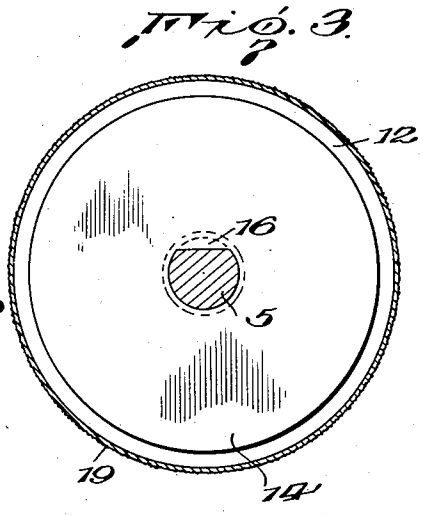
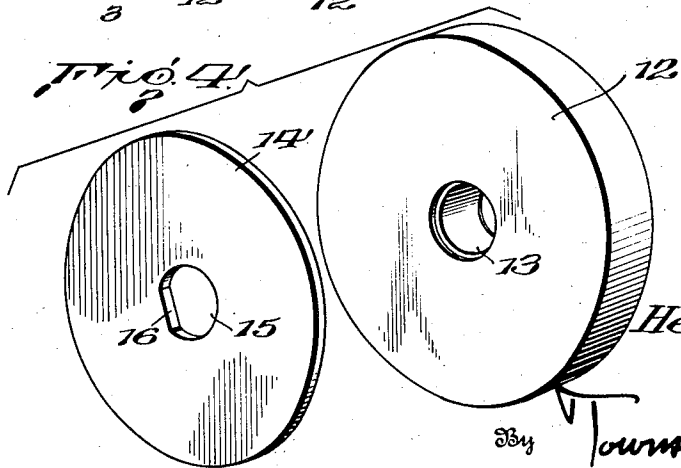
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SURFACING TOOL

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SURFACING TOOL

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This invention relates to rotary surfacing tools and has particular application to the construction of abrading tools known as sanding drums.

5 An object of the invention is the provision in a rotary surfacing tool of a novel mounting for the work engaging element thereof whereby a uniform bearing and resilient support is provided for the entire effective surface of the work engaging element.

10 Another object is the provision of a surfacing tool having a support for a work engaging element, which support possesses inherent resiliency and which is adapted to be forced into holding engagement with the work engaging element.

15 A further object is the provision of a sanding drum having an inherently resilient supporting base for receiving a sanding sleeve and which is provided with means for internally expanding the base into uniform holding and bearing engagement against the inner face of the sanding sleeve. Other details will be apparent from the description.

20 It is to be understood that the present disclosure shall not constitute a limitation inconsistent with the scope of the invention as claimed. The present disclosure defines a physical embodiment of the principles of this invention and constitutes a showing of a preferred means for reducing the invention to practice. While the disclosed form has specific reference to a sanding drum it is obvious that the principles can have application to any form of surfacing tool.

In the drawing:

Figure 1 is a perspective of a sanding drum constructed in accordance with the invention.

40 Figure 2 is a vertical longitudinal section therethrough.

Figure 3 is a transverse section on the line 3-3 of Figure 2.

45 Figure 4 is a group perspective of internal elements of the drum.

In the disclosed embodiment the invention consists of a support in the form of a spindle 5 provided with a longitudinal keyway 6 and externally threaded at one end 7. At its opposite end the spindle is formed with an en-

larged head 8 provided with a socket bore 9 whereby the spindle may be attached to a driving element by means of suitable fastening elements, here shown as hollow head set screws 10.

55 In making up the tool a metal end plate comprising a disk 11 is slid axially over the spindle from its threaded end to rest against the head 8, the plate being provided with an annular central bore so that a spindle may be inserted therethrough. Following the application of the end plate 11 a substantially resilient core is applied over the spindle in the same manner. As best shown in Figure 2, this core consists of a series of parallel disks or washers 12 of resilient material such as rubber. These washers are provided with central annular bores within which are received metal bushings 13 having a width less than the thickness of the washers. By virtue of the bushings 13 the washers 12 are capable of rotary and axially slidable movement of the spindle in the assembly of the tool.

