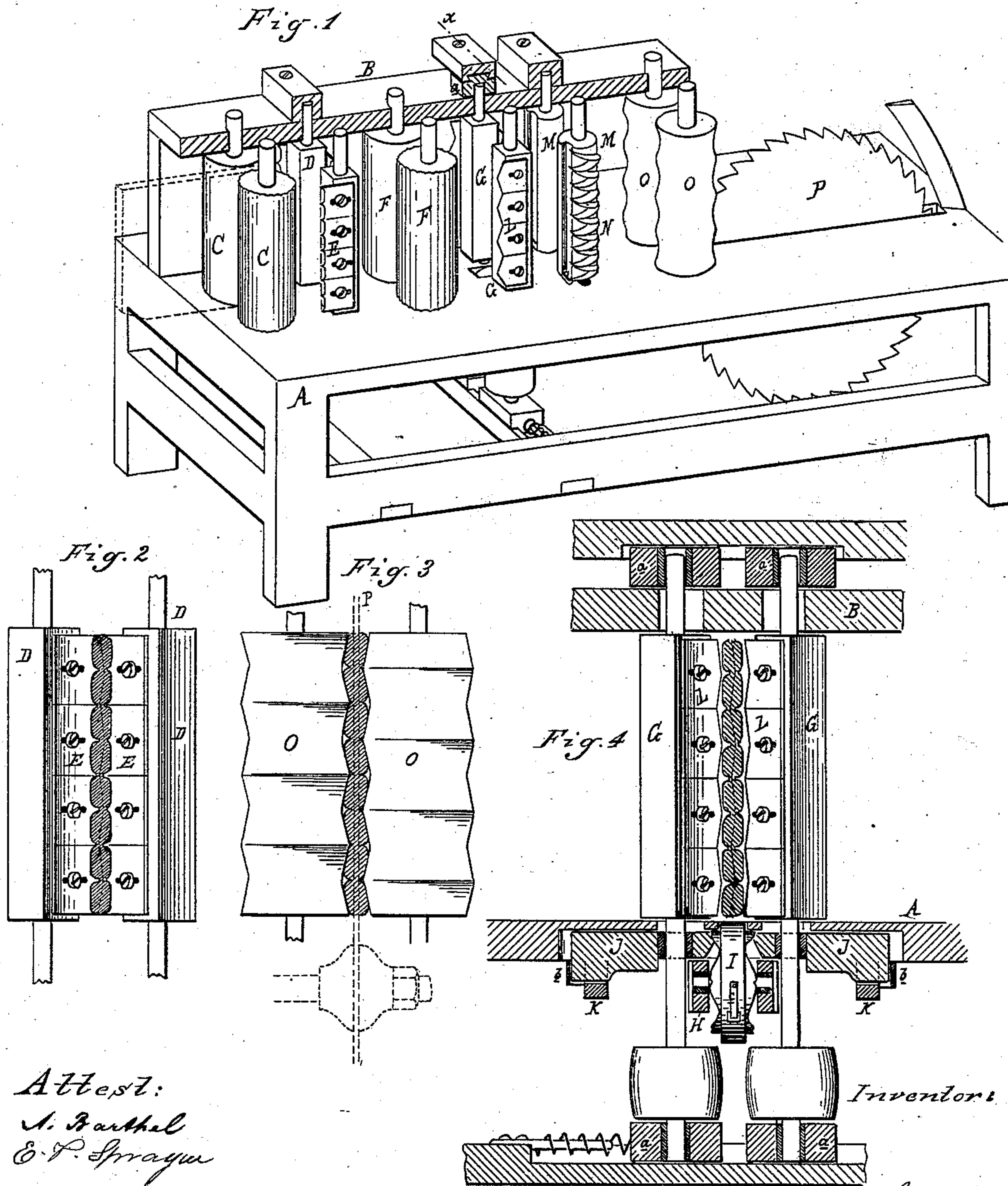


G. A. RAUPP.
Barrel-Hoop Machine.

No. 225,075.

Patented Mar. 2, 1880.



