May 13, 1969 H. L. NEDSTEN 3,443,457

METHOD FOR MAKING CHIPPING TOOLS FOR SPIRAL CHIPPERS

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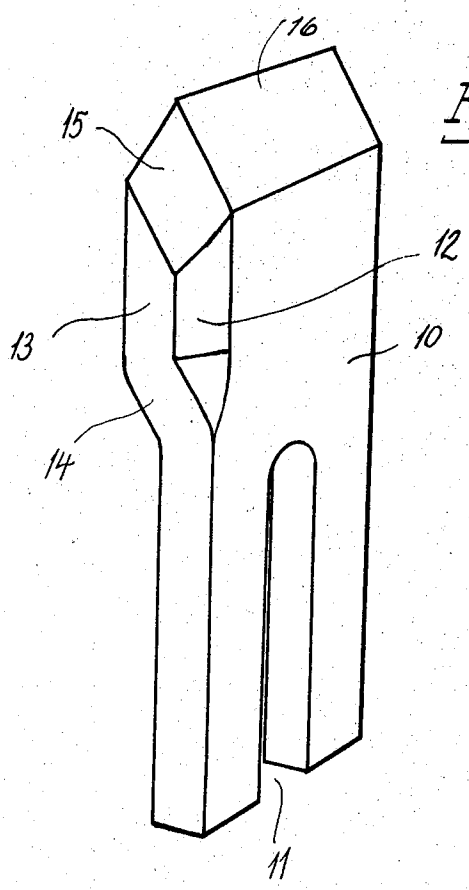


Fig. 1

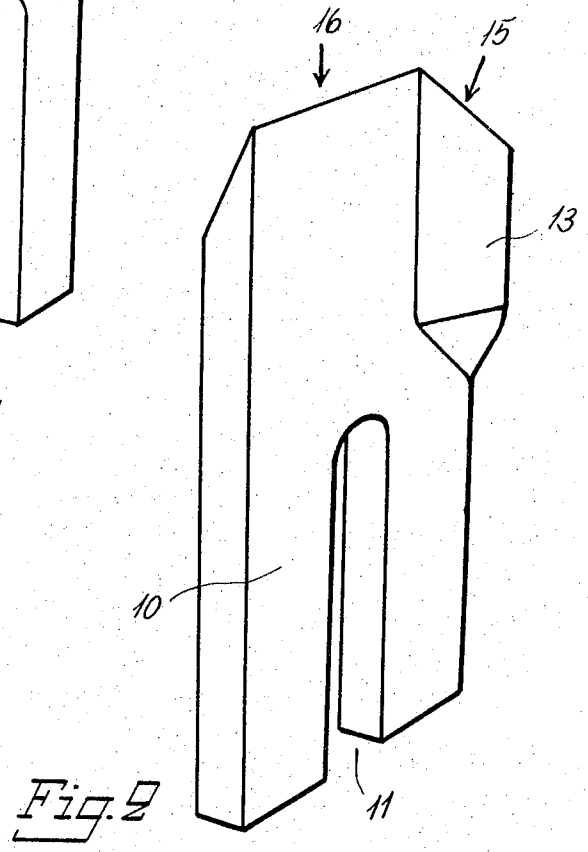


Fig. 2

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METHOD FOR MAKING CHIPPING TOOLS FOR SPIRAL CHIPPERS

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ABSTRACT OF THE DISCLOSURE

This invention pertains to chipping tools used for producing wood chips within the cellulose industry. The tool is designed so as to prevent damage to the chips by crushing and to impart a uniform thickness to the chips. This object is achieved in that the tool is heated and one corner zone thereof is swaged or pressed up to form a cutting heel, the cutting edges of which are then ground as required.

The present invention relates to a method for making chipping tools for spiral chippers, which are preferably but not exclusively intended to be inserted in machines of the type represented by the apparatus according to U.S. Patent 3,219,076, and which are also intended to produce wood chips for use within the cellulose industry, in a manner which prevents damage to the chips by crushing and which gives a uniform chip thickness.

Pursuant to one alternative in the previous manufacture of such chipping tools, flat chipping tool blanks of determined thickness, including working tolerances, have been used. According to a second alternative a section, rolled material has been used. However, in both of the previous cases it has been necessary to grind away valuable material when shaping the cutting heel from the starting blank.

Furthermore, chipping tools of this type present the disadvantage that as the steel in the side edge of the chipping tool on the working side is ground away a V-shaped groove appears which weakens the material strength of the tool in a critical zone.

The present invention is intended to eliminate the aforementioned disadvantages and is mainly characterized in that starting from a heated flat steel blank a corner zone of the said blank is swaged up to form a cutting heel, which is caused to project beyond the one flat surface of the blank, whereafter the chipping edge zone is ground.

The invention also relates to a chipping tool made according to the method.

The invention will now be described below with reference to an embodiment shown diagrammatically in the accompanying drawing; further characteristic features of the invention being disclosed in conjunction therewith.

FIG 1 shows a perspective view from below of a chipping tool made according to the invention.

FIG. 2 shows, also in perspective, a view from above the chipping tool shown in FIG. 1.

Th ereference numeral **10** in FIGS. 1 and 2 indicates an original, substantially parallelepipedic starting blank, from which the chipping tool in question is made and, which is suitably made of steel, preferably self-hardening steel. A longitudinal groove **11** has been arranged in the said starting blank for the purpose of clamping the chipping tool in the machine, in a manner known per se.

According to the method of the invention, subsequent to raising the temperature of the starting blank, the material of said blank is pressed upwards from the bottom at one corner zone, in a direction towards the top of the starting blank, in such a way that a recess **12** appears on the under surface at the same time as a so-called cutting heel **13** is formed by the swaged material, at the top of the starting blank **10**. From the point of view of material strength, the offset portion **14** thereby gives an advantageous integrating material unity between the cutting heel and the start blank in general.

If a self-hardening material is used in conjunction with the method of the invention it is possible to effect both the shaping and hardening of the tool in substantially one and the same working operation.

Subsequent to the chipping tool having been shaped in the manner described, the cutting edges **15** and **16** can be ground to the required cutting angles. These edges can then be re-ground as the tool becomes worn. The method according to the invention grants an increase in the degree of utilization of the tool, by approximately 10% and, moreover, a more stable design of the cutting heel.

The invention is not restricted to the shown and described embodiment of the same but can be varied arbitrarily within the scope of the following claims.

What is claimed is:

1. A method for making chipping tools for use with spiral chipping machines, characterized in that starting from a heated flat steel blank (**10**), a corner zone (**13**) of said blank is pressed up to form a cutting heel which is caused to project beyond the one flat surface of the blank, whereafter the cutting edge zone (**15, 16**) is ground.

2. A method as claimed in claim **1**, characterized in that the steel blank is made of self-hardening material and that shaping and hardening operations are effected in substantially the same working operation.

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BERNARD STICKNEY, *Primary Examiner.*

U.S. Cl. X.R.

72—377; 144—240