No. 477,220. Patented June 21, 1892.

Fig 1

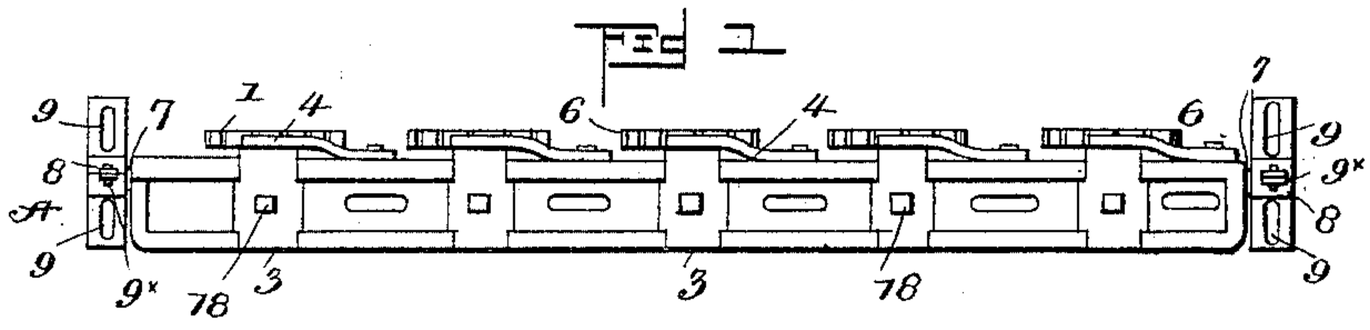


Fig 8

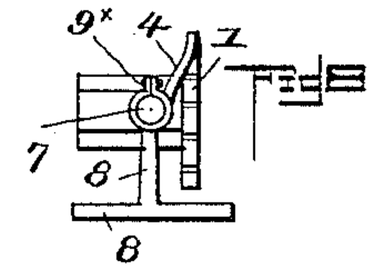


Fig 2

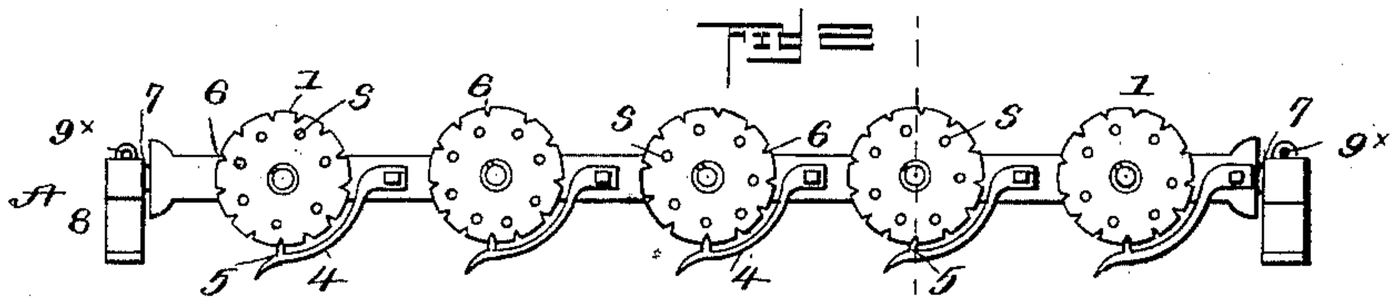


Fig 9

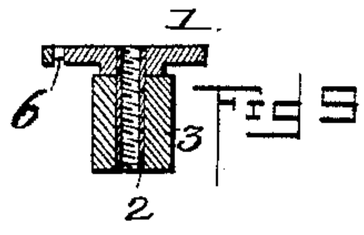


Fig 3

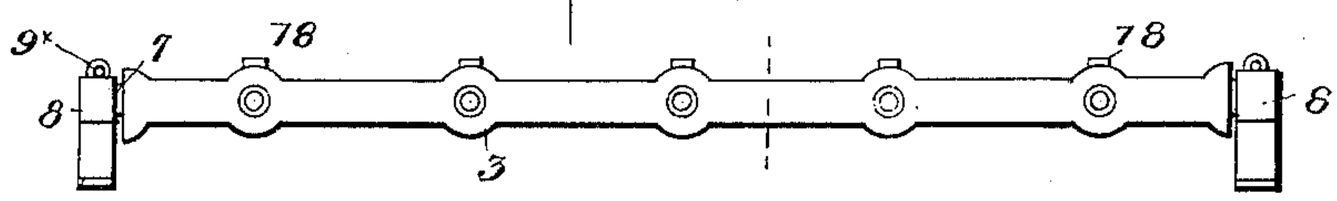


