

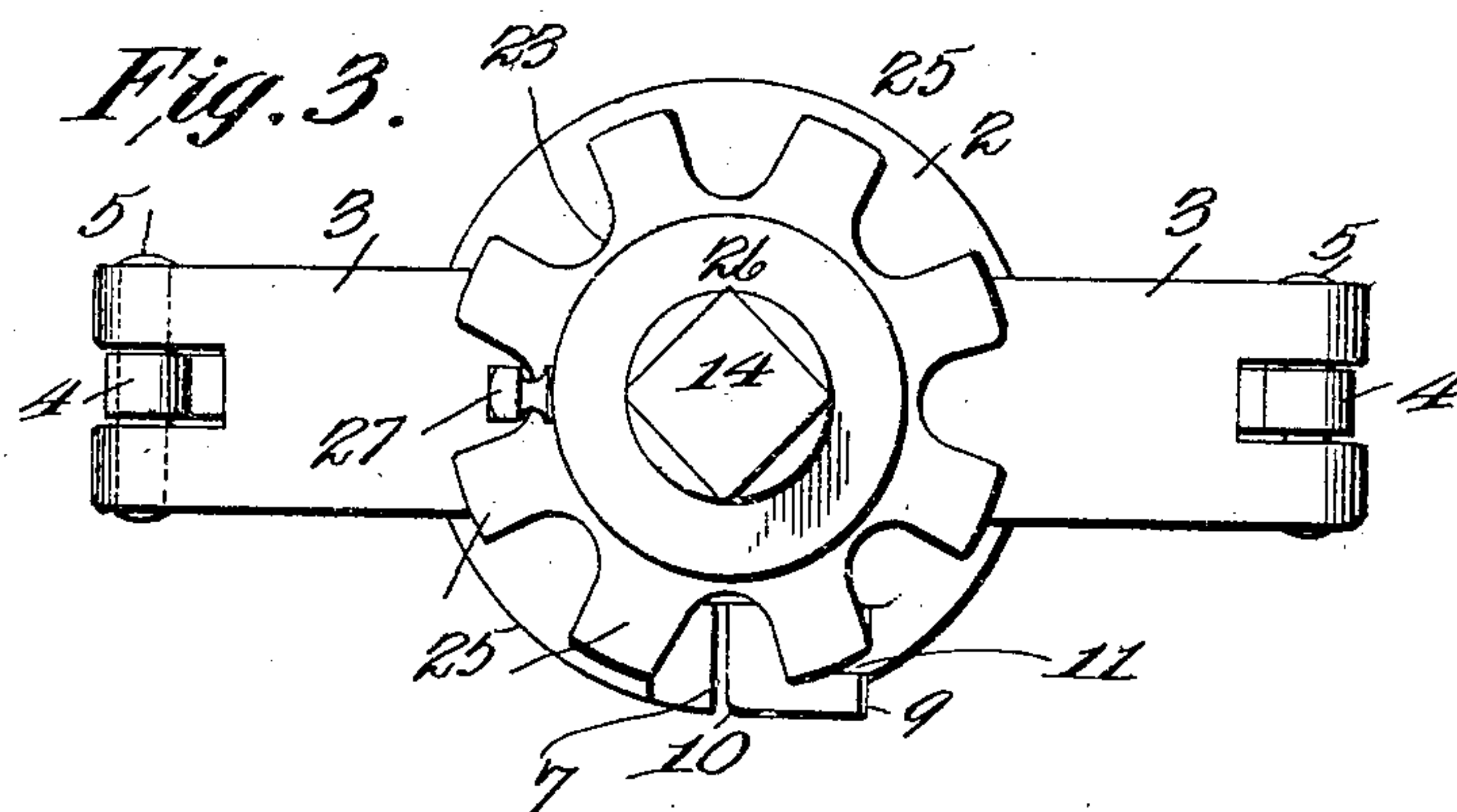
