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TOOL OR CHUCK FOR THE FINISHING AND GRINDING OF WORK IN PROSTHETICS

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Fig. 1.

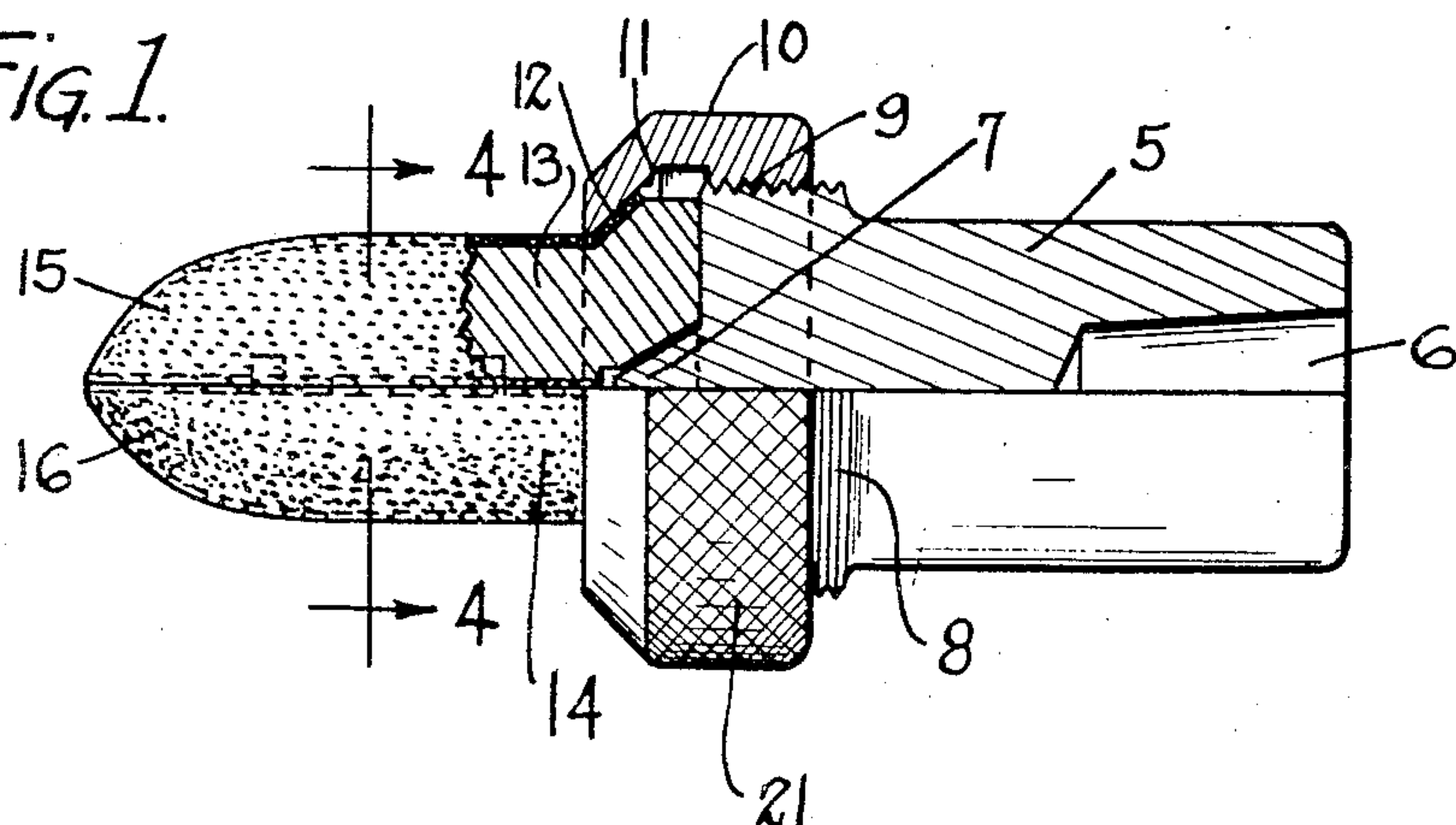


Fig. 2.

