

I. M. Singer,
Type Machine.

No. 6310.

Patented April 10, 1849.

Fig 1

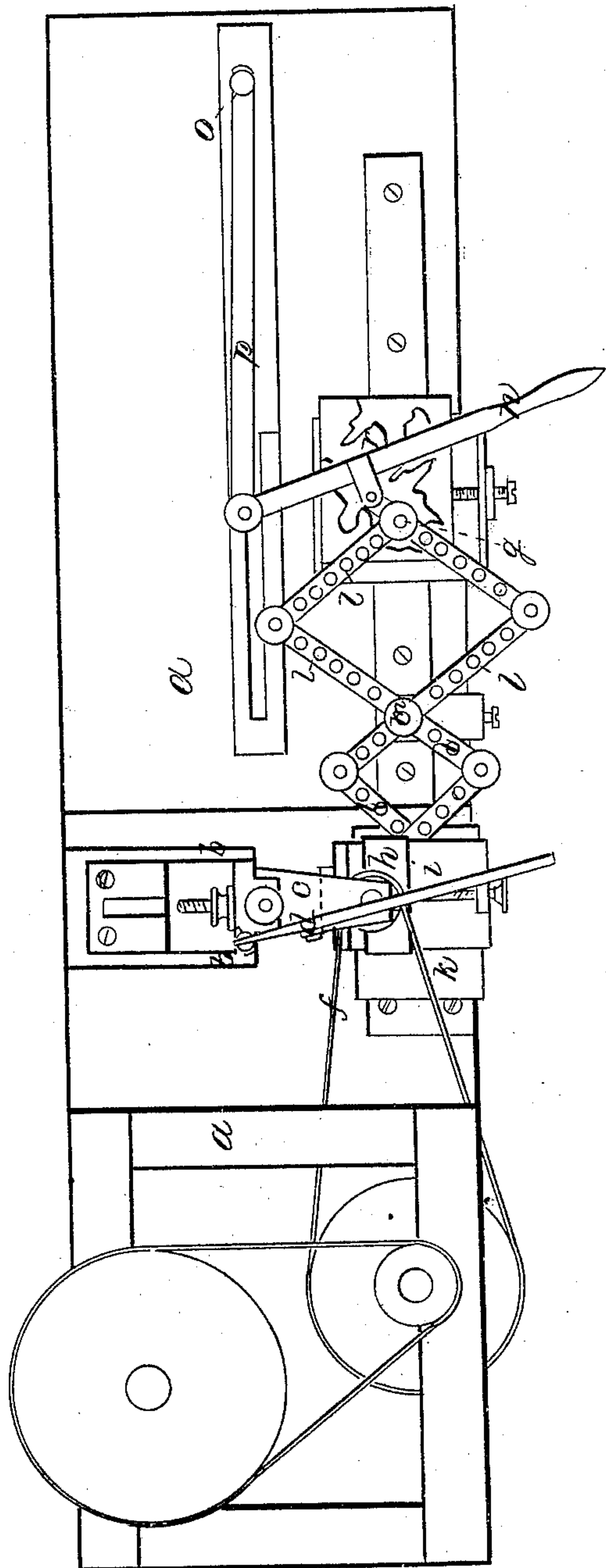
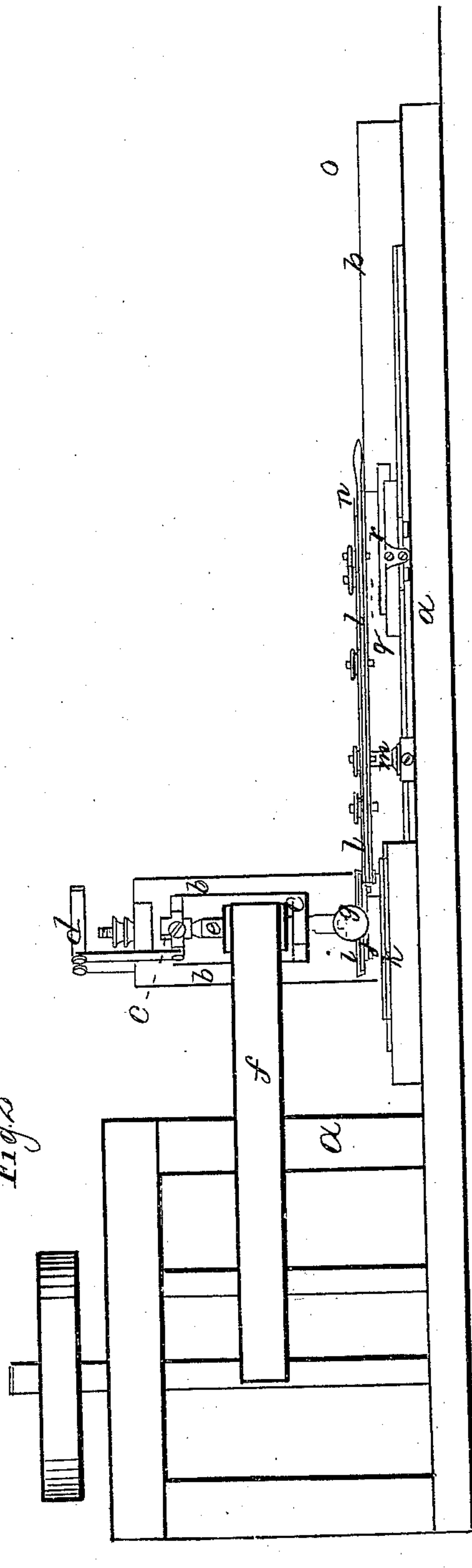


