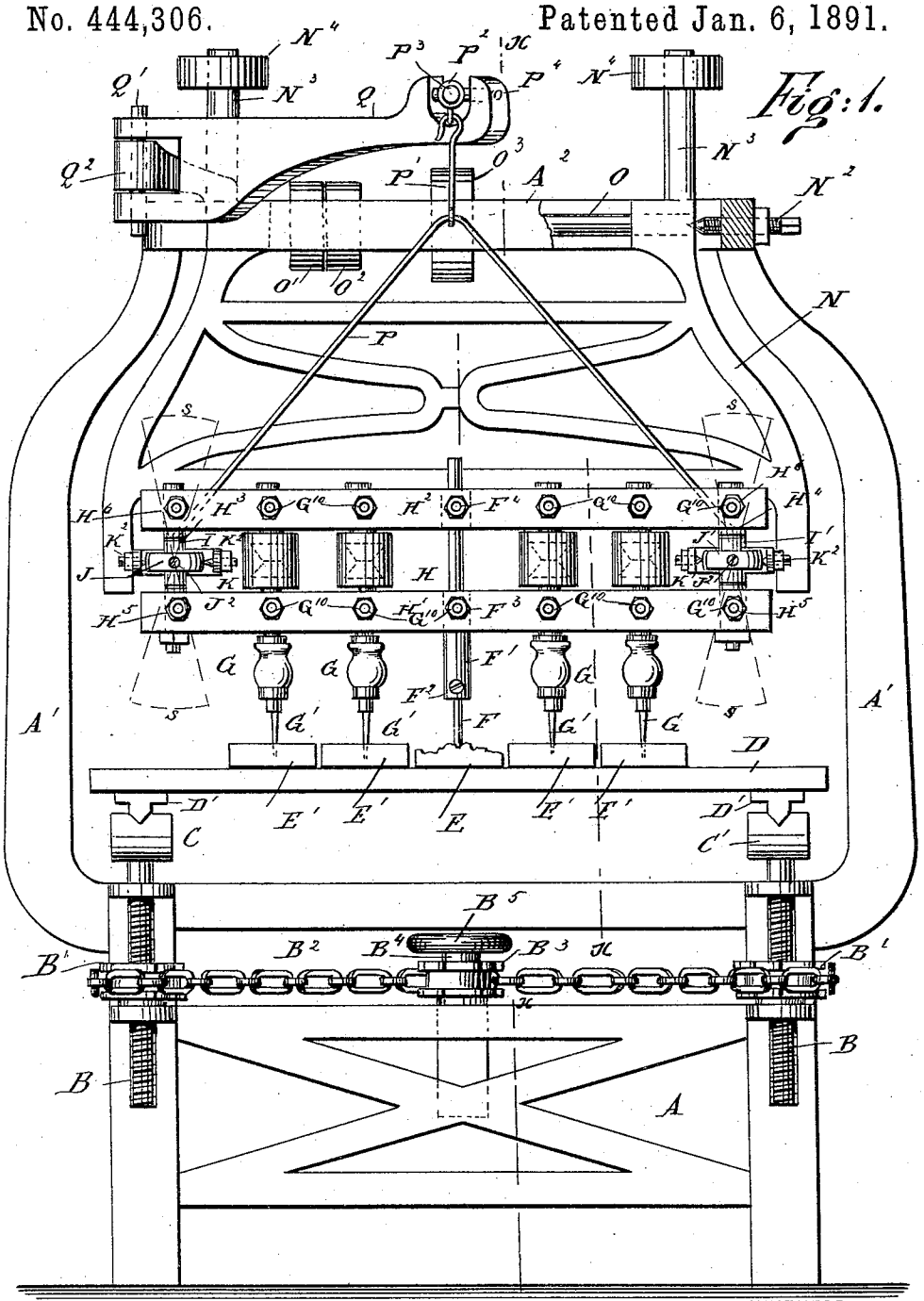
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J. ROHLMANN.

CARVING MACHINE.

No. 444,306. Patented Jan. 6, 1891.

Fig. 1.