Fig 10

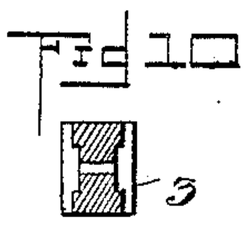


Fig 4

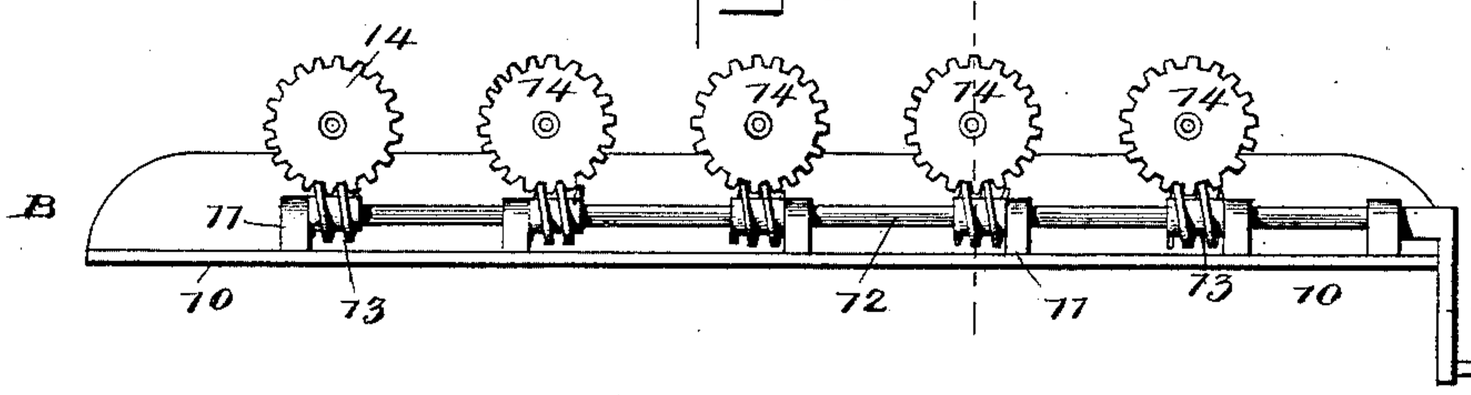


Fig 11

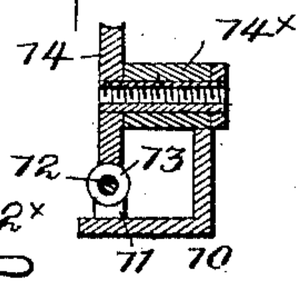


Fig 5

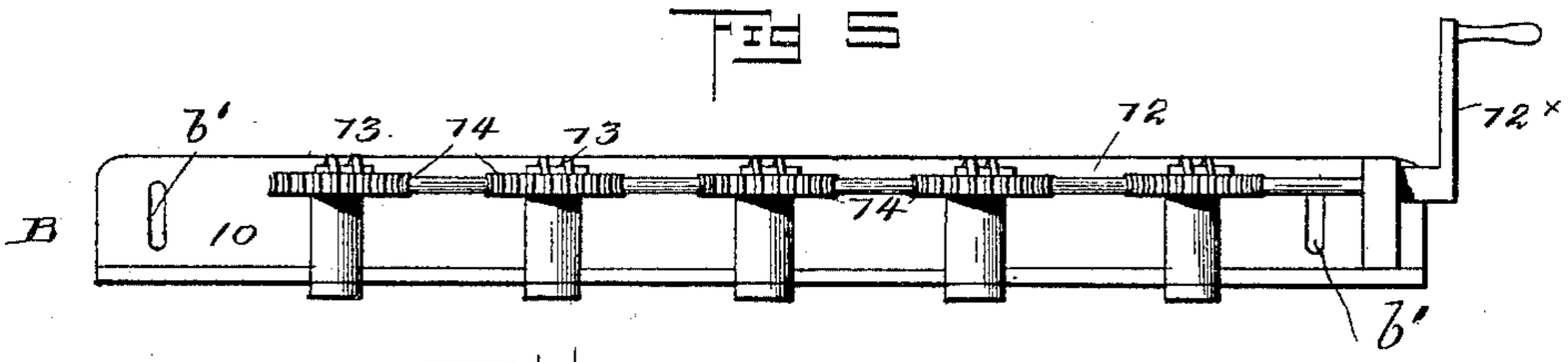


Fig 6

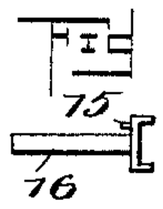


Fig 7