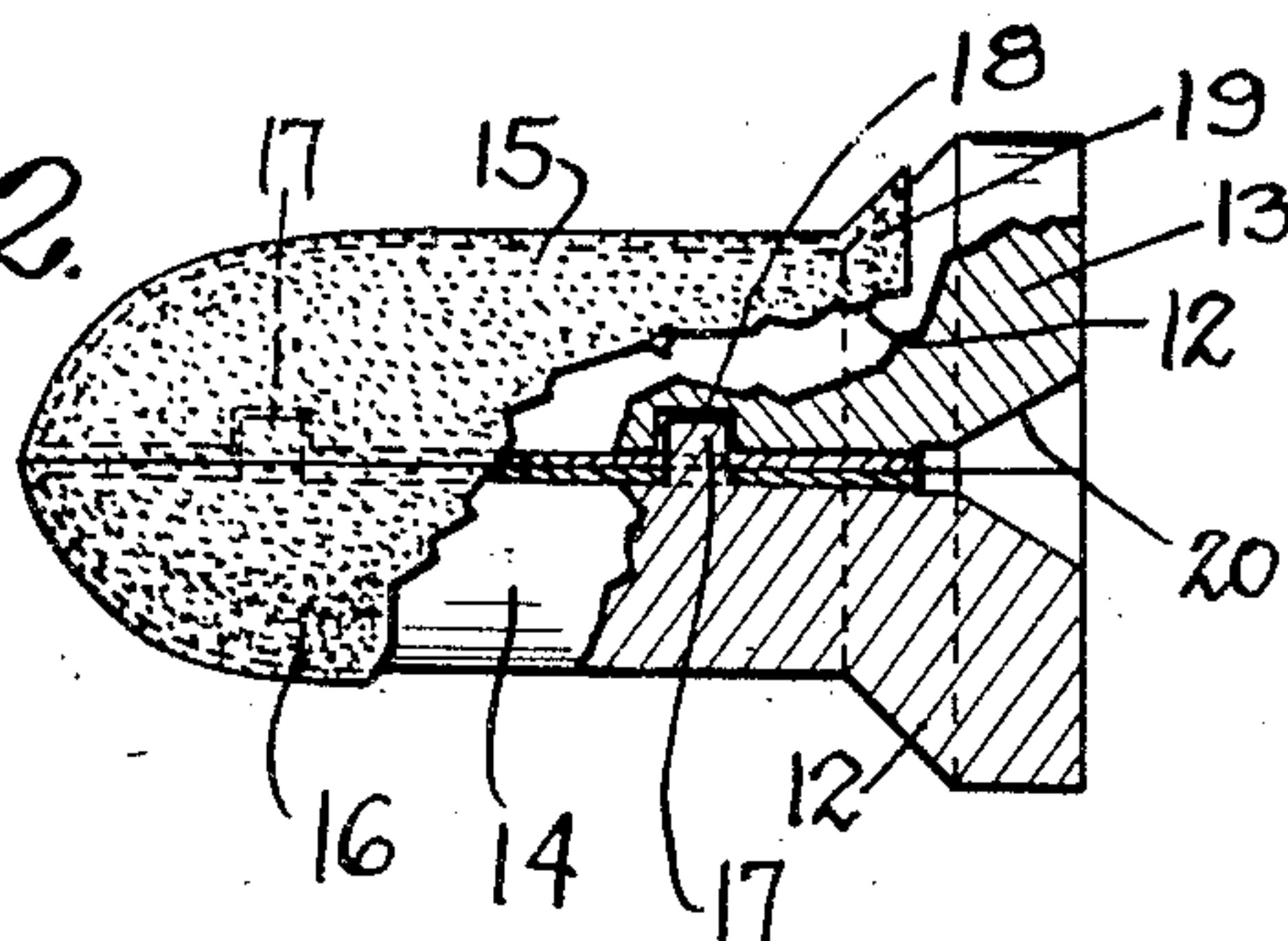


Fig. 3.

