

H. A. HOLT.

CUTTER CARRIER FOR WOOD WORKING MACHINES.

No. 265,604.

Patented Oct. 10, 1882.

Fig. 1.

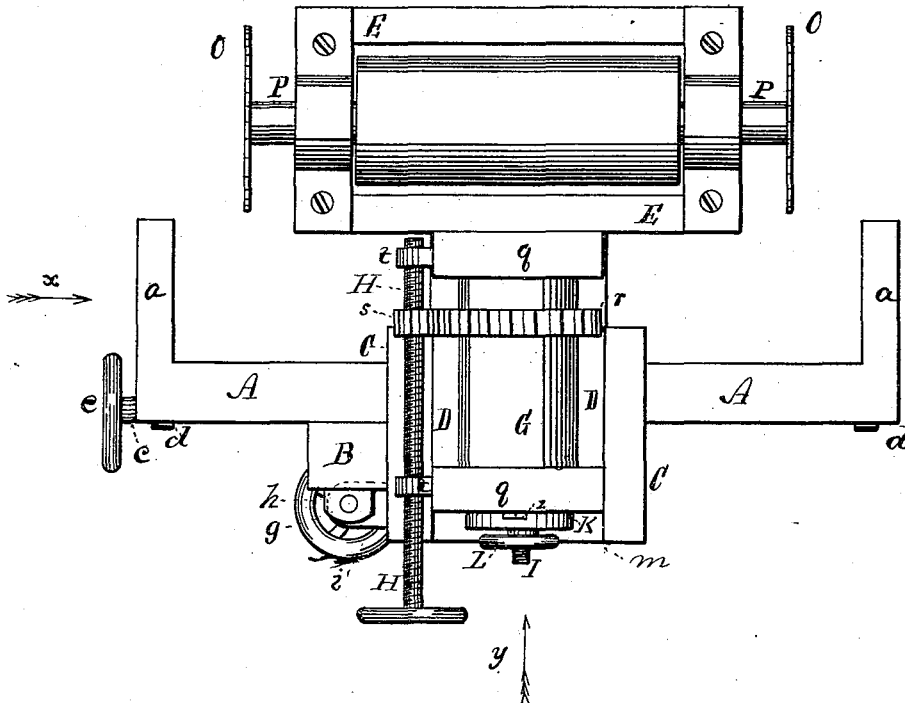
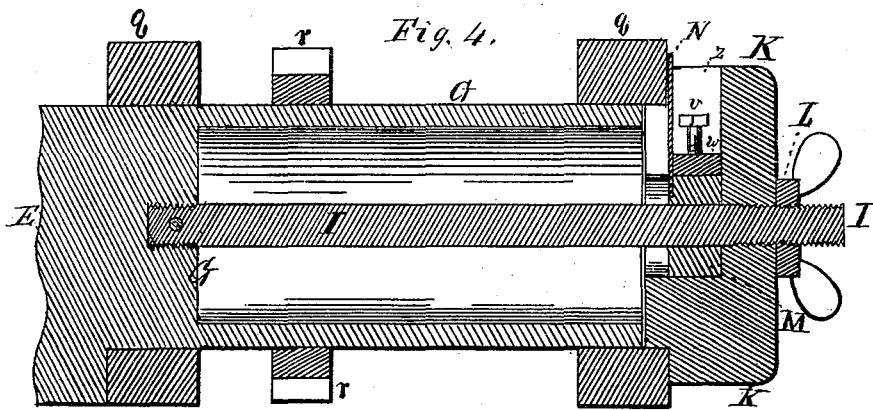


Fig. 4.



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Fig. 2.