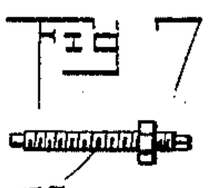


Fig 12

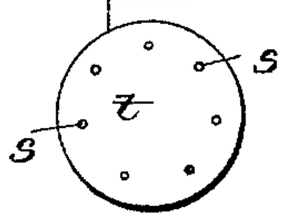
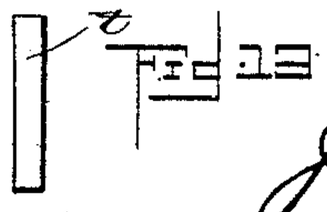


Fig 13



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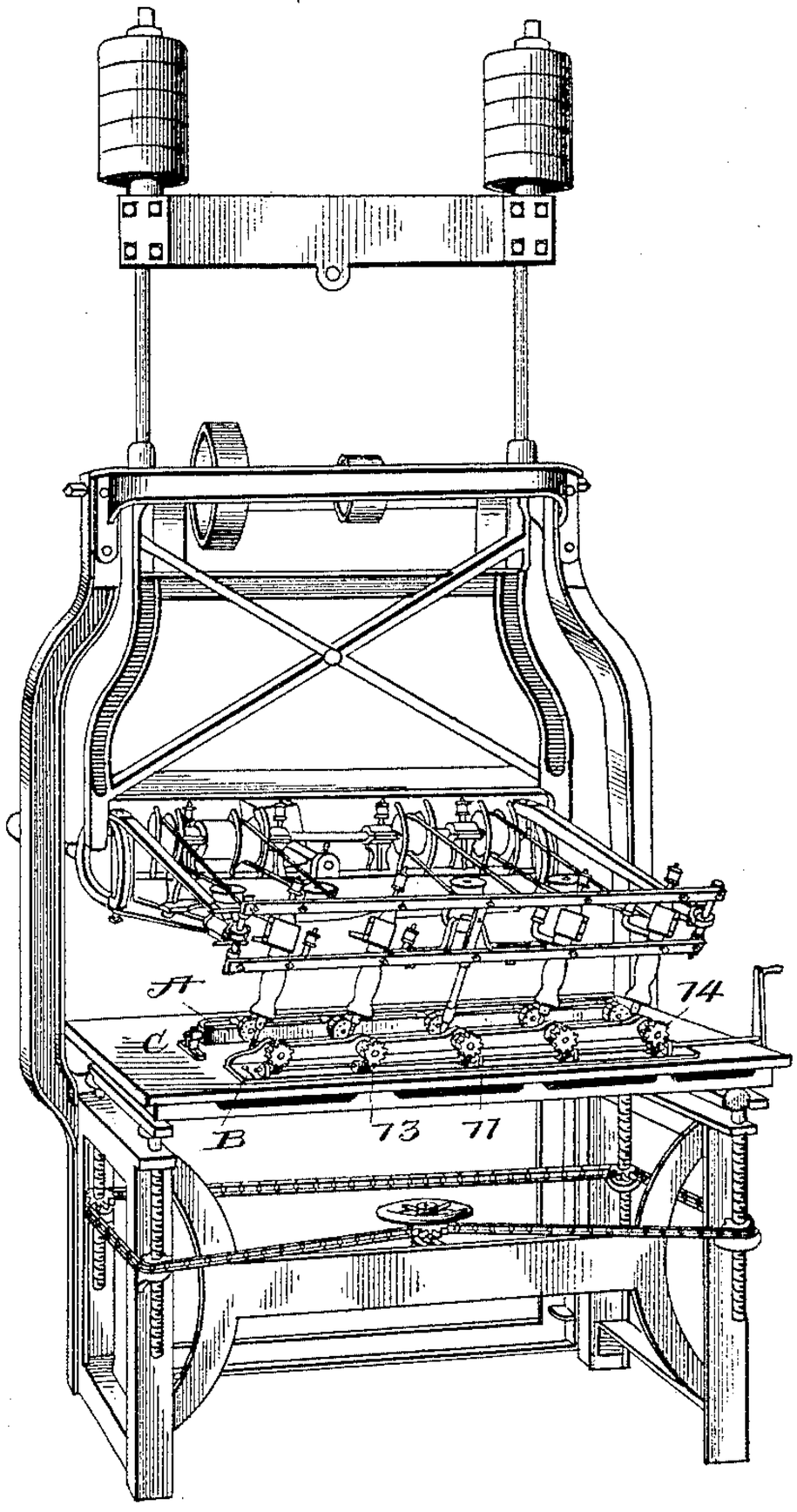
(No Model.) 2 Sheets—Sheet 2.

