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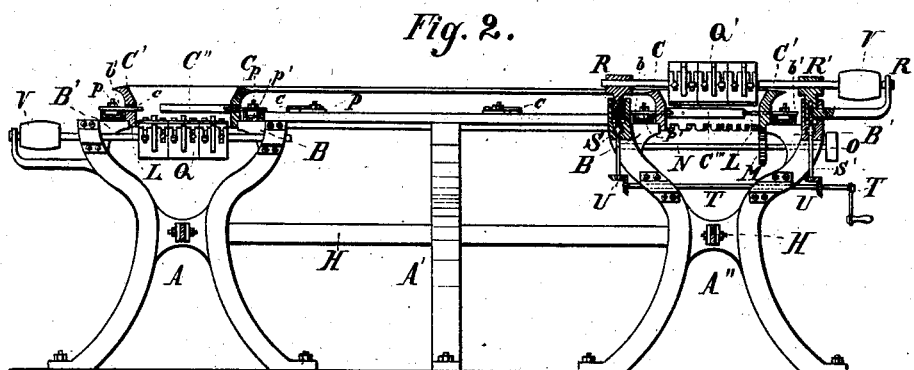
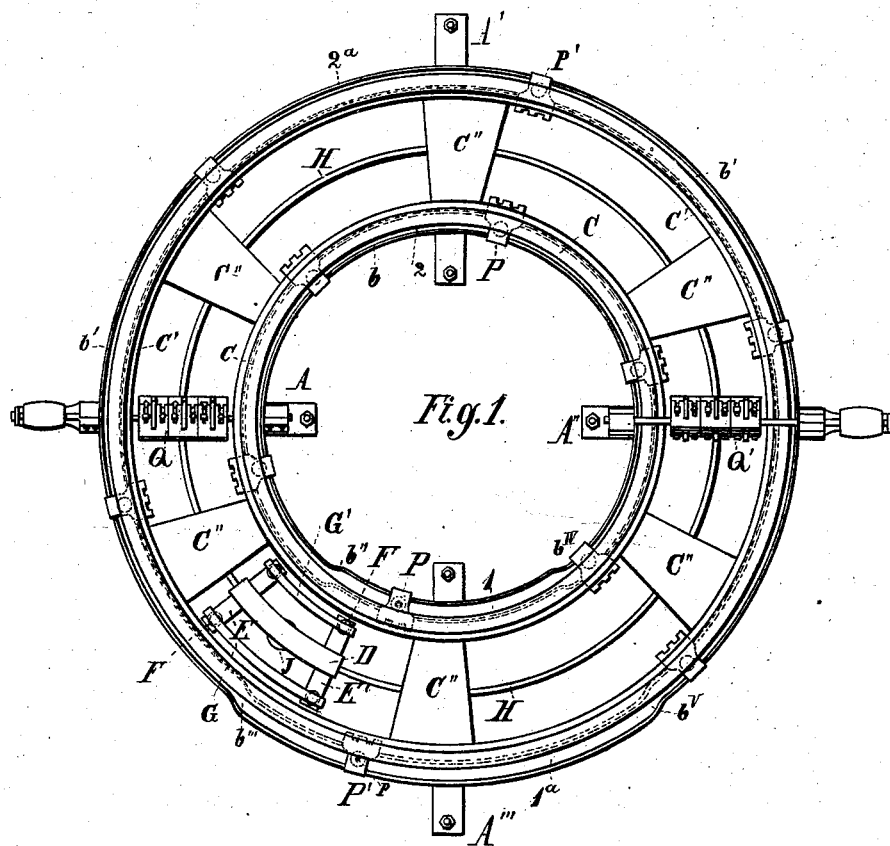
2 Sheets—Sheet 1.

F. H. KANE.

MACHINE FOR DRESSING FLAT COOPERAGE STUFF.

No. 259,868.

Patented June 20, 1882.



