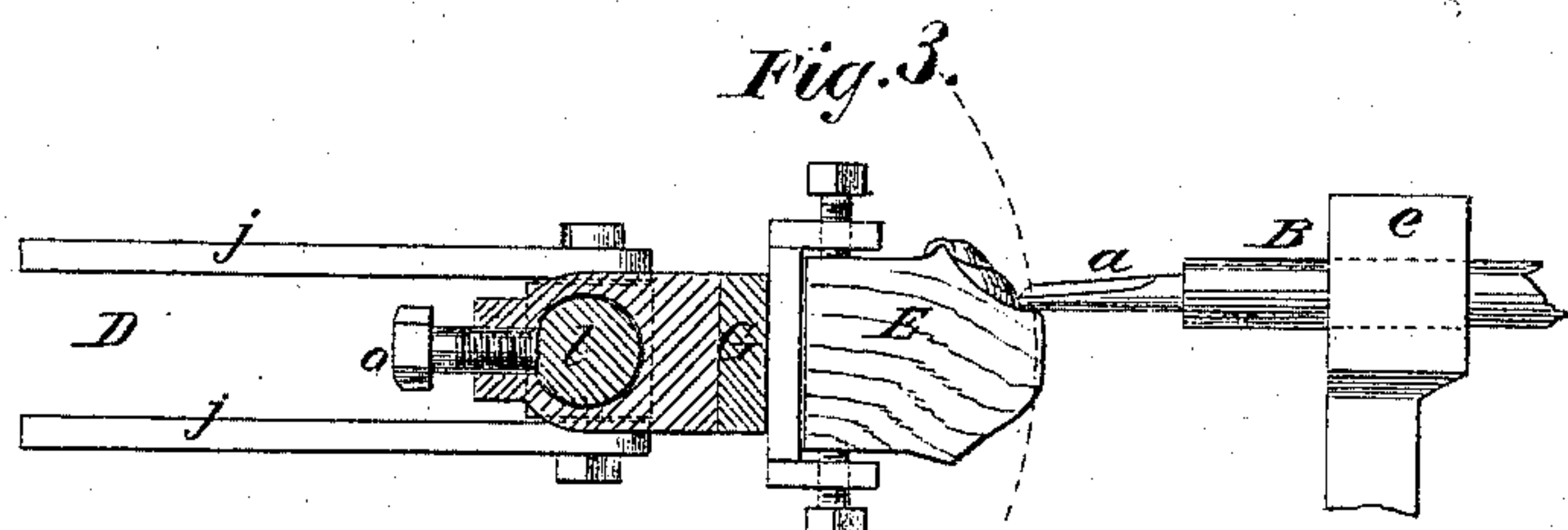
