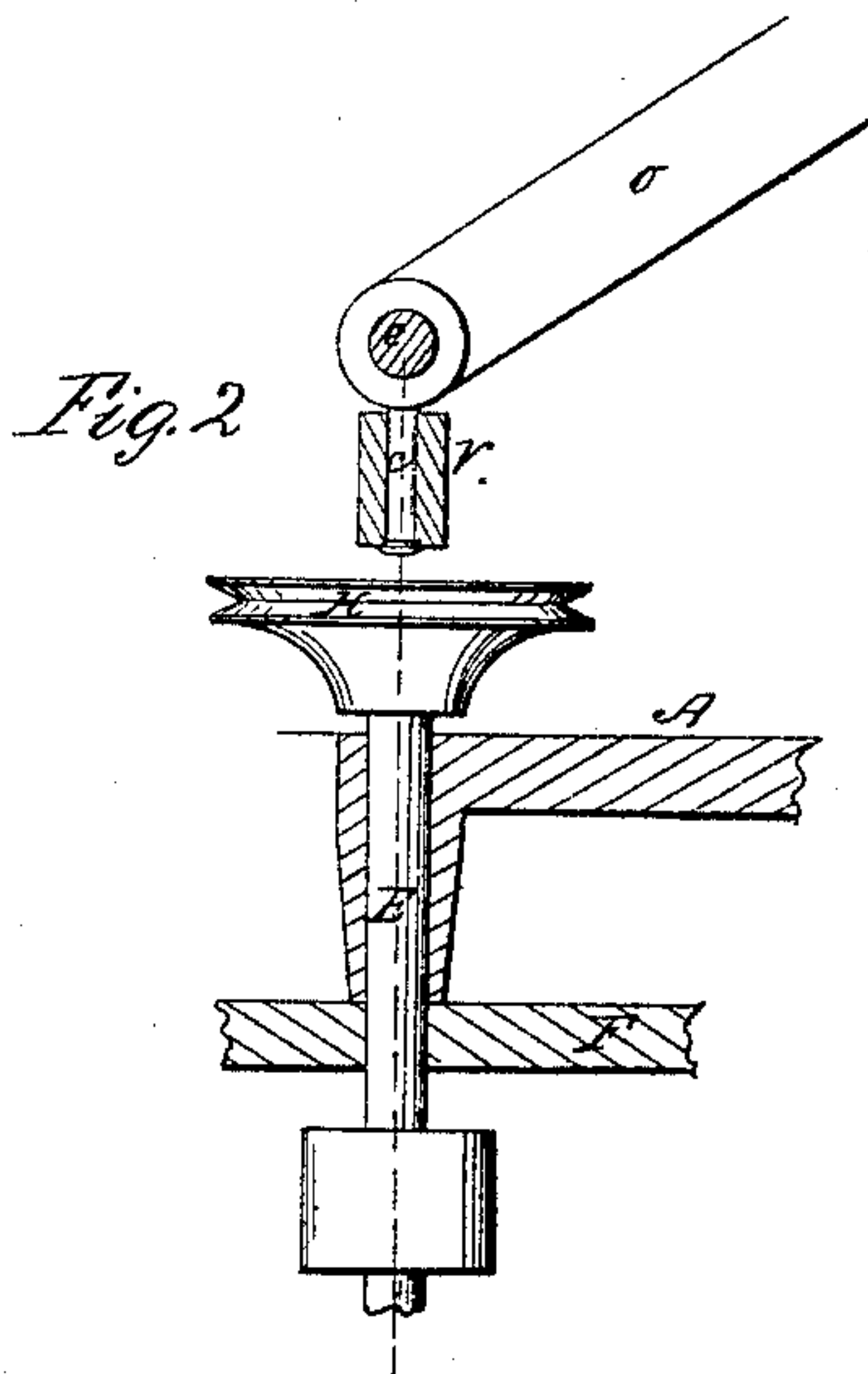
