

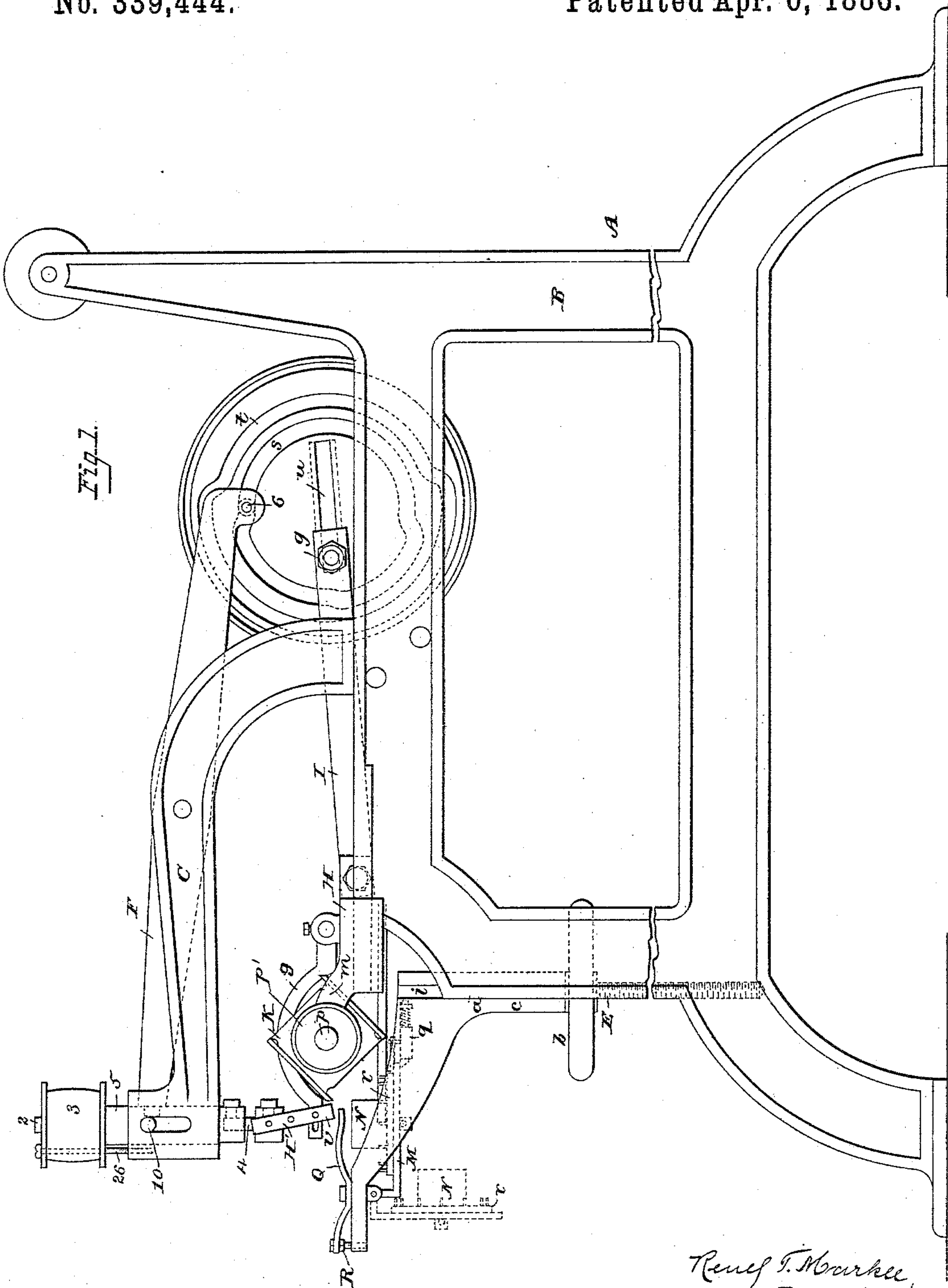
(No Model.)

3 Sheets—Sheet 1.

R. T. MARKEE.
CARVING MACHINE.

No. 339,444.

Patented Apr. 6, 1886.



Attest:
Court. A. Cooper.