WITNESSES:

Chas. Nida.

C. Bedgwick

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ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

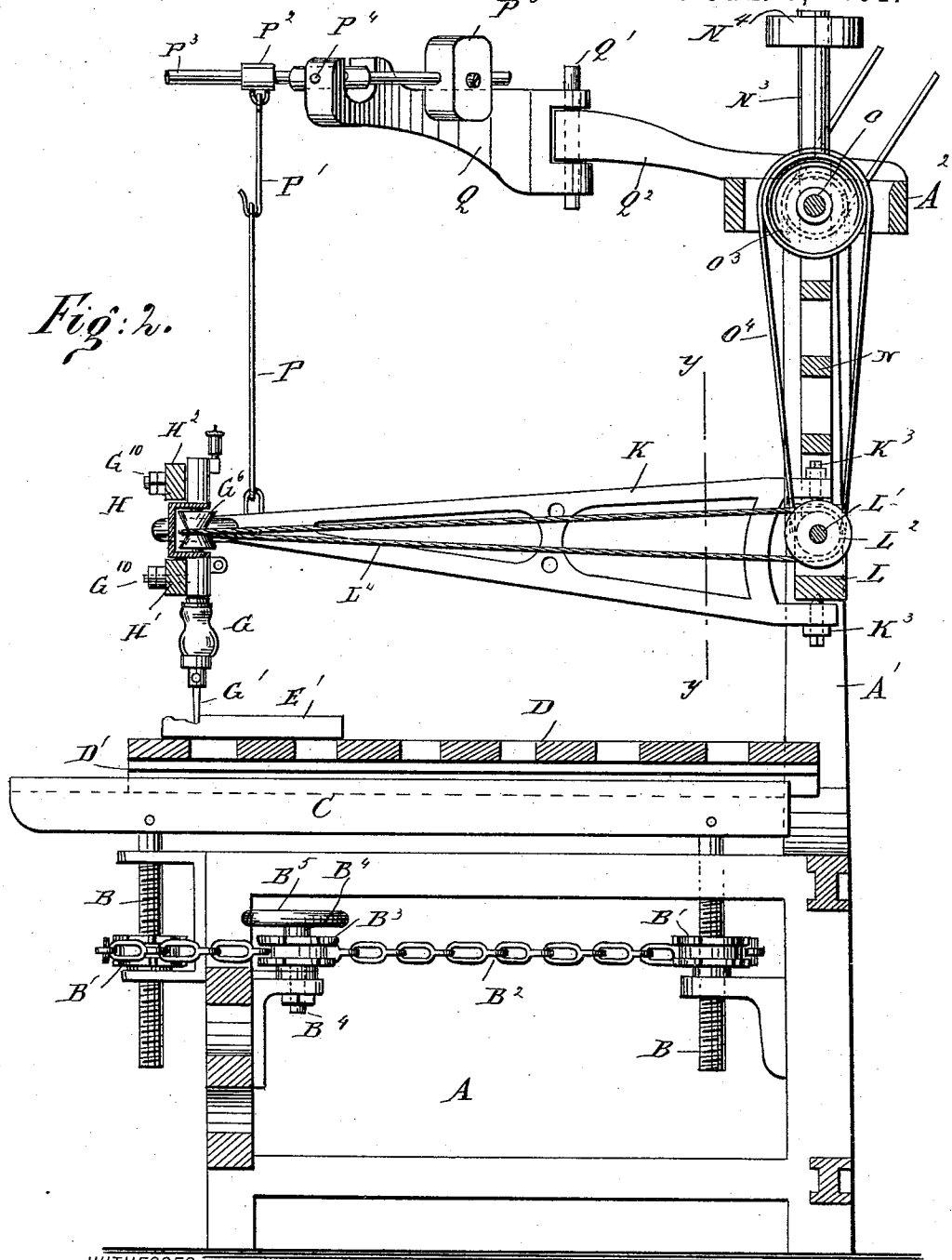
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Fig. 2.



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CARVING MACHINE.

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Fig: 3.

