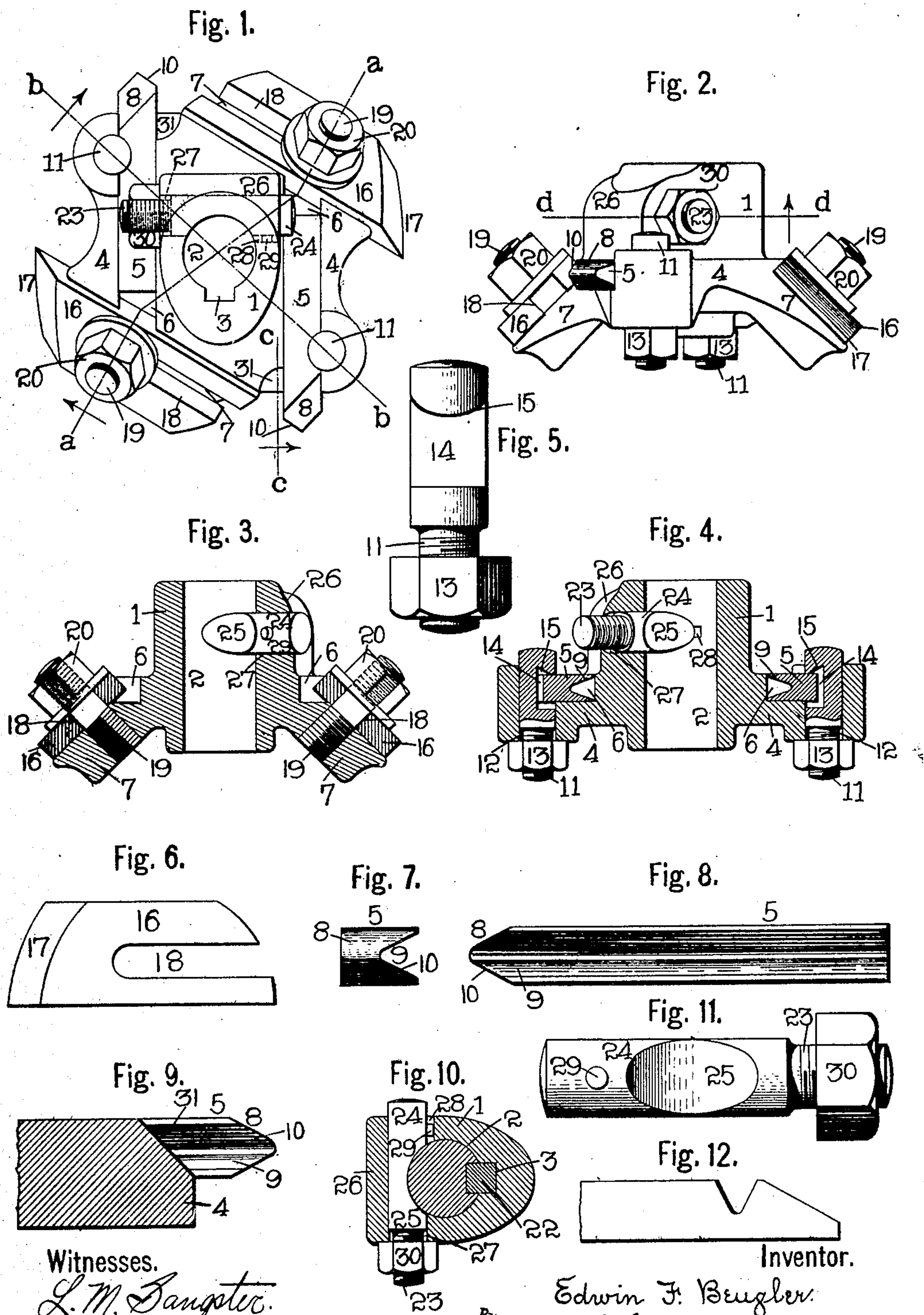


E. F. BEUGLER.
CUTTER HEAD.
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CUTTER-HEAD.

No. 916,527.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWIN F. BEUGLER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a certain new and useful Improvement in Cutter-Heads, of which the following is a specification.

This invention relates to an improved cutter head which is chiefly adapted for chamfering and crozing the ends of barrel staves and the object of the invention is to provide a very strong and exceedingly simple device of this character which will cut with great rapidity and produce a clean cut groove without tearing or splitting the wood.

The invention also relates to certain details of construction all of which will be fully and clearly hereinafter described and claimed reference being had to the accompanying drawings, in which,—

Figure 1 is a face view of the improved cutter head. Fig. 2 is a side view of the improved cutter head. Fig. 3 is a transverse section on line *a a*, Fig. 1, showing the manner of securing the chamfering cutters to the body. Fig. 4 is a transverse section on line *b b*, Fig. 1, showing the manner of securing the croze cutters to the body. Fig. 5 is an enlarged detached view of one of the recessed bolts for securing the croze cutters to the body. Fig. 6 is a detached plan view of one of the chamfering cutters. Fig. 7 is an enlarged detached end view of one of the croze cutters. Fig. 8 is an enlarged detached edge view of one of the croze cutters. Fig. 9 is an enlarged fragmentary section on line *c c*, Fig. 1, showing the beveled portion of the body for deflecting chips from the croze cutters. Fig. 10 is a transverse section through the hub of the cutter head on line *d d*, Fig. 2, showing the manner of securing the cutter head to its shaft, a cross section of which is shown. Fig. 11 is an enlarged detached view of the locking bolt for fastening the cutter head to its shaft. Fig. 12 is a fragmentary edge view of a barrel stave after it has been operated upon by the improved cutter head, showing the croze cut therein and the inner edge of the stave end chamfered.