J. ROHLMANN.

ATTACHMENT FOR CARVING MACHINES.

No. 477,229. Patented June 21, 1892.

Fig. 14.



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UNITED STATES PATENT OFFICE.

JOSEPH ROHLMANN, OF ST. JOSEPH, MISSOURI.

ATTACHMENT FOR CARVING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 477,229, dated June 21, 1892.

Application filed May 25, 1891. Serial No. 394,057. (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 certain new and useful Attachments for Carving-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

Heretofore, so far as I am aware, the blocks to be carved in carving-machines and also the pattern or model have been placed flat upon a table, and the blocks therefore could not be cut underneath and had to be severally loosened from the table in order to rearrange them during the cutting or carving operations. With such flat and fixed arrangements of the pattern and blocks it was consequently impossible to cut such objects as busts, heads, and kindred or other articles needing to be carved not only on one side or surface, but on many or all sides, and including frequently the under side. To remedy this and to furnish work-holding attachments readily attachable to and removable from existing or other machines are the objects of my present invention, and which consists in work-holding attachments, as hereinafter described, for use in carving-machines and which are adapted for holding the pattern and also for holding the blanks to be carved in imitation of such pattern, and whereby such pattern and blanks may each and all be turned, as need be, to any desired position under the tracer and cutters without needing to loosen the holder or holders from the table in order to rearrange them during the cutting operation, the attachments being such that they may readily be applied to or removed from the table of existing carving-machines, and one of these holding attachments being such that it may be used on the machine either by itself alone or in conjunction with a fellow holder of somewhat different construction, and between which two holders the pattern, as also the blanks, are held similarly to the holding of a block between the bits of a turning-lathe.

In the drawings I have shown my novel attachments in Figures 1 to 11, and in Fig. 12 the same are shown in position as applied to the table of a carving-machine, this machine requiring here no detailed description further than to say that like existing machines—such, for instance, as shown in my patent, No. 444,306, dated January 6, 1891—provision is made for giving the requisite movements to the cutters, to the cutter-frame, and also to the pivoted brackets by means of universal joints.