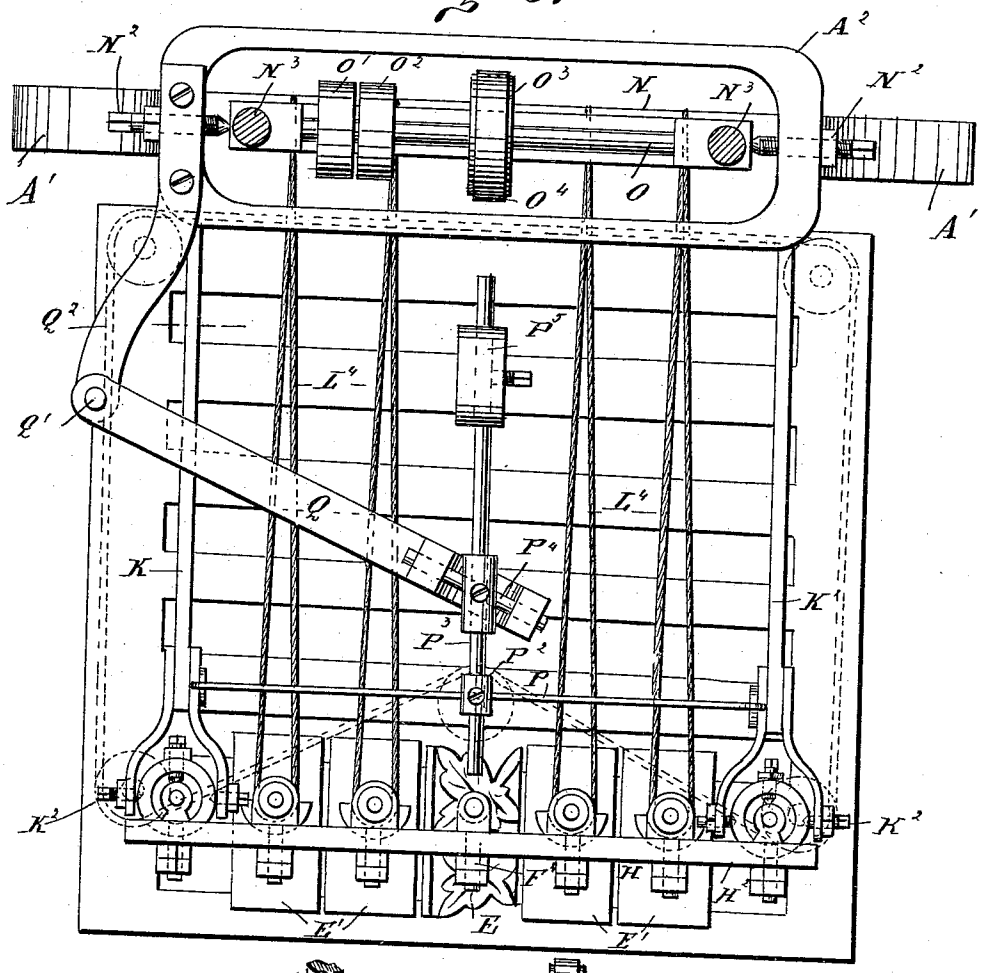
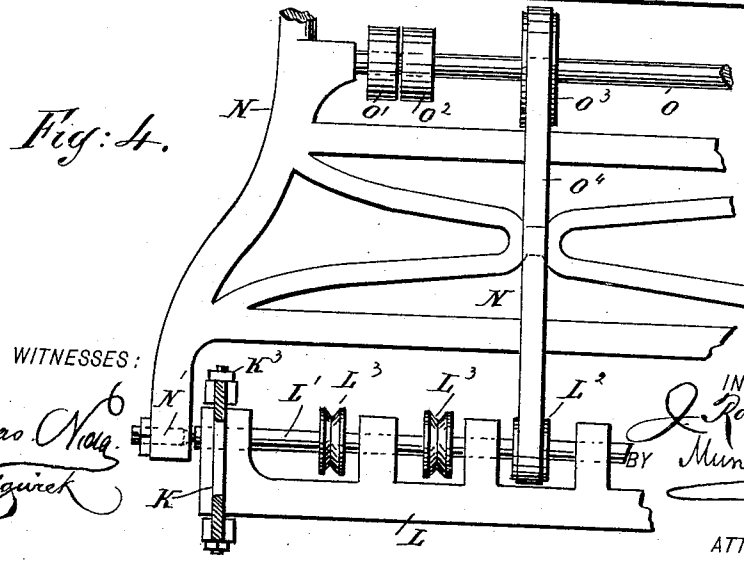


Fig: 4.