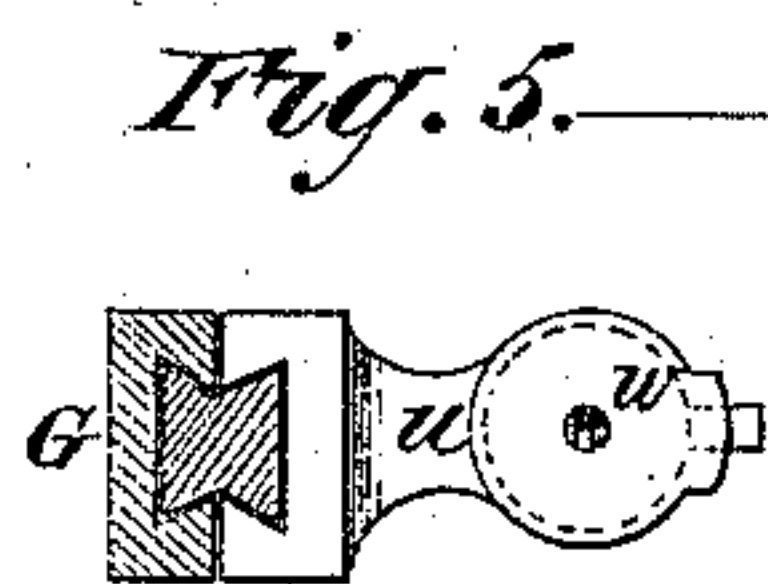
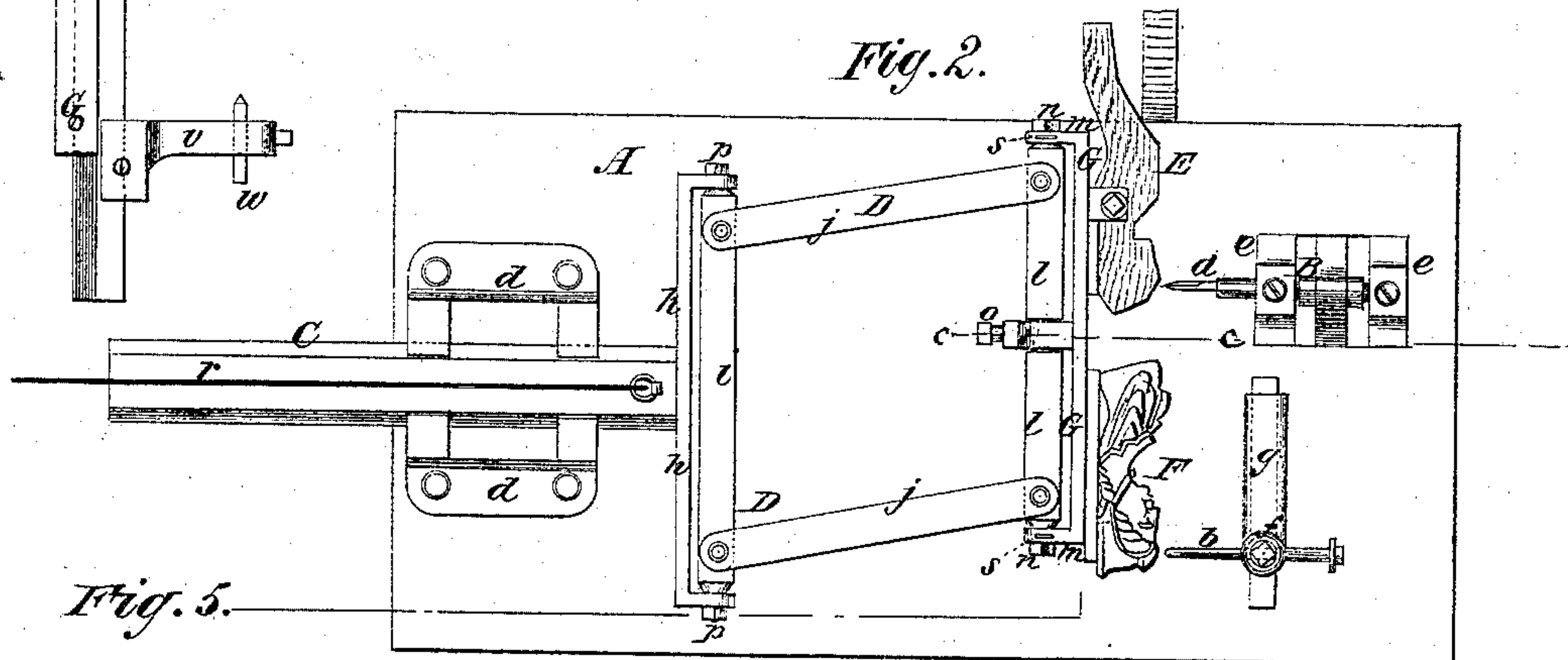