Attest:
A. Barthel
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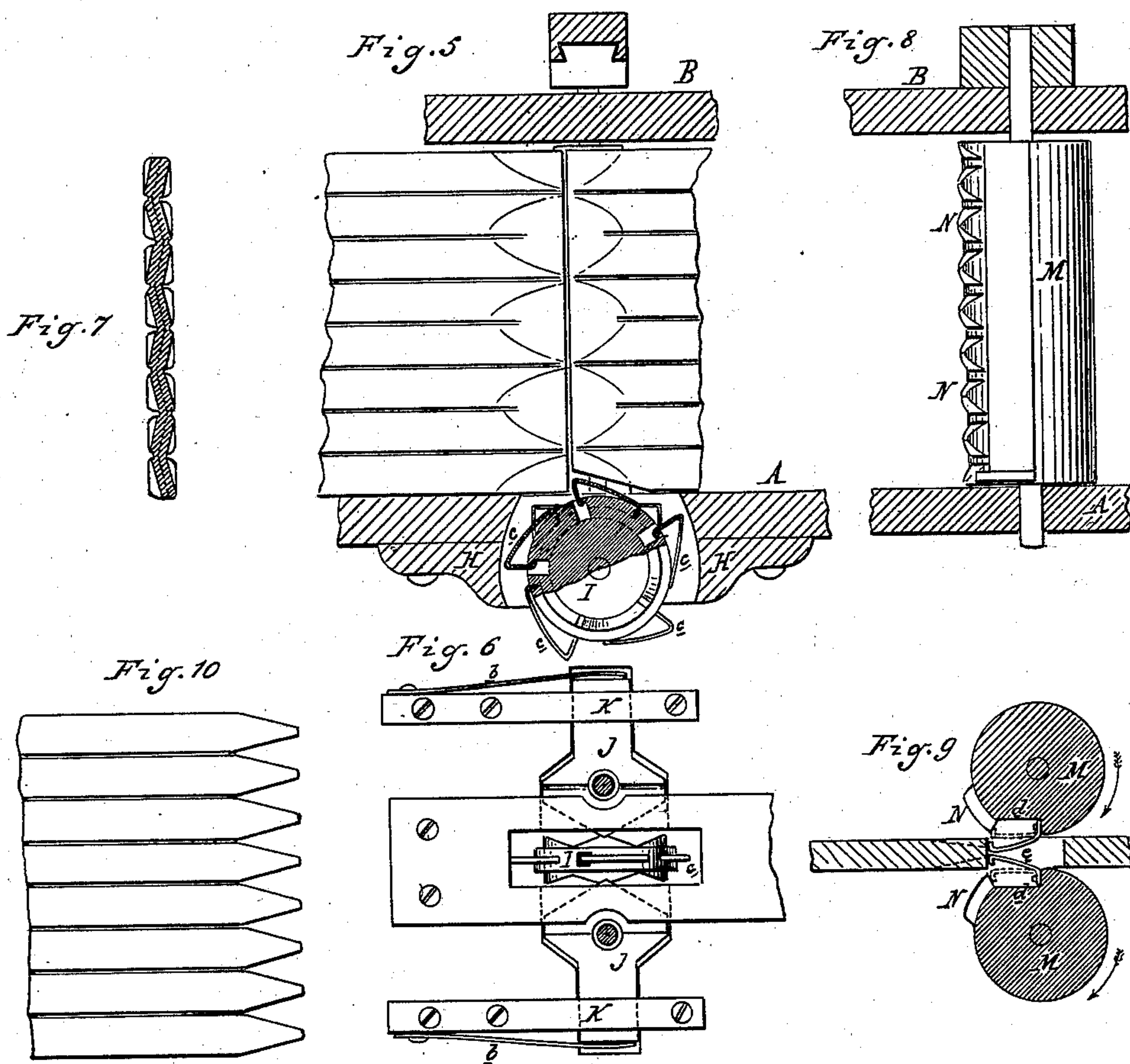
Inventors:

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UNITED STATES PATENT OFFICE.

GUSTAVE A. RAUPP, OF ECORSE, MICHIGAN.

BARREL-HOOP MACHINE.

SPECIFICATION forming part of Letters Patent No. 225,075, dated March 2, 1880.

Application filed July 10, 1879.

To all whom it may concern:

Be it known that I, GUSTAVE A. RAUPP, of Ecorse, in the county of Wayne and State of Michigan, have invented an Improvement in Barrel-Hoop Machines, of which the following is a specification.

The nature of my invention relates to new and useful improvements in the construction of that class of machines employed for cutting hoops from a board or plank.

The invention consists, first, in the peculiar construction and arrangement of certain rollers and cutters for dividing the plank longitudinally into strips or cants which are oval in cross-section; second, in the arrangement and operation of certain cutters for forming the lap upon one end of each of the strips or cants; third, in the construction of peculiar cutters for pointing the opposite ends of the strips; and, fourth, in the peculiar construction, arrangement, and combinations of the various parts, all as more fully hereinafter set forth.

In the drawings, Figure 1 is a perspective view, with a portion of the frame broken away. Fig. 2 is an elevation of the cutters which partially divide the plank into strips. Fig. 3 is an elevation of the corrugated feed-rolls. Fig. 4 is a vertical cross-section on the line *x x*. Fig. 5 is a detached view, showing device for operating the lapping-cutters. Fig. 6 is a bottom view of the same. Fig. 7 is an end elevation of the strips after having been lapped. Fig. 8 is an elevation of the pointing-cutters. Fig. 9 is a bottom plan of the same. Fig. 10 is an elevation, showing the strips as pointed.

In the accompanying drawings, which form a part of this specification, A represents a suitable table, surmounted by the frame B. In the front end of this table and frame are properly journaled the feed-rollers C, driven by suitable pulleys and belt.