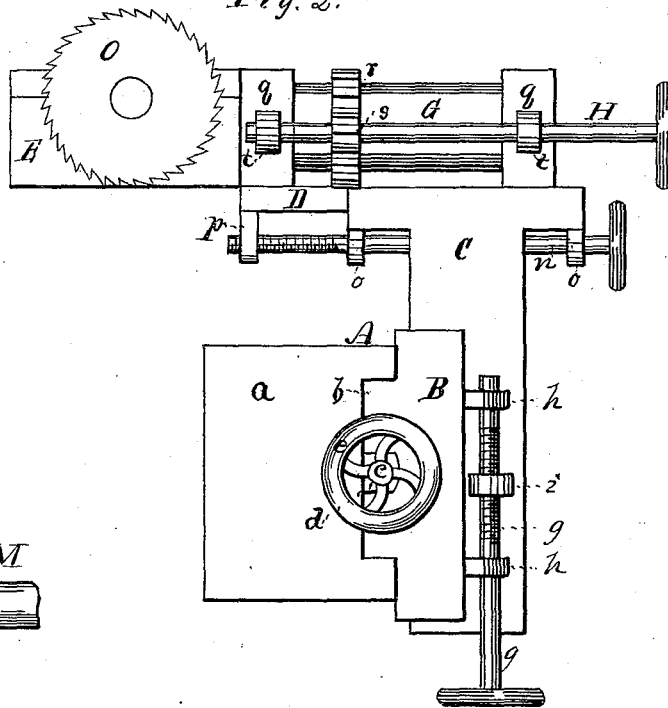


Fig. 7.

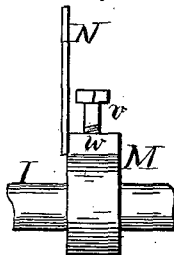
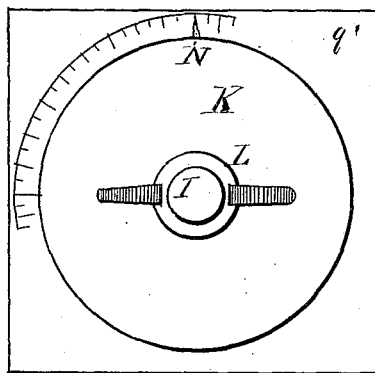


Fig. 5.



