

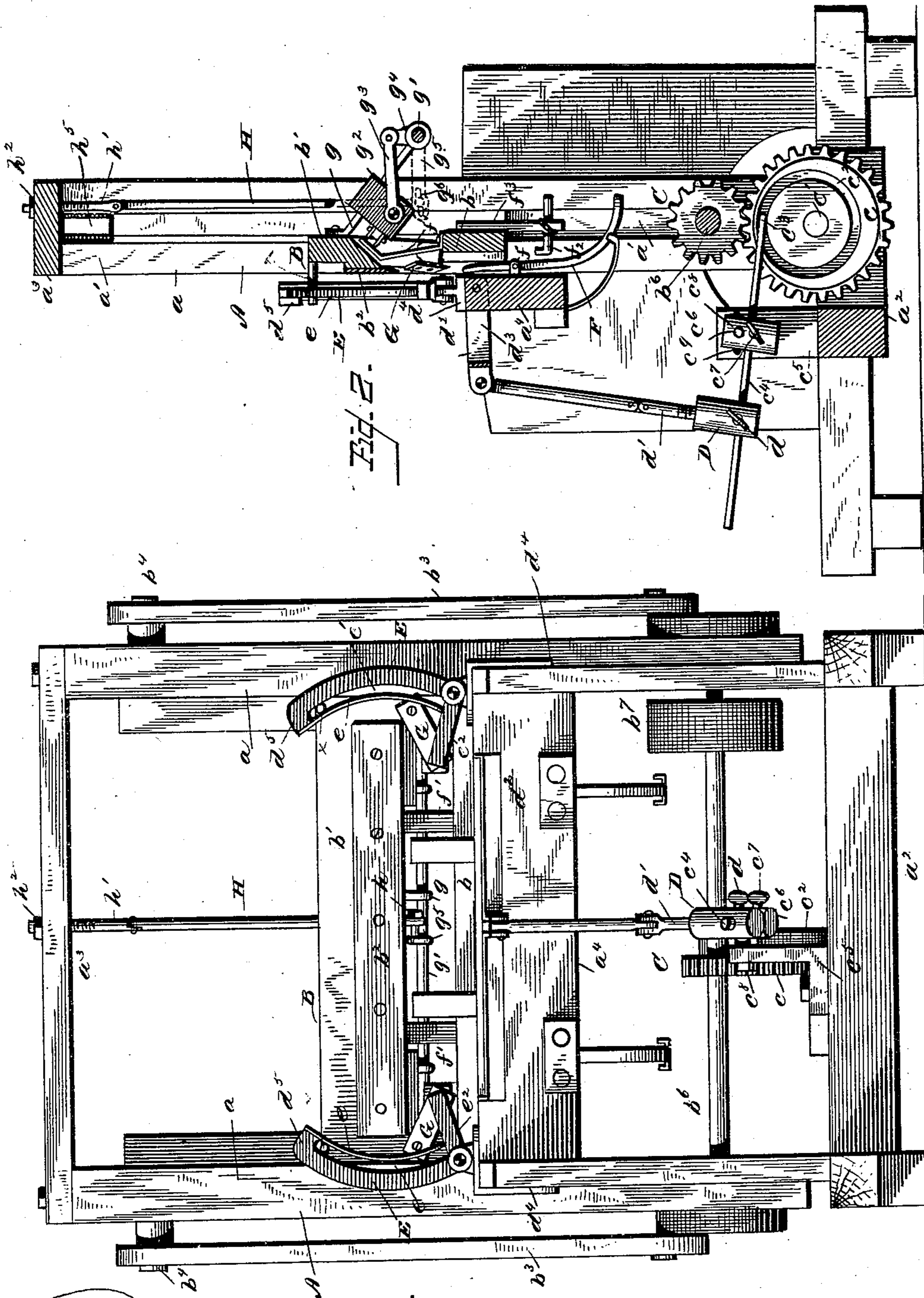
(No Model.)

2 Sheets—Sheet 1.

A. HITZERT.
BARREL HOOP MACHINE.

No. 313,207.

Patented Mar. 3, 1885.



WITNESSES
James M. Hilton
James M. Hilton

INVENTOR
Albert Hitzert
By *Wm. B. Bates and Co.*
His Attorneys.

