(No Model.) 3 Sheets—Sheet 1.

D. C. PUTNAM.

HOOP MAKING MACHINE.

No. 527,884. Patented Oct. 23, 1894.

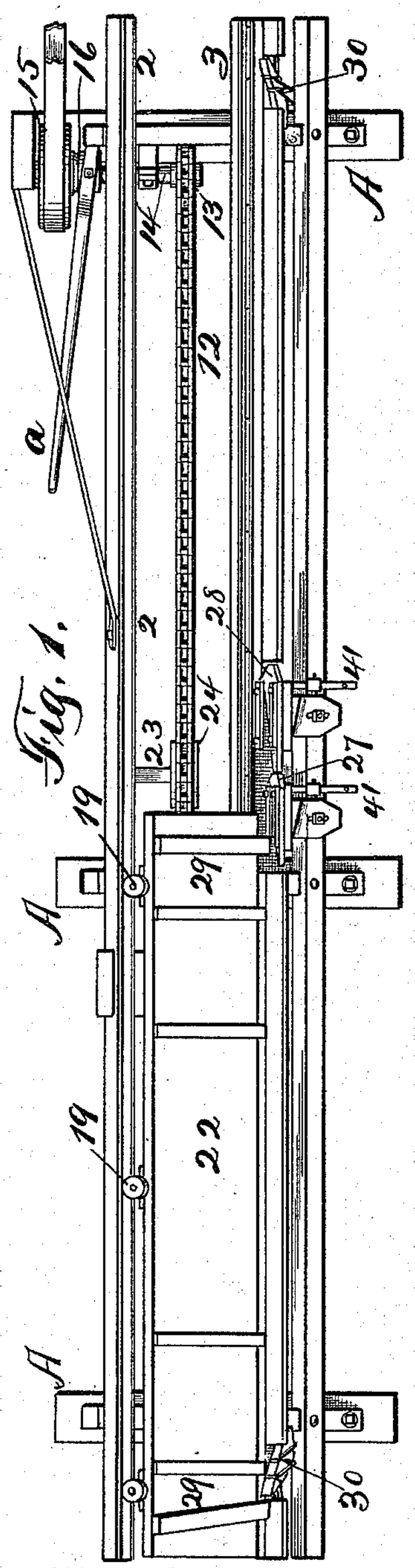


Fig. 1.

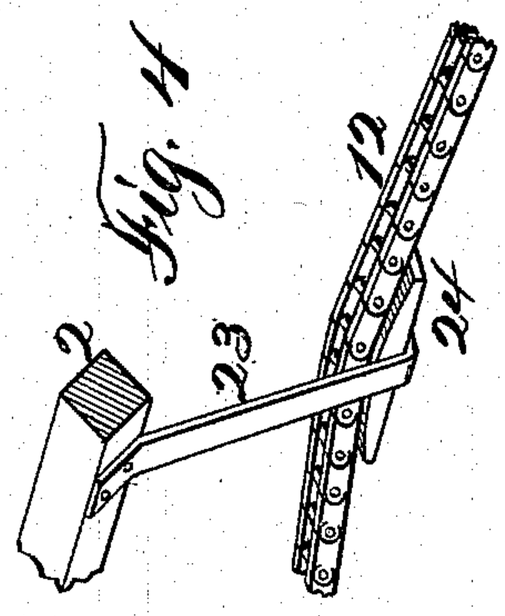


Fig. 4.