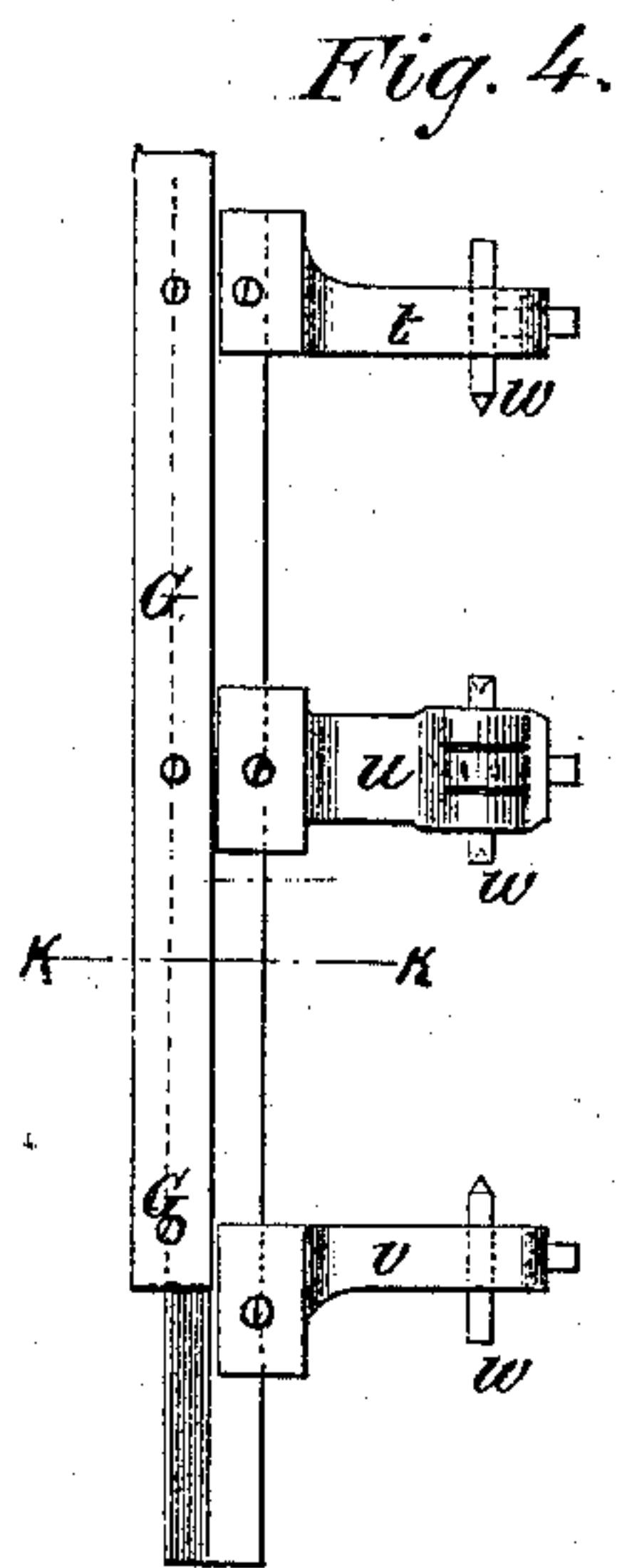