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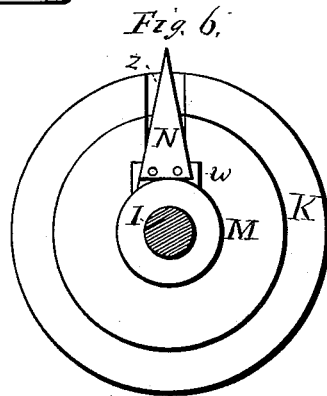
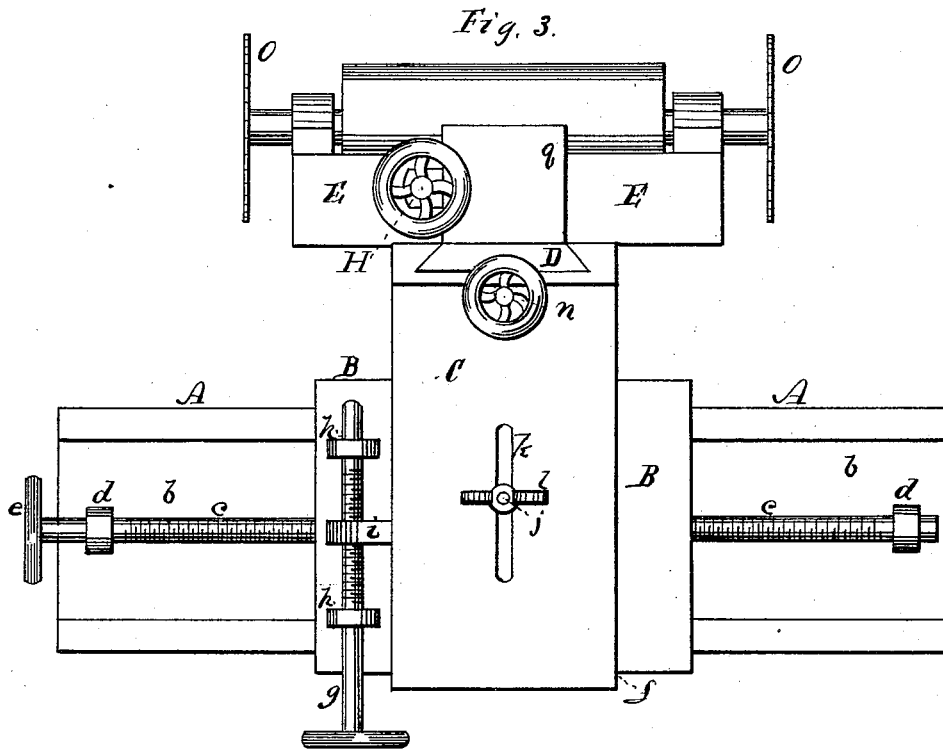
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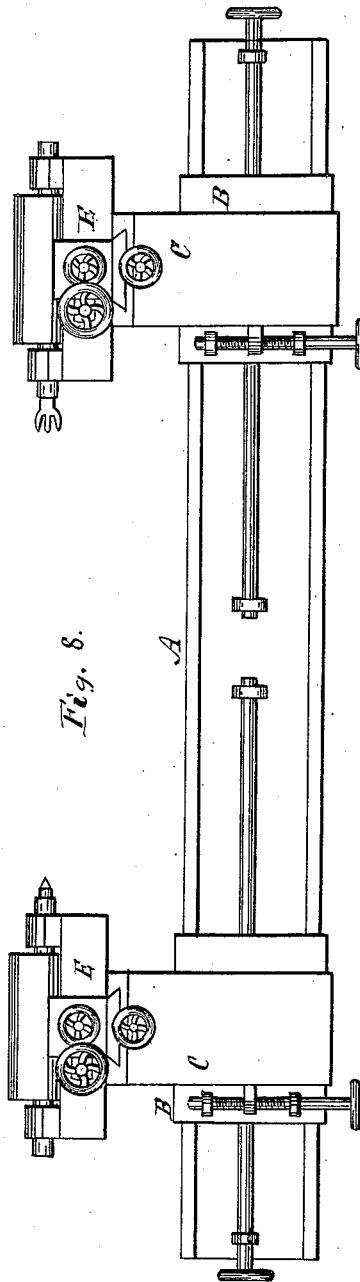


Fig. 8.

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# UNITED STATES PATENT OFFICE.

HENRY A. HOLT, OF WILTON, NEW HAMPSHIRE.

## CUTTER-CARRIER FOR WOOD-WORKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 265,604, dated October 10, 1882.

Application filed December 31, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY A. HOLT, of Wilton, in the county of Hillsborough and State of New Hampshire, have invented certain Improvements in Wood-Working Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

In Letters Patent No. 159,514, granted to me February 9, 1875, I described a means of mounting and adjusting the positions of the cutter-heads and other tools used in the machine. By that device the arbors of the tools could be adjusted laterally in a horizontal line, vertically, and angularly, whereby any desired position thereof might be obtained. The cross-girders upon which the arbor-blocks were there mounted were also capable of adjustment laterally in a horizontal direction in the frame of the machine at right angles to the horizontal adjustment of the arbor-blocks, whereby the driving-belts which transmitted the motion from the driving-shaft to the arbors of the tools could be tightened to any required degree. There are objections to this latter mode of adjustment, since it involves a special construction and arrangement of parts not immediately connected with the operative parts affected, and which belong to the frame-work, so that, in addition to the increased expense of construction and increased complexity of the machine, the arbor-blocks could not be applied to machines which were not specially made for the purpose.

The main feature of my present invention consists in combining in the tool-carrying device itself an additional horizontal adjustment of the arbor-bearing blocks with the other three adjustments for tightening the belts, and for any other purpose, whereby simplicity, compactness, and economy of construction are effected, the complexity of the adjusting manipulations is reduced, and the whole device is complete in itself, and may be readily attached to any machine or frame suited to the purposes of the invention.