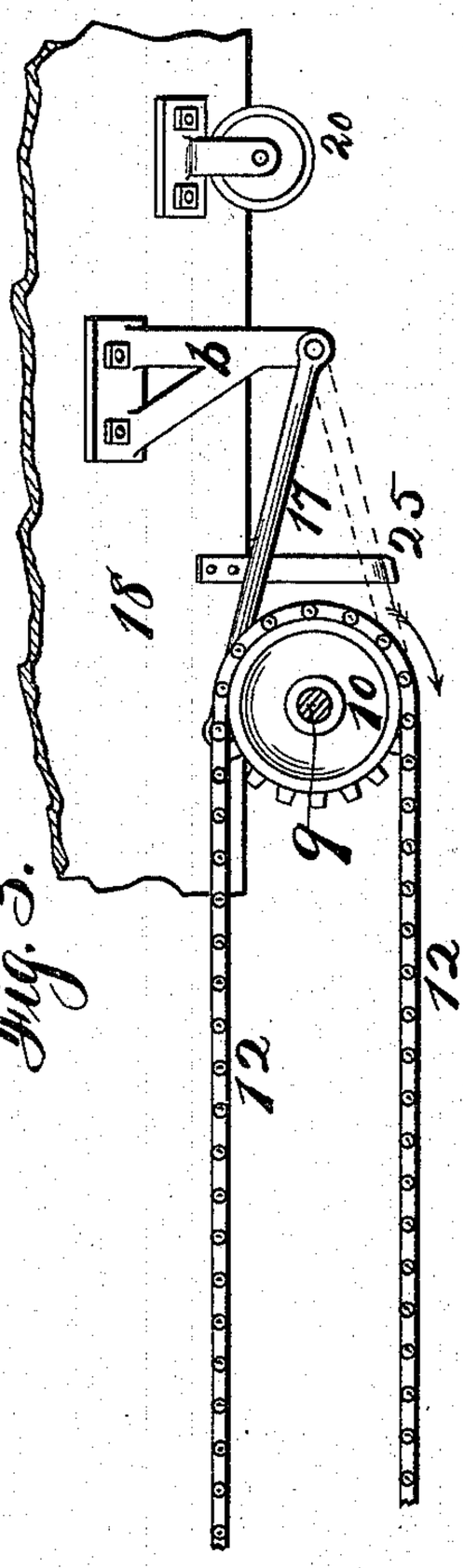


Fig. 3.

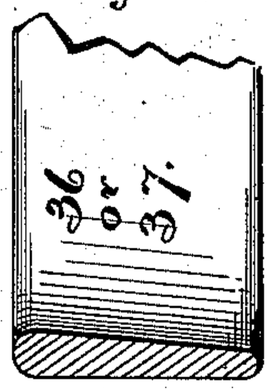


Fig. 14.

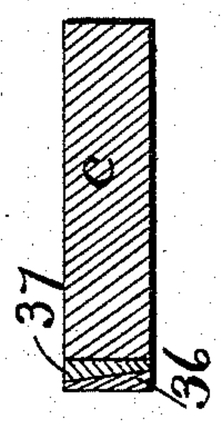
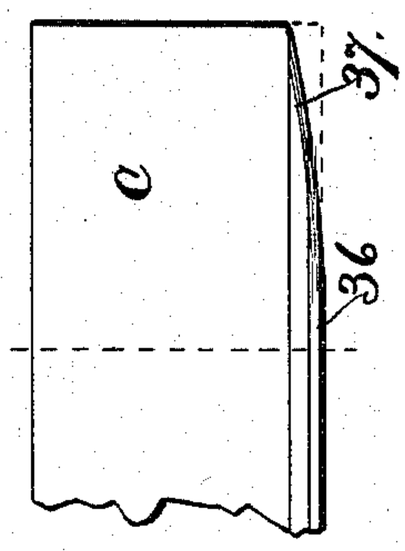


Fig. 12

Fig. 13.

Fig. 11



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(No Model.) 3 Sheets—Sheet 2.

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HOOP MAKING MACHINE.

No. 527,884. Patented Oct. 23, 1894.

Fig. 2.