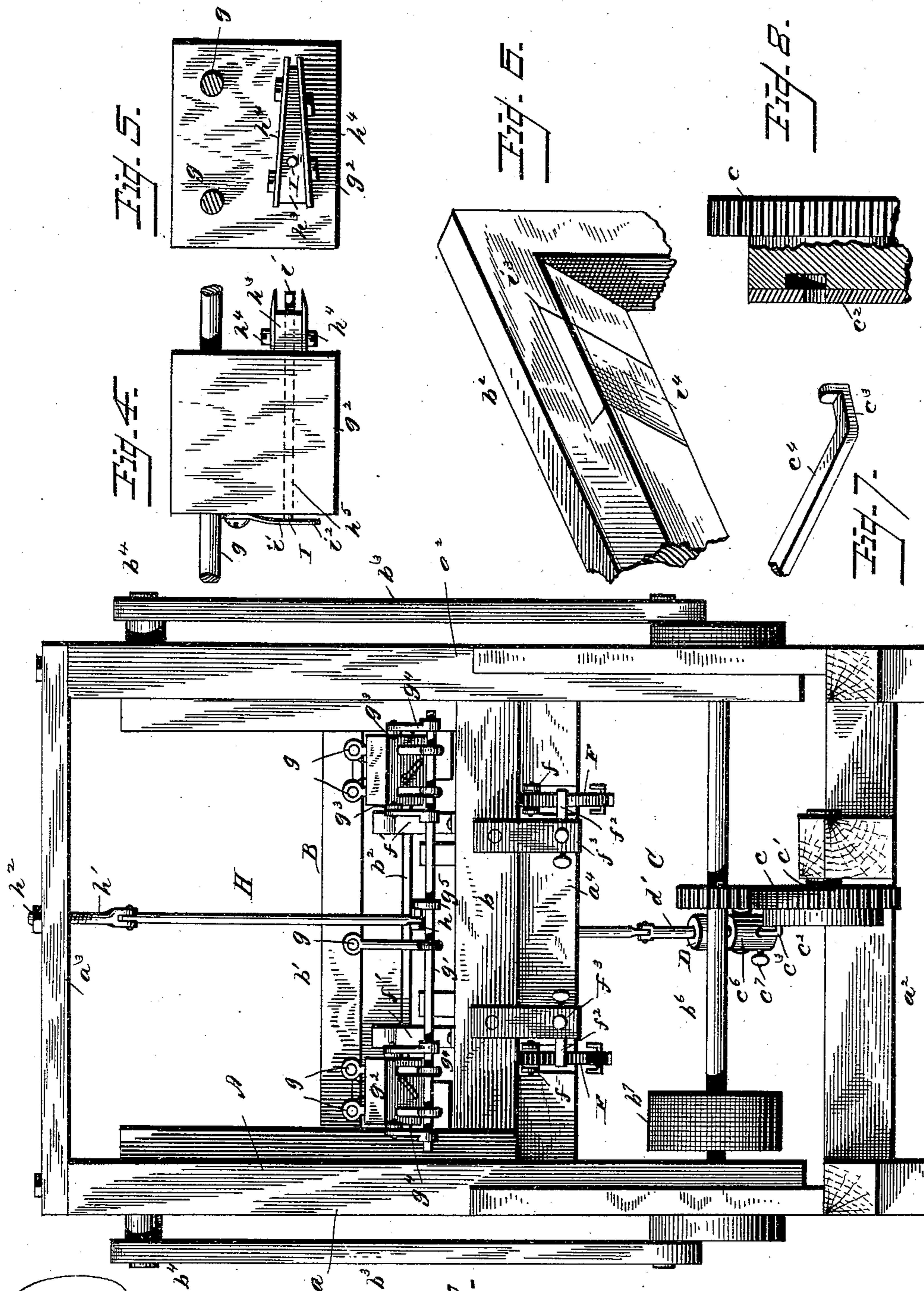
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WITNESSES
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Fig. 3.
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Albert Hitzert.
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UNITED STATES PATENT OFFICE.

ALBERT HITZERT, OF EAST SAGINAW, MICHIGAN.

BARREL-HOOP MACHINE.

SPECIFICATION forming part of Letters Patent No. 313,207, dated March 3, 1885.

Application filed January 8, 1885. (No model.)

To all whom it may concern:

Be it known that I, ALBERT HITZERT, a citizen of the United States, residing at East Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Machines for Making Barrel-Hoops, of which the following is a specification, reference being had to the accompanying drawings.

This invention has relation to improvements in machines for making barrel-hoops; and it consists in the construction and novel arrangements of devices, all as hereinafter fully explained, and particularly pointed out in the claims appended.

The annexed drawings, to which reference is made, fully illustrate my invention, in which Figure 1 represent a front view of my device. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a rear view. Figs. 4, 5, 6, 7, and 8 are detail views.

Referring by letter to the accompanying drawings, A designates the main frame of the machine, consisting of the lateral vertical up-rights a , having the vertical guideways a' , and connected to one another by the lower cross-bar, a^2 , upper bar, a^3 , and central cross-bar, a^4 , which latter bar is slightly inclined upon its upper edge from front to rear, as shown.

