

H. SCHNEIDER.
 GROZE CUTTING TOOL.
 APPLICATION FILED OCT. 30, 1911.

1,017,329.

Patented Feb. 13, 1912.
 2 SHEETS—SHEET 1.

FIG. 1.

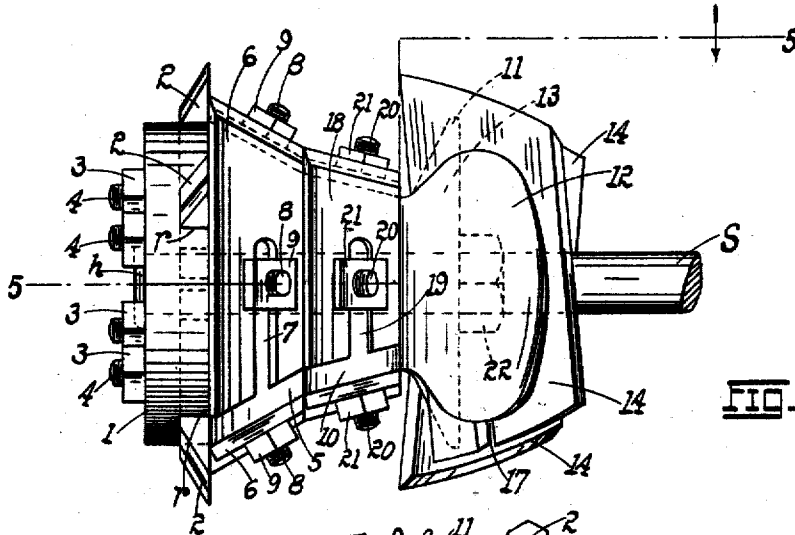
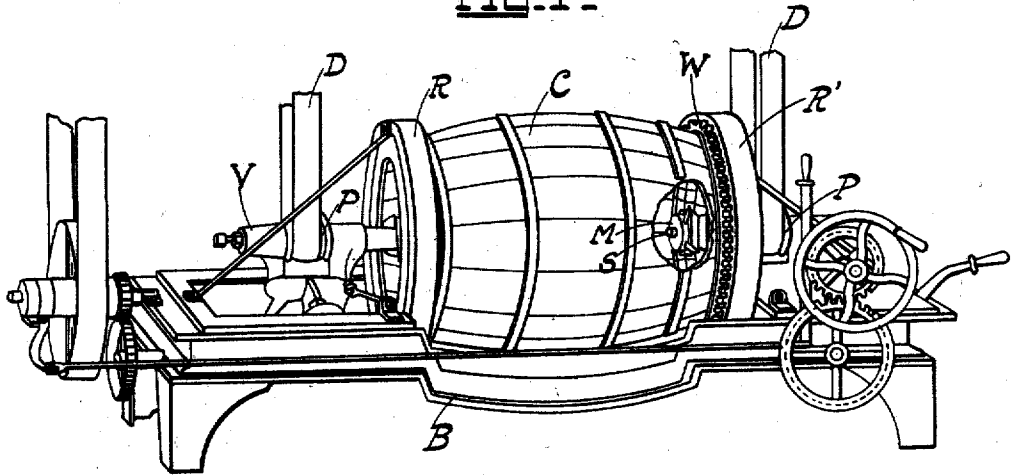


FIG. 2.

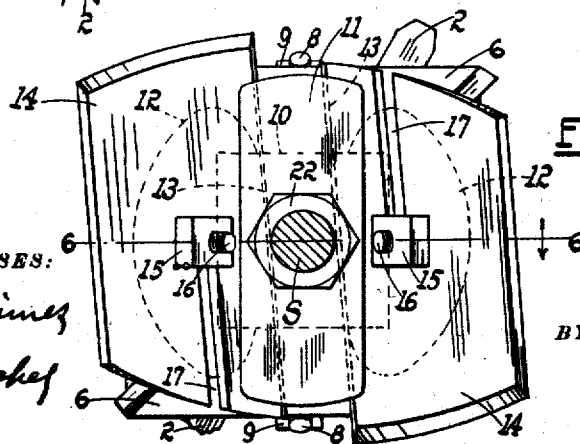


FIG. 3.

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H. SCHNEIDER.
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2 SHEETS—SHEET 2.

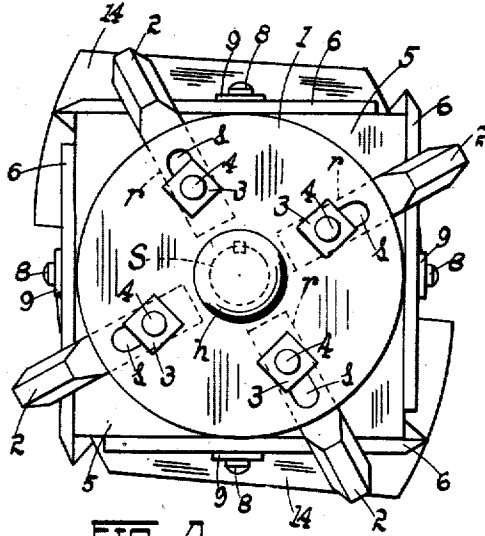


FIG. 4.