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CARVING MACHINE.

No. 444,306. Patented Jan. 6, 1891.

Fig. 5.

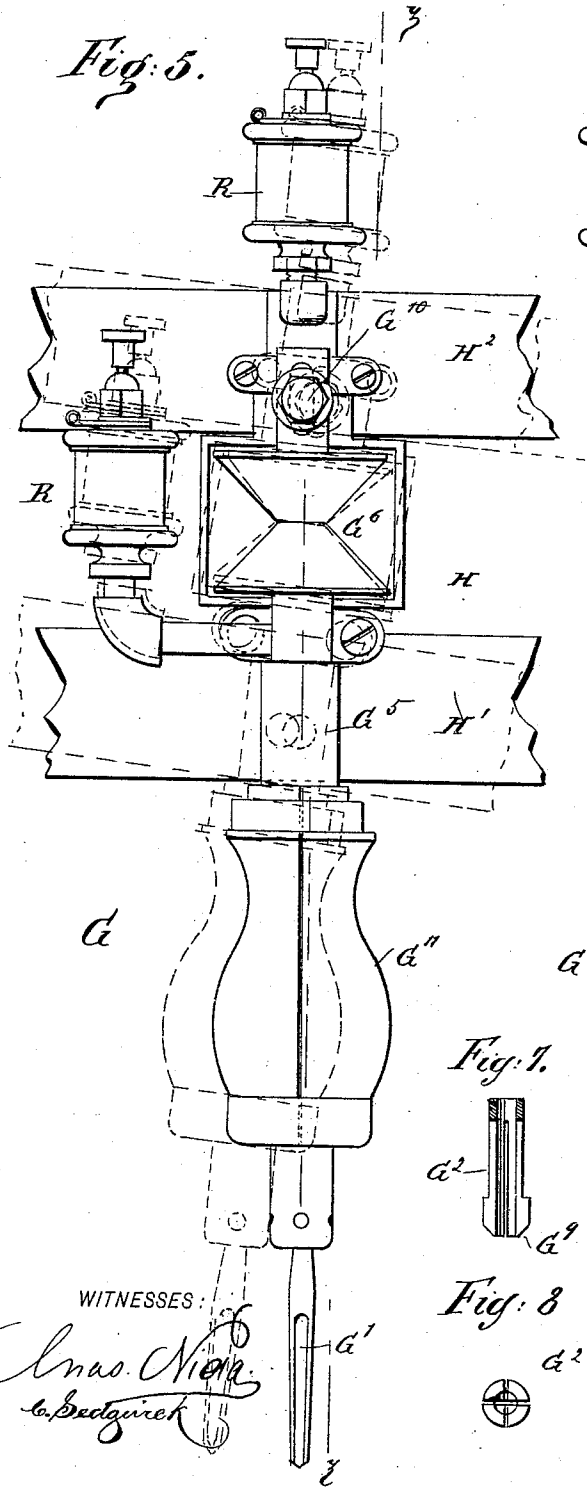


Fig. 6.