B indicates the vertically-moving carriage, consisting of the vertical lateral slide-bars, which play within the guideways of the main frame, and are connected at their lower ends by a cross-bar, b , and a little below their center by the cross head or block b' , which latter is beveled on its rear face, and is provided with a cutting blade or knife, b^2 , which is secured thereto on its front or face by bolts the heads of which enter countersunk perforations in said blade, thus permitting the bolt-head to be flush with the face of the blade.

The knife-frame is connected at each side to the upper end of a pitman, b^3 , by a bolt, b^4 , which has a vertical movement in the slots b^5 in the main uprights. Said pitmen are connected at their lower ends to a crank-shaft, b^6 , extending transversely across the lower portion of the machine, and the same is provided with the drive-pulley b^7 and a pinion C, which

latter meshes with a gear-wheel, c , on a short shaft, c' , secured to the main frame of the machine. This gear-wheel is provided on its face with an eccentric, c^2 , in the form of a groove, in which plays one end, c^3 , of a lever, c^4 , which is adjustably fulcrumed to a short standard, c^5 , by means of the adjusting-block c^6 , having the set-screw c^7 and the transverse bolt c^8 passing through the horizontal slot c^9 in the short standard c^5 .

To the end of the lever c^4 , opposite to the eccentric end thereof, is adjustably secured a block, D, by means of the thumb-screw d , and pivoted to this block at its lower end is a rod, d' , which is also pivoted at its upper end to a tilting frame, d^2 , the lateral arms d^3 of which enter kerfs made in the cross-bar of the main frame, and are pivoted at their ends therein, as shown in the drawings.

On the front of the machine, and on each side thereof adjoining the main uprights, are secured castings d^4 , to which are pivoted E-shaped dogs or holding devices d^5 , the vertical arm E of which is curved upwardly and inwardly, and is provided with a spring, e , having the same curvature as said arm, and between said spring and arm is a space, e' , in which a stud, e , plays that is secured to and projects from the ends of the cutter-head, as shown in Fig. 1 of the drawings. The horizontal arm e^2 of the dog extends toward the center of the machine, and is designed to bear upon the plank when the cutter descends to sever a strip from the plank, and hold the latter firm in place and upon the central cross-bar of the main frame and the tilting frame aforesaid.

F indicates vertical rods which are pivoted to the rear face of the central cross-bar at f , the upper ends of which receive the strip after being cut from the plank, and support the same in rear of the cutter-head and between the rear incline face of the latter and the spring-arms f' , which latter arms are secured to the transverse lower bar of the sliding frame when said strip is firmly held in position to be pointed, as will be further explained. These rods F are curved downwardly and rearwardly at their lower ends, and are kept in engagement with an adjustable arm, f^2 , which is se-

cured by a set-screw to a depending bracket, f^3 , fixed to the lower cross-bar of the vertical sliding frame, and can be adjusted at will, in order to have the upper end near or far from the central cross-bar of the main frame in regulating the position of the strip to be pointed.

G represents the knives for cutting the lapping ends of the strip or hoop, which are arranged at each end of the cutter-head and below the strip-cutting knife, and are provided with countersunk perforations at each end to receive the head of the securing-bolts, by which they are fixed to the cutter-head, and the same are inclined inwardly and set at the desired angle in order to cut the lap-joint of the strip prior to the severing of said strip by the knife b^2 .

At the rear of the sliding frame, and operating thereon, is the mechanism for pointing the ends of the strip or hoop after the same has been cut from the plank, which I will now explain.

The letters g represent inclined rods, the upper ends of which are securely bolted to the rear face of the cutter-head, and the lower ends thereof are provided with eyes or bearings through which passes a horizontal transverse bar, g' , and revolves loosely therein. Sliding upon these rods g is the block g^2 , that carries on its upper inclined face the cutting-knives whereby the strips are pointed. Pivoted at one end to each side of these blocks is a connecting-bar, g^3 , which is also pivoted at its opposite end to a crank-arm, g^4 , that is fixed to the transverse rod or bar g' , and about the center of this rod or bar is secured one end of an arm, g^5 , which is horizontally slotted at its opposite end, as at g^6 , to receive a bolt, h , which connects the lower end of a vertical rod, H, with the arm g^5 . The upper end of this latter rod is pivoted to a short screw-threaded rod, h' , that passes through a perforation in the center of the top cross-bar of the main frame, and is provided with a nut, h^2 , whereby said rod H may be raised or lowered, as circumstances require, in regulating the stroke of the cutters in pointing the strip.

