

P. HAUCK & A. METZGER.
Carving Machines.

No. 149,121.

Patented March 31, 1874.

Fig. 1.

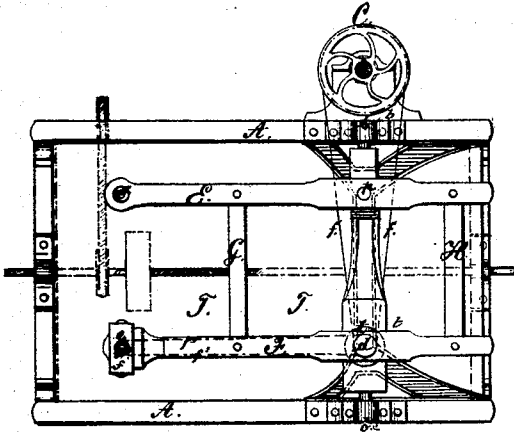


Fig. 2.

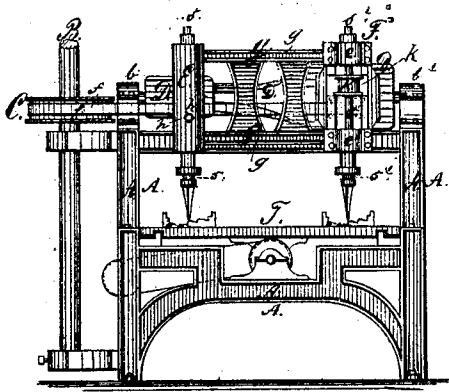


Fig. 3.

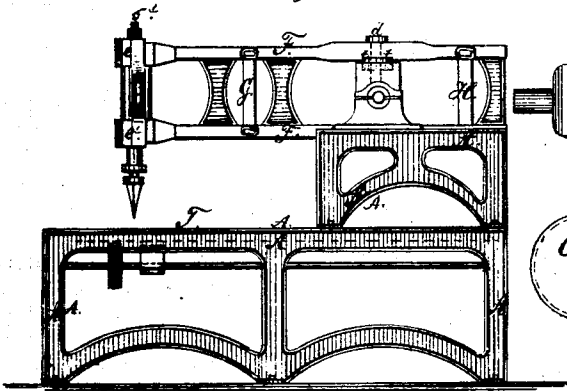


Fig. 4.

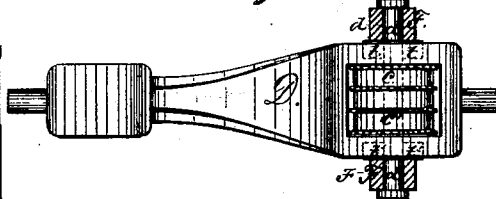
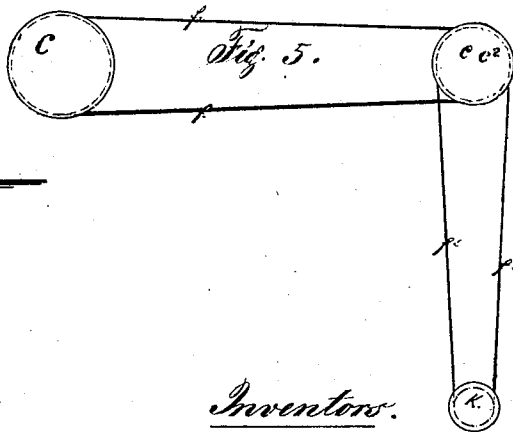


Fig. 5.



Witnesses.

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PHILIPP HAUCK AND ANDREW METZGER, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN CARVING-MACHINES.

Specification forming part of Letters Patent No. **149,121**, dated March 31, 1874; application filed December 16, 1872.

To all whom it may concern:

Be it known that we, PHILIPP HAUCK and ANDREW METZGER, both of the city of Brooklyn, county of Kings and State of New York, have invented an Improved Carving-Machine, of which the following is a specification:

The first part of our invention relates to the combination of a pivoted beam, or an axle, with a set of two or more frames, in such a manner that said frames, being provided on their ends with arrangements for bearing or holding the necessary carving-tools, can easily be moved up and down, as well as sidewise, to the right or left, together, and all in the same ratio, by moving one of the frames, or by operating with the so-called copying-pin, which is fastened on the end of one of the same, the object of this part of our invention being to obtain a most simple, durable, and exact working mechanism, whereby the operator will be enabled to produce many most accurate copies in the very shortest time. The second part of our invention relates to the combination of pulleys and spindles with the former combination, in such a manner that the carving-tools, being firmly secured to the lower ends of the spindles, can be made rotating at the same time when the frames are moved; or, in other words, when the copying-pin is directed toward the surface of the model, and moved thereon.

