Nov. 4, 1930. E. S. SHIMER ET AL 1,780,846

CUTTER HEAD

Filed June 19, 1928

Fig. 1.

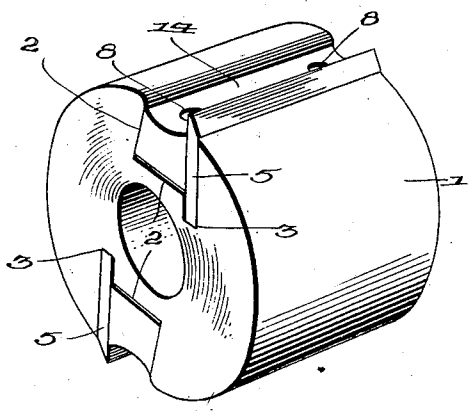
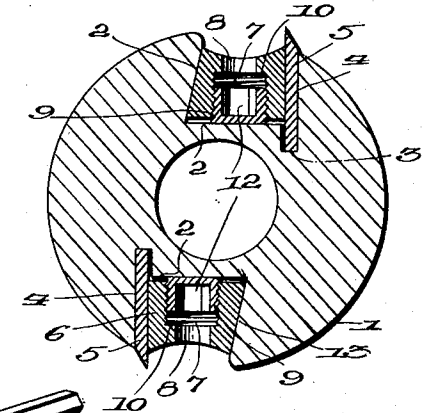


Fig. 2.



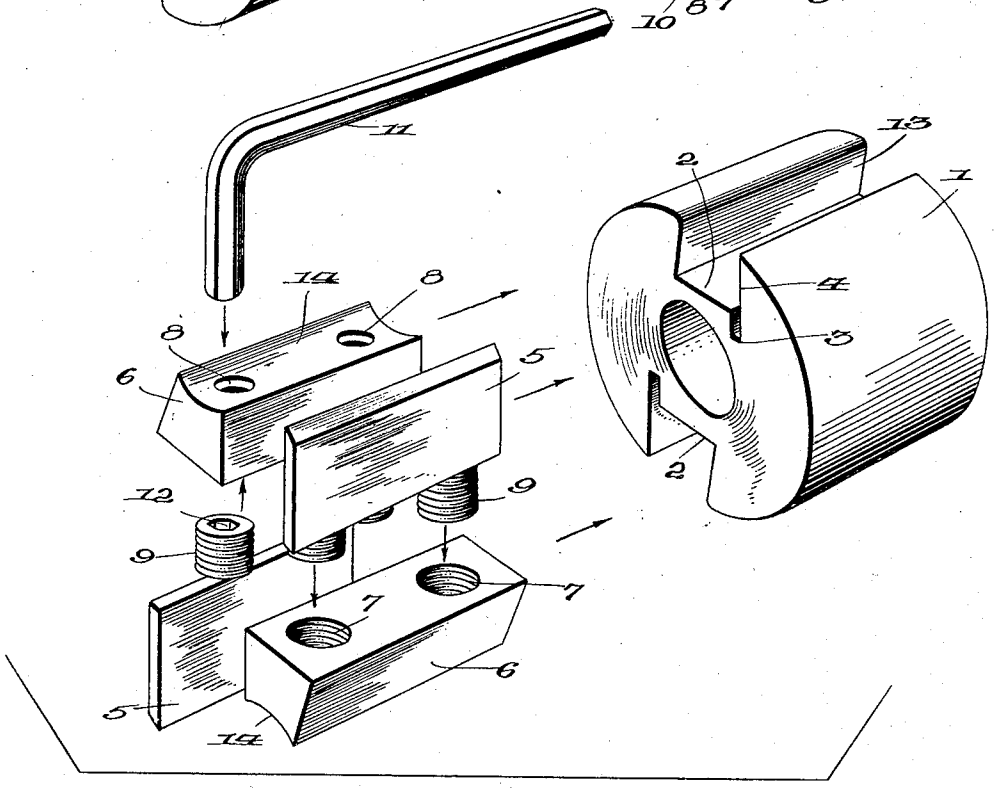


Fig. 3.