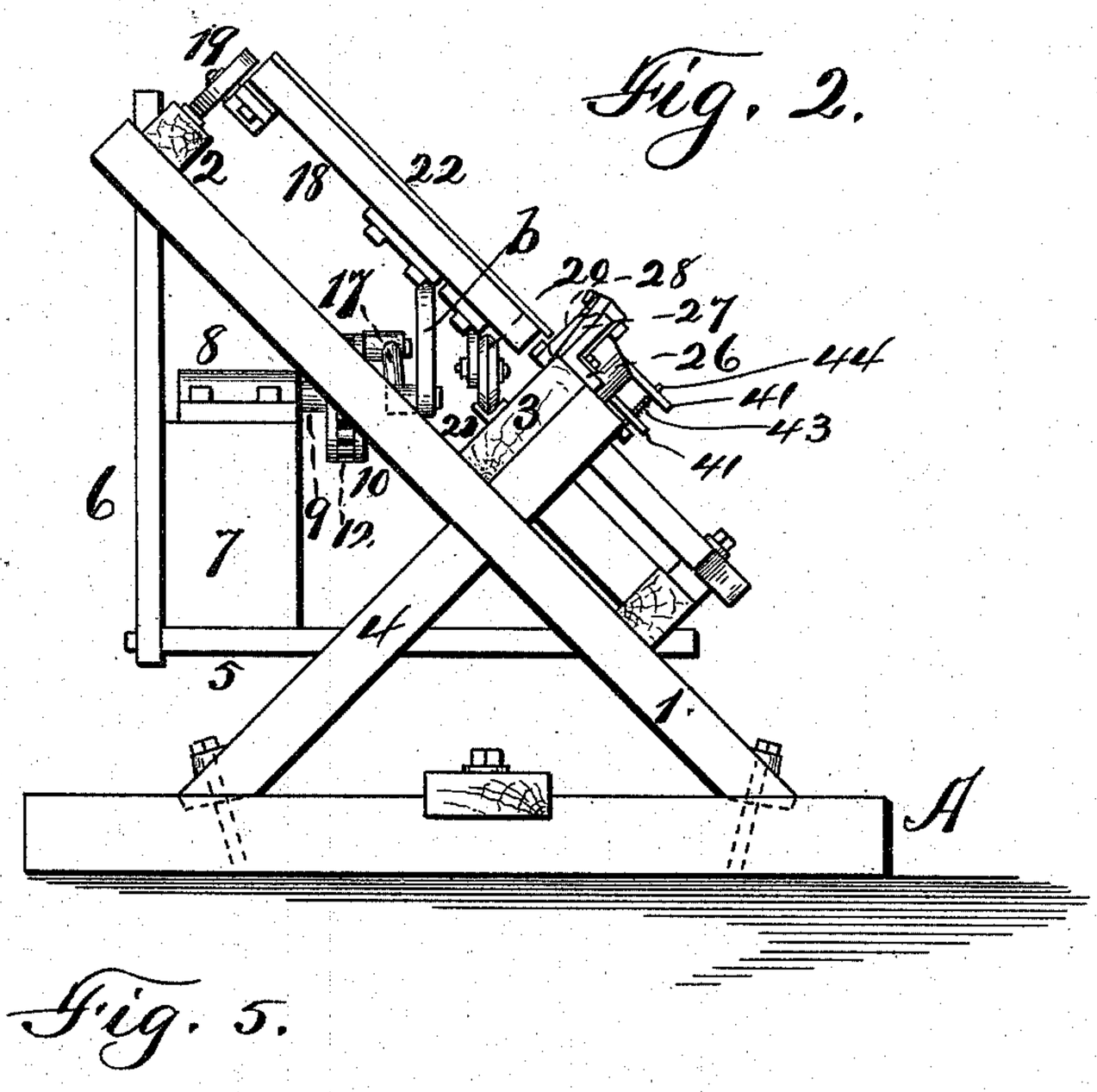


Fig. 5.