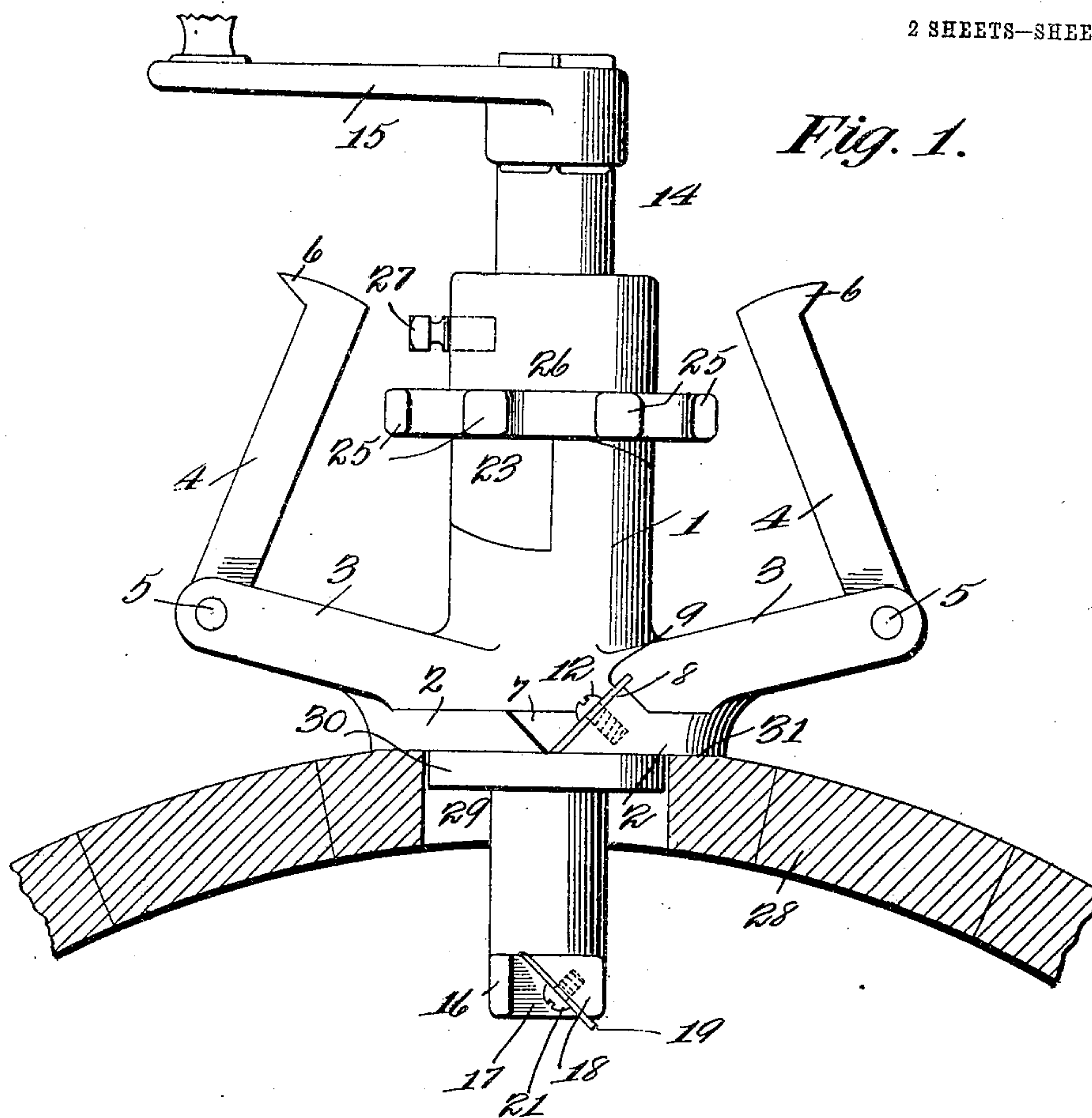
No. 810,432.