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UNITED STATES PATENT OFFICE

ELMER S. SHIMER AND HAROLD L. SHIMER, OF MILTON, PENNSYLVANIA, ASSIGNOR TO SAMUEL J. SHIMER & SONS, OF MILTON, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

CUTTER HEAD

Application filed June 19, 1928. Serial No. 286,667.

Our invention relates to an improvement in cutter-heads.

This present invention refers more particularly to that variety of cutter-heads used for the surfacing of lumber and it applies to planing and matching machines, tenoning machines, shapers, etc., and in fact it will apply to almost every variety of wood-working and wood-working machinery.

The particular feature that we wish to emphasize is the bit-holding device which includes a wedge-shaped block, preferably rounded out or concaved on its outer surface, thereby serving to turn the chip just under or beneath the edge of the knife. This block is fitted to a channel of corresponding shape, and a lock-screw or screws, threaded into it and entering from the inner surface of the block, is or are accessible through a hole in the outer surface to receive a wrench whereby the screw or screws are backed off or turned rigidly against the lower surface of the channel, thus forcing the block outwardly against the adjacent surface of the knife, forcing the latter rigidly against the wall of the channel, where it is held rigidly in place.

In the accompanying drawings: Fig. 1 is a view of a cutter-head in perspective;

Fig. 2 is a transverse section;

Fig. 3 is a view of the several parts of our improved cutter-head detached and disassembled, but shown in position to be assembled.

The numeral 1 represents a cylindrical cutter-head made of solid metal as is customary. In the particular type illustrated, there are two channels indicated by the numeral 2 at opposite points. Obviously any number of these channels might be employed, and since they are all alike we shall proceed to refer hereinafter in the singular instead of the plural. The channel has a groove 3 at one side following down and forming a continuation of the wall 4 of the channel; and the inner edge of the knife 5 is seated in the groove 3 and rests against the wall 4, where it is rigidly held by our improved locking and clamping mechanism.

This locking and clamping mechanism consists of a wedge-shaped block 6 corresponding in shape with the channel 2 and adapted to slide into the latter endwise where it fits loosely when first inserted.

One or more holes are counterbored through the block, and these holes are preferably on two diameters, the hole 7 of larger diameter having the screw-threads, and the smaller-bored hole 8 may be without threads.

A hollow set-screw 9 is threaded into the threads of the hole 7 and being of greater diameter than the hole 8 can only turn in the restricted space between the bottom of the channel 2 and the shoulder 10 formed between the two holes 7 and 8.

The hollow set-screw 9 is reached by a hexagonal wrench 11 shown in Fig. 3 through the hole 8, and is received by a hexagonal opening 12 in the center of the hollow set-screw. When this wrench is turned one way, it will tighten the knife by crowding the wedge-shaped block outwardly against the knife on one side, and the sloping wall 13 of the channel on the other side, by forcing the hollow set-screw inwardly against the inner wall or bottom of the channel 2, and thus making a very simple and rigid lock. Thus a powerful pressure is exerted upon the knife to hold it in place when the cutter-head is revolving and cutting wood.

When the wrench 11 is turned the opposite way, it will loosen the knife.

The knives are preferably of the thin steel variety known in the trade as high-speed steel, although any good style will serve the purpose so long as it is uniform in thickness, and suitable to be subjected to the needs of the wedge-shaped block.

The wedge-shaped block 6 is rounded out or concaved in its outer surface as shown at 14 to turn the chip just under or beneath the edge of the knife.

This device has also an advantage of closing up all openings that may effect running balance by gum and chips.

We claim:

A cutter-head of the character described comprising a body portion having a channel formed in a side thereof, the walls of said

channel converging toward the periphery, said channel having an extended groove at a corner thereof, the base of the channel being flat and smooth from said groove to the opposite side wall, a knife disposed in said groove, a wedge-shaped block disposed in the channel and having an approximately flat under side to normally fit against the flat base of the channel, said block having a hole extending radially therethrough and of two different bores with a shoulder therebetween, the larger portion of the hole being innermost and screw-threaded, and a set-screw threaded into said larger portion and having a recess to receive a tool, the inner end of the set-screw being approximately flat to bear against the flat base of the channel.

In testimony whereof we affix our signatures.

ELMER S. SHIMER.
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