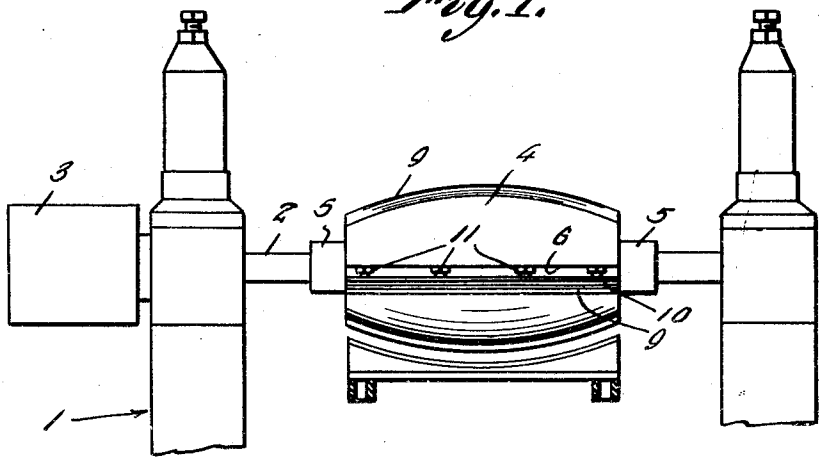
Dec. 1, 1931. E. R. NORTON ET AL 1,834,034

STAVE PLANER CUTTER HEAD

Filed Oct. 15, 1930 2 Sheets-Sheet 1

Fig. 1.



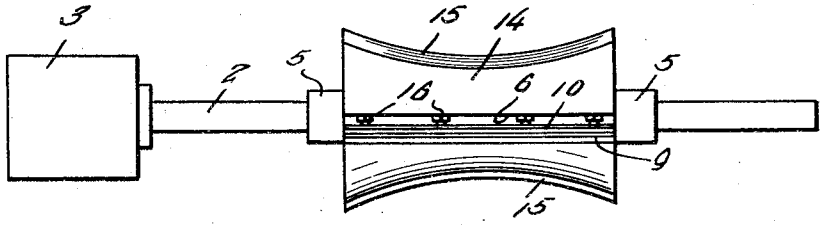




Fig. 2.

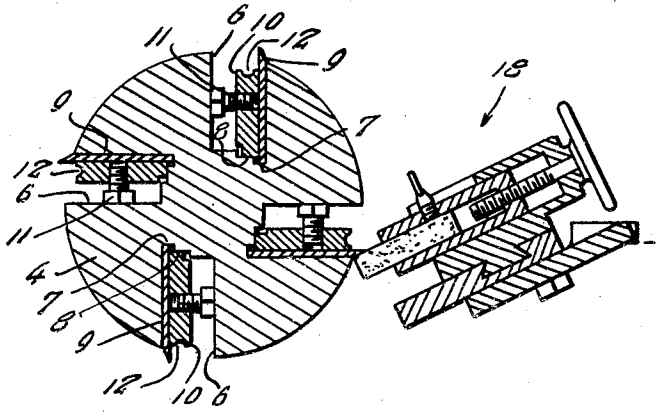



Fig. 6.

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Fig. 3.

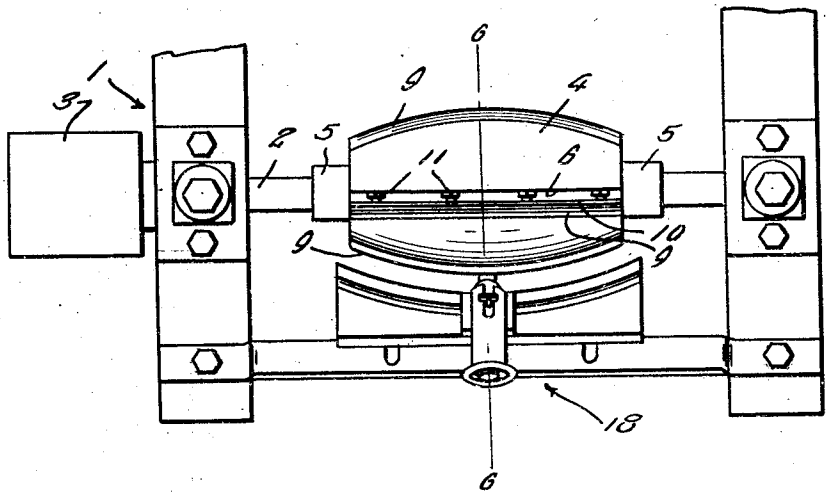



Fig. 4.