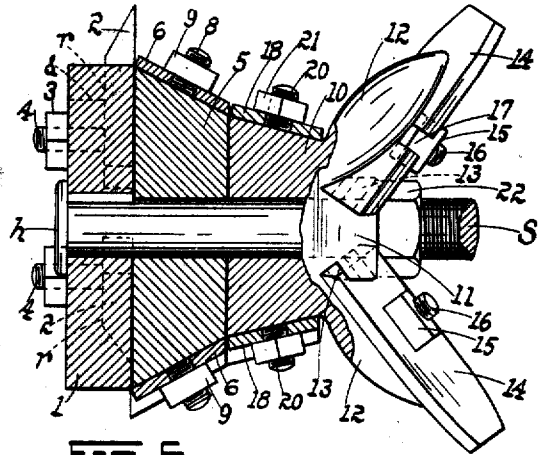


FIG. 5.

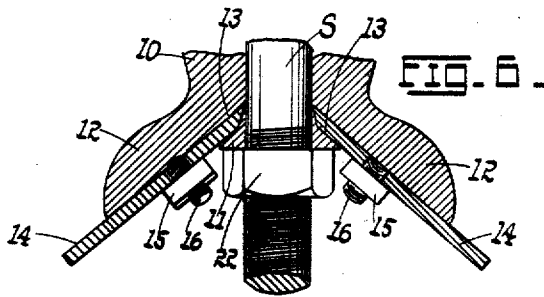


FIG. 6.

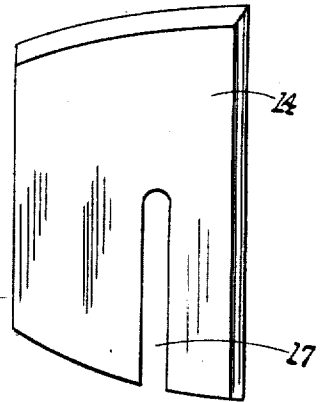


FIG. 7.

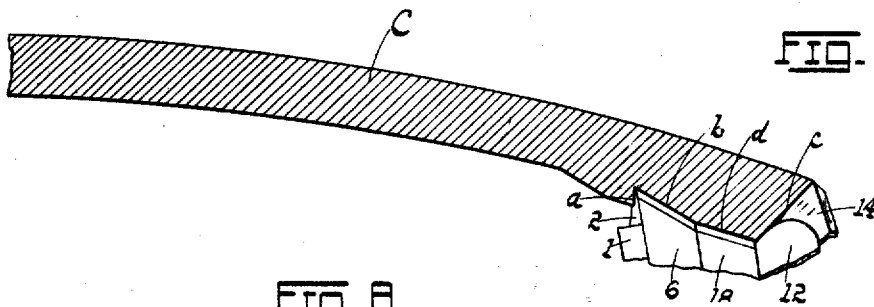


FIG. 8.

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CROZE-CUTTING TOOL.

1,017,329.

Specification of Letters Patent.

Patented Feb. 13, 1912.

Application filed October 30, 1911. Serial No. 657,650.

To all whom it may concern:

Be it known that I, HERMAN SCHNEIDER, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Croze-Cutting Tools, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in rotary croze-cutting tools or cutters; and it consists in the novel details of construction more fully set forth in the specification and pointed out in the claim.

In the drawings, Figure 1 represents a perspective of a conventional type of crozing and chamfering machine showing my invention applied thereto; Fig. 2 is a side elevation of the crozing tool detached; Fig. 3 is a rear end view with shaft in section; Fig. 4 is a front end view of the tool; Fig. 5 is a longitudinal section on the broken line 5-5 of Fig. 2; Fig. 6 is a sectional detail on the line 6-6 of Fig. 3; Fig. 7 is a detached view of one of the chamfering blades; and Fig. 8 is a longitudinal section of the barrel wall showing the croze applied thereto.

The present invention is designed for use in connection with comparatively thick staves in which a shoulder or ledge is cut in lieu of the prevailing groove for the support of the head, the object being to provide a tool with several independent cutters or sections rotating in unison about a common axis and respectively chamfering, dressing, beveling and shouldering (or dove-tailing) the assembled staves, without "grubbing".