PATENTED JAN. 23, 1906.

F. PFLUGER & E. CHRISTENSEN.
COUNTERBORING TOOL FOR CASKS.

APPLICATION FILED JUNE 16, 1904.

2 SHEETS—SHEET 1.



Witnesses
E. H. Stewart
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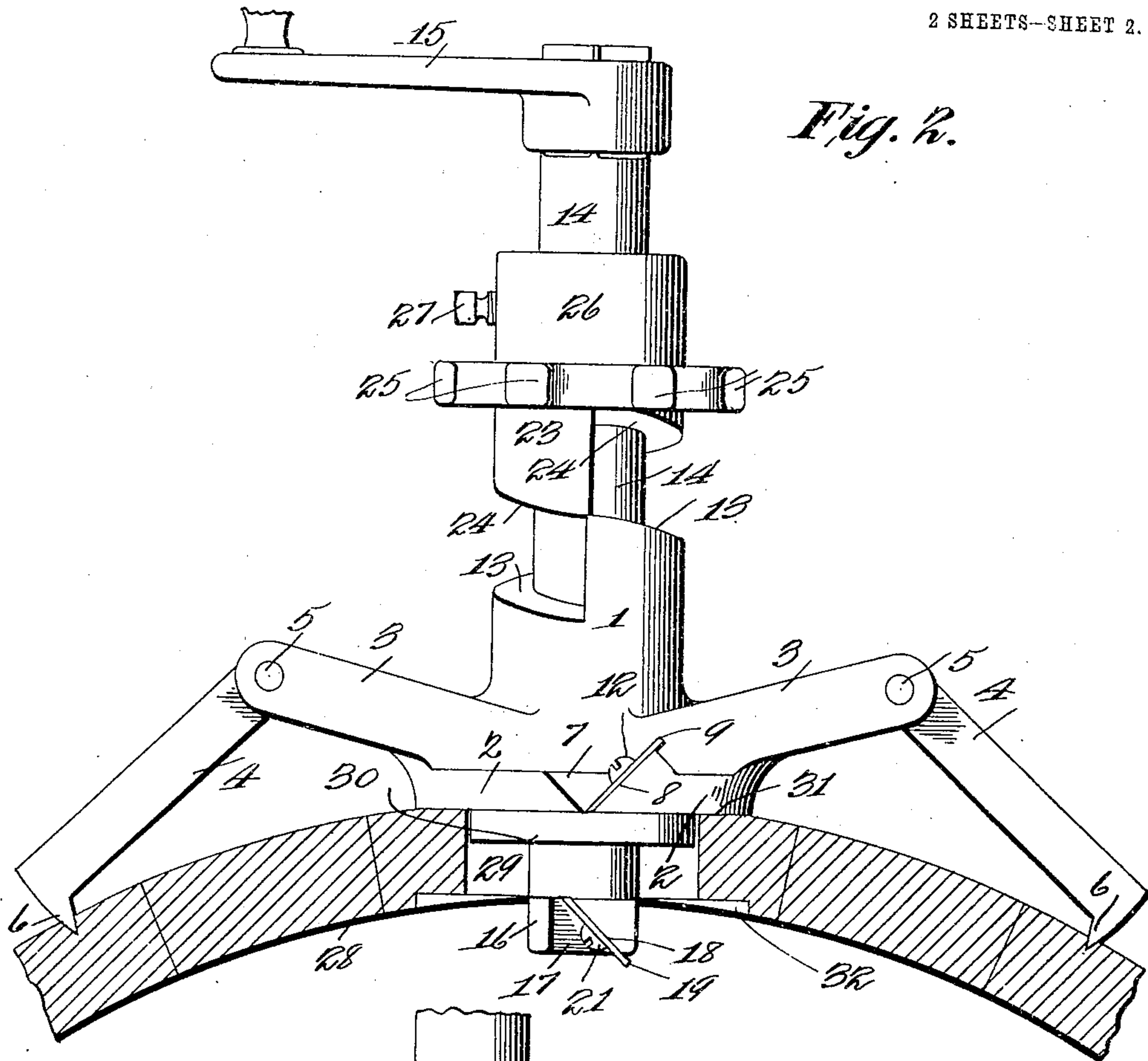
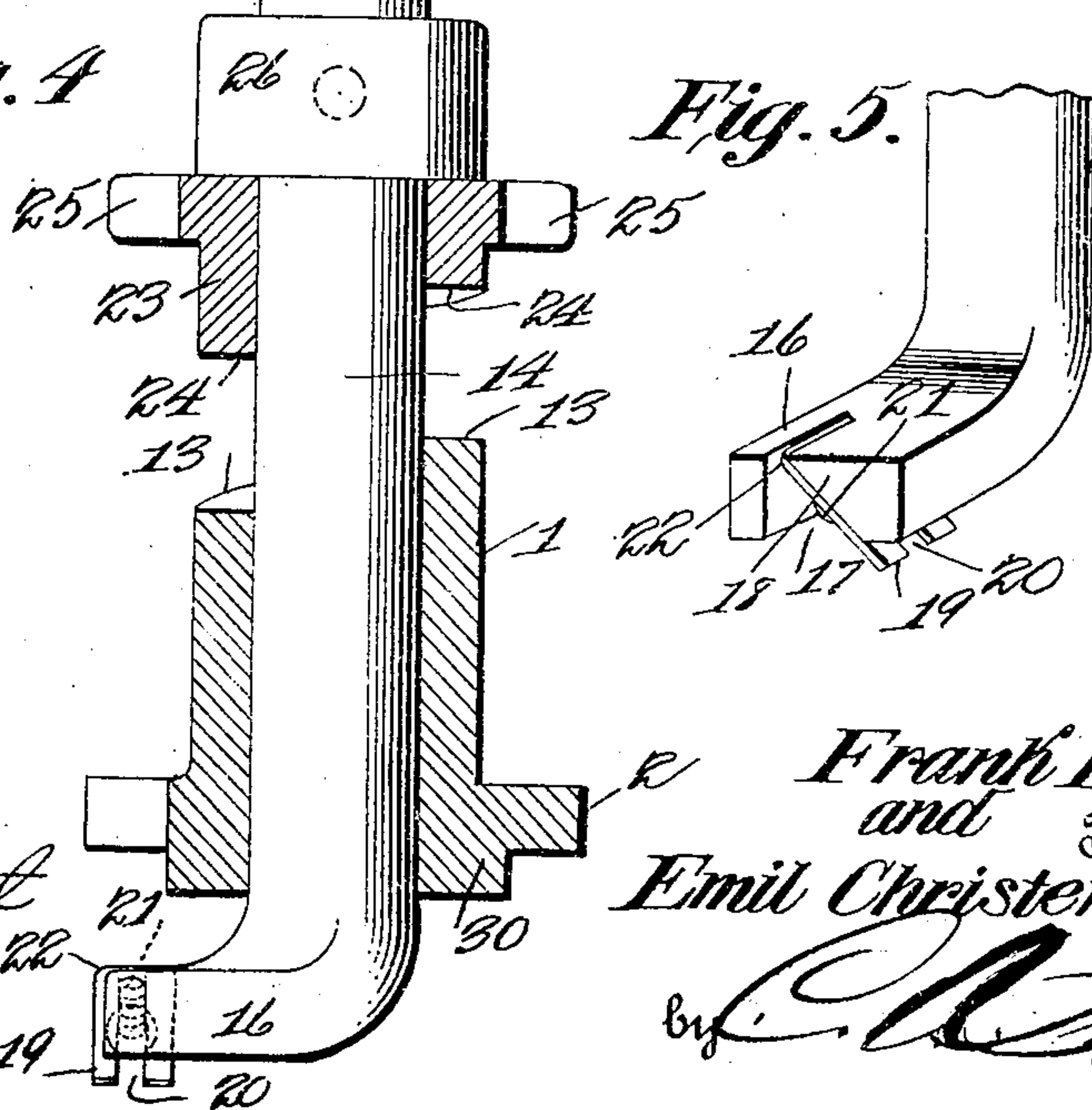


Fig. 2.