Figure 1 is a plan of a machine embodying our invention. Fig. 2 is a front elevation of the same. Fig. 3 is an elevation, showing that side of the machine which is at the right hand in Fig. 1. Figs. 4, 5 represent details of the machine made upon a larger scale.

A is the frame of the machine, which frame should be substantially constructed to resist the vibrations of the operating parts. B is the driving-shaft, communicating power from the main shaft of the machine to the pulley C, from which latter motion is communicated to the operating parts. D is the pivoted beam or axle, which is hung in the bearings *b b'*. This beam or axle has near its one end a square opening, large enough to receive the pulley *c c'*. The latter, *c c'*, is made rotating around a loose bolt or short axle, *d*. Said pulley is divided into two or three parts, which parts are separated from each other by projecting rims, so that the belts which are to be placed on the

same cannot slip over or come into collision with each other. E and F are the frames, to which G and H are the connecting-pieces, which are properly pivoted on E and F. Both frames are secured to D—that is to say, E by means of the round bolt or pivot *p*, and F by the trunnions *t t'*, as shown in Fig. 4. Thus arranged, said frames can easily be swung or moved up and down, as well as sidewise, to the right or left, whereby the ends of both frames, being equally distant from the axis of D, must describe equal parts of circles, the diameter of which must also be equal in relation to both. *s* and *s'* are the spindles, of which *s* is firmly secured to E by means of the screw *h*, which allows also that *s* can be set higher or lower, as occasionally may be required. The spindle *s'* is provided with a pulley, K, and hung in bearings *e e'*, which latter are firmly secured to the end of F. F is here so constructed that an opening will be left between both bearings large enough to receive said pulley K, and to allow that the same may rotate freely. *f* and *f'* are the belts, communicating rotation from the pulley C to the pulleys *c c'* and K, and therewith to the spindle *s'*. The carving-tools to be used in this machine are generally made hollow, more or less pointed, and of different shape. The copying-pins are made in shape corresponding with the former. Both are to be well fastened to the lower ends of the spindles *s s'*, which may be effectuated by the usual means. The table-plate T is provided with a number of rectangular slits or openings, so as to allow the fastening of the usual clamps or dogs for holding the model and the blocks of wood or marble to be carved in their right position. Said table-plate is made sliding on both sides of the frame. The necessary forward and backward moving of the same during the operation may be effectuated by any of the known devices; for example, by that which is indicated in the drawing, Figs. 1, 2, and 3.

The manner of operating with this machine will now be fully understood by a short description, as follows: After the operator has convinced himself that the belts are in order, the copying-pin and carving-tool firmly secured to the spindles, and that both are equally distant from the clean surface of the

table-plate, the model and the block or piece of wood to be carved are brought in their right position and well fastened to the bed-plate below. The operator then moves the copying-pin toward the face of the model, following the outlines of the same as near as possible, whereby he first will have to look to it that all the superfluous material is cut off from the block referred to, leaving the figure as a rough but exact counterpart in outlines and proportions of the model. He then commences the finishing of the work by moving the copying-pin near and nearer to the face of the model, and, finally, exactly on the same, taking care that all points of the hollow as well as elevated parts are touched by the pin. Thus provided, the carving-tool on the opposite frame must cut its way into the block of wood or marble placed on the table or bed-plate below, in exact correspondence with the movement of the copying-pin on the surface of the model, and the production of a most accurate counterpart will certainly be the result. Groups, or any small statues, which have to be carved on all sides, are first finished on one side, then turned and operated upon another side, and so forth, in the same manner as before, taking care, however, that the finished side or sides are fully protected against any injury.

As the most kind of carving to be done in relation to furniture manufacture is of small size, a machine with a set of three frames may

profitably be used. We therefore think it proper to mention here that a third frame can easily be brought in combination with the pivoted beam D of our machine and connected with E and F, as described before. In such a case, however, smaller and stronger belts have to be used, and the pulley *c c'* has also to be removed and to be substituted by such one which is divided into three well-separated parts, so that each part forms a band-pulley or wheel for itself.

We make no claim to the application of frames combined with spindles and carving-tools for carving-machines; nor to the mode of communicating rotation to the spindles and carving-tools by means of pulleys and belts in general, for we are aware that those are not new; but

We claim as new, and as our invention—

1. The combination of the pivoted beam or axle D and the frames E and F, substantially as and for the purpose hereinbefore set forth.

2. The combination of the spindles *s* and *s'* and pulleys *k* and *c c'* with the pivoted beam or axle D and the frames E and F, substantially as and for the purpose hereinbefore set forth.

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Witnesses:

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