

(No Model.)

2 Sheets—Sheet 1.

C. W. TROWBRIDGE.

PORTABLE METAL SAWING MACHINE.

No. 388,602.

Patented Aug. 28, 1888.

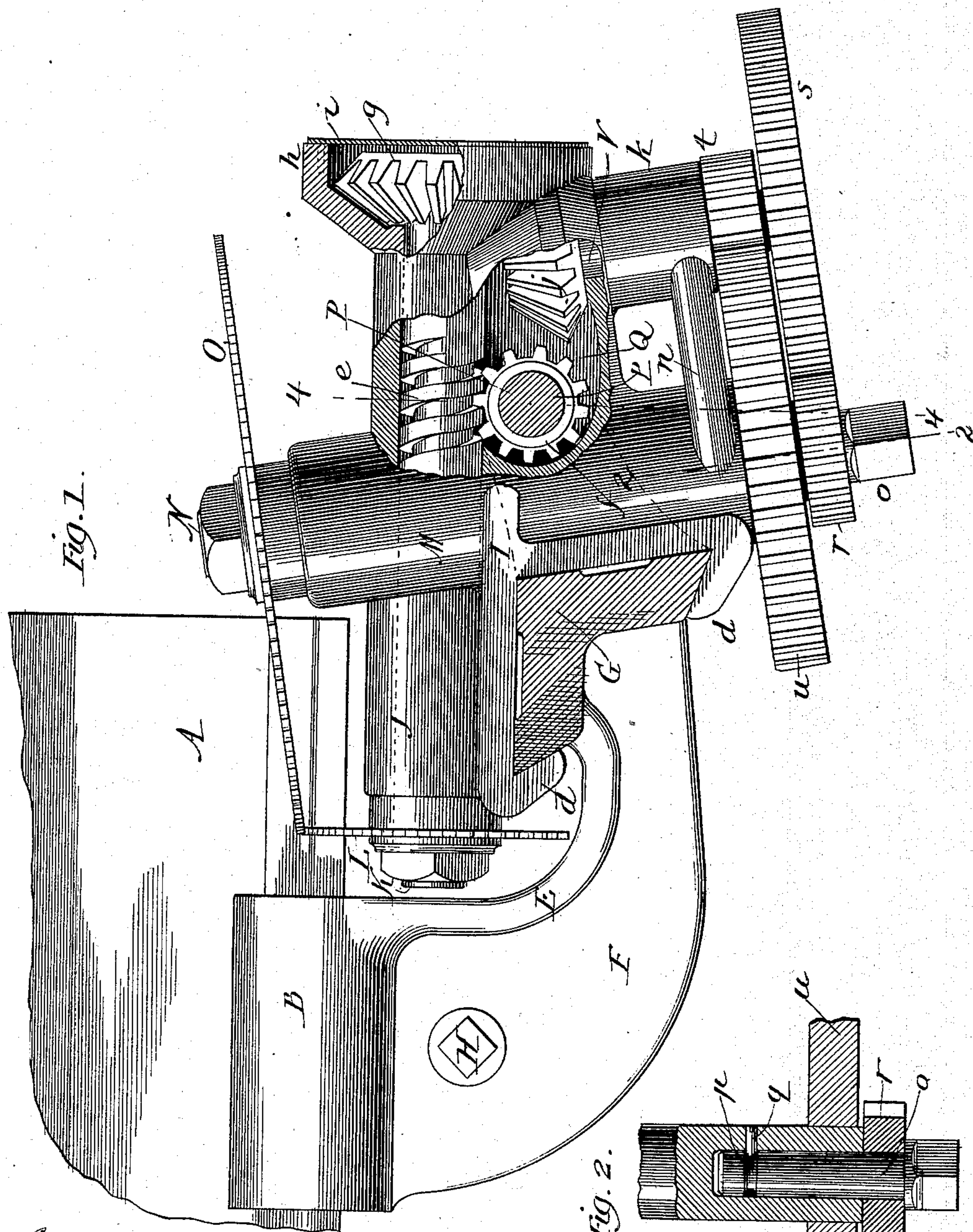
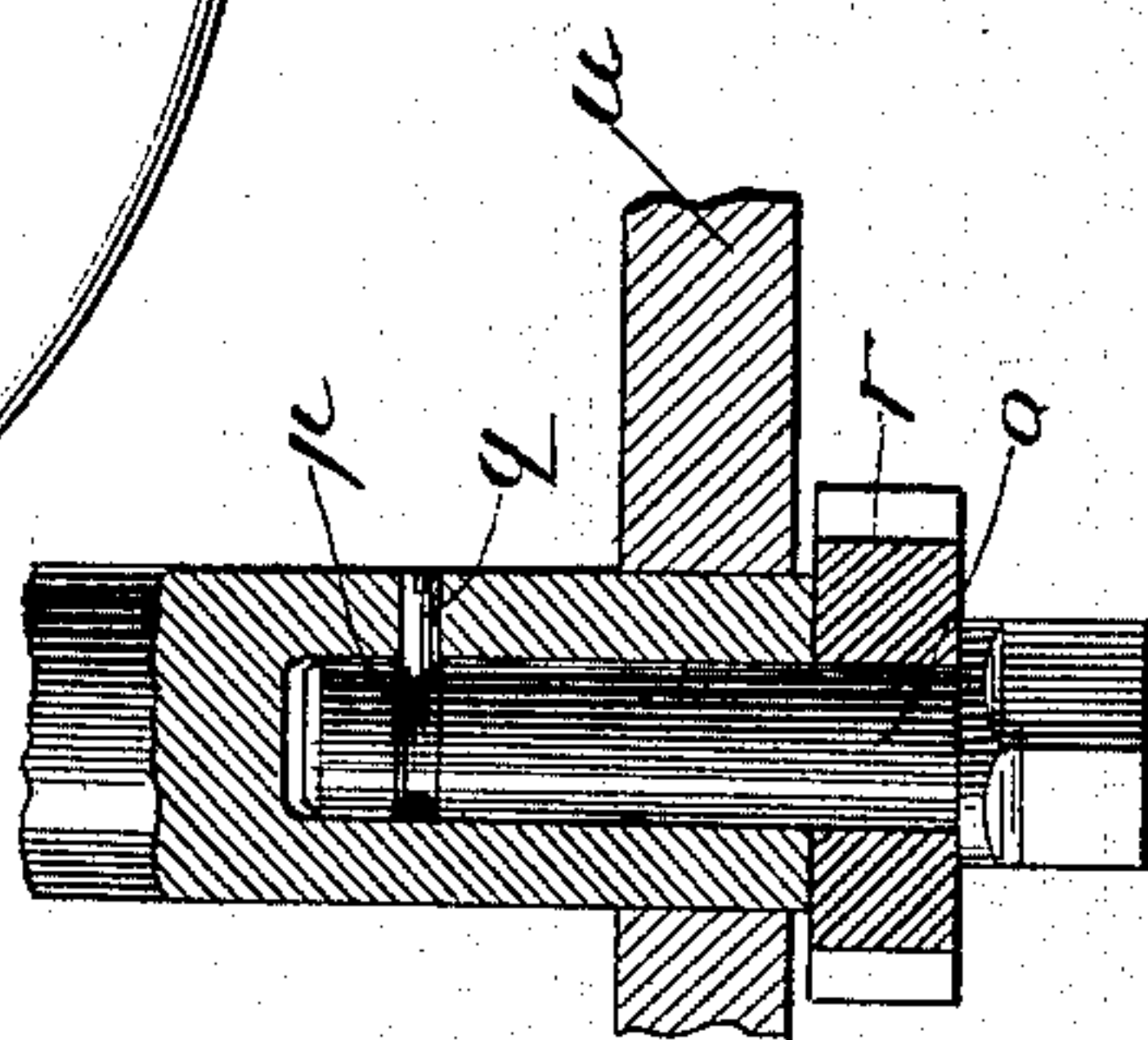