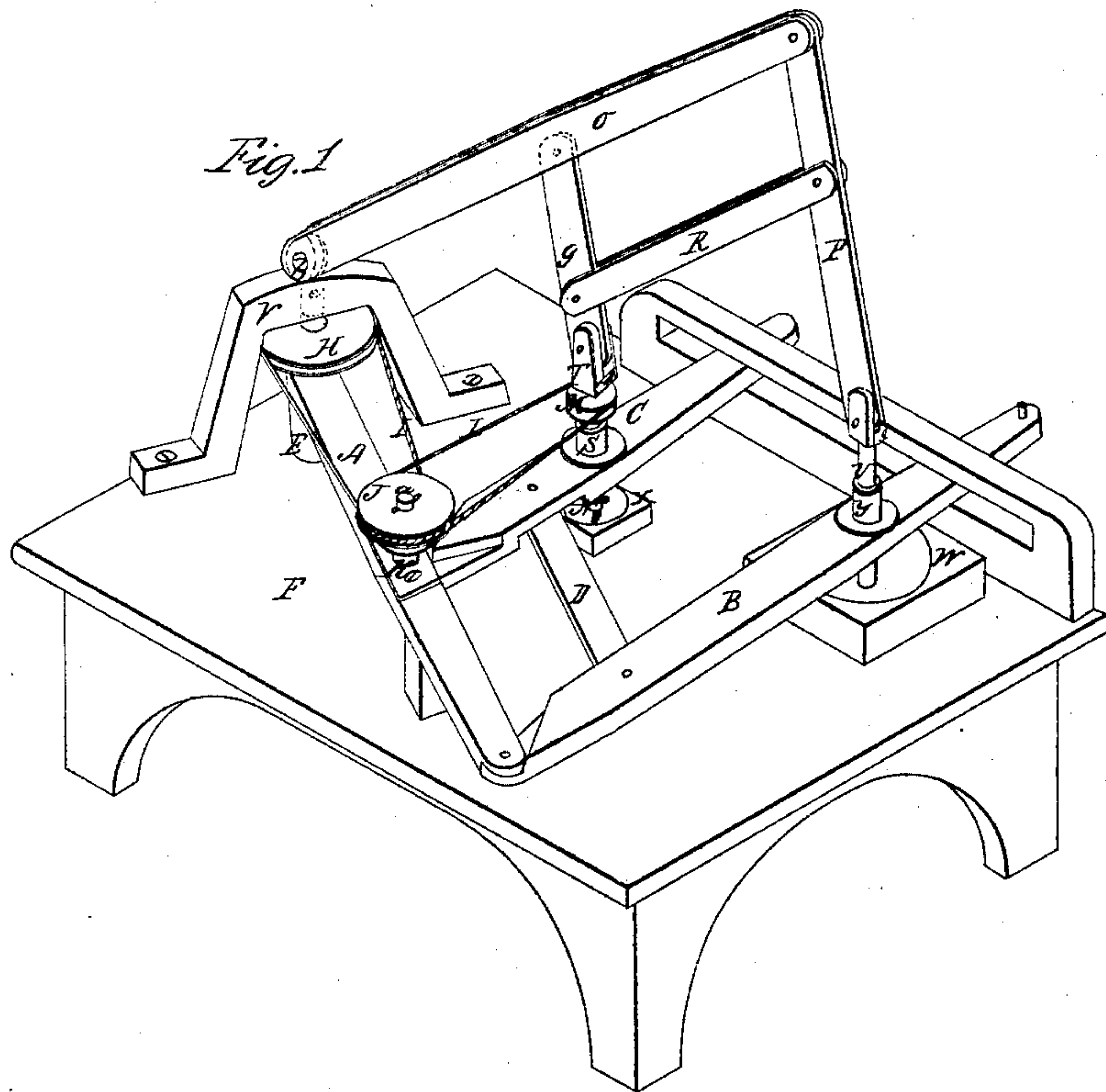