Witness:  
Carl Spender.  
Walter Allen

Inventor:  
Frank H. Kane  
by Knight Bros.  
Atty's

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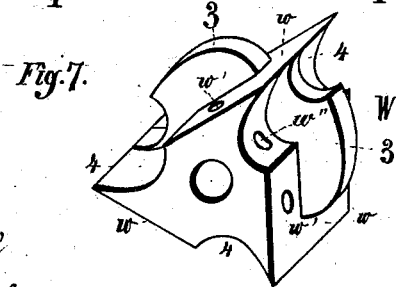
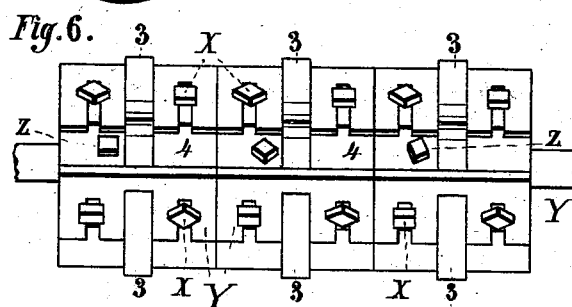
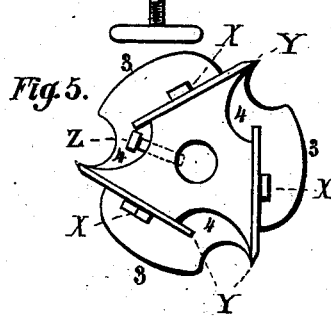
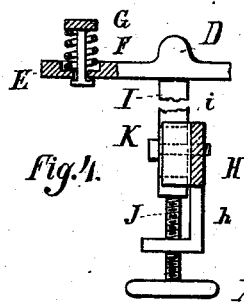
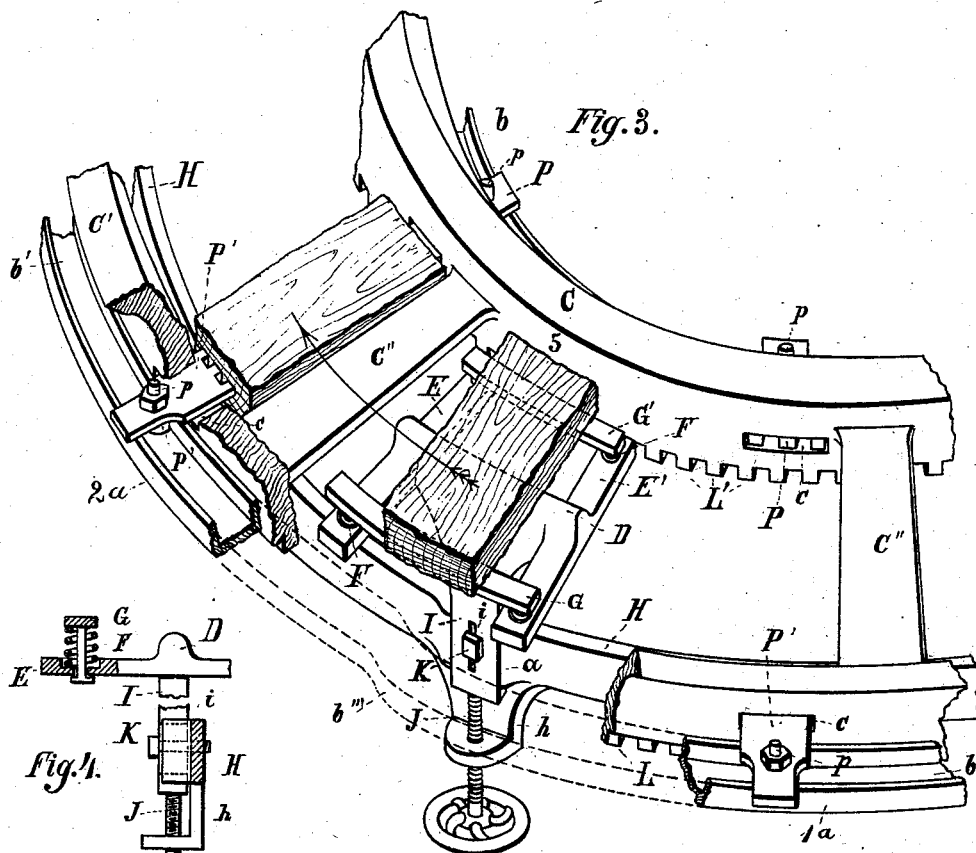
2 Sheets—Sheet 2

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# UNITED STATES PATENT OFFICE.

FRANK H. KANE, OF RIVER SIDE, OHIO.

## MACHINE FOR DRESSING FLAT COOPERAGE-STUFF.

SPECIFICATION forming part of Letters Patent No. 259,868, dated June 20, 1882.

Application filed February 23, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK H. KANE, of River Side, Hamilton county, Ohio, have invented a new and useful Machine for Dressing Flat Cooperage-Stuff, of which the following is a specification.

My invention relates to a device for reducing to any desired uniform thickness and for "taking out of wind" cask-headings and other flat cooperage-stuff.