H. C. G. Linsmann.

Reney T. Moorkee
Inventor

By J. W. Foster & Freeman

Atty.

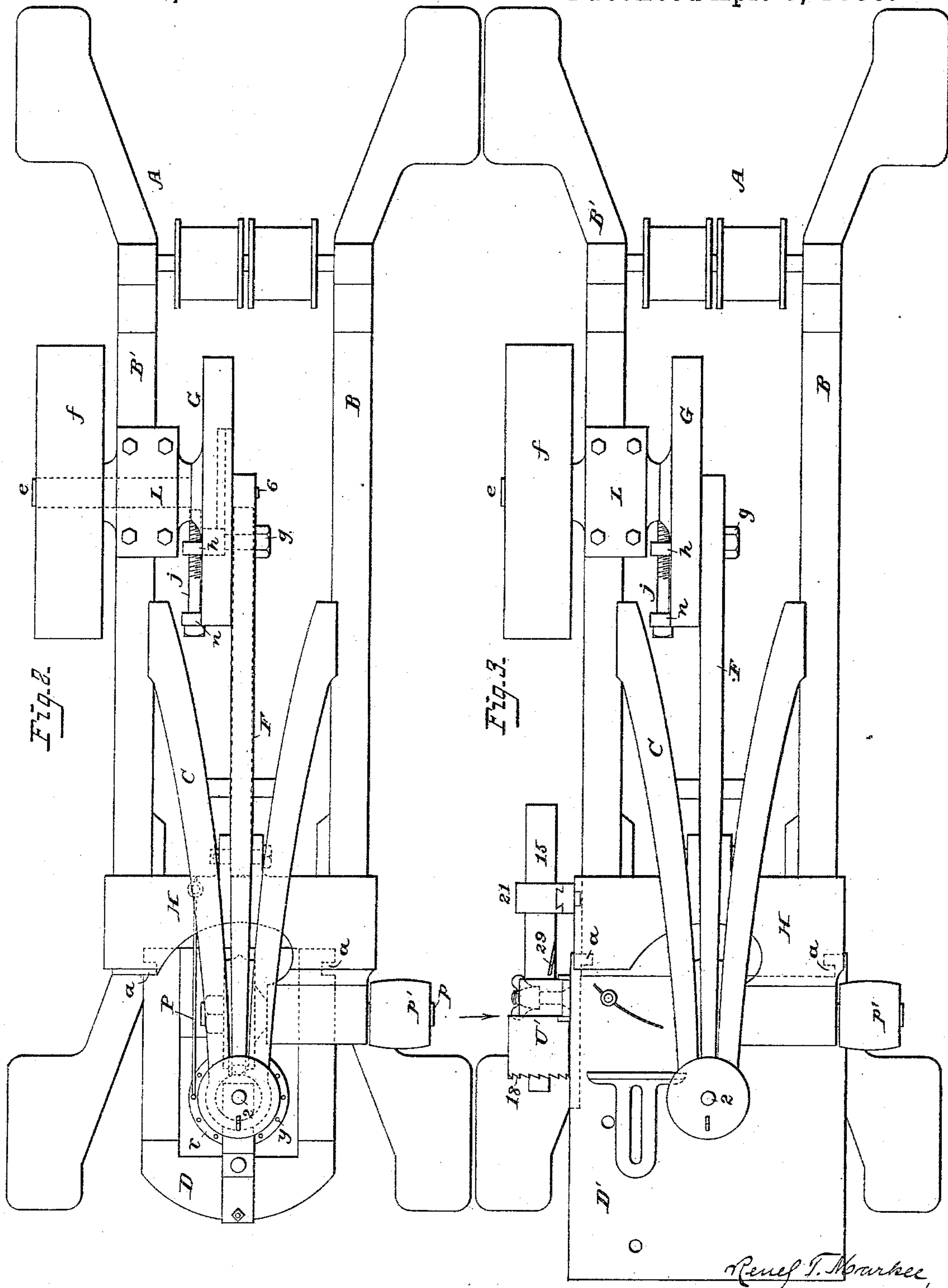
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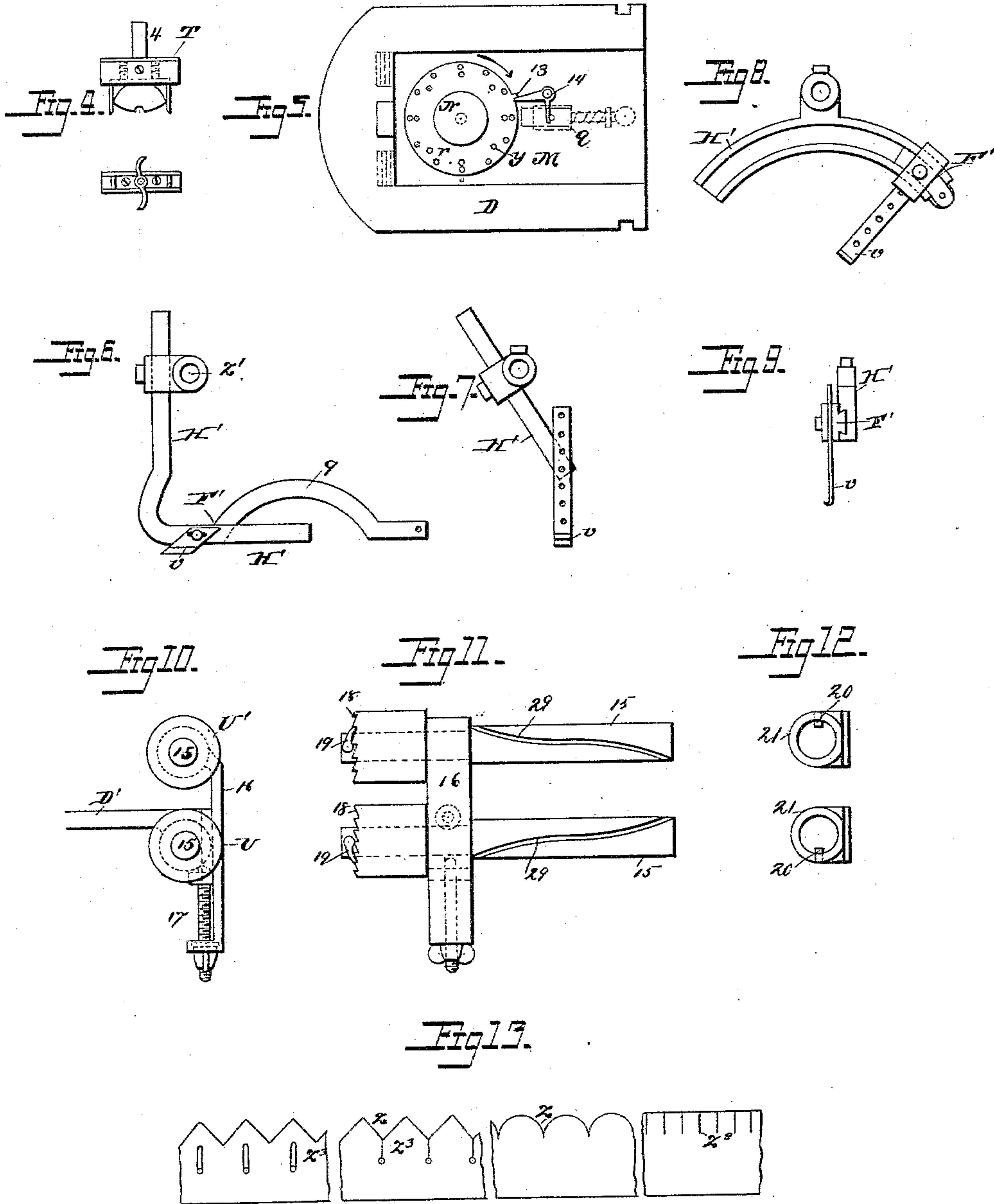
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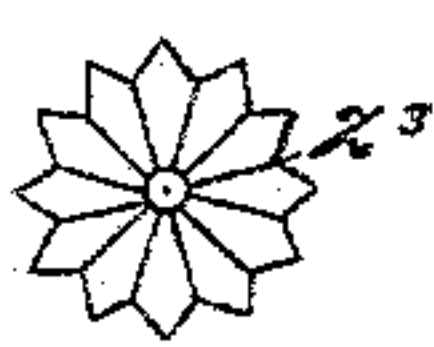
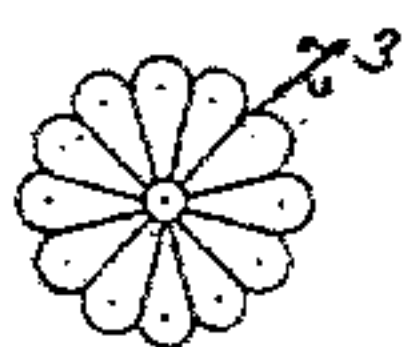
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Attys.