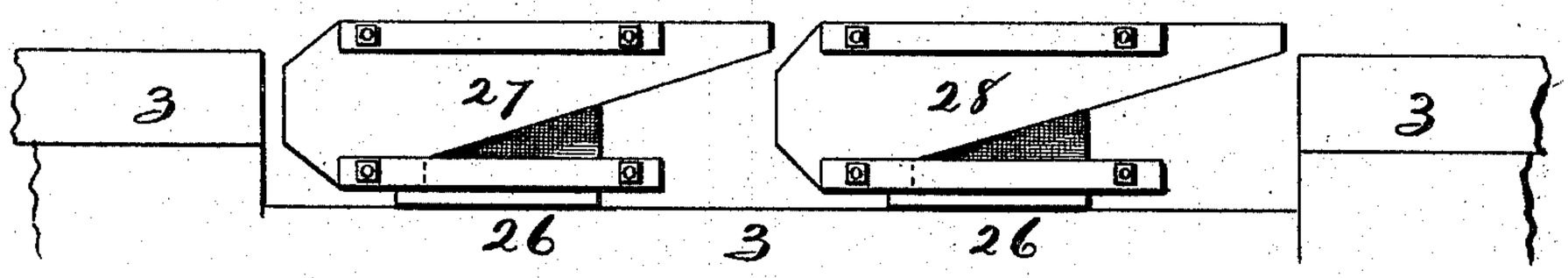


Fig. 6.

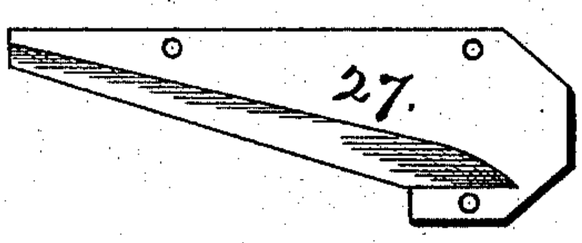
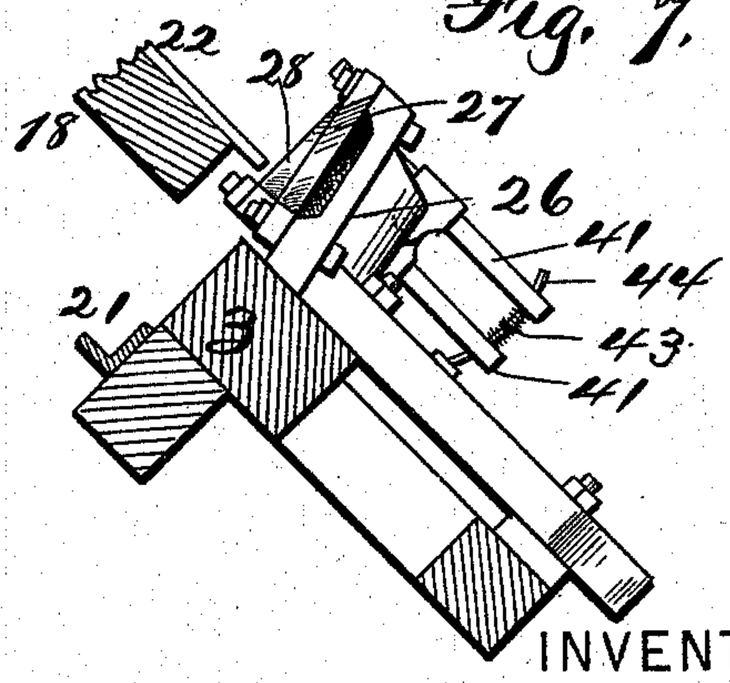


Fig. 7.



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(No Model.) 3 Sheets—Sheet 3.

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HOOP MAKING MACHINE.

No. 527,884. Patented Oct. 23, 1894.