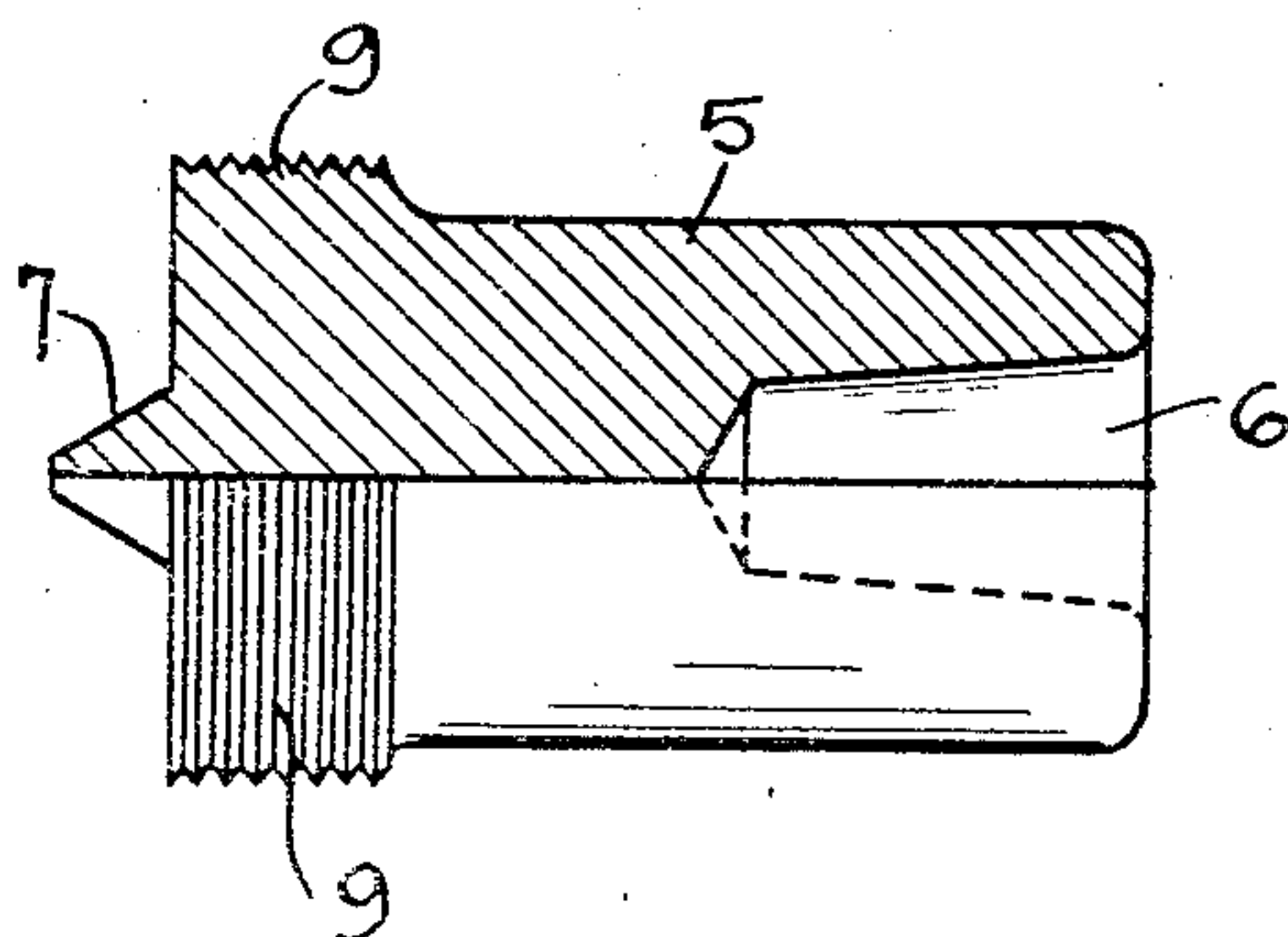