UNITED STATES PATENT OFFICE.

REUEL T. MARKEE, OF PHILADELPHIA, PENNSYLVANIA.

CARVING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 339,444, dated April 6, 1886.

Application filed July 20, 1885. Serial No. 172,148. (No model.)

To all whom it may concern:

Be it known that I, REUEL T. MARKEE, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Carving and Rosette Machines, of which the following is a specification.

My invention relates to that class of wood-working machines for forming ornamental rosettes, strips, or moldings; and my invention consists of a machine provided with a rotary cutter and reciprocating cutters, and with movable tables, attachments, and feeding devices, as fully set forth hereinafter, so that cutting operations may be effected in connection with circular or straight blanks having flat, concave, or convex surfaces.

In the drawings, Figure 1 is a side elevation of a wood-working machine, illustrating my improvements. Fig. 2 is a plan view showing the parts arranged for cutting rosettes; Fig. 3, a plan showing the parts arranged for cutting straight molds; Fig. 4, side and end views of the rotary cutter; Fig. 5, a plan of the rosette-table; Figs. 6, 7, 8, and 9, views showing the reciprocating cutter and different forms of guides; Fig. 10, an edge view of the feed-rolls; Fig. 11, a face view of Fig. 10; Fig. 12, end views of the feed-roll-operating devices; Fig. 13, a diagram illustrating the action of the cutting devices in forming strips and rosettes.

The frame A is suitably constructed to support the other parts, consisting, as shown, of two connected side pieces, B B', and an overhanging arm, C, and each side piece is provided with a vertical guide, a, for a detachable table or platform, D or D'. A set-screw, E, passes through a cross-piece of the frame A, and is provided with a hand-wheel, b, and bears on a leg, c, of the table D or D', which has grooves i, to receive the guides a, so that by turning the hand wheel and screw the table may be adjusted to and set in any desired position.

In a bearing, L, on the side piece, B', turns a shaft, e, carrying a band-pulley, f, and a cam-wheel, G, having in its side face two cam-grooves, s t, and a slot, u, and in the latter is adjustable a block, h, carrying a crank-pin, g.

The block h extends through the wheel to receive a screw, j, turning in a stud, n, and serving to adjust the block and crank-pin.

At the forward end of the frame slides a cross-head, H, connected by a rod, I, with the crank-pin g, so that the revolution of the wheel G reciprocates the cross-head, and in brackets m m, projecting from the cross-head, turns a shaft, p, carrying a band-pulley, p', and a cutter-head, K.

To the table D, which is cut away at the center, is hung a leaf, M, which may be turned up into the central opening or swung down to the position shown in dotted lines, Fig. 1, and a beveled-ended spring-bolt, q, dotted lines, Figs. 1 and 5, springs beneath and catches and holds the leaf when in a horizontal position.

On the leaf M is centrally pivoted, so as to turn freely, a hub, N, having a peripheral flange, r, at its lower end, with notches y, with which engages a hook or finger on an arm, P, carried by the cross-head H, so that as the said cross-head moves back the arm P will catch in one of the notches y and the hub will be turned to a slight extent. The hub is thus rotated intermittently.

The hub is adapted to receive a blank to be cut—for instance, a blank to be formed into a rosette or medallion—which is pinned to the head of the hub, and the leaf then turned to a horizontal position, bringing the blank below a pivoted spring-arm, Q, which may be set by an adjusting-screw, R, so as to bear with any desired degree of pressure upon the blank.