E. Allen,
Working Marble.

Nº 11,922.

Patented Nov. 14, 1854.



UNITED STATES PATENT OFFICE.

EDWIN ALLEN, OF SOUTH WINDHAM, CONNECTICUT.

MACHINERY FOR CARVING STONE.

Specification of Letters Patent No. 11,922, dated November 14, 1854.

To all whom it may concern:

Be it known that I, EDWIN ALLEN, of South Windham, in the county of Windham and State of Connecticut, have invented
5 certain new and useful Improvements in Machinery for Carving Stone and other Substances; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had
10 to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a perspective view of a machine constructed according to my invention. Fig. 2, is a sectional view showing the ar-
15 rangement of the pivots of the pantographs.

The nature of my invention consists in the employment for the purpose of carving stone or other substances of two pantographs combined in a certain way with a
20 tracer and cutting tool whereby the said tracer and cutting tool are rendered capable of moving, not only over every point in a plane, as in a single pantograph, but also capable of a movement perpendicularly to
25 the said plane for the purpose of tracing over undulating surfaces, and cutting corresponding undulating surfaces. By this combination, statues, bas-reliefs, and ornamental compositions of an extremely compli-
30 cated character, may be cut to pattern with the greatest accuracy.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

35 A, B, C, D, represent a horizontal pantograph, similar to the single pantographs in common use, turning freely upon a vertical shaft, E, which works in suitable bearings in and below the table, F, and constitutes the
40 driving shaft of the machine, and which carries a pulley, H, which transmits rotary motion by a band, I, to another pulley, J, running loosely on a stud (a) which forms the pivot of the leg, C. To the pulley, J, is
45 secured another pulley, K, which transmits motion by a band, L, to a pulley, M, which is secured to the tool shaft, N, which both turns and works longitudinally in a socket, S, in the leg, C, of the pantograph.

50 The tool shaft is suspended from the leg, Q, of the second pantograph, O, P, Q, R, by a box, T, in such way that it turns freely therein. The beam, O, of the second pantograph works upon a horizontal pivot (b)
55 which turns freely upon a vertical pivot (c) which intersects it at right angles, and has

its bearing in a bridge piece, V, striding over the shaft, E, which forms the pivot on which the first pantograph turns. The pivot (c) is exactly in line with the shaft, C, and
60 therefore the mode of hanging the second or vertical pantograph, is the same in effect, as if it were attached by a universal joint, to the main pivot of the first. The tracer, U, is suspended from the leg, P, of the second
65 pantograph, and works freely through a fixed socket, Y. The pattern, W, and the block, X, of stone or other material to be operated upon, are both secured to the ta-
70 ble, F.

The above described combination of two pantographs enables the tracer to follow the most intricate patterns, and the tool to produce a corresponding form on the piece of stone or other material to be operated
75 upon.

The most elaborate bas-reliefs may be produced, without moving the pattern; and by arranging the pattern and the block so as to be turned over, statues or sculpture may
80 be copied, by carving one-half and afterward reversing or changing the pattern, and turning the piece over, to carve the other half.

I do not claim to be the first inventor of
85 a machine for carving in which the tracer and cutting tool have their relative motions not only in a horizontal but a vertical plane, and I do not wish to claim the within described combination of pantographs for
90 other purposes than that of carving. But

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

The employment for the purpose of carving stone and other substances, of two pan-
95 tographs, combined with a tracer and cutting tool as described, to wit: the pantographs being arranged at right angles to each other and having their main pivots, connected or arranged in such way, as to
100 form or be equivalent to a universal joint, and the tool and tracer, being suspended from or attached to the pantograph, O, P, Q, R, and passing through sockets in the legs of the pantograph, A, B, C, D,—where-
105 by the tracer and tool are allowed a universal movement, as herein set forth.

EDWIN ALLEN.

Witnesses:

O. D. MUNN,
A. BRUEN.