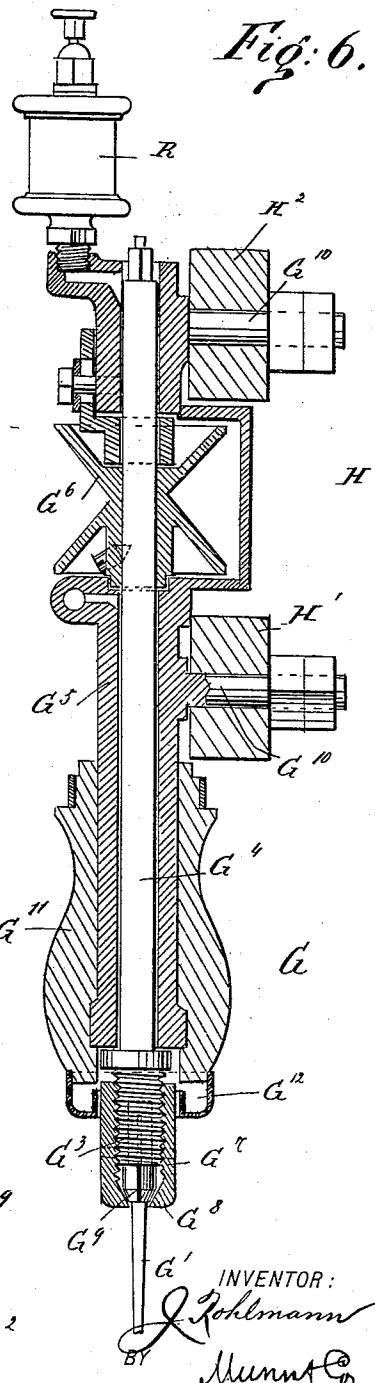


Fig. 7.

Fig. 8

WITNESSES:

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UNITED STATES PATENT OFFICE.

JOSEPH ROHLMANN, OF ST. JOSEPH, MISSOURI.

CARVING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 444,306, dated January 6, 1891.

Application filed August 26, 1889. Serial No. 322,001. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH ROHLMANN, of St. Joseph, in the county of Buchanan and State of Missouri, have invented a new and Improved Carving-Machine, of which the following is a full, clear, and exact description.

The invention relates to wood-working machinery; and its object is to provide a new and improved carving-machine which is simple and durable in construction, very effective in operation, and adapted to carve simultaneously a number of blocks after one pattern.

The invention consists in certain parts and details and combinations of the same, as will be described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front view of the improvement, with parts in section. Fig. 2 is a sectional side elevation of the same on the line *x x* of Fig. 1. Fig. 3 is a plan view of the same. Fig. 4 is a sectional front view of part of the improvement on the line *y y* of Fig. 2. Fig. 5 is an enlarged front view of one of the cutters. Fig. 6 is a sectional side elevation of the same on the line *z z* of Fig. 5. Fig. 7 is a sectional side elevation of the tool-chuck, and Fig. 8 is a plan view of the same.

The improved carving-machine is mounted on a suitably-constructed frame A, provided on each side with suitable bearings for guiding vertical screw-rods B, rigidly connected at their upper ends with the side rails C and C′, respectively, on which are mounted to slide transversely the runners D′, secured on the under side of the table D, adapted to support the pattern E and the blocks E′ to be carved after the pattern E.

On each of the screw-rods B screws a nut B′, formed on its outside like a sprocket-wheel, over which passes an endless sprocket-chain B^2, also passing over a sprocket-wheel B^3, secured on the vertical shaft B^4, mounted to turn in suitable bearings on the main frame A. A hand-wheel B^5 is fastened on the top of the said shaft B^4, and serves to turn the latter, so as to turn the sprocket-wheel B^3, whereby the sprocket-chain B^2 is set in motion and turns simultaneously the several nuts B′, in order to raise or lower the screw-rods B, and consequently the side rails C C′, supporting the table D.

Over the pattern E is held a tracing-tool F, and on top of the several blocks E′ operate the cutters G, held, with the tracing-tool F, on the frame H, which is counterbalanced and universally jointed, so as to give any desired motion to the tracing-tool and the several cutters. The tracing-tool F is fastened into a socket F′ by means of a set-screw F^2, and the said socket F′ is provided with two bolts F^3 and F^4, extending horizontally and passing through beams H′ and H^2 of the frame H. The beams H′ and H^2 extend longitudinally in front of the machine, are placed parallel with each other, and connected at their ends by rods H^3 and H^4, each provided with two bolts H^5 and H^6, passing into the beams H′ and H^2. These bolts H^5 and H^6 are in the nature of horizontal pivots connecting beams H′ and H^2 to rods H^3 H^4, so as to permit the beams to approach each other like parallel-motioned bars, the pivotal connection of bolts H^5 H^6 to beams H′ and H^2 being substantially the same as the pivotal connections of bolts G^{10} to said beams, as shown in Figs. 5 and 6, more fully described hereinafter.