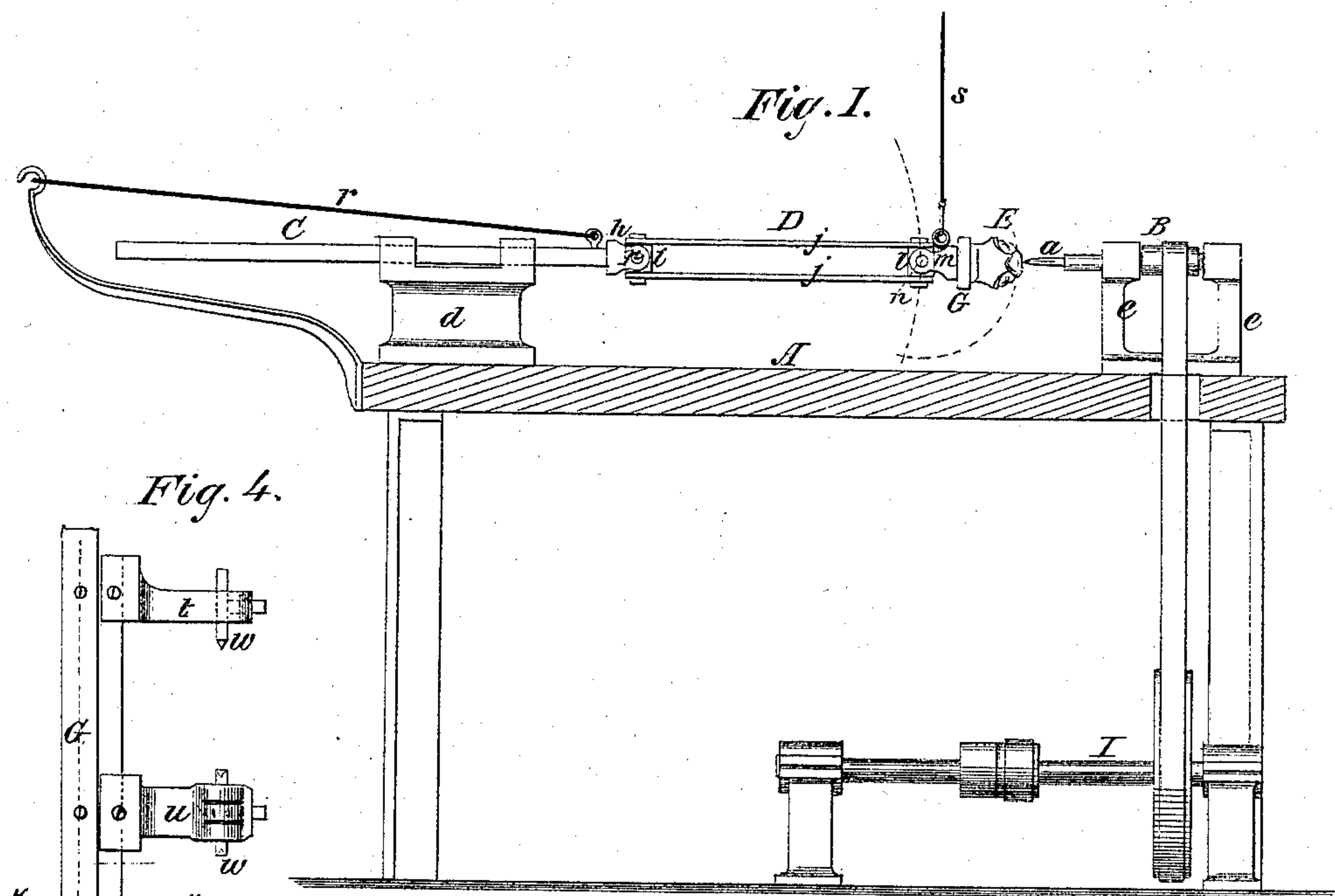