This improved device has a body consisting of a central sleeve 1 provided with a circular opening 2 and a recess or keyway 3 on one side of said opening, see Fig. 1, in

which a key or feather is fitted to fasten the cutter head to a shaft. A flange surrounds and projects from the sleeve which in part extends at a right angle and in part at an angle of substantially forty-five degrees from the sleeve. The right angled portions of the flange are substantially similar and are designated by the numeral 4 and serve to support the croze cutters 5, being provided with grooves 6 in which the croze cutters are secured. The obtuse angled portions 7, or portions extending at substantially an angle of forty-five degrees, serve to support the chamfering cutters.

The croze cutters 5 are shaped substantially as shown in Figs. 1, 2, 4, 7, 8 and 9 being comparatively narrow having a beveled and sharpened cutting end 8 and a V-shaped longitudinal groove 9 which forms the V-shaped croze cutting edge 10. The croze cutters 5 are adjustable in the grooves 6 and are each locked rigidly in place by a screw bolt 11 which passes through an opening 12 in the flange portion and is drawn into locking position by a nut 13. The head of the screw bolt is provided with a side slot 14 in which the croze cutter projects and the top wall 15 of the slot 14 is beveled outwardly and downwardly so that it will bear against and grip with its outer end upon the croze cutter as shown in Fig. 4, and thus secure it rigidly in place.

The chamfering cutters 16 are formed of a substantially flat wide metal plate, having one end sharpened and beveled and extending with a slight curve in a diagonal direction to form the cutting edge 17 and having a slot 18 extending longitudinally from the other end to approximately the middle of the plate. The chamfering cutters 16 are fastened to the obtuse angled portions 7 by stud-bolts 19 which screw into said portions and extend through the slots 18 of the cutters, and nuts 20 screwed upon the upper ends of the stud bolts 19, see Fig. 3.

The cutter head is fastened very rigidly to the shaft 21 upon which it is mounted being secured not only by a longitudinal key or feather 22 as previously described, but by a transverse bolt which wedge locks against the shaft by screw pressure. The peculiar form of the bolt will be understood by referring to Figs. 1, 3, 4, 10 and 11, particularly Fig. 11. The bolt has but a short screw

threaded portion 23 and an extremely long head 24 which is provided with a recess 25 on one side, the wall of which is curved to substantially the curve of the shaft, see Fig. 10.

- 5 An enlargement 26 is formed on one side of the sleeve 1 and an opening 27 extends through the enlargement at substantially a right angle to the opening 2, and communicates with and cuts across said opening
- 10 sufficiently to permit the shaft 21 and its transverse locking bolt to be located and arranged as shown in Fig. 10. To prevent the rotation of the transverse bolt, a slot 28 is cut on one side of the opening 27 through
- 15 the enlargement in which a short pin 29, extending from the side of the head 24 of the bolt, projects and slides as shown in Figs. 1, 4 and 10. A nut 30 is fitted upon the portion 23 and when screwed tightly into place
- 20 draws the curved wall of the recess 25 against the surface of the shaft. It will be noted by referring to Fig. 10 that the transverse bolt is on the opposite side of the shaft from the key so that the wedging of the bolt forces the
- 25 shaft toward the key and thereby tends to increase the tightening effect of the key.

To prevent the chips or shavings of wood cut by the croze cutters filling up the V-shaped groove and clogging the cutters, a

30 portion of the flange is cut away on one side of the croze cutters as shown at 31, which

permits the chips or shavings to fly inwardly and thus avoid clogging, see Figs. 1 and 9.

I claim as my invention—

1. A cutter head comprising a sleeve hav- 35 ing a surrounding flange which in part extends at a right angle and in part at an obtuse angle, a narrow cutter secured to the right angled portion of the flange and having a beveled and sharpened cutting end and a 40 V shaped groove forming a V shape croze cutting edge and a wide cutter secured to the obtuse angle portion of said flanges and having a curved and beveled and sharpened chamfer cutting end. 45

2. A cutter head comprising a sleeve, a flange surrounding the sleeve, a pair of narrow cutters secured in parallelism to the flange and upon the opposite sides of the sleeve, and each having a beveled and sharp- 50 ened cutting end and a V shaped groove forming a V shaped croze cutting edge, and a pair of wide cutters secured to the flange and upon opposite sides of the sleeve and each located between the pair of croze cutters; 55 said wide cutters each having a curved and beveled and sharpened chamfer cutting end, substantially as set forth.

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