Fig 2



UNITED STATES PATENT OFFICE.

ISAAC M. SINGER, OF PITTSBURG, PENNSYLVANIA.

MACHINE FOR CARVING WOOD OR METAL.

Specification forming part of Letters Patent No. 6,310, dated April 10, 1849.

To all whom it may concern:

Be it known that I, ISAAC M. SINGER, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Machines for Cutting Types and other Irregular Fabrics; and I do hereby declare that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known, and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan, and Fig. 2 a longitudinal elevation, of my improved machine.

The same letters indicate like parts in both the figures.

The principle of my invention, which distinguishes it from all other things before known, consists in combining with a rotating cutter, which works in fixed bearings and has only an endwise motion for cutting in, a compound sliding frame, which carries the block of wood or other material to be cut or carved, which said compound sliding frame is connected with one end of a series of pantograph-levers, the other ends of which are connected with a pointer or tracer, to be guided over the figure to be imitated, the said compound sliding frame consisting of two parts that slide at right angles with each other.

In the accompanying drawings, *a* represents a frame properly adapted to the purpose, but which may be varied at pleasure. In the standards *b b* of this frame there is a carriage, *c*, which slides vertically, and governed by a hand-lever, *d*, for determining the depth of cut. This carriage carries a vertical spindle, *e*, which receives the required rotary motion by a belt, *f*, from any first mover; and the lower end of this spindle carries a cutter, (see dotted lines,) *g*, of any required form for cutting wood or any other material to be carved. The block of wood, *h*, to be carved is properly secured on the upper surface of a sliding table, *i*, below the cutter, which slides freely but accurately back and forth on another table, *j*, below it, the edges of the latter being embraced by V-grooved projections on the bottom of the frame in the usual or any desired manner of making such slides, and in like manner the lower table, *j*, slides freely from right to left on the bed *k*. The table *i* is

jointed to one end of a system of pantograph-levers, *l*, (made in the manner of lazy-tongs,) and turning on an adjustable fulcrum-pin, *m*, the other end of this system of levers being jointed to a hand-lever, *n*, which is connected with its fulcrum *o* by a joint-link, *p*, to give a free motion in all directions, and this end of the pantograph-levers is also provided with a pointer or tracer, *q*, so that the operator, by means of the hand-lever, can cause it (the tracer) to pass over all the lines of the object *r* to be copied. In this way it will be seen that whatever motion is given to the tracer by the hand of the operator will be communicated to the compound sliding tables which carry the material to be carved, and that as this passes under the rotating cutter, which has a fixed axis, the exact figure will be carved by the rotation of the cutter, the depth of the cut being determined by the up and-down motion of the cutter-spindle governed by the hand of the operator.

By combining the compound sliding tables which carry the material to be carved with the system of pantograph-levers, the motions, however complex, can be given with facility and steadiness, which could not be effected if these motions were given to the cutter in consequence of the tremulous motions which would be given to the slides by the great velocity of the rotating cutter; and, in addition to this advantage, there is another and still more important one, which is avoiding the complexity of machinery, unavoidable when a rapid rotary motion is given from some first mover to a spindle which is to follow irregular and various motions.

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

Combining with a rotating cutter which has only an endwise motion for determining the depth cut, substantially as described, a compound sliding table, (which carries the material to be carved,) operated by a system of pantograph-levers provided with a pointer or tracer, that all the motions given to the tracer may be communicated to the material to be carved, substantially in the manner and for the purpose specified.

ISAAC M. SINGER.

Witnesses:

MARTIN L. BALLARD,
JOHN N. BAKER.