Fig. 8

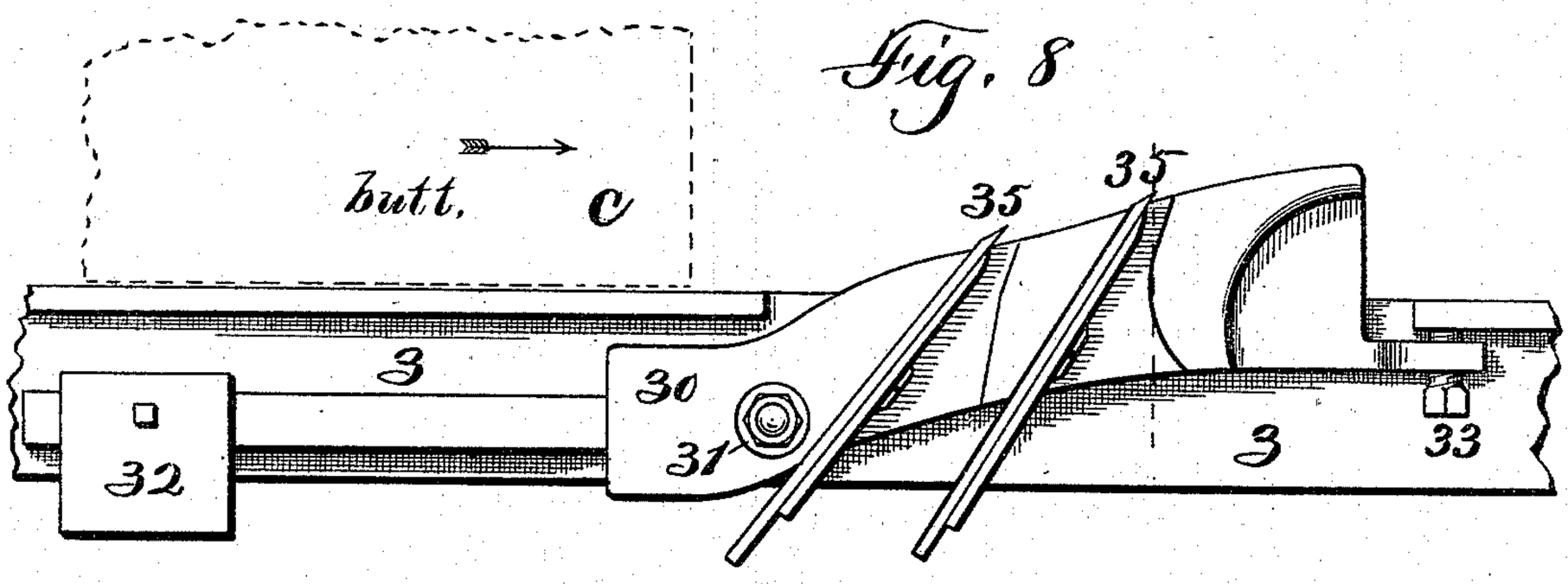


Fig. 9.