Fig. 1 shows in elevation the attachment bar or frame holding the indexed plates, stops, &c. Fig. 2 is a top view of Fig. 1, showing the construction of the plates and stops of this attachable, adjustable, and reversible bar and also showing the means by which the supports of the bar may be secured to the table. Fig. 3 is a bottom or under side view of Fig. 1, also showing the openings through the base of the bar or frame-support for fastening the same to the carving-table. Fig. 4 is an elevation of the bar or frame for holding the circular center bearings, worm-wheels, and cranked shaft for operating the same. Fig. 5 is a plan or top view of Fig. 4. Figs. 6 and 7 are detail views of center bits or stock-holders adapted to work in either of Figs. 1 or 4. Fig. 8 is an end view of Fig. 1; and Figs. 9, 10, and 11 are cross-sections of Figs. 2, 3, and 4, respectively. Figs. 12 and 13 are face and edge views, respectively, of a wooden bed or base, suitable to be applied to the index-plates; and Fig. 14 is a perspective of the frame of a carving-machine to show both of my attachments applied thereto when jointly used.

A B indicate the two bars of my attachment, A being the one which, while for general use, is used in conjunction with bar B, yet by reason of certain specialties in its construction is adapted for a certain class of work to hold the pattern and the blanks to be carved without the assistance of bar B. When used with bar B, the pattern and blanks are held between both bars and between suitable bits, like as in a turning-lathe. These bars are adapted when both are used together to be placed parallel to each other across the front of the table C of the machine and to be fastened thereto by means of bolts and screws or other appropriate fastening

ter be explained.

The bar A is provided with a series of indexed plates 1, each of which is mounted on a tubular pin or shank 2, which is arranged to turn in the socket part 3 of the bar, a spring-pawl 4, secured at one end to the bar, serving by its detent or stop 5 to engage with any one of a circular series of teeth 6 in the periphery of plate 1, and thus to hold the plates stationary at any desired point. A circular or other series of threaded screw-holes S is made in the face of each of the plates 1 to facilitate the fastening thereto, respectively, of the blocks to be carved and of the pattern-block, as may be needed.

I prefer to provide a wooden bed or base *t* to be interposed when desired between each of the blanks to be cut and the metal plates 1 to prevent the cutting-tools when worked down close from coming in contact with the metal. The blank can be secured to this bed or base in any convenient way by screws or otherwise, and these beds or bases then fastened by screws and screw-holes S to the plate. The bar A, it will also be observed, is hung so that it may be turned as a whole on its end centers or pivots 7, by which it is upheld or supported in split or other journal-bearings in the end posts 8, which posts may be screwed to the table through the slots 9. These posts may be adjustably held at any desired position or angle by means of screw-nuts 9×, adapted to clamp the journal-boxes which hold the pivots. The other bar B, between which and the plates 1 of bar A the several blocks are held to be carved, is constructed as follows: On its bed or base 10, which is provided with slots *b'* to receive fastening-screws in suitable bearings 11, is mounted a shaft 12, having a crank-handle 12× and provided with a series of worms 13, each one of which engages with a worm-wheel 14, thus constituting a worm-gear. A hollow shank or spindle 14× is centrally affixed to or forms part of each of the wheels 14, and center bits or holders 16 17 of any appropriate kind—such, for instance, as those shown in Figs. 6 and 7—are to be inserted in these hollow or tubular shanks 14×, as also similarly in the shanks of the index-plates 1, such bits being held to place in any well-known manner—as, for instance, being screwed to place or held in place by means of a projecting pin 15. These center holders, by means of the crank-shaft 12 and worms and gears, may be simultaneously and coincidently or equally turned in either direction, as the exigencies of the work may require, even to the extent of a complete revolution. Set-screws 18 are used, working severally against or into holes in the shanks of the index-plates, thus permitting the plates to be adjusted farther in or out of their sockets or supporting parts 3, as may be needed.

C and clamp or fasten the posts 8 thereto by means of suitable screws passed through the slots 9 or by other suitable fastenings, and when I desire to operate the same in combination with the part B, I turn and fasten the indexed plates 1, so as to face at option either the front or the rear of the machine, and then place the part B parallel with A and at the required distance from it and with its circular center holders opposite to and facing such index-plates.