In the accompanying drawings, Figure 1 represents a top view of one of the complete tool carrying and adjusting devices provided with the improvement above set forth; Fig. 2, a side

view of the same, looking in the direction indicated by the arrow *x*, Fig. 1; Fig. 3, a side view thereof, looking in the direction indicated by the arrow *y*, Fig. 1.

A single girder, A, serves for the use of the present device, taking the place of the double girders described in the former Letters Patent. This girder may be of iron and provided with flanges *a a* at its ends, whereby it may be bolted to the opposite sides of the machine or frame to which the device is to be applied. The girder is represented as short, of sufficient length only to carry one of the tool-carrying devices; but it may be of any desired length, and generally it will be long enough to carry two of the tool-carriers and give room for their adjustments in different parts of its length. In one vertical side of this girder is formed a deep channel or groove, *b*, which may be of dovetail form. In this channel fits and slides one side of the horizontally-adjusting carrier or carrier-block B, by which the main horizontal adjustment of the tools is effected. I have represented as a means of adjusting this block a stationary screw, *c*, extending nearly the length of the girder A, and turning in bearings *d d* near the ends thereof, preferably in the run of the channel *b*, as shown. Its position must be accurately parallel with the lines of the channel, and it passes through the block B, which is threaded as a nut to receive and be operated by the screw. On turning the screw by its hand wheel or crank *e* the carrier-block is moved in the direction and to the extent desired. In the outer face of this carrier-block B is a vertical channel or groove, *f*, also preferably of dovetail form, in which fits and slides one side of the vertically-sliding carrier or carrier-block C, by which the vertical adjustment of the tools is produced. The adjustment of this block is also properly effected by a stationary screw, *g*, turning in bearings *h h* on the carrier-block B, respectively near the top and bottom thereof, the screw passing through and fitting, as in a nut, in a projection, *i*, on the side of the said block C. The operation of the adjusting-screw is similar to that of the block B. To secure this block C more firmly in position after each adjustment, a means is represented in Fig. 3, consisting of a fixed horizontal bolt, *j*, projecting through a horizontal slot

in the girder A, out through a hole in the block B, and through a vertical slot, *k*, in the block C, and a tightening-nut, *l*, turning on the bolt, which is screw-threaded to receive it. Now, instead of mounting the arbor-blocks directly upon this vertically-adjusting carrier C, corresponding with the construction described in the former patent, I form in the laterally-extended top of this carrier a horizontal channel or groove, *m*, of dovetail form, and in a direction at right angles to the girder A, in which channel fits and slides a bearing-block, D, by which the second horizontal adjustment of the tools is effected, instead of the lateral adjustment of the supporting-girders in the machine-frame set forth in the former patent. A means of adjusting this bearing-block, similar to those described for adjusting the other blocks, is represented, consisting of a stationary screw, *n*, turning in bearings *o o* on the under side of the top extension of the block C, and passing through and turning in a nut-extension, *p*, on the under side of the bearing-block. The arbor-block E, on which the tools are directly mounted, has a cylindrical or tubular horizontal projecting arm, G, on one side, which serves as the journal by which the angular adjustment of the arbor-block is effected. This journal turns in two bearings, *q q*, on the bearing-block D, and by this turning the angular position of the arbor-block is accomplished. The adjusting movement thereof is effected (or may be) by an endless screw and worm-wheel, as in my former patent, or any equivalent device. I have represented a means consisting of a cog-wheel, *r*, fixed to the journal G, and a driving-pinion, *s*, gearing into this cog-wheel, the pinion being secured on a shaft, H, which turns in bearings *t t* on the bearings *q q* or other part of the bearing-block D, and is turned by a hand-wheel or equivalent means.