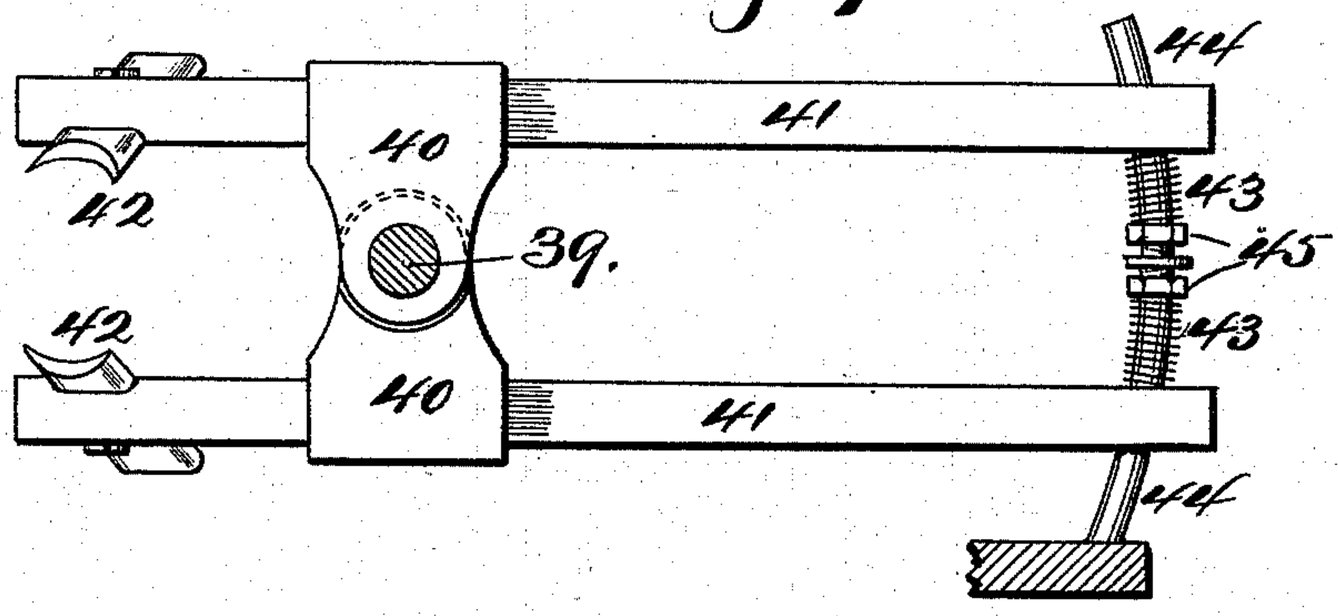


Fig. 10.

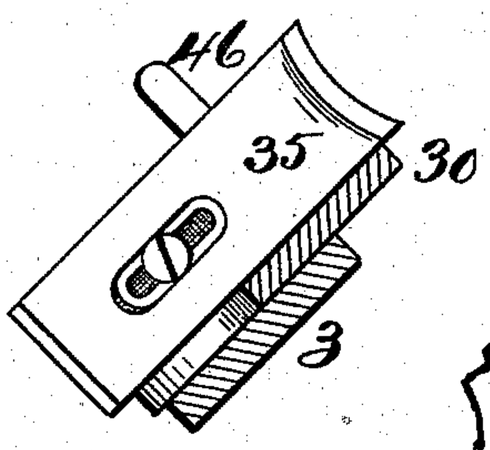
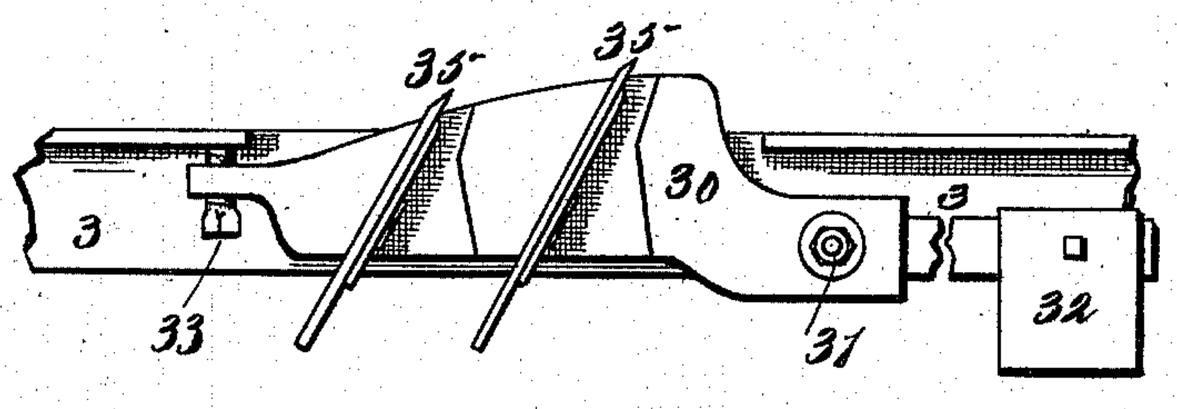


Fig. 15.



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UNITED STATES PATENT OFFICE.

DOUIA C. PUTNAM, OF WAYNE CENTRE, NEW YORK.

HOOP-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 527,884, dated October 23, 1894.

Application filed July 1, 1893. Serial No. 479,335. (No model.)

To all whom it may concern:

Be it known that I, DOUIA C. PUTNAM, of Wayne Centre, in the county of Wayne, in the State of New York, have invented new and useful Improvements in Hoop-Making Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to hoop-making machines, designed to cut them from the edge of a steamed plank or butt of proper thickness.