Fig. 4

Fig. 5.



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UNITED STATES PATENT OFFICE.

FRANK PFLUGER AND EMIL CHRISTENSEN, OF PORTLAND, OREGON.

COUNTERBORING-TOOL FOR CASKS.

No. 810,432.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed June 16, 1904. Serial No. 213,095.

To all whom it may concern:

Be it known that we, FRANK PFLUGER and EMIL CHRISTENSEN, citizens of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented a new and useful Counterboring-Tool for Casks, of which the following is a specification.

This invention relates to counterboring-tools, and has for its object to provide an improved hand-operated tool of this character especially adapted for convenient application to a cask, keg, or the like for counterboring the inner end of the bung-hole thereof and for facing or planing the exterior of the cask around the bung-hole to form a flat seat for the outer annular flange of the bung.

Another object of the invention is to provide for conveniently setting the tool so as to counterbore the bung-hole to any desired depth according to the varying thicknesses of the staves of different casks, thereby to insure a uniform length of bung-hole in casks having staves of corresponding thicknesses.

It is furthermore designed to provide for anchoring or locking the stock of the tool to the cask, so as to prevent rotation thereof during the counterboring action of the tool, and to arrange the parts of the tool so that the counterboring-knife may be manipulated by one hand and the feed device therefor manipulated by the other hand of the operator.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is an elevation of the tool of the present invention fitted in position for facing or planing the exterior of a cask around the bung-hole thereof, a portion of the cask being shown in section. Fig. 2 is a similar view showing the tool anchored or fixed to the cask against rotation and set for the counterboring operation. Fig. 3 is a plan view of the tool with the operating crank-handle removed. Fig. 4 is a detail sectional view of the stock of the tool. Fig. 5 is a detail perspective view of the inner end

of the spindle which carries the counterboring-knife.

Like characters of reference designate corresponding parts in each and every figure of the drawings.

The present tool includes an open-ended tubular stock 1, which is provided at its inner or lower end with an annular flange 2, constituting a base, there being opposite substantially radial bracket-arms 3 extended outwardly from the stock and the upper face of the base. A link 4 is pivoted to the outer end of each arm 3, as indicated at 5; and the free extremity of the link is provided with a transverse spur 6, designed to be driven into a cask, so as to fix the stock against rotation during a portion of the operation of the tool, as will hereinafter appear. A substantially radial slot or opening 7 is formed in the base 2 and has one wall 8 set at an angle transversely across the opening for the support of a knife-blade 9, which has its cutting edge projected at the bottom of the base and provided with an outer rounded corner 10. In the upper portion of the knife-blade is a longitudinal slot or bifurcation 11, through which a screw 12 is passed into the wall 8 of the opening for the purpose of rigidly holding the knife-blade in place and to permit of endwise adjustment thereof to take up wear upon the cutting edge of the blade. The top or outer end of the stock is provided with a cam-face or spiral edge 13 for use in feeding the counterboring knife-blade, as will be hereinafter described.

A cylindrical spindle 14 is mounted to rotate and to move in an endwise direction within the tubular stock and is of a length to project at opposite ends of the stock, the upper or outer extremity of the spindle being made non-circular for the detachable reception of a suitable crank-handle 15, employed for rotating the spindle. The lower end of this spindle is provided with a crank-arm 16, having an upright bifurcation or opening 17 formed in the outer end thereof, with one wall 18 set at an inclination transversely of the opening for the support of a blade 19, which has its cutting edge projected at the top of the crank-arm, while the lower end of the blade is provided with a longitudinal slot or bifurcation 20 for the reception of a screw 21, which is set into the wall 18, so as to rigidly hold the blade in place and at the same time to permit endwise adjustment of the

blade to take up wear upon the cutting edge thereof. The outer corner of the cutting edge of the blade is rounded, as indicated at 22.