To hold the journal fixedly and firmly at any required angle, I have a peculiar device, which constitutes another feature of improvement in my present invention. This is represented in Figs. 4, 5, 6, and 7 of the drawings, of which Fig. 4 is a central vertical section of the journal G in its bearings *q q*; Fig. 5, a view of the front end thereof; Fig. 6, a view of the back side of the clamping-collar, dial-pointer, and clutch-collar; and Fig. 7, a side view of the dial-pointer and collar on the rod separate from other parts. These views are on an enlarged scale. By the construction here represented the journal G is hollow or tubular, at least in part, and a central rod, I, is secured in the hollow to the solid or rear end of the journal, and it extends out through the whole length of the tube and some distance beyond the journal. The journal itself does not reach entirely through the forward bearing, *q*, of the bearing-block D, leaving room therein to admit a circular projection, *u*, on the back side of a loose clamping-collar, K, which is concentrically placed on the rod I, that extends through it, the said circular projection fitting closely in the

bearing to keep the rod I central in the journal. The surface of the collar around the circular projection bears against the forward surface of the bearing *q*. The rod I is screw-threaded outside of this collar, and a hand-nut, L, screws thereon, and by being pressed against the face of the collar clamps it forcibly against the front surface of the said bearing, and thereby holds it from turning. To connect the collar with the rod and journal, so that the latter shall turn with it, a clutch-collar, M, is secured fixedly but adjustably on the rod I, in the proper position, by a set-screw, *v*. A clutch-projection, *w*, on one side of this collar fits snugly into a notch, *z*, in the back side of the loose collar K, thereby coupling the two collars together, but allowing a free forward and backward movement of the said loose collar. The clutch-collar must be entirely forward of the bearing *q* when the loose collar is clamped up to it. The dial-pointer N projects from the collar M out through the notch *z* beyond the loose collar. The dial or scale of degrees to the extent of a quarter of a circle or a little more is marked on the face of the bearing *q*, as shown in Fig. 5. The angle at which the arbor-block is set is thereby readily observed. This adjustment of the arbor-block extends from the horizontal to the vertical position, and more, if desired.

I have represented saws O O on both ends of the arbor P of the arbor-block. Any kind of molding or cutting tool may be located on either or both ends of this arbor instead of saws. Generally, however, only one tool is attached to the arbor at a time; but in the particular case of saws it is useful to have one on each end of the arbor, and when the arbor is in a horizontal position both saws can cut at once in cutting out stock to special lengths or widths. Thus a wider usefulness is given to the machine.

Another capability of this invention I have so adapted as to constitute another feature of improvement, as represented in Fig. 8, which is an elevation of two arbor-blocks and their carriers mounted on one girder. By placing both arbor-blocks in a horizontal position the centers of their arbors or axes will be in one line. Then by putting a lathe-head driver on one arbor, as at the right hand, and a foot-point on the other arbor, as at the left hand in the figure, a complete common lathe is produced, which may serve instead of a separate lathe.

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

1. An arbor-block or tool-holder, E, provided with a journal, G, turning in a horizontally-adjustable bearing-block, D, which is mounted on a vertically-adjustable carrier-block, C, that is mounted on a carrier-block, B, adjustable horizontally in a direction transverse or at right angles to the adjustment of the bearing-block D, substantially as and for the purpose herein specified.

2. In combination with the horizontally-adjustable carrier-block B and vertically-adjustable carrier-block C; the horizontally-adjustable bearing-block D, the three blocks operating substantially as and for the purpose herein specified. 15

3. The combination of the hollow journal G, provided with the central rod, I, and arranged in its outer bearing, *g*, as described, with the loose collar K and clutch-collar M, substantially as and for the purpose herein specified. 10

4. The combination of the clutch-collar M on the journal-rod I, the dial-pointer N, and the journal-bearing *g*, having a dial or graduated

scale on its face, substantially as and for the purpose herein specified. 15

5. In a wood-working machine, the combination of two arbor-blocks or tool-carriers, E E, mounted on a girder, A, and each having the adjustments herein described, one being provided with a lathe-head and the other with a lathe foot-point, substantially as and for the purpose herein specified. 20

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Witnesses:

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MARY S. FLINT.