My device comprises an annular turn-table adapted to revolve continuously in its own plane, and to receive and carry forward to the action of the cutters the pieces to be dressed, and to discharge the dressed pieces. For the purpose of said work there are associated with such table and cutters a rest of peculiar form and construction, a series of automatically grasping and releasing dogs, and other mechanical adjuncts, hereinafter explained.

In the accompanying drawings, Figure 1 is a top view of a machine embodying my invention. Fig. 2 is an axial section through the same. Fig. 3 is a perspective view of a portion of the machine with two pieces of undressed heading, of which one is represented as already dogged and in the act of being carried forward to the dressers, and of which the other is represented as awaiting similar treatment by the pair of dogs next in succession. Fig. 4 is a vertical section through a part of the rest or support upon which the rough pieces of heading are placed by the attendant. Fig. 5 is an end view, and Fig. 6 is a side view, of one of the cutters. Fig. 7 represents one of the component sections of a cutter-head.

A series of equidistant standards, A A' A'' A''', disposed radially in a horizontal circle, uphold two sets of track pieces or brackets, B B', for support and guidance in a circular horizontal path of an open annular bed, carriage, or turn-table, that consists of two concentric rings, C C', united by radial spokes C'', which spokes, besides serving to unite the said parts C C', also do duty as forwarders for the pieces of heading. The rings C C' flare upward and outward, as shown, to facilitate insertion of the stuff and to guide it to its proper place upon the rest. The said rings have preferably a slanting rim, so as to shed chips, dust, &c.

Supported upon and attached to the frame

in such manner as to be capable of vertical adjustment is a bar, D, which constitutes the rest proper. Said bar is located concentric with and midway between the rings C and C' of the turn-table.

Radial brackets E E', projecting from the bar D, carry springs or cushions F, that in turn uphold yielding auxiliary rests G G'. The piece to be dressed being so placed in the machine as to repose flatwise by its mid-length upon the rest proper, D, and by its ends upon the auxiliary rests G G', the resilience of the latter enables them to accommodate themselves to the winding or other irregular surface of the stuff, and yet to support the same with sufficient stability to coact with the spokes in presenting each piece in succession to the gripping action of the dogs.

The rest proper, D, may be supported by any proper means. The means employed and preferred by me are as follows:

H is an annular brace that rigidly connects the standards. This brace has a dovetail socket, a, which receives the correspondingly formed stem I of the rest proper, D. A lug, h, upon the brace H is tapped to receive a screw, J, whose point bears upward against the lower extremity of stem I, and thus supports the said rest. A bolt, K, traversing a slot, i, in the stem, serves to retain the rest securely to its place of adjustment.

The outer ring, C', of the turn-table is armed with an inverted crown-wheel, L, into which meshes a pinion, M, upon a shaft, N, journaled horizontally and radially in the frame and carrying a drive-pulley, O. Each ring C C' is slotted at c for the reception of serrated jaws or dogs P P', having downturned shanks p, preferably provided with friction-rollers p', that occupy cam-troughs b b', which are attached to the tops of the standards. These troughs are concentric, except at the points b'' b''' b'''' b'''' in the circuit, where they are deflected to unite the segments 1 and 1<sup>a</sup>, which are more distant from the median line of the track, with the segments 2 2<sup>a</sup>, which are nearer to that line. The effect of this arrangement is such that for about one-fourth of the table-circuit the dogs are held in the retracted position, and consequently out of contact with the stuff, and for the remainder of the circuit are pressed and held into the ends

of the stuff or headings, so as to cause them to participate in the motion of the table, and by so doing to subject them to the action of the cutters.

5 The cutters Q Q' are preferably of the rotary cylindrical kind common in wood planers and jointers, and are journaled horizontally and radially, or nearly so, in the frame. The bearings of one or both of the cutters may, as at  
10 R R' R'', be vertically adjustable by means of screws S S', operated by winch T and gearing U. One cutter, Q, is located below and the other one, Q', above the path of the stuff, the two being preferably located on remote  
15 sides of the machine, as shown. Each cutter has a driving-pulley, V.

The construction of the cutter is preferably as follows:

W is one of three similar sections having  
20 three symmetrically-disposed facets, *w*, of which each facet has a screw-threaded hole, *w'*, for the fastening-bolt X of one of the three knives or bits, Y, with which each section is armed. Each section is fastened independently  
25 to the cutter-shaft by means of one or more set-screws, Z, which enter screw-threaded holes *w''* in the fillets 4. Each section is preferably attached somewhat out of line with the others, so as to distribute the work around the circuit  
30 of the head.