The sliding blocks g^2 are provided each with a projection, h^3 , on the upper and lower faces of which the cutter-blades are bolted, as shown at h^4 , and passing horizontally through this block is a perforation, h^5 , which extends from end to end thereof. Within this perforation is a rod, I, the end i of which projects therefrom between the cutting-blades, and is held in this position by means of a spring, i' , secured to the block, and pressing upon the end i^2 of the rod I aforesaid, and the end i serves to force the cuttings from the space between the knives after the strip has been pointed.

The cutter-head is provided at each end on its rear face with horizontal dovetailed slide-ways i^3 , to receive a correspondingly-dovetailed slide, i^4 , which is opposite the cutting-knives h^4 , and receive the edges of said knives

after the cut is made in pointing the strip, thus preventing said edge from injury, and said slides can be readily replaced when worn and become worthless.

Having thus given a description of the various parts of which my machine is composed, I will now proceed and explain more fully its operation.

Operation: When power is applied to the shaft, revolving the same, the cranks on the ends of said shaft, through the medium of the pitmen b^3 , causes the knife-frame to descend, when the knife b^2 cuts a strip off the plank which has been previously laid upon the tilting frame, and the lapping parts are also cut by the same stroke by means of the knives G at the ends of the cutter-head b' ; and by the rotation of the gear-wheel c , with its cam-groove acting upon the fulcrumed rod c^4 , the tilting frame d^2 is operated, thus feeding the plank to the long knife, and said plank is held firmly in place by the inwardly-extended arm e^2 of the dogs E E, which latter are operated by the studs x , secured to the knife-head b' , which act upon the curved vertical arm E thereof, while the spring e serves to allow the dog to yield should a thick plank be used. After the strip is cut from the plank said strip is delivered upon the ends of the curved rods F, being forced thereto by the plank when getting in position for the next cut, when said strip is grasped by the springs f' and held in rear of the cutter-head, and between the same and the inclined face thereof, and when the knife-frame ascends, carrying with it the strip, the ends of the same are pointed by the "pointing-knives" in the following manner: The upward movement of the knife-frame causes the block to move forward on the inclined rods g , by means of the crank-arms pivoted thereto by the connecting-rods g^3 , secured to the transverse rod g' , which carries the crank-arm g^5 , connected to the lower end of the vertically-adjustable rod H, and when the knife-frame rises the crank-arm is forced downward, thus turning the transverse rod g' and forcing the knives h^4 against the ends of the strip, thereby cutting and pointing the same, and the action of the spring i upon the rod I in the block g^2 forces cut pieces or chips from between said knives, thus keeping them free to act.

It will be seen from the above description, and by reference to the annexed drawings, that the mechanisms for operating the tilting frame and pointer cutter-knives are adjustably arranged with relation to one another, thus enabling the operator to adjust the parts to a nicety, in order to permit the cutting and feeding frame to work in harmony, as also the pointing-knives.

To the front face of the vertically-sliding frame, and below the strip-cutting knife, is secured a gage, as shown, and it will be further seen that the second strip forces the first or preceding strip, after the same has been point-

ed, out from the spring-clamps, and takes its place to be pointed, and by this construction of a hoop-cutting machine the strip is cut from the plank, formed with lapping ends, and pointed, and drops in rear of the machine a complete hoop, ready for the market. At the same time said machine is simple in operation and durable.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a hoop-machine, the combination, with the main frame A, having the slideways, and the vertically-sliding frame B, carrying the strip-knife b^2 and lapping-knives and operated as described, of the pivoted tilting frame d^2 , its adjustable connecting-rod d' , lever c^4 , fulcrumed to the standard, gear-wheel c , pinion C, cam-groove c^2 , spring-dogs d^5 , cutters h^4 , and means, as described, for operating the same, the rods F, curved at their lower ends, adjustable rods f^2 , and spring-clamping arms f' , the whole operating as set forth, and for the purpose specified.

2. The herein-described machine for cutting, lapping, and pointing hoops, consisting of the main frame A, the sliding frame B, carrying the cutting-knives, gear-wheel c , pinion crank-shaft and pitmen b^3 , the groove eccentric c^2 , fulcrumed lever c^4 , adjustable rod d' , tilting frame d^2 , curved arms F, pivoted to the frame A, adjustable arms f^2 , against which they bear, the spring-clamping arms, sliding block carrying the pointing-knives and pivotally connected to the crank-arms of the shaft g' , the slotted crank-arm secured to this shaft, and the adjustable rod H, connected to the top cross-bar of the main frame, substantially as described, and for the purposes specified.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT HITZERT.

Witnesses:

E. L. STONE,
P. F. DEVEAUX.