My object is to produce a hoop-making machine adapted to cut hoops successively from the edge of a plank after it has been steamed, in which the plank or butt is placed upon an inclined and reciprocating table, the cutting knives being stationary, and the butt being fed by sliding down said incline; in which the hoops are cut of unequal thickness upon the edges; in which the edges are rounded after being cut; in which the ends are beveled and rounded; in which the table is reciprocated by a pitman rod connected at one end to the table and at the other end to an endless driving chain; in which the lower face of the butt is beveled and rounded at one end by the forward movement of the table and at the other by the backward movement thereof, so that each hoop when cut off from the butt is rounded and beveled on both ends; and in which the edge rounding is done substantially simultaneously with the cutting, on both edges at the same time, by concave stationary cutters mounted upon adjustable and yielding knives, spring pressed against the hoops.

My invention consists in the several novel features of construction and operation hereinafter described and which are specifically set forth in the claims hereunto annexed.

It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1, is a top plan of the machine. Fig. 2, is an end elevation thereof. Fig. 3, is a detail of the table reciprocating mechanism. Fig. 4, is a detail of a support to carry the sag of the drive chain. Fig. 5, is a top plan of the hoop-cutting knives, where two are used. Fig. 6, is a bottom plan of one of these knives. Fig. 7, is a transverse vertical sectional elevation of part of the table, and of the hoop cutting knives and their mounting for cutting hoops of unequal thickness of edge. Fig. 8, is an enlarged detail of the mounting of the cutters for beveling and rounding the ends of the butt before the hoop is cut off. Fig. 9, is an elevation of one set of the cutters for rounding the edges of the staves as they are cut off from the butt. Fig. 10, is a sectional detail of one of the beveling and rounding cutters (shown in Fig. 8) and its mountings on line *x x*. Fig. 11, is an elevation of part of a butt, showing it beveled and rounded, the parallel lines showing the cuts made by cutting off two hoops. Fig. 12, is a cross section of the same, showing the two cuts. Fig. 13 is an elevation of the outer face of a finished hoop. Fig. 14, is a cross section of the same. Fig. 15 is a view similar to Fig. 8 with the weight reversed.

A, is the base upon which is erected the inclined frame comprising the inclined end bars —1—, the longitudinal rails—2—3—, the support —4—, the bars —5—6— upon which the pillar —7— is erected, carrying the journal bearing —8— in which the shaft —9— is journaled, and —10— is a sprocket secured upon said shaft over which the endless drive chain —12— passes; and —13— is the drive-sprocket, secured upon the drive-shaft —14—; and —15— is the drive-pulley loose upon said shaft, which is journaled in the end of the frame, in the same manner as shown in Fig. 2, and —16— is an ordinary clutch by which the drive pulley is connected to or disconnected from the drive shaft in the usual manner, by operating the lever —*a*—.

A pitman rod —17— is pivotally connected to the drive chain —12— having its other end pivotally connected to a bracket —*b*— secured to the carriage —18—, which is mounted upon the rollers —19— upon its upper edge, traveling upon the rail —2—, and at its lower edge upon rollers —20— which travel upon a trackway —21— secured upon the rail —3— and the continuous movement of the drive chain in one direction recipro-

cates the carriage and the feed-table —22—, thereon.

An arm —23— dependent from the rail —2— carries a saddle —24— which centrally supports the upper section of the drive chain to prevent its sagging, and an arm —25— is secured upon the table, its lower end being angularly bent so as to engage with and support the sag of the lower section of the chain.

Upon suitable brackets —26— secured to the rail —3— the sloping and bevel-edged cutting knives —27— —28— are secured, shown in the drawings as each so set as to cut a hoop strip from the lower edge of the butt —*c*— upon the table, in such manner that one edge is thicker than the other, and both cuts together create a rectangle, one knife following the other in its cutting, the knives being stationary while the butt is reciprocated by the carriage, thus cutting the hoops from the butt, each time the butt is carried forward. The butt —*c*— is held from moving longitudinally upon the table by the bars, or cleats —29— between which the butt lies.