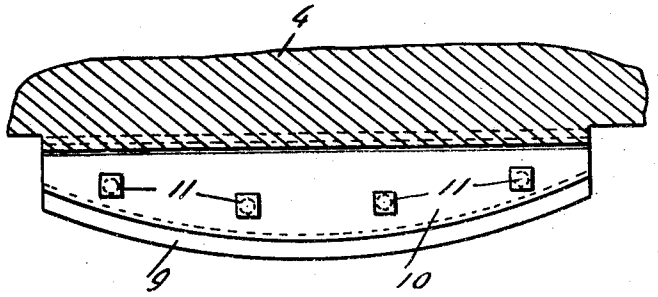
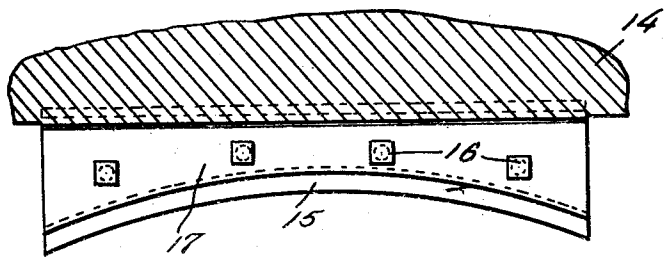



Fig. 5.

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# UNITED STATES PATENT OFFICE

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## STAVE PLANER CUTTER HEAD

Application filed October 15, 1930. Serial No. 488,906.

This invention relates to barrel stave planing machines generally and more particularly to a cutter head for machines of this character but it is to be understood, of course, that a cutter head in accordance with this invention may be used in connection with any type of woodworking or other machines for which the same is found adapted and desirable.

An important object of the invention is to provide, in a manner as hereinafter set forth, a cutter head for barrel stave planing machines embodying a novel construction and arrangement of knives together with novel means for frictionally clamping the knives in position for use.

Other objects of the invention are to provide a cutter head of the character described which will be simple in construction, strong, durable, efficient in operation and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention may become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:—

Figure 1 is a view in front elevation of a portion of a stave planing machine showing a cutter head constructed in accordance with this invention mounted in position thereon.

Figure 2 is a view in front elevation of a cutter head in accordance with this invention to be used for planing the outside of the staves.

Figure 3 is a top plan view of the form of the invention illustrated in Figure 1 which is for use in planing the inner side of the staves.

Figure 4 is a fragmentary sectional view through the head used for planing the inner side of the staves and showing a knife mounted thereon.

Figure 5 is a fragmentary sectional view through the cutter head which is used for planing the outside of the staves and showing a knife in position thereon.

Figure 6 is a vertical transverse sectional view taken substantially on the line 6—6 of Figure 3.

Referring to the drawings in detail, it will be seen that the reference numeral 1 designates generally the upper front frame portion of a conventional barrel stave planing machine in which is journaled transversely a shaft 2 having one end projecting laterally of the frame 1 and having fixed thereon a pulley 3 for receiving a suitable drive belt (not shown) for operating the shaft 2 from a suitable source of power. As seen in Figures 1, 3, 4 and 6 of the drawings, a convexed head 4 is mounted in any suitable way on an intermediate portion of the shaft 2 and is provided with the integral, reduced extensions 5 at its ends.