H. GRUBENBECHER.
Carving Machines.

No. 137,837.

Patented April 15, 1873.



Witnesses:

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UNITED STATES PATENT OFFICE.

HENRY GRUBENBECHER, OF NEW YORK, N. Y.

IMPROVEMENT IN CARVING-MACHINES.

Specification forming part of Letters Patent No. 137,837, dated April 15, 1873; application filed October 26, 1872.

To all whom it may concern:

Be it known that I, HENRY GRUBENBECHER, of the city, county, and State of New York, have invented an Improvement in Carving-Machines, of which the following is a specification:

Figure 1 represents a side elevation of my improved carving-machine. Fig. 2 is a top view of the same. Fig. 3 is a detail vertical section on the line *c c*, Fig. 2; Fig. 4, a top view of the frame for holding pattern and block in position for turning; and Fig. 5 a transverse section on the line *k k*, Fig. 4.

Similar letters of reference indicate corresponding parts.

The invention consists in the improvement of carving-machines, as hereinafter described and pointed out in the claim.

In the accompanying drawing, the letter *A* represents the supporting frame or table. The same furnishes bearings *e* for the spindle *B* of the cutting-tool *a*, and bearings *f* for the gage-pin *b*, and also a support, *d*, for the sliding carriage *C*, to which the jointed block and pattern-holding frame *D* are attached. The spindle *B* is revolved, by belt or other connection, with a suitable driving-shaft, *I*. The tool *a* can be applied to and removed from the spindle, so that it may be replaced when desired. The gage-pin *b* is fastened in the support *f*, which is laterally adjustable on the table *A* by having its shank enter a sort of sleeve, *g*, that is fixed to the table, or by slotting the shank and connecting it by a screw to the table, or by slotting the table, or otherwise. By this adjustability of the support *f* the pin *b* can be set at any suitable distance from the tool *a*, according to the dimensions of the articles to be cut. The pin *b* can also be longitudinally adjusted in the support *f*, so that its point can be set and held exactly in line with the point of the tool. The slide *C* is by preference dovetailed in the support *d*, so that it can move back and forth, but not sidewise, nor up and down. To its front end is secured a cross-arm, *h*, which has projecting ears at the ends, wherein the ends of a rock-shaft, *i*, are pivoted, as shown in Fig. 2. Rods *j j*, which are pivoted to the shaft *i*, connect the same with a parallel bar, *l*, and constitute together therewith the joint-

ed frame *D*, which is a changeable parallelogram.

The block *E* to be carved, and the pattern *F* to be imitated, are fastened to the face of a plate, *G*, which has ears *m m* at its ends, which are pivoted to the ends of the bar *l*. The plate *G* can, on its points *n n*, be swung to hold the block and pattern at any suitable angle to the tool and gage-pin, and can, by a set-screw, *o*, or otherwise, be locked at any desired angle to the bar *l*. The whole frame can moreover be vibrated on the pivots *p p* of the rock-shaft *i*, so that the block and pattern can be swung on two different curves, both indicated by dotted lines in Fig. 1. A spring or weight, *r*, connects with the slide *D*, and tends to draw it back, away from the tool *a* and pin *b*. Another spring or weight, *s*, serves to balance the frame *D*, and to hold it nearly horizontal.

The operator, after the block and pattern have been properly secured to the plate *G*, and the tool *a* and pin *b* being adjusted, has only to vibrate the plate *G* up and down, and draw it back and forth, and swing it sidewise on the pivots of the rod *j*, so as to bring every part of the pattern in contact with the pin *b*, which will cause the tool to reach corresponding depths and parts of the block, and to reproduce the pattern. When work is to be cut on more than one side—*i. e.*, when it becomes necessary to turn the pattern, in order to bring all parts of its surface in contact with the pin *b*—I employ the holder which is represented in Figs. 4 and 5, and in which laterally adjustable brackets *t*, *u*, and *v*, are fastened to the face of the plate *G*. These brackets contain center-pins *w w*, all in line with each other. The block to be cut is centered between the brackets *t* and *u*, and the pattern between the brackets *u* and *v*. The center pin in the middle bracket *u* has flattened ends and is swiveled in *u*, so that when the pattern is turned the block will also be turned in the same manner and degree by virtue of such swivel-connection.

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

1. The plate *G* that holds the block and pattern combined with a jointed frame, *D*,

balanced in a horizontal position by weights or springs, as and for the purpose described.

2. The combination with plate G, supporting both block and pattern, of the tool *a* and pin *b*, operating therewith, as and for the purpose set forth.

3. A block and pattern-plate, G, provided

with the brackets *t u v*, having centering-pins, *w*, of which the middle one is swiveled, as and for the purpose specified.

HENRY GRUBENBECHER.

Witnesses:

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