A further object is to construct a tool which is strong, readily adjusted, easily manipulated, and one offering further and other advantages better apparent from a detailed description of the invention which is as follows:-

Referring to the drawings, B represents the base of a conventional machine provided with a stationary chuck-ring R and an adjustable chuck-ring R' between which the cask C is held and slowly rotated through the instrumentality of the cog-wheel W identified with the adjustable ring R'. The cutters M operate within the cask (one cutter at each end) being mounted on the shafts S of the vibrating carriages V and revolved by belts D passing over the pulleys P on the carriages. The machine is merely referred

to in a general way as its character is well understood in the art and no claim is herein made to any portion of the machine. In fact reference is made only to those parts with which the cutters are directly associated, namely, the rings R, R', by which the cask (or barrel) is rotated. The invention proper, however, is confined to the cutter, and in detail is as follows:-To the free end of the shaft S or the end inserted into the cask is keyed a circular member or disk 1 provided with radial recesses or grooves r for the reception of the shoulder cutting blades or cutters 2, the cutters being adjustable radially in their recesses and when once adjusted are rigidly clamped by the nuts 3 passed over the screw-studs 4 carried by the cutters and projecting from the outer face of the disk through elongated slots s in the outer walls of the recesses r, said slots allowing for the adjustment of the cutters as obvious. Passed over the shaft S and engaging the disk 1 is a member 5 in the form of the frustum of a pyramid, the base of the frustum being on the side toward the disk. About the faces of the frustum are disposed blades 6, the latter being provided with longitudinal slots 7 (Fig. 2) for the passage therethrough of the screw-studs 8 projecting from the faces of the member 5, the studs carrying clamping nuts 9 by which the blades are securely fastened to the member 5 when once properly adjusted. The blades 6 serve to cut the bevel b on the inside of the cask C, the blades 2 forming the shoulder a by which the head of the cask is supported (Fig. 8).

In practice the member 5 is so adjusted or turned on the shaft S, as to bring the cutting edges of the blades 6 to one side of the cutting edges of the cutters 2 (Fig. 4) this arrangement preventing the bunching and crowding of the cuttings and shavings removed by the tool. Passed over the shaft S and engaging the narrow end of the member 5 is a pyramid-frustum or member 10 terminating at its narrow end in an elongated head 11 integral therewith; the sides of the head 11 being bounded by wings 12, 12, inclined to the axis of rotation of the tool, the bases of the wings forming with the sides of the head 11 inclined grooves 13 for the reception of the bases of the chamfering blades 14. These blades are additionally secured to the wings 12 by means of nuts 15 passed over the screw studs 16 projecting from the faces of the wings

through slots 17 in the blades, said slots allowing for the proper adjustment of the blades. The latter cut the chamfer *c* from the edge of the stave (Fig. 8). Disposed about the inclined walls of the frustum 10 are blades 18 provided with slots 19 (Fig. 2) for the passage therethrough of the screw-studs 20 projecting from the frustum wall, the nuts 21 clamping the blades in position when once adjusted. The blades 18 dress the surface *d* on the stave (Fig. 8). The shaft *S* is provided with a screw-threaded portion beyond the head 11 (Fig. 6) over which is passed a clamping nut 22 by which the several members or sections 1, 5, 10, carrying the cutters or blades are rigidly clamped together so as to rotate as a unit with the shaft *S*, the free or inner end of the latter terminating in a head *h* against which the member 1 may bear as an abutment when the nut 22 is driven home.

The operation is clearly understood from the foregoing. Once the several cutter sections or members with their blades are adjusted and secured on the shaft, a rapid rotation is imparted to the shafts *S* projecting from the carriages *V* into the barrel or cask, a slow rotation being at the same time given the latter but in the opposite direction. A single rotation of the cask will suffice to cause the tool to impart the necessary chamfering, dressing and dovetailing (beveling and shouldering) to the staves (Fig. 8), the formations *a*, *b*, *c*, *d*, being cut in the cask at each end. Obviously, the tool operating at one end of the cask must be right-handed and that at the opposite end left-handed, that is to say, the blades must be set so as to cut while turning at one end, relative to the observer, in the direction of the hands of the clock, while at the other end they

would be turning in a direction opposite to the hands of a clock.

The present tool may be readily kept in repair since the cutters and blades are readily removed from the head and sharpened. Obviously the cutting edges of the blades 6 are disposed in a circle interior to the cutting edges of the radial blades or cutters 2.

Having described my invention, what I claim is:—

A croze-cutting tool comprising a shaft, a terminal disk keyed thereto and provided with radial grooves, cutters deposited in said grooves and projecting beyond the periphery of the disk, a member having a pyramid-frustum body portion mounted on the shaft and engaging the disk aforesaid, blades on the faces of the frustum having cutting edges disposed in a circle interior to the free cutting edges of the radial blades of the disk, a second pyramid frustum engaging the first frustum, and forming substantially an extension of the first frustum, blades on the faces of the second frustum, an outer terminal member on the shaft coupled to the second frustum and comprising a central head, lateral outwardly diverging wings forming inclined slots or grooves with the sides of the head, and blades inserted in said grooves and supported by, and secured to the wings, the succession of blades starting from the last set successively chamfering, dressing, beveling and shouldering the assembled staves, as set forth.

In testimony whereof I affix my signature, in presence of two witnesses.

HERMAN SCHNEIDER.

Witnesses:

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