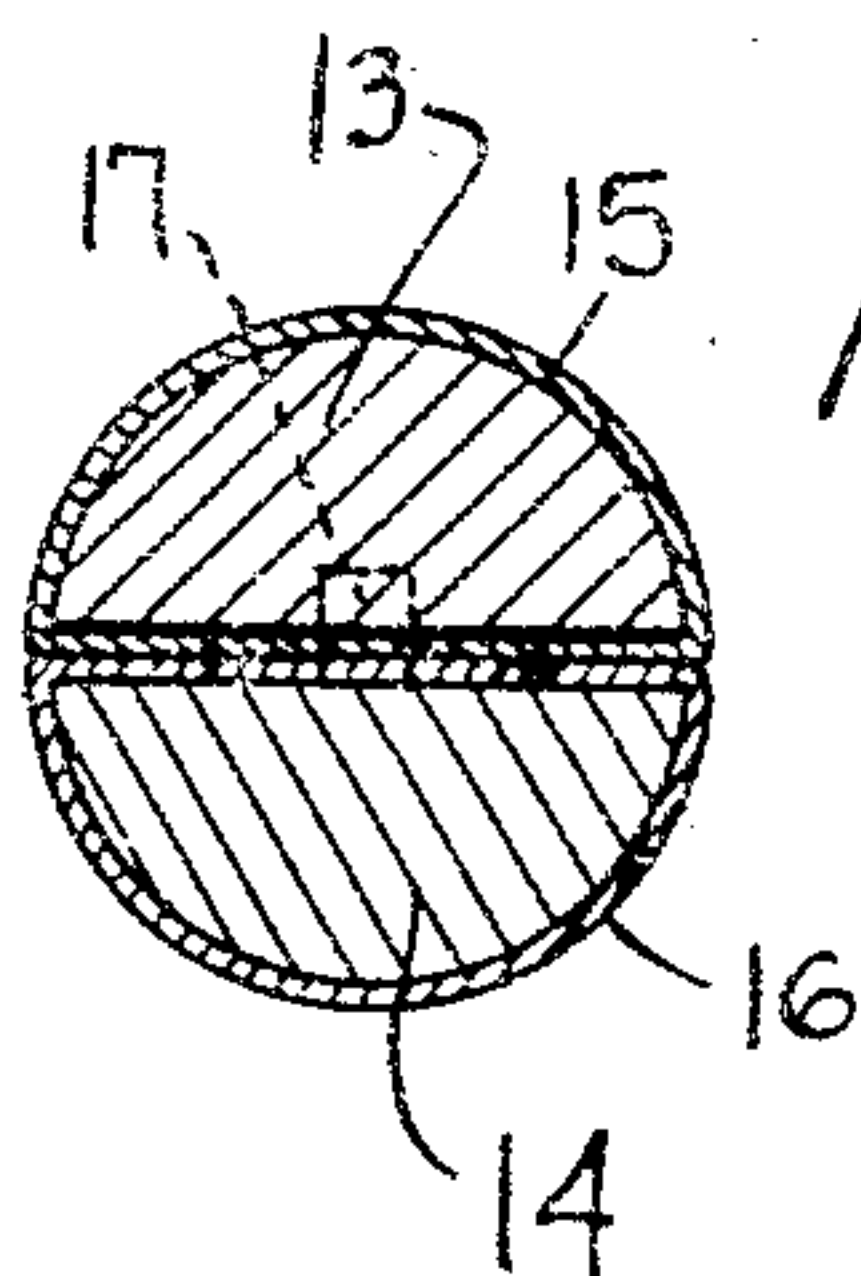