Above the stock is a sleeve 23, which is mounted to rotate loosely and to move longitudinally upon the spindle, with its lower edge provided with a spiral 24, disposed for cooperation with the cam-face 13 of the stock, the upper end of this sleeve being provided with an annular series of projections 25 to constitute a hand-wheel for convenience in rotating the sleeve. A set-collar 26 loosely embraces the spindle above the sleeve 23 and is provided with a set-screw 27 to adjustably fix the collar upon the spindle. It will here be explained that the sleeve 23 is supported upon the upper end of the stock, and the set-collar 26 is supported upon the top of the sleeve, while the spindle 14 is connected to the collar through the medium of the set-screw 27, whereby the spindle is supported upon the stock, so as not to drop through the same when the parts have been assembled in readiness for use.

For an understanding of the operation of the present tool reference will be had more particularly to Figs. 1 and 2 of the drawings, wherein has been illustrated a portion 28 of a cask, barrel, or the like, having the usual bung-hole 29 formed therein. Preparatory to applying the tool to the cask the set-screw 27 is loosened and the spindle lowered through the stock, so as to drop the counterboring-blade 19 below the planer-blade 9 a distance greater than the thickness of the stave through which the bung-hole has been formed, after which the set-screw 27 is tightened and the tool fitted to the cask with the annular boss 30 fitted within the bung-hole and the base 2 against the exterior of the cask, the anchoring-links 4 being thrown upwardly, as shown in Fig. 1, so as not to engage the cask. When thus fitted in place, it will be noted that the counterboring-blade 19 is disposed below and out of contact with the adjacent inner wall of the cask, while the planer-blade 9 is in position to plane or face the exterior of the cask around the bung-hole when the entire tool is rotated by means of the arms 3 and links 4 as handles to cause the planer-blades 9 to travel around the bung-hole and plane or cut a smooth flat face or seat upon the exterior of the cask. When the exterior of the cask has been planed or faced to the satisfaction of the operator, the rotation of the tool is stopped, the links 4 are swung downwardly, and their spurs 6 driven into the cask, so as to lock or fix the stock against rotation, and then the counterboring-knife 19 is set in the following manner: The set-screw 27 of the collar 26 is loosened, so as to permit of the spindle 14 being drawn upwardly through the stock until the cutting edge of the counterboring-knife 19 engages

the inner wall of the cask, and then the spindle is lowered a distance equal to the difference between the height of the cam-face 13 on the stock and the depth of the desired counterbore, when the set-screw 27 is set against the spindle, so as to hold the latter in its adjusted position. The crank-handle is then manipulated to rotate the spindle, and the hand-wheel 25 is rotated with the other hand to work the cams of the sleeve 23 over the cams 13 of the stationary stock, thereby to feed the spindle upwardly during its rotation until the counterboring knife or bit engages the inner wall of the cask and cuts into the same to form the counterbore 32. The rotation of the spindle and the feeding-sleeve 23 is continued until the cam thereof slips from or jumps the cam of the stock, whereby the sleeve and the spindle will automatically drop down to their original positions, and thereby carry the counterboring-bit 19 away from the cask, and thus limit the operation of the bit, so as to produce a counterbore of a predetermined depth. It will here be noted that any depth of counterbore may be had, according to the distance the spindle and the counterboring-bit are lowered through the set-collar 26. Hence when the spindle has once been set it will produce uniform counterbores in staves of equal thicknesses, and thereby any predetermined length of bung-hole may be formed. It will of course be understood that after the said collar 26 has once been adjusted it remains fixed in its position upon the spindle, except when it is necessary to change the depth of the bung-hole to accommodate different sizes of bushings or in changing to a set of casks having staves differing in thickness from that of the work upon which the tool has been previously engaged.