Circumferentially spaced channels 6 extend longitudinally from end to end of the cutter head 4 and said channels have their inner walls provided, on one side, with longitudinally extending grooves 7 which are coextensive with the channels 6. Each channel 6 is further provided with a shallow groove having one side opening out into the groove 7 and its other side forming a shoulder 8 at its junction with the remaining part of the inner wall of the channel. As clearly seen in Figure 6 of the drawings, the shoulders 8 are disposed intermediate the planes of the bottom or inner walls of the channels 6 and the bottom walls of the grooves 7. The channels 6 are disposed off center with respect to the lateral axis of the cutter head 4.

A knife 9 is disposed longitudinally in each of the grooves 7 in abutting engagement with the adjacent side of the channels 6 and said knives 9 are provided with a convex cutting edge 10 which projects beyond the periphery of the cutter head 4. The cutting edge 10 of each knife conforming substantially to the contour of the cutter head 4. It will be noted that the arrangement of the channels 6 in the cutter head 4 is such that the walls of said channels against which the knives 9 are disposed are terminated inwardly of the outer ends of the opposite walls of the channels 6. Pressure plates 10 are disposed in the channels 6 for abutting engagement with the knives 9 with their inner

edges located in the shallow groove with the shoulders 8 acting as means for limiting the outward movement of the plates and each of the plates 10 is provided with a plurality of transverse threaded openings for receiving the headed bolts 11. The heads of the bolts 11 abut the walls of the channels 6 which are free of the knives 9, for clamping the plates 10 against the knives 9 upon rotation of the bolts 11 in a manner to frictionally secure the knives in position. The outer edge of each of the plates 10 is provided with a longitudinal groove 12.

The form of cutter head illustrated in Figures 2 and 5 of the drawings is for planing the outer side of the staves and to this end the head 14 is concaved as are also the cutting edges 15 of the knives. The clamping bolts 16 which secure the knives in position are arranged as best illustrated in Figure 5 of the drawings and the bolts 11 which secure the knives 9 in position are arranged as seen in Figure 4 of the drawings. The knives having the concave cutting edges 15 as seen in Figures 2 and 5 of the drawings are designated by the reference numeral 17. In all other respects the form of the invention illustrated in Figures 2 and 5 of the drawings is similar to that form of the invention illustrated in Figures 1, 3, 4 and 6.

After the knives are set in their respective cutter heads, it has been found necessary that the same be jointed before the machine is placed in operation and to facilitate this operation a jointing tool is mounted in position on the supporting frame 1 for operative engagement with the cutting edges of the knives. This jointer is designated generally by the reference numeral 18.

As will be readily apparent, the knives may be expeditiously adjusted and secured in position in the cutter heads. A cutter head in accordance with this invention has been found to practically eliminate torn staves and waste of timber. It will further be readily apparent that the cutter heads constituting this invention conform substantially to the cross sectional shape to which the staves are to be cut or planed. While but four knives have been shown mounted in position in the heads any desired number of knives may be provided, it being only necessary to increase the diameter of the heads to accommodate more knives. The pressure plates 10 also function as chip breakers.

It is believed that the many advantages of a device constructed in accordance with this invention will be readily understood, and although the preferred embodiments of the invention are as illustrated and described, it is to be understood that changes in the details of construction may be had which will fall within the scope of the invention as claimed.

What is claimed is:—

A device of the character described comprising a head having a longitudinal channel therein, the inner wall of the channel having a deep longitudinal groove in one side thereof, and a shallow groove having one side opening out into the deep groove, the opposite side of the shallow groove forming a shoulder at its junction with the rest of said inner wall, a knife disposed longitudinally in the channel in abutting engagement with a side wall of the channel and having its inner edge located in the deep groove, a pressure plate in the channel and having its inner edge located in the shallow groove, and operatively engageable with the knife, said pressure plate being provided with a plurality of threaded, transverse openings, and headed bolts threaded into the openings and having their heads engageable with a side wall of the channel for engaging the pressure plate against the knife upon rotation of the bolts in one direction in a manner to frictionally clamp the knife in position, the outer edge of the pressure plate having a longitudinal groove therein.

In testimony whereof we affix our signatures.

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