60 The series of members 13 is spaced by means of nonresilient spacer disks 14 of a suitable material, preferably bakelite, which are centrally apertured as at 15 to engage over the spindle, and which have chordial portions 16 adapted to be engaged in the longitudinal keyway 6 of the spindle so that while these spacer disks may be slid axially upon the spindle, rotary movement thereon is prevented. These spacer disks 14 are of appreciably smaller diameter than the annular resilient members 12. At the outer end of the spindle adjacent the threaded end portion 7 a second metal end plate 17 is disposed over the spindle and is held in place by a securing nut 18 threaded over the spindle end.

65 Prior to service the assembled spindle and core are arranged so that the resilient members 12 and spacer disks 14 have a relatively loose engagement with respect to their mounting upon the spindle. A work engaging band here shown as a sanding sleeve 19, is then applied over the core by sliding the same axially thereover from one end. The peripheral faces of the resilient washers 12 provide a supporting surface for the sanding sleeve.

and as under normal assembly conditions the maximum external diameter of the members 12 is only slightly less than the internal diameter of the sanding sleeve, the sleeve may be readily positioned over the core and will have relatively loose support thereon.

With the sleeve or work engaging band properly assembled with respect to its resilient supporting core the nut 18 is tightened to clamp against the end plate 17 and force the same axially inward whereupon all of the resilient core members 12 will be compressed between the plates 11 and 17. A continued compression by manipulation of the nut 18 will cause a radial expansion of the members 12 so that their peripheral surfaces will expand uniformly throughout their entire area. This expansion effectively binds the resilient members against the inner face of the sanding sleeve so that the sleeve is firmly anchored with respect to the core and cannot move with respect thereto. At the same time this firm anchorage of the sanding sleeve is accomplished without a loss of resiliency in its support as the material of the members 12 provides an effective resilient filler means existing between the supporting spindle and the sanding sleeve.

It is obvious that the bushings 13 will in themselves constitute a means acting to limit the compressing movement of the plates 11 and 17 as the spacer disks 14 will ultimately be moved into direct engagement with the bushing ends to prevent an undesirably high degree of compression such as would so expand the core sections as to impart a bursting strain to the sanding sleeve.

I claim:

1. A rotary surfacing tool comprising a spindle, annular core sections of resilient material axially slidable thereon, non-resilient spacer disks slidable on the spindle and between said core sections, and means on said spindle for forcing said core sections into radial expansion to bind and hold a work engageable sleeve thereon when applied thereover.

2. A surfacing tool comprising a spindle, a series of annular rubber washers arranged thereon in parallel relation, non-resilient spacers between said washers, end plates on said spindle and bearing upon said washers, a work engageable sleeve slidably applicable over the peripheries of said washers, and means for moving an end plate axially inward of the spindle whereby to force the washers into radially expanded holding engagement with said sleeve.

3. In a rotary surfacing tool, a spindle, a core thereon composed of annular sections of resilient material and uniform thickness each being provided with a central bore, non-resilient bearing sleeves in the section bores and of an axial extent less than the thickness of the sections, non-resilient spacer

members separating said core sections, and means for compressing the core section axially of the spindle to cause radial expansion thereof, the ends of said bearing sleeves and the spacer members being engageable under such compression to limit the extent thereof.

4. A rotary surfacing tool comprising a spindle, a series of annular rubber core sections of equal diameter axially movable on said spindle and disposed in parallel relation, rigid spacer discs axially slidable on said spindle and disposed between said core sections, the diameter of said spacer discs being less than the core sections, end plates on said spindle and bearing against the end core sections, a work engageable sleeve applicable over the peripheries of the core sections, and means for moving an end plate axially inward on the spindle whereby to compress the core sections between said end plates and spacer discs and expand the core sections radially into holding engagement with said sleeve.

In testimony whereof I affix my signature.
HERBERT E. TAUTZ.

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