The cutter-head carries cutters of any desired shape to impart the desired peripheral shape to the rosette or molding. Thus they may be shaped to make V-shaped or rounded indentations z, as shown in Fig. 13, each indentation being formed when the cross-head H is moved to carry the cutter-head to the blank, and the hub and blank being rotated a part of a revolution as the cross-head moves back, so that when it again moves forward a new cut will be made at another portion.

It is sometimes required to shape the face as well as the edge of the blank—for instance, to impart a convex or concave form. This I effect by using a revolving cutter-head and cutter supported by a shaft, 2, turning in the

head of the overhanging arm C. The shaft 2 carries a band-wheel, 3, and has a socket at the lower end to receive the stem 4 of the cutter-head T, Fig. 4; and in order to carry the cutter-head T out of the way when the cutter-head K approaches the blank the shaft 2 turns in a bearing, 5, that slides vertically in the overhanging arm. One means of moving the bearing 5 consists of a vibrating lever, F, hung to the arm C, and extending into a recess in the sliding bearing 5, and provided with a pin, 6, which is removable, but which when in place extends into the groove s of the cam-wheel G. The groove s is so formed as to vibrate the lever F and lift the bearing 5 when the cutter-head K approaches the blank.

It will be evident that by making the cutter-heads and their cutter-blades of different forms, the forms imparted to the faces and edges of the blanks may be varied at pleasure.

It is sometimes desirable to score or cut the face of the blank, in addition to or as a substitute for the cutting operations described. This may be done in my improved machine by the use of a reciprocating gage or graver, v.

The movements imparted to the graver vary according to the shape of the blank. Thus if the blank is flat the graver is reciprocated horizontally, and if it is convex or concave the graver travels in a curved path. Different supports and actuating means may be employed according to the movements imparted. Thus to secure a straight cut the graver v is secured to a support or slide, F', connected to an arm, 9, Fig. 6, pivoted at its rear end to the cross-head H. The support F' slides at the front end on a guide-bar, H', having a socket, z', receiving a pin, 10, that extends from the bearing 5 through a slot in the arm C.

The reciprocation of the cross-head carries the graver v over the blank and makes scores z', and to insure that it cuts at each forward motion the pin 6 is withdrawn from the socket in the lever F and set in another socket to enter the groove t, which will cause the bearing 5 to slide down as the cutter-head moves forward, and up as it moves back.

It will be obvious that where other motions are desired other cam-grooves may be made in the wheel G.

When a convex blank is to be cut, the guide H' is made with an upward curve, as shown in Figs. 8 and 9, and when the blank is concave the graver v is secured directly to the arm H', and the latter is hung to swing on the pin 10. In all cases the support for the graver is connected to the cross-head, and is raised and lowered as the latter reciprocates.

When the blank has completed a revolution and is finished, its removal is facilitated by letting the leaf N drop. To effect this automatically I cause the hub to unlock the detent in any suitable manner. Thus the hub has a stud, 13, Fig. 5, which at the completion of a revolution strikes a bell-crank lever, 14, one arm of which bears on a shoulder on

the bolt q and draws it back as the hub revolves.

When the blank is a straight strip or molding, instead of a circular block, it must be fed intermittently in front of the cutter-head K. To effect this I substitute the table D' for the table D and use feed-rolls U U', between which the strip is passed to be operated on by the cutter-heads and gravers, or any of them, as before described. Different means may be employed for imparting an intermittent motion to the feed-rolls.

The shaft 15 of the lower roll, U, turns in a stationary bearing on the table. The bearing 16 of the upper roll is adjusted vertically to carry such roll to its proper distance from the lower one, a shifting-screw, 17, effecting this adjustment. The rolls turn freely on the shafts in the contrary direction in which the strip is to be fed, but have ratchets 18, that engage with pawls 19, pivoted to the shafts, so as to be turned therewith to feed the strips.

The shafts have each a longitudinal spiral-like groove, 29, adapted to receive a pin, 20, on a hollow bearing-block, 21, carried by the cross-head H, Fig. 3, the two blocks being adjustable in the same manner as the two roll-shafts.