The bits 16 and 17 being placed in their appropriate places in the respective index-plates 1 and wheels 14, the pattern-model is first fastened between the central ones of the series of these plates and wheels, and the blanks to be carved are severally similarly fastened between the other pairs of plates and wheels, and are thus each held tightly between them in the same way that wood or other blanks are usually held between the center bits or holders of a lathe, it being understood that in this case the faces of the indexed plates are in a vertical plane, and looking either toward the front or rear of the machine, as the case may be, and that the centers of the center bearings for each blank should be in substantially the same line. This manner of holding up in space the pattern and the stock to be carved affords the very great advantage that, besides the universal movements in the machine, there is also the provision for adjustment and turning around of the pattern and the blocks, so as to carve all around the block by bringing up for the action of the cutters any desired portion of the block. I thus give substantially a universality of motion to the material to be carved independently of but in addition to any universal movements in the machine itself.

When it is desired to change the position of the model and blanks, the crank 12×, being operated, turns the worms 13, and these in turn, by acting upon the worm-wheels 14, turn the model and all the blanks simultaneously and equally to any degree desired. The turning of the cranks turns each of the wheels 14 coincidently and simultaneously, and correspondingly turns the pattern and blocks held between these wheels and the index-plates, and also the index-plates, the latter then becoming self-locked by means of the spring-pawls 4.

For certain special work—such as carving rosettes, heads, or busts—bar B is dispensed with, the model is fastened by any convenient means to the top of the center one of the indexed plates or bar A, the face of such plates being then in a horizontal plane or looking upward, and the blanks are similarly fastened to the other plates, and the tool-holders, with their tracing-tool and the cutters, are brought to bear, respectively, upon the pattern and upon the blanks, and the machine is

then put into operation. When under these conditions it is desired to adjust or to change the position of the model or the blanks, the bar or frame A is turned or inclined backward or forward, as desired, on its pivots 7 and fastened to its desired position by means of its clamping device above named, and each one of the indexed plates being also, as before described, arranged to be turned by its shank in the socket parts 3 of the bar and adjusted to any required degree in a circle and adapted to be then fastened by the spring detent or stops 4 5 it will be seen that, while the model and blanks may be turned completely around axially with the plates 1 and shanks 2, if desired, the bar A may also be turned completely around or to any degree required in the course of the work, inasmuch as it may be reversed or turned on its pivots in either direction, or can be completely turned over and secured in any needed position, even upside down, say, to cut under and finish the under part of the work. The bar A, by reason of its preponderance of weight being below its points of suspension, normally hangs downward, so that the faces of its index-plates 1 lie horizontally. This greatly facilitates the securing to the plates of any blocks prior to the carving operation, especially when the bar A is to be used alone or without the bar B.

I claim—

1. As an attachment for wood-carving machines, a bar having means for carrying a series of blocks and held in end supports provided with slots for fastening-screws, whereby the bar may be secured to a table and adjusted forward or backward thereon and in which supports the bar may also be turned around and adjusted to the desired position.

2. An attachment for wood-carving machines, having a stock or block carrying bar hung on centers in its supports and provided with a series of index-plates for severally holding the blocks, each of said plates being mounted to permit it to be turned on its own center and provided with an automatic detent, serving to hold it to its adjusted position.

3. An attachment for wood-carving machines, having its block-carrying bar hung on centers in its supports and provided with a series of plates, each having a pin or shank inserted in a socket on the bar, and a set-screw whereby when the plate is raised or lowered relatively to the bar it may be held firmly in its adjusted position.

4. In combination, the supports 8, bar A, pendent thereon, and plates 1, revolubly socketed in said bar and having automatic detents 5 and provision for receiving a center bit and adjusting-screws $9^{\times}$, all substantially as shown and described.

5. Attachments for use in carving-machines, consisting of a pair of bars, each having slots whereby they may be secured relatively to each other upon the bed or table of the machine, as desired, and having center bits, and means, substantially as shown and described, whereby the pattern and the blocks held between the bits may be turned on their axes and secured in any such adjusted position, and one of these bars having revoluble toothed plates and spring-pawls, all substantially as set forth.

6. The combination, with slotted bar A, having a series of revoluble index-plates provided with spring-pawls, of slotted bar B and its worm-shaft and center bits, the combination being and operating substantially as set forth.

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