Guards 3 that project concentrically from each section prevent "skittering" and jarring of the stuff and insure a smooth cut, and concave fillets 4, immediately in front of each blade,  
35 facilitate fracture of the chips and prevent rank cutting.

In practice the rest or support D is adjusted to a level a little below the zenith of the lower cutter, and the upper cutter is adjusted  
40 to such level as to place its lower periphery as much above the upper periphery of the lower cutter as the desired thickness of the finished heading.

The operation of my device is as follows:  
45 The rest and the upper cutter having been adjusted to their proper levels and the machine set in operation, (the two cutters revolving at a very high speed and the table-operating pinion at a slow speed,) a piece of undressed heading is placed upon the rest D, as indicated at 5 in Fig. 3. The next following spoke  
50 of the turn-table, taking the piece of heading in front of it, pushes it forward, and while yet supported by the rest D the stuff becomes securely gripped, as in a vise, by the conjoint  
55 action of the dogs P P', which, having been first made to converge upon the piece of heading, carry it forcibly onward over the first cutter, Q, which just shaves sufficient off of  
60 the slab to face the under side. Thence the piece is carried forward by the dogs through half of the circuit to the remote side of the track, where, in passing under the second cutter, Q', the upper side of the heading is faced  
65 and the piece reduced to the precise thickness desired. Thence the now dressed heading is

carried by the dogs to the point *b<sup>iv</sup> b<sup>v</sup>*, where the retraction of the dogs liberates it and permits it to pass out of the machine.

I reserve the right to modify the above-described illustration of my improvement without departing from the characteristic features of the improvement. For example, in the within illustration of my invention a single feeding place or rest and one pair of cutters are  
70 shown; but by a corresponding enlargement of the machine one or more additional feeding-places and as many additional pairs of cutters may be employed. The upper and under faces of the heading may be dressed on separate machines, like that shown, except that a single cutter may be employed on each. A greater or a less number of pairs of dogs and corresponding forwarding-spokes may be used,  
75 varying with the diameter of the machine and the size of the stuff to be worked. An additional crown-wheel, as at L', Fig. 3, may be provided on the under side of the ring C, with a corresponding pinion on drive-shaft N. The turn-table may be driven by worm-gear or  
80 other suitable mechanism, at discretion of the builder. The stuff-forwarders may consist of bars separately attached to the spokes or other part of the turn-table, instead of the spokes themselves. One series of dogs may be stationary, if desired.  
85

I am aware that it has been customary to construct the rests of shingle and other wood-working machines so as to be adjustable for different depths of cut, and I therefore dis-  
90 claim novelty in such, separately and broadly considered.

I claim as new and of my invention—

1. In a machine for dressing flat cooperage-stuff, the following elements, constructed and  
95 combined substantially as set forth, to wit: two annular series of horizontal track-pieces, B B', stationary cam trough or troughs, as *b b'*, a continuously-revolving turn-table, C C' C'', having radial slots *c*, containing one or more  
100 pairs of dogs, P P', whose shanks *p* occupy said cam-troughs, a horizontal rest, D, to receive the stuff flatwise, and one or more revolving cutters, Q Q', journaled radially of the track, respectively, so far below and above  
105 the same as to impart the desired thickness and flat dressing to the stuff, in the manner explained.

2. In a machine for dressing flat cooperage-stuff, the combination, with a continuously-revolving turn-table, of the rest, consisting of  
110 fixed bar D for the middle and the two yielding bars G G' for the ends of the stuff, the said rest being constructed, arranged, and adapted to operate substantially as set forth.  
115

3. In a machine for dressing flat cooperage-stuff, the described combination, with a continuously-revolving turn-table, of the rest D G G', having the stem I occupying dovetail socket *a* in the supporting-frame, and having  
120 adjusting-screw J and clamping-bolt K, substantially as and for the purpose set forth.  
125

4. In a machine for dressing flat cooperage-  
stuff, the combination of horizontal vertically-  
adjustable rest D G G', adapted to support  
the stuff flatwise and present it to the cutters  
5 edgewise, the stuff clamping and forwarding  
table C C' C'', turning in its own plane and par-  
allel with the plane of said rest, and the cut-  
ters Q Q', journaled radially of said table, one  
below and the other above, and one or both of  
them adjustable relatively to the same, sub- 10  
stantially as set forth.

In testimony of which invention I hereunto  
set my hand.

FRANK H. KANE.

Attest:

GEORGE H. KNIGHT,  
SAML. S. CARPENTER.