Fig. 2.



Inventor:

Chas. W. Trowbridge.

Witnesses:
Harry F. Jones.
Albert H. Adams.

2 Sheets—Sheet 2.

PORTABLE METAL SAWING MACHINE.

Patented Aug. 28, 1888.



Inventor:
C. M. Northridge

UNITED STATES PATENT OFFICE.

CHARLES W. TROWBRIDGE, OF CHICAGO, ILLINOIS.

PORTABLE METAL-SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 338,602, dated August 28, 1888.

Application filed June 28, 1888. Serial No. 278,477. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. TROWBRIDGE, residing at Chicago, in the county of Cook and State of Illinois, and a citizen of the United States, have invented a new and useful Improvement in Portable Metal-Sawing Machines, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation. Fig. 2 is a detail, being a section at line 2 of Fig. 1. Fig. 3 is an end view looking from the left hand of Fig. 1. Fig. 4 is a section at line 4 of Fig. 1, looking to the left. Figs. 3 and 4 are on a smaller scale than Fig. 1.

The leading object of this invention is to provide a portable machine having two saws arranged to cut in different directions for the purpose of cutting the ends of iron beams, as is frequently necessary in building, although the machine may be used for other purposes, which object I accomplish by providing a guide which is to be clamped to the article to be cut and a frame moving upon said guide, which frame carries the two saws, and by providing devices for rotating the saws, and at the same time moving the frame upon the guide, all as illustrated in the drawings and hereinafter described. That which I claim as new will be pointed out in the claims.

In the drawings, A represents a beam which, as shown, is provided with flanges *a*. B is a fixed jaw upon one end or side of a plate, C, in which there is a long slot, *b*. D is a movable jaw projecting upward through the slot *b*, the jaw being integral with the block *c*. E is a strong casting. F is a rib on such casting E. G is a guide. The parts B, D, E, F, and G are all cast together.

H is a screw which passes through the rib F and into the block *c* for the purpose of operating the movable jaw D.

I is a casting, which may be considered as the main frame. It is provided with lips *d*, which engage with the guide G, on which the frame I moves.

J is a bearing for a shaft, K, which carries a saw, L. M is a bearing for another shaft, N, which carries the saw O. The shaft K is provided with a screw-thread, *e*, with which the worm-pinion *f* engages.

g is a beveled cog-wheel on the shaft K.

h is a housing over the wheel *g*.

i is a covering-plate.

j is a beveled wheel which engages with the wheel *g*. This wheel *j* is upon a shaft, *v*, in a bearing, *k*. The pinion *f* and the wheel *j* are located in a chamber, Q, formed by casting, as will be understood by reference to Fig. 1, in which a portion is cut away.

P is a screw-threaded shaft on which the pinion *f* is located.

l is a crank on the shaft P.

m is a pin used to prevent the crank and shaft P from rotating.

n is a strengthening-piece.