As the cross-head moves forward the action of the pins 20 and grooves 29 turns the shafts without turning the rollers, so that there is no feed when the strip is being acted on by the cutters; but when the cross-head moves back the shafts are turned in the opposite direction, and the pawls engage with and turn the rolls, feeding the material forward.

It will be obvious that different appliances may be used for imparting motion to the cutter-head, shaft 2, and its bearing.

When the shaft 2 is not to revolve, a screw-pin, 76, is inserted through a hole in the band-pulley and into a hole in the arm C, and prevents its turning.

Without limiting myself to the precise construction and operation of parts described, I claim—

1. The combination, in a wood-working machine, of a cross-head having a definite reciprocating movement and carrying a revolving cutter, and a table supporting the blank to be formed, and a feed device connected to be operated by the reciprocation of the cross-head, substantially as described.

2. The combination of the frame, cross-head having a definite reciprocating movement, revolving cutter-head carried by the cross-head, and an adjustable table connected detachably to the frame, substantially as described.

3. The combination of the frame, cross-head having a definite reciprocating movement, cutter carried thereby, table and hub adapted to receive a blank, and a feed device directly connected to the cross-head for rotating the hub intermittently, substantially as described.

4. The combination of the reciprocating cross-head carrying a cutter, the table, hub having a notched flange, and catch carried by the cross-head and engaging with said flange, substantially as described.

5. The combination, with the frame, of the positively-reciprocating cross-head, table adjustable upon said frame and provided with a hinged leaf and detent therefor, and hub carried by the leaf, and means, substantially as described, for operating said detent, as and for the purpose set forth.

6. The combination, in a wood-working machine, of a reciprocating cross-head carrying a cutter, a table having a hinged leaf, hub carried by the hinged leaf and provided with a projection or stud, 13, detent supporting said leaf when in its elevated position, and lever 14, adapted to be struck by the stud 13, to retract the detent, and means, substantially as described, for rotating said hub, as set forth.

7. The combination, in a wood-working machine provided with a reciprocating cross-head carrying a cutter, of a table carrying a hinged leaf provided with a hub, connections, substantially as described, between said cross-head and hub for intermittently rotating the latter, a detent supporting the hinged leaf when elevated, and connections, as described, between the hub and detent to release said leaf when the hub completes a revolution, as set forth.

8. The combination of the blank holding and feeding devices, reciprocating cross-head carrying a cutter-head, K, and graver v, and support therefor connected to the cross-head, substantially as described.

9. The combination of the blank holding and feeding devices, reciprocating cross-head and cutter, graver and support connected to the cross-head, and a lever connected to vertically reciprocate said graver-support, substantially as described.

10. The combination, with the frame of a wood-working machine, of a graver, means, substantially as described, for horizontally reciprocating the same, vertically-sliding graver-support carried by the frame, cam-

wheel G, having two or more grooves, pivoted lever F, connected to said graver-support and cam-wheel, and an adjustable connecting-pin, 6, substantially as described.

11. The combination of the reciprocating cross-head and cutter, a table supporting the blank, a guide, a graver connected to a support on said guide, and an arm connecting said support and the cross-head, substantially as described.

12. The combination of the reciprocating cross-head carrying a cutter at its forward end, table arranged in the path of and below said cutter, and vertical shaft turning in bearings above the table and constructed to support a cutter head, T, substantially as described.

13. The combination of the reciprocating cross-head carrying a cutter, table, overhanging arm, shaft 2, turning in a sliding bearing in said arm, cam-wheel, pivoted lever connected to said wheel and sliding bearing to reciprocate the latter, and a graver supported by said shaft and connected to the cross-head, substantially as described.

14. The combination, with the reciprocating cross-head, of the overhanging arm, vertical shaft and its sliding bearing supported thereby, pin 10, projecting laterally from said bearing, reciprocating graver, and interchangeable supports for the graver constructed to be hung to said pin, and connections, substantially as described, between said graver and cross-head, as and for the purpose set forth.

15. The combination, with the table, reciprocating cross-head, and cutter, of supports having straight and curved guides, a graver carried by said supports, and a connection between said graver and the cross-head, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

REUEL T. MARKEE.

Witnesses:

J. GORDON SHOWAKER, Jr.,
ANDREW TOLAND.