Having thus described the construction and operation of our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A tool of the class described comprising a stock, a rotatable and endwise-movable spindle carried by the stock, a counterboring-tool carried by the spindle, and means to rotate and move the spindle endwise for a predetermined distance in a direction to actuate the counterboring-tool, said means capable of being slid in the opposite direction to quickly withdraw the counterboring-tool from the work at the limit of the endwise-operating movement of the spindle.

2. A tool of the class described comprising a stock, a rotatable and endwise-movable spindle carried by the stock, a counterboring-tool carried by the spindle, and means to rotate and move the spindle endwise for a predetermined distance in a direction to actuate the counterboring-tool, said spindle being free to gravitate in the opposite direction

to quickly withdraw the counterboring-tool from the work at the limit of the endwise-operating movement of the spindle.

3. A tool of the class described comprising
5 a spindle carrying a cutting element, means to rotate the spindle, and means cooperating with the spindle to force the same endwise by a certain amount of rotation and on further
10 rotation to disengage and permit free movement of the spindle in the opposite direction.

4. A tool of the class described comprising a stock having a longitudinal bore and provided with means to lock the stock against rotation, a cam upon the stock, a rotatable
15 and endwise-movable spindle mounted in the stock and projected at opposite ends thereof, a counterboring-blade carried by one end of the stock, a cam slidable and rotatable upon the spindle in frictional engagement with the
20 cam on the stock, and a stop carried by the spindle to limit endwise movement of the movable cam, each cam having an abrupt shoulder for alinement with the shoulder of the other cam to permit of the spindle being
25 quickly moved in an endwise direction to withdraw the counterboring-blade from the work.

5. A tool of the class described comprising a stock having a longitudinal bore, a fixed
30 spiral cam upon the stock terminating at its outer end in a receding shoulder, a rotatable and endwise-movable spindle mounted in the bore of the stock and projected at opposite ends thereof, a counterboring-blade carried
35 by one end of the spindle, a cam slidable upon the spindle in frictional engagement with the cam of the stock and provided with a spiral surface terminating at its outer end in a receding shoulder, a stop carried by the
40 spindle to limit endwise movement of the movable cam, and means for rotating the spindle, the slidable cam capable of tripping from the fixed cam when their receding shoulders are brought into alinement.

45 6. A tool of the class described comprising a stock having a longitudinal bore, a fixed cam upon the stock provided with a spiral surface terminating at its upper end in a pendent shoulder, a rotatable and endwise-
50 movable spindle mounted in the bore of the stock and projected at opposite ends thereof, a counterboring-blade carried by one end of the spindle, a cam slidable upon the spindle and provided with a spiral under face in frictional engagement with the spiral face of the
55 fixed cam and terminating at its lower end in an upright shoulder, a stop carried by the spindle to limit upward movement of the movable cam, and means for rotating the
60 spindle, the movable cam capable of automatically tripping from the fixed cam by gravitation when the shoulders of the two cams are brought into alinement.

7. A tool of the class described comprising
65 a stock having a longitudinal bore, a cam

upon the stock, a rotatable and endwise-movable spindle mounted in the bore of the stock and projected at opposite ends thereof, a counterboring-blade carried by one end of the spindle, a cam slidable upon the spindle
70 and in frictional engagement with the cam of the stock, a stop adjustable longitudinally upon the spindle to limit endwise movement of the slidable cam, and means to rotate the spindle, the slidable cam capable of rotation
75 independently of the spindle to move the same in an endwise direction by engagement of the slidable cam with the fixed cam and the stop on the spindle.