D are cutter-heads, journaled in bearings in rear of the rolls C, receiving the rotary motion from belts which pass around pulleys secured to their lower ends below the bed of the table. These cutter-heads are provided with cutters E, substantially of the form shown in Fig. 2. These cutters are arranged so that as a board is presented edgewise to them they will partially divide the board into strips with

rounded corners, every alternate spur of the cutters being longer than the intermediate ones, and are so arranged upon their heads that the long spurs of one series of cutters will be coincident with the short spurs of the other series, and in their operation they partially divide the plank into strips, leaving a web between such strips, which is cut away by the saw, as hereinafter described.

F are feed-rolls, properly journaled in the frame, which guide the partially-divided board to the cutter-heads G. These cutter-heads are journaled in sliding boxes *a* at top and bottom, and are driven in any convenient manner.

Journaled in a hanger, H, secured to the under side of the table, is a wheel, I, the sides of which are corrugated, as shown, which engage with the sliding blocks J, which have a lateral movement in suitable guide-brackets K, secured to the bed of the table, springs *b* compelling the inner pointed ends of these blocks to always be in contact with the corrugated surfaces of the wheel. Arranged in the periphery of this wheel J are the springs *c*, which alternately project through a slot in the bed of the table as the wheel is revolved.

The heads G are provided with knives L. As the plank or strips are fed to these cutters the forward end of the lower strip comes in contact with one of the springs *c*, which projects above the table-bed. As the board passes on, this causes the wheel I to partially revolve, causing the blocks J, through which the shafts of the cutter-heads G pass, to slide laterally in their bearings, following the corrugations on the sides of the wheel I, and compelling the cutter-heads G to advance toward each other and cut a bevel upon each side of the strips, and in the further passage they are drawn or forced back from the strips. As the board advances and the spring *i* passes beneath the table the parts remain in this position until the rear end of the board, which has previously been beveled off, as shown in Fig. 5, comes over the next spring *c* in the wheel I, when, it meeting with no further resistance, it springs up, projecting above the bed of the table, ready to be engaged by the next board following, which, rotating the wheel as before, causes the cutters G to advance and retract,

beveling off the rear end of the first board and the forward end of the board immediately following.

M are cutter-heads, circular in form, journaled in proper bearings, and are provided with a flattened portion, *d*, extending their entire length. These cutter-heads are also provided with knives N, which are V-shaped, as shown, and at the base of each cutter-head is secured a spring, *e*. As the board advances to and between these cutters they are caused to revolve until the flattened portion is presented to the side of the board, the springs *e* pressing against the same. As the cut-away end of the board passes these springs they spring inwardly and toward each other, as shown in Fig. 9. The next succeeding board strikes against these springs, causing the cutter-heads M to revolve and bring the knives N into contact with the forward end of such succeeding board and point off the ends of the strips, as shown in Fig. 10. As the board passes on it goes between the corrugated feed-rolls O, which twist the strips into the positions shown in Fig. 3, presenting their ends in that position to the circular saw P, which divides the strips vertically, cutting away the web which heretofore has kept them together, making two perfect beveled hoops, pointed and lapped, from each strip.

What I claim as my invention is—

1. In a hoop-cutting machine, substantially as described, the combination of the revolving cutter-heads D, having cutters E, constructed with alternate long and short cutting-spurs, as shown, the long spurs of one cutter being arranged opposite the short spurs of the other cutter, for the purpose of cutting a board into hoop-strips with connecting-webs on a zigzag line.

2. In a hoop-cutting machine, the combination of the vertical cutter-heads G, having cutters L and mounted in sliding bearings, with a wheel rising through the table between

the cutter-heads, such wheel being turned by the movement of the hoop-board, and operating, through connecting mechanism, to move the cutters away from and toward the hoop-board, for the purpose of beveling the ends of the hoops, substantially as described and shown.

3. In a hoop-cutting machine, the combination of the cutter-heads M, having V-shaped cutters N, and the springs *e*, whereby the revolution of the cutters, by the passage of the hoop-board between them, is checked at suitable periods of time by the action of said springs, substantially as described.

4. In a hoop-cutting machine, the combination of the corrugated feed-rolls O, having opposite corrugations arranged in alternate order, as shown, and the circular saw P, whereby the board passing between said corrugated rolls is twisted for presentation, so that it is divided by said saw into two beveled hoops, substantially as described.

5. In a hoop-cutting machine, the combination of revolving cutters, with alternate long and short spurs to divide a board or plank into double hoop-sections connected by webs on a zigzag line, corrugated feed-rollers to twist such sections alternately in opposite direction, so as to bring the connecting-webs all into line with each other, and a circular saw for dividing the hoop-board into two parts, and at the same time for separating the sections, substantially as described and shown.

6. In a hoop-cutting machine, and in combination with vertical feed-rolls O F, cutter-heads D G M, and cutters E L N, the corrugated feed-rolls O and circular saw P, all constructed and arranged to operate substantially as and for the purposes set forth.

GUSTAVE A. RAUPP.

Witnesses:

A. BARTHEL,
H. S. SPRAGUE.