On the rods H^3 and H^4, between the beams H′ and H^2, are mounted to turn the sleeves I and I′, each engaged by the pointed ends of set-screws J^2, screwing in a ring J or J′, respectively, each supported on the pointed ends of the set-screws K^2, screwing in the forked ends of the brackets K and K′, respectively. The pivots K^2, which connect the rings to the brackets, form one axis of oscillation, and the pivots J^2, which connect the rings to the sleeves I I′, form another axis of oscillation at right angles to K^2, which together constitute a universal joint. The pivots J^2, acting in harmony with bolts H^5 H^6, permit the beams H′ H^2 to move like parallel bars, as indicated by the dotted arcs of oscillation *s s*, Fig. 1. The brackets K K′ are fulcrumed at their rear ends at K^3 in the pulley-frame L, provided with suitable bearings, in which turns the shaft L′, engaged at its ends by the set-screws N′, held in the lower end of a swing-

ing frame N, supported near its upper end on set-screws N^2, screwing in the standards A', erected on the rear of the main frame A. The upper ends of the standards A' are connected with each other by a cross-frame A^2.

In the swinging frame N, in line with the set-screws N^2, is held in suitable bearings a main driving-shaft O, provided with fast and loose pulleys O' and O^2, respectively, connected in the usual manner with machinery for imparting a driving motion to the carving-machine. On the shaft O is also secured a pulley O^3, over which passes a belt O^4, also passing over a pulley L^2, secured on the shaft L' of the pulley-frame L. When the shaft O is rotated, the shaft L' is set in motion by the connection above described.

The front ends of the rearwardly-extending brackets K and K' are supported on a bail P, extending upward and supported in its middle on a rod P', hung on a sleeve P^2, held adjustably on the weighted lever P^3, fulcrumed on a shaft P^4, mounted to turn in suitable bearings on an arm Q, pivoted at Q' to a bracket Q^2, extending from the top of the cutting-frame A^2, previously mentioned. A weight P^5 is held on the lever P^3 and can be adjusted on the said lever to any desired position by a set-screw or other means. The weight P^5 serves to counterbalance the brackets K K' and the frame H and its contents supported on the front ends of the said brackets.

The swinging frame N is provided on each side with upwardly-projecting arms N^3, each supporting near its upper end a weight N^4, which serves to move the frame N at all times back into a vertical position. It will be seen that the frame H, with the cutters G and the tracing-tool F, is free to swing forward and backward, turning on the set-screws K^2. Said frame is also free to swing sidewise, turning with its rods H^3 and H^4 in the sleeves I and I', respectively, supported by the set-screws J^2 from the rings J and J'. The sidewise motion of the frame H is permitted by the brackets K and K', as the latter have their vertical pivots at their rear ends in the frame L.

The frame H, when in a vertical position, can be moved forward and backward without turning, as the frame N permits such movement, turning on the set-screws N'. The frame H can also be raised and lowered by the frame L turning on the set-screws N' in the swinging frame N. The weight P^5 counterbalances the frame H and its contents when raised or lowered to any position. The counterbalancing-lever P^3 follows the movement of the frame H and the brackets K K' on account of being pivoted on the shaft P^4, turning on the pivoted arm Q. Thus it will be seen that the tracing-tool F and the cutters G can be moved in any desired position.

Each of the cutters G is provided with a cutting-tool G', the shank of which fits into a split sleeve or chuck G^2, passed into a central aperture formed in the lower screw-threaded end G^3 of the spindle G^4, mounted to turn in the spindle-frame G^5, carrying a pulley G^6, over which passes a belt L^4, also passing over a corresponding pulley L^3, fastened on the shaft L' of the pulley-frame L.