8. A tool of the class described comprising
80 a stock having a longitudinal bore and provided with an outer spiral edge forming a cam, a rotatable and endwise-movable spindle mounted in the bore of the stock and projected at opposite ends thereof, a counter-
85 boring-blade carried by one end of the spindle, an endwise-movable sleeve mounted upon the spindle and provided with a spiral edge in frictional relation with the spiral edge of the stock and also provided
90 with a handle for rotating the sleeve, a stop-collar adjustable longitudinally upon the spindle in the path of the slidable movement of the sleeve, and means to rotate the spindle, the sleeve being rotatable independently
95 of the spindle to feed the latter endwise during its rotatable movement.

9. A tool of the class described comprising a tubular stock having a spiral outer edge, means carried by the stock for engagement
100 with a cask to prevent rotation of the stock and capable of being moved out of engagement with the cask to permit rotation of the stock, a planer-blade carried by the stock, a rotatable and endwise-movable spindle pro-
105 jected at opposite ends of the stock, a counterboring-blade carried by one end of the spindle, an endwise-movable sleeve mounted upon the spindle and having a spiral edge in cooperative relation with the spiral edge
110 of the stock, a stop-collar adjustable longitudinally upon the spindle to limit endwise movement of the sleeve and capable of holding the latter in locked engagement with the spiral of the stock to interlock the latter and
115 the spindle for simultaneous rotation, and means connected to the spindle for rotating the same, the sleeve also capable of rotation independently of the spindle to feed the latter in an endwise direction.
120

10. A tool of the class described comprising a stock having a cask-engaging anchoring device capable of being engaged with the cask to prevent rotation of the stock and
125 also capable of being disengaged from the cask to permit rotation of the stock, a planer-blade carried by the stock, a rotatable and endwise-shiftable spindle carried by the stock, a counterboring-blade carried by the spindle, means to rotate and feed the spindle
130

in an endwise direction upon the stock, and means to interlock the spindle and the stock for simultaneous rotation.

11. A tool of the class described comprising 5 ing a stock having a planer-blade, anchor-links pivoted to the stock and having spurs to enter a cask and anchor the stock against rotation, a rotatable and endwise-movable spindle carried by the stock, a counterboring- 10 blade carried by the spindle, means to rotate and to feed the spindle in an endwise direction independently of the stock, and means to interlock the stock and the spindle for simultaneous rotation.

12. A tool of the class described comprising 15 ing a tubular stock having a terminal annular flange provided with an opening, a concentric tubular guide-boss at the flanged end of the stock, a planer-blade fitted in the 20 opening of the flange, substantially radial arms projected from the stock, anchor-links pivoted to the arms and provided with lateral terminal spurs, the other end of the stock having a spiral edge, a rotatable and 25 endwise-movable spindle projected in opposite directions through the stock and provided at one end with a crank-arm, a counterboring-blade carried by the crank-arm, an endwise-movable sleeve mounted upon 30 the spindle and provided with a spiral edge in cooperative relation with the spiral of the stock, a stop-collar adjustable longitudinally upon the spindle in the path of the sleeve and capable of holding the latter interlocked 35 with the stock for simultaneous rotation of

the latter and the spindle, and a crank to rotate the spindle, the sleeve also capable of rotation independently of the spindle to feed the latter in an endwise direction.

13. A tool of the class described comprising 40 ing a stock which is capable of rotation and provided with a planer-blade, a counterboring-blade capable of adjustment to a position out of contact with the work during operation of the planer-blade, and means to 45 bring the counterboring-blade into engagement with the work and to swing the same around the stock as a center after the completion of the operation of the planer-blade.

14. A tool of the class described including 50 a planer-blade for the exterior of a cask, a counterboring-blade for the interior of a cask, and means to successively operate the blades.

15. A tool of the class described comprising 55 ing a stock which is capable of rotation and provided with a planer-blade for operation upon the exterior of a cask, and an endwise-movable spindle mounted to rotate independently upon the stock and provided with 60 a crank-arm carrying a counterboring-blade for operation upon the interior of a cask.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

FRANK PFLUGER.
EMIL CHRISTENSEN.

Witnesses:

H. W. GAMMIE,
J. E. BOYNTON.