Fig. 4.



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TOOL OR CHUCK FOR THE FINISHING AND GRINDING OF WORK IN PROSTHETICS

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This invention relates to a tool in the nature of a chuck for holding sheets of abrasive or polishing materials which are used in the finishing of work in prosthetics, such as the finishing or buffing of dentures or other plates which must be acted upon by a number of different kinds of abrasives or polishing materials quickly and in succession and to this end, we have provided a tool which may be removed from or placed on a rapidly revolving spindle by hand without possibility of injury to the worker so that the machine does not have to be stopped and thus time is saved and the cost of the work reduced to a minimum.

An important object of our invention is to provide in a tool of the character referred to, an assembly of parts that provide for the locking over a split mandrel, a plurality of sheets of abrasive or polishing materials which can be quickly replaced when the same becomes worn.

Changes and variations may be made in the construction shown and described without departing from the principles of the invention or sacrificing its chief advantages; hence such invention is not to be confined to the structures shown in the accompanying drawings; in which

Figure 1 is a view in elevation, a part thereof being shown in section of a tool constructed in accordance with our invention.

Figure 2 is a view in elevation of the mandrel portion of the tool, parts thereof being shown in section to disclose how they fit together to hold in position thereon, a sheet of abrasive or polishing material.

Figure 3 is a view in elevation of the socket member constituting a portion of the tool, a part thereof being shown in section to facilitate illustration, and

Figure 4 is a section taken on the line 4—4 of Figure 1 showing how the sheets of abrasive or polishing material are held in position.

Referring to the drawings in detail, 5 indicates a socket member having a socket bore 6 provided in the end thereof and reduced at its opposite end to form a tapered cone section 7 adjacent to which is formed, the socket

thread 8 arranged to receive the threaded portion 9 of a sleeve nut 10. This sleeve nut is provided with a beveled, annular surface 11 on its interior which is arranged to cooperate with the bevelled portion 12 of the semi-cylindrical mandrel members 13 and 14, which, as illustrated in Figure 2, are separable on their median line and are arranged to hold between them and on their outer surface, the sheets 15 and 16 of abrasive or polishing material, the ends of the sheets being disposed between the members 13 and 14 and arranged to be pierced by the assembly dowels or pins 17 which engage into suitable teeth 18 formed in the adjacent mandrel section 15.

The material in sheet form for the purpose of polishing or grinding the work is so cut that its inner ends 19 is positioned between the beveled surface 12 formed on each of the mandrel halves 13 and 14 and the beveled annular surface 7 of the sleeve nut 10 so that when the nut is threaded down on the thread 8 of the socket 5, it will not only force together the mandrel parts 13 and 14 but will securely hold the sheets of polishing material in place on the exterior thereof. The cone end 7 of the socket fits into a conical bore 20, one-half of which is formed in each of the halves of the mandrel members 13 and 14. The cone is for the purpose of keeping the two halves of the mandrel closed and centered so that when the chuck is frictionally forced on to the end of a revolving spindle, (not shown), the mandrel part will be fixed centrally and the polishing or abrasive operation can be carried on with accuracy.

The outer surface of the sleeve nut 10 is knurled as at 21 to provide a hand grip so that the parts may be taken apart manually and subsequently assembled after the polishing or abrasive material is positioned over the mandrel part.

The pin 17 employed in the mandrel part 14 may be cone shaped, if desired so as to facilitate the placing thereover of the ends of the material to be held around the outside of the mandrel part.

It is evident, therefore, that we have provided an improved tool or chuck that will grip abrasive or polishing materials in such

a manner as to make possible the shaping of materials to be operated upon in any form desired and to provide a tool or chuck that is easily applied and removed without trouble
5 of stopping the motor driven spindle and also a tool that may be taken off a revolving spindle and replaced without stopping the spindle and without danger of damage to the hands of the operator.

10 Our invention is not to be restricted to the precise details of construction shown since various changes and modifications may be made therein without departing from the scope of the invention or sacrificing the ad-
15 vantages derived from its use.

What we claim is:—

In a device of the character described, a socket having a centering cone at one end, a spindle opening at the opposite end and a
20 threaded intermediate portion, a plurality of semi-cylindrical mandrel pieces having a cavity for the reception of said cone and a bevelled outer surface, a nut arranged for threaded engagement with the threaded por-
25 tion of the socket and having a bevelled surface for engagement with the bevelled surface of said mandrel to hold therebetween a piece of polishing material.

In testimony whereof we affix our signa-
30 tures.

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