On the threaded end G^3 of the spindle G^4 screws a nut G^7, provided on its lower end with inclined flanges G^8, adapted to press against a conical offset G^9, formed on the lower end of the split sleeve G^2, so as to press said sleeve together at its lower end to fasten the tool G'. (See Figs. 6, 7, and 8.) From the spindle-frame G^5 extend horizontally the bolts G^{10}, passing through the beams H' and H^2 of the frame H in the same manner as the bolts F^3 and F^4 pass through the said beams, as before described in reference to the tracing-tool.

The spindle-frame G^5 is provided with the usual oil-cups R for oiling the spindle G^4. A handle G^{11} is held on the spindle-frame G^5, and serves for conveniently moving the latter whenever desired. On the lower end of the handle G^{11} is held a drip-cup G^{12} for gathering the drip-oil of the spindle G^4 and to prevent the oil from passing onto the carved work.

The operation is as follows: When the shaft O is rotated, the spindles G^4 of the cutters G are turned, the tools G' turning with the spindles. The operator takes hold of the frame H and manipulates the said frame, so that the tracing-tool F moves over the ornament already formed on the pattern E, pressing the frame H downward, so that the several tools G' cut with their cutting bottom edges into the wooden blocks E'. The surplus material on the blocks E' is removed by the tools G', and as the said tools operate in correspondence with the movement of the tracing-tool F the ornament finally appearing in the blocks E' corresponds to the ornament on the pattern E.

It will be seen that as the operator is enabled by the peculiar construction of the machine to press the tracing-tool in any desired position, so that the cutting-tools assume a like position, all parts of the ornament can be readily traced and reproduced in the blocks E' by the action of the cutting-tools G'. It will further be seen that by the simple movement of the hand-wheel B^5 the table D, carrying the pattern E and the blocks E', can be readily raised or lowered, according to the thickness of the blocks to be operated on. It will further be seen that the table D can be easily moved forward and backward on the rails C and C', so as to bring the blocks directly under the tracing-tool F and the tools G'. It will further be seen that the frame H, carrying the tracing-tool and the cutters, can be very easily manipulated on account of being counterbalanced in any and every position by the weight P^5.

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

1. In a carving-machine, the combination, with a frame carrying the cutters and tracing-tool, of universal joints supporting the ends of the said frame, pivoted brackets supporting the said universal joints, and a counterbalanced lever connected with the free ends of the said brackets, substantially as shown and described.

2. In a carving-machine, the combination, with a frame carrying the cutters and tracing-tool, of universal joints supporting the ends of the said frame, pivoted brackets supporting the said universal joints, a counterbalanced lever connected with the free ends of the said brackets, and a pivoted arm carrying a shaft on which the said lever is pivoted, substantially as shown and described.

3. In a carving-machine, the combination, with a main frame, of screw-rods guided in the said frame, side rails supported on the said screw-rods, a table held to slide horizontally on the said side rails, nuts screwing on the said screw-rods, and an endless chain passing over the said nuts and adapted to turn all the nuts simultaneously, substantially as shown and described.

4. In a carving-machine, the combination, with a main frame, of screw-rods guided in the said frame, side rails supported on the said screw-rods, a table held to slide horizontally on the said side rails, nuts screwing on the said screw-rods, an endless chain passing over the said nuts and adapted to turn all the nuts simultaneously, and means, substantially as described, for imparting a traveling motion to the said chain to turn the said nuts, as set forth.

5. In a carving-machine, the combination, with a main frame, of screw-rods guided in the said frame, side rails supported on the said screw-rods, a table held to slide horizontally on the said side rails, nuts screwing on the said screw-rods, an endless chain passing over the said nuts and adapted to turn all the nuts simultaneously, a sprocket-wheel mounted to turn in the said frame and over which passes the said chain, and means, substantially as described, for turning the said sprocket-wheel, substantially as shown and described.

JOSEPH ROHLMANN.

Witnesses:
BERNARD H. ROHLMANN,
WILLIAM F. SMITH.