Upon each end of the rail —3— a plane —30 is pivotally mounted at —31—, the body of which is provided with a counterbalance —32 at one end and a set screw —33— at the other end, engaging with a flange upon said rail, by which the vertical lift of the counterbalance is regulated. Each plane body is provided with an inclined upper face, and the plane knives —35— having concaved cutting edges are adjustably mounted in the plane body; said knives standing in opposite directions; each body being so located that the end of the butt is carried onto the inclined face of the plane, and onto the plane-knives, and then as the movement of the carriage is reversed each of the knives takes hold and removes a shaving and by their joint action the ends of the block are beveled and rounded substantially as shown in Fig. 11, and then the first cut removes a short hoop —36— and the next cut a long one —37— and so on, alternately.

Upon a rod —39— the plates —40— are pivoted, and the knife bars —41— are secured to said plates, and —42— are the edge rounding knives adjustably secured to said bars, and adjustable also and yielding toward or from each other, by means of the springs —43— around the guide rod —44—; and —45— are nuts for adjusting the tension of said springs upon or against said bars. A set of these edge rounders is provided for and erected adjacent to each of the hoop-cutters so that each hoop as it leaves its knife, passes between the cutters of an edge rounder and its edges are rounded substantially as shown in Fig. 14. An arm —46— upon the plane body prevents its depression below a predetermined level.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a hoop-cutting machine, the combination with a butt-carrying table, of an endless drive chain, a pitman rod connected thereto and means to actuate said chain continuously in one direction to reciprocate the table.

2. In a hoop-cutting machine, the combination with a traversing butt-carrying table, an endless drive chain, pitman rod connected to said table, and to said chain, and means to actuate said chain continuously in one direction, of stationary hoop-cutting knives mounted adjacent to the edge of the table.

3. In a hoop cutting machine, the combination with a reciprocating butt-carrying table, of a plane having an upwardly inclined face, plane-irons projecting therefrom and engaging with the lower side of the butt, adjacent to its end when it has been carried on to said inclined face, the table and means for imparting the reverse movement.

4. In a hoop-cutting machine, the combination with a reciprocating butt-carrying table, of non-reciprocating planes adjacent to the end limits of the traverse of the table and having oppositely inclined faces, and plane-irons standing at opposite angles to said faces respectively, and alternately engaging with the lower side of the butt adjacent to its ends when it has been carried on to said inclined faces respectively and the table reverses the direction of its movement.

5. In a hoop-cutting machine, the combination with the reciprocating butt-carrying table, of non-reciprocating planes adjacent to the end limits of the traverse of the table and having oppositely and adjustably inclined faces, and plane-irons standing at opposite angles to said faces respectively, and alternately engaging with the lower side of the butt, adjacent to its ends, when it has been carried onto said faces respectively and the table reverses the direction of its movement.

6. In a hoop-cutting machine, a bed, a traversing table, planes erected upon the bed and having oppositely inclined faces, and plane irons alternately engaging with the butt adjacent to its ends, in combination.

7. In a hoop-cutting machine, a bed, a traversing table, planes erected upon the bed and having oppositely inclined faces, plane irons alternately engaging with the butt adjacent to its ends, and hoop cutting knives engaging with the chamfered butt, in combination.

8. In a hoop cutting machine, a bed, a traversing table, planes erected upon the bed and having oppositely inclined faces, plane-irons alternately engaging with the butt adjacent to its ends, hoop-cutting knives engaging with the chamfered butt, and edging knives between which the hoop passes as it is cut from the butt, in combination.

9. In a hoop-cutting machine, a bed, a trav-

ersing table, planes yieldingly mounted upon the bed and having oppositely inclined faces, plane irons adapted to alternately engage with the butt adjacent to its ends, and hoop-cutting knives engaging with the chamfered butt, in combination.

10. In a hoop-cutting machine, the combination with the traversing butt-carrying table, of the planes engaging with the butt thereon, the hoop cutting knives adjacent to the edge of the table, and the edge-rounding cutters receiving the hoops from said knives.

In witness whereof I have hereunto set my hand this 26th day of June, 1893.

DOUIA C. PUTNAM.

In presence of—

HOWARD P. DENISON,

C. B. KINNE.