No. 786,849. PATENTED APR. 11, 1905.

J. L. & T. C. SHEPPARD.

DRUM OR BARREL HEAD CUTTER.

APPLICATION FILED DEC. 18, 1903

3 SHEETS—SHEET 1.

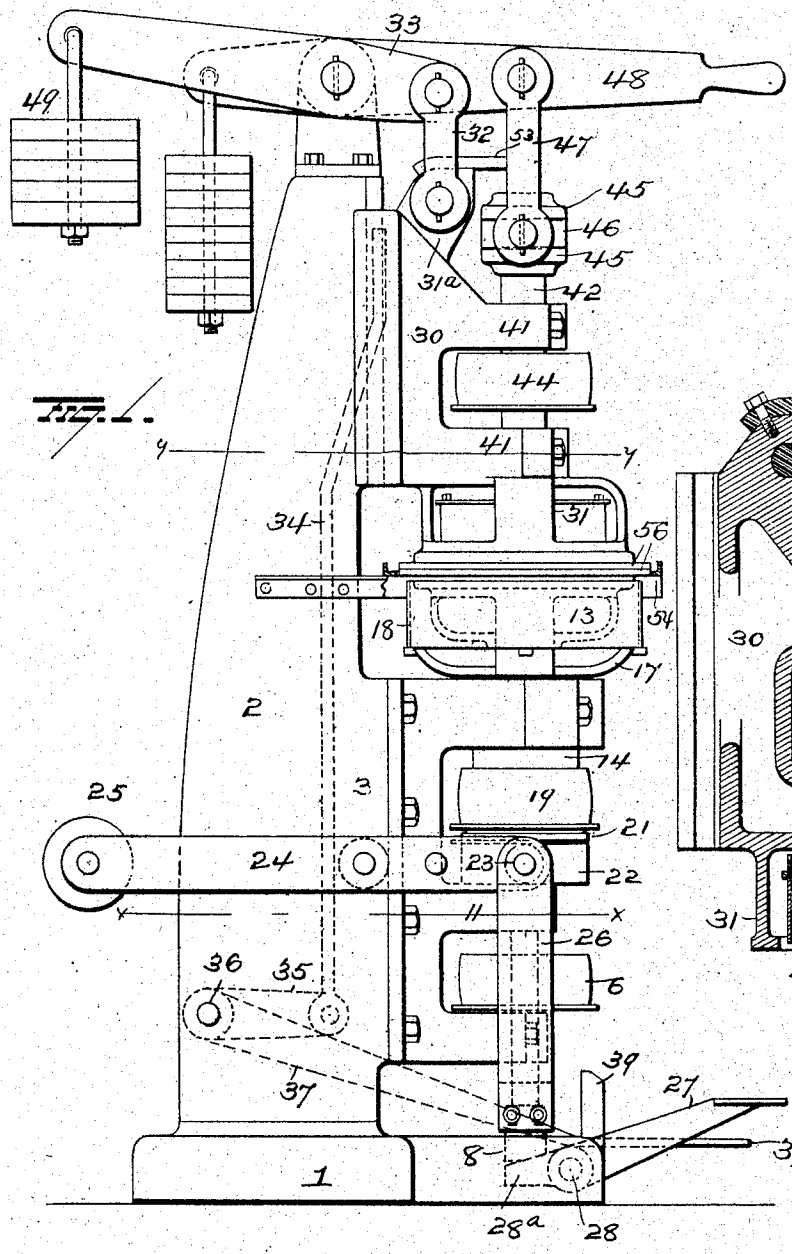


FIG. 1.

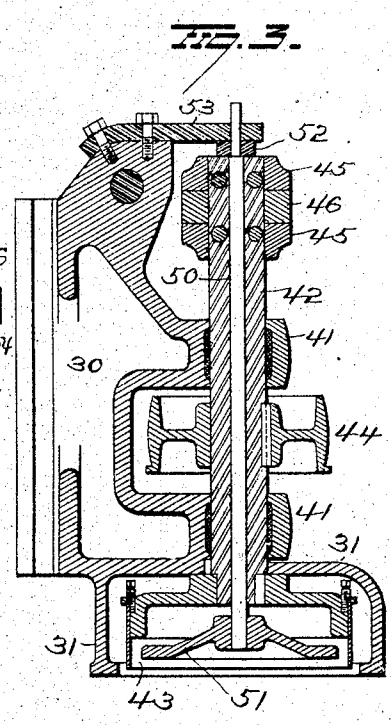


FIG. 3.

WITNESSES

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3 SHEETS—SHEET 2.

FIG. 2.

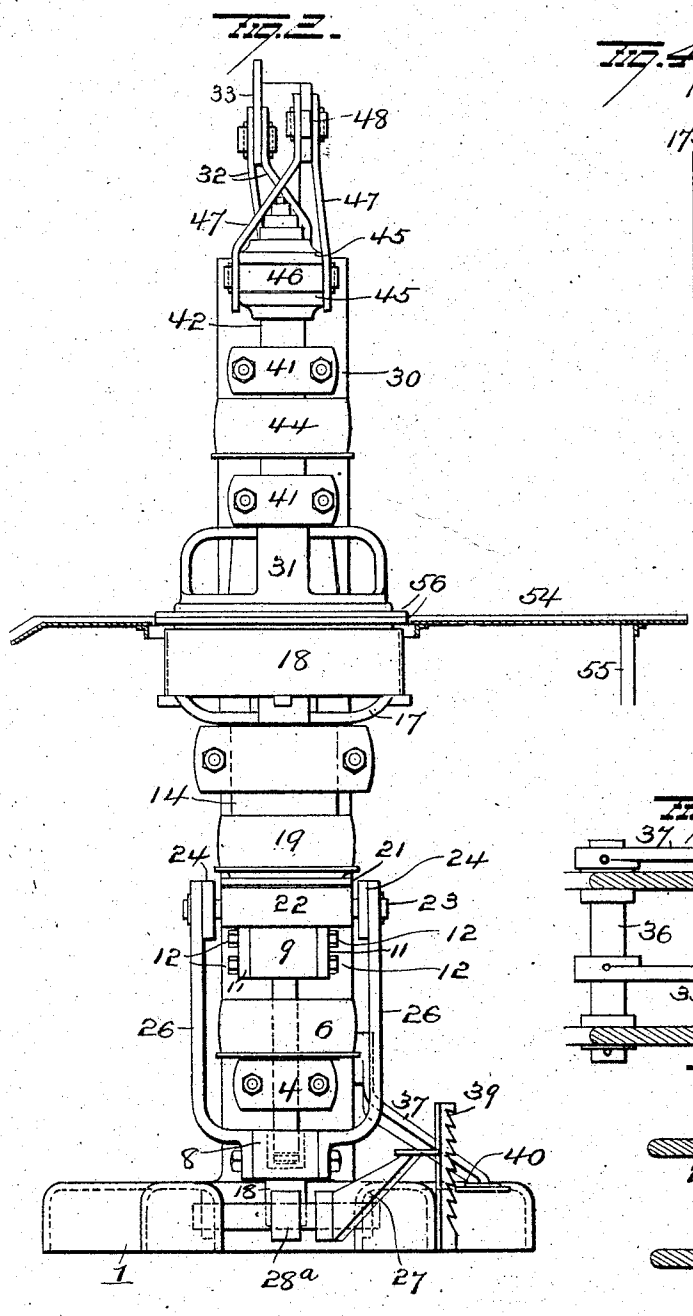


FIG. 4.

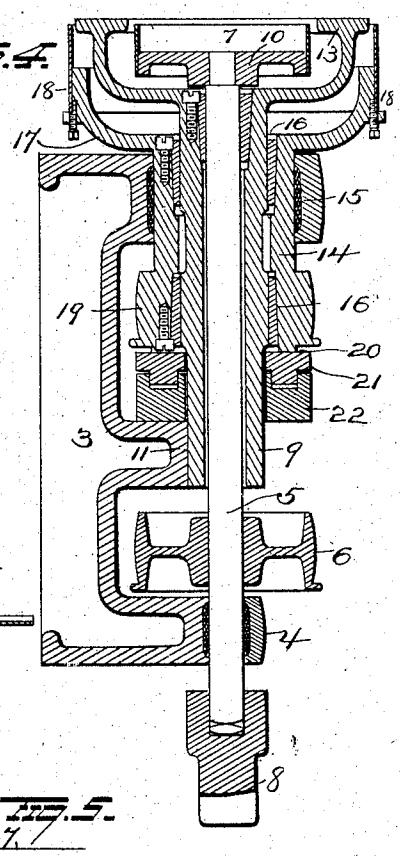


FIG. 5.

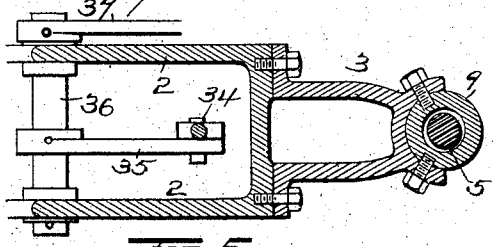
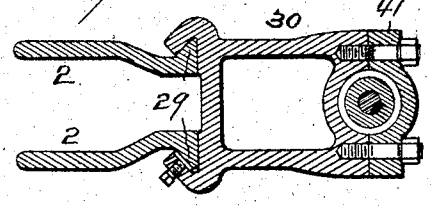


FIG. 6.



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3 SHEETS—SHEET 3.

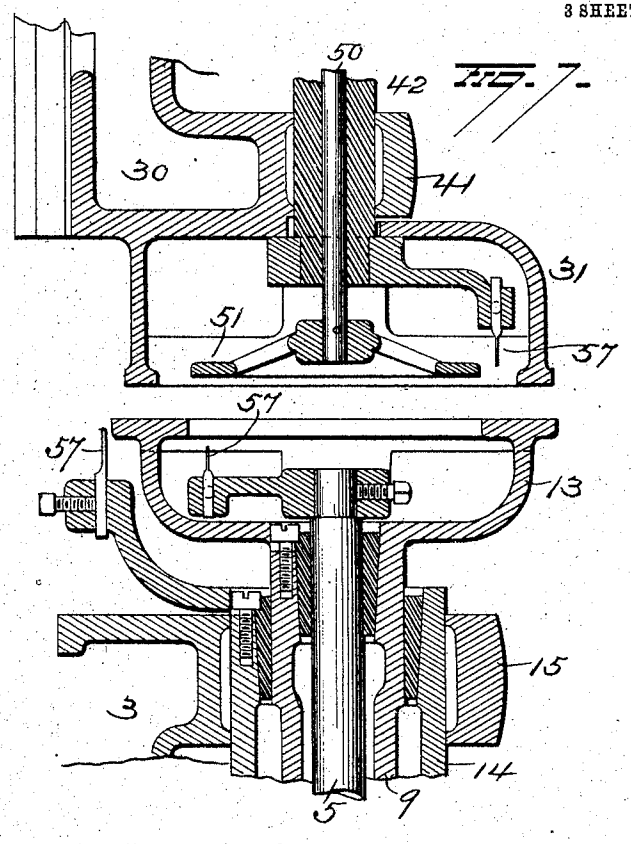
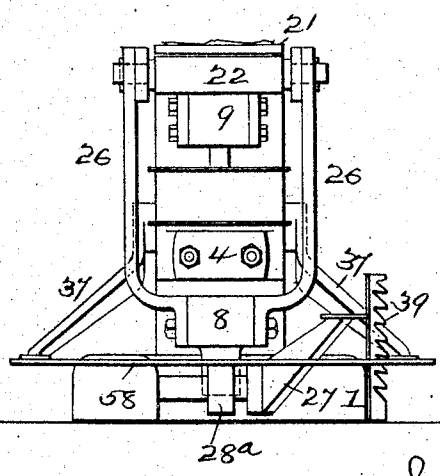


FIG. 7.

FIG. 8.



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UNITED STATES PATENT OFFICE.

JOHN L. SHEPPARD AND THOMAS C. SHEPPARD, OF CHARLESTON, SOUTH CAROLINA.

DRUM OR BARREL HEAD CUTTER.

SPECIFICATION forming part of Letters Patent No. 786,849, dated April 11, 1905.

Application filed December 18, 1903. Serial No. 185,717.

To all whom it may concern:

Be it known that we, JOHN L. SHEPPARD and THOMAS C. SHEPPARD, residents of Charleston, in the county of Charleston and State of South Carolina, have invented certain new and useful Improvements in Drum or Barrel Head Cutters; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to an improved drum or barrel head cutter, the object of the invention being to provide improvements of this character which will at a single operation cut out barrel or drum heads having open centers and at the same operation cut out the removable closures for said open centers, and relates more particularly to an improved machine for cutting out barrel or drum heads and closures therefor similar to the construction disclosed in Patent No. 697,027, granted April 8, 1902, to J. L. Sheppard.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation with feeding-table removed. Fig. 2 is a front view. Fig. 3 is an enlarged view, in vertical section, of the upper clamp and cutter mechanism. Fig. 4 is a similar view of the lower clamp and cutting mechanism; and Figs. 5 and 6 are views in horizontal section on the lines x x and y y, respectively, of Fig. 1; and Figs. 7 and 8 are views of modifications.

1 represents a hollow base having an upright hollow frame 2 thereon supporting our improvements, which will now be described.

Below the center of frame 2 and to the front face thereof a bracket 3 is secured by bolts or screws and provides at its lower end a bearing for a vertical shaft 5, having a pulley 6 secured thereon in a recessed portion of bracket 3, and said shaft projects upward and downward from said bearing 4 the desired distance, has secured upon its upper end a cylindrical saw 7, and a bifurcated block 8 is mounted on its lower end for a purpose which will hereinafter appear.

Shaft 5 extends up through an elongated vertical sleeve 9, a tubular bearing 10 being located between said shaft 5 and sleeve 9, and the latter is rigidly secured between forwardly-projecting arms or lugs 11 on bracket 3 by means of bolts or screws 12, and a clamping-ring 13 is made integral with the upper end of said sleeve.

Around sleeve 9 is a larger sleeve 14, mounted in a bearing 15 in bracket 3 and spaced from sleeve 9 by bearing-rings 16 and having an enlarged circular head 17 at its upper end, to which a cylindrical saw 18 is secured, and of greater diameter than clamping-ring 13 and located around the same. A pulley 19 is made integral with the lower portion of sleeve 14, and an annular shoulder 20 thereof rests upon a flanged ring 21, having rotary mounting in a block 22, supported against downward movement by arms or lugs 11 of frame 3. This block 22 is made with trunnions 23 at opposite sides, on which the forward ends of counterbalance-levers 24 are mounted, and said levers are pivoted between their ends to frame 3 and carry weights 25 at their rear ends to assist in elevating sleeve 14, saw 18, and shaft 5 and saw 7, as links 26 are also mounted on trunnions 23 and are secured to opposite sides of block 8.

To raise block 8 and the saws 7 and 18, a foot-lever 27 is secured on a shaft 28, mounted in the forward portion of base 1, and has a crank-arm 28^a thereon, located in the bifurcated lower end of block 8, so that when lever 27 is depressed crank-arm 28^a will elevate block 8 and saws 7 and 18 controlled thereby.

The upper forward face of frame 2 is made with guide-flanges 29 at opposite sides to enter internal grooves in a sliding bracket 30, to which the upper clamping-ring 31 is fixed and coöperates with lower ring 13 to clamp material between them. The bracket 30 has a lug 31^a on its upper end, connected by a link 32 with a weighted counterbalance-lever

33, fulcrumed between its ends on top of frame 1, and a rod or link 34 is secured to bracket 30 and connected at its lower end to a crank-arm 35 on a shaft 36, mounted in the lower portion of hollow frame 2, and a forwardly-projecting foot-lever 37 is secured to this shaft 36 at one side of frame 2 to permit the operator by pressure thereon to draw down bracket 30 and parts carried thereby. To hold this lever 37 in a depressed position, a ratchet-toothed upright bar 39 is secured to base 1, and a lug or tooth 40 is secured to lever 37 and adapted to engage between any of the teeth of said bar and hold the lever in any position to which it may be forced down. The sliding bracket 30 is made with forwardly-projecting arms 41, having alined bearings for a vertical sleeve 42, carrying at its lower end a cylindrical saw 43 and having a pulley 44 fixed thereon between arms 41. On the upper end of sleeve 42 rings 45 are secured and spaced apart to receive and hold in position a ring 46, loose on the sleeve and having trunnions on its opposite sides. Links 47 connect these trunnions with a hand-lever 48, fulcrumed between its ends on frame 2 and counterweighted at its rear end, as shown at 49, and this lever is adapted to be drawn down by the operator to move upper saw or cutter 43 into contact with the material to be cut.

In sleeve 42 a shaft 50 is located and has a stop-ring 51 on its lower end to engage the material. This shaft 50 extends up above sleeve 42, has a collar 52 fixed thereon above sleeve 42, and is contracted at its extreme upper end and mounted in a forwardly-projecting bar 53, secured to the top of bracket 30.

An approximately horizontal guide-table 54, supported on suitable legs 55, is adapted to guide strips 56 of veneer between the clamps and saws and has an opening therein through which the clamps and saws contact with the veneers.

Belts (not shown) are passed around the several pulleys to drive them simultaneously.

The operation of our improvements is as follows: Squares of veneers, composed of two (2) sheets each securely held together by nails or glue and with grain crossed, are fed along table 54 between clamping-rings 13 and 31, when the operator by pressure on foot-lever 37, through the medium of shaft 36 and link 34, draws sliding bracket 30 downward, pressing upper clamping-rings 31 and 51 downward to securely clamp the veneers or strips between rings 13 and 31 and 51. When securely clamped, the operator can remove pressure from lever 37, as it will be securely held by ratchet-bar 39. The operator next applies pressure on foot-lever 27 to elevate shaft 5 and sleeve 14 and move saws or cutters 7 and 18 into contact with the lower side of veneer or sheet, and it will be observed that outer or larger saw or cutter 18 is disposed in a higher plane than inner saw or cutter 7, so that while outer cutter 18 will pass through both veneers the inner cutter 7 will pass through but the lower veneer. Simultaneously with the depression of foot-lever 27 the operator draws down hand-lever 48, which forces sleeve 42 and upper saw or cutter 43 downward, compelling said upper cutter to cut through the upper side or half of veneer. Upper saw or cutter 43, while of considerably less diameter than the outer cutter 18 of the lower pair, is of slightly-greater diameter than inner cutter 7, so that while both veneers will be severed, forming drum or barrel heads of exact circumference, the central opening in the upper veneer will be larger than in the lower, forming when the veneers are together a flanged central opening, into which the plug formed from the disks cut therefrom will exactly fit and lie flush with the drum.

Instead of employing cylindrical saws we might employ cutters 57, as shown in Fig. 7, and we might provide a platform lever mechanism 58, as clearly shown in Fig. 8, upon which the operator can stand and exert his entire weight to turn shaft 36 and draw bracket 30 downward and clamp the veneers in position to be cut.

A great number of other slight changes might be made in the general form and arrangement of the parts described without departing from our invention, and hence we do not restrict ourselves to the precise details set forth, but consider ourselves at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of our invention.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a drum or barrel head cutter, the combination of clamping devices and three rotary cutters of different diameters all having the same vertical axis, one cutter adapted to cut out the head of proper size and the others or inner cutters adapted to make circular kerfs on opposite sides of the head.

2. In a drum or barrel head cutter, the combination of clamping devices, three cutters of different sizes, all having the same vertical axis, the outer cutter adapted to cut the head of proper size, and the inner and smaller cutters adapted to penetrate partly through the head from its opposite sides, and means for simultaneously moving two of said cutters toward and away from the head.

3. In a drum or barrel head cutter, the combination with means for clamping two veneers together so that no portion is movable during cutting or until clamp is removed, of a series of concentric rotary cutters, means for causing one of said cutters to pass through both sheets of veneer to form the head of proper size, means for limiting the feed of another of said rotary

cutters to cut a circular disk from the center of one veneer, means for operating another of said rotary cutters to cut a disk of larger size from the center of the other veneer, and means for rotating all of said cutters.

4. In a machine of the class described, the combination with means for clamping two veneers together, of three concentric rotary cutters, means for operating them simultaneously, means for passing the largest one of said cutters through both sheets of veneer to form a head of proper size, and means for limiting the feeding movements of the other rotary cutters to the thickness of one veneer.

5. In a drum or barrel head cutter, the combination with means for clamping two veneers together, of three concentric rotary cutters, means for operating them simultaneously, means for feeding one of said cutters through both veneers to form a head of proper size, means for limiting the feed of the other cutters to the thickness of one veneer and mechanism under control of the operator to operate the clamping means and move the cutters into and out of contact with the veneers.

6. In a drum or barrel head cutter, the combination with a frame, of a fixed lower clamping member, an upper movable clamping member, means for forcing the upper member downward to clamp veneers, three concentric cutters, means for operating said cutters simultaneously, and means for limiting the feed of two of said cutters to a predetermined amount.

7. In a drum or barrel head cutter, the combination with a frame, of a stationary bracket thereon, a clamping-ring carried by said bracket, a vertically-movable rotary cutter carried by said bracket, a foot-lever to move said cutter vertically, a sliding bracket mounted on the frame above the fixed bracket, a clamping-ring carried by the sliding bracket, means for forcing the sliding bracket down to clamp two veneers between the clamping-rings, a vertically-movable rotary cutter carried by the sliding bracket and having a smaller diameter than the first-mentioned cutter and concentric therewith, said clamping-rings lying between the smaller and larger cutters, means for imparting vertical movement to the cutter carried by the sliding bracket, and separate driving-pulleys for the cutters.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

JOHN L. SHEPPARD.
THOMAS C. SHEPPARD.

Witnesses:
C. S. LANIGAN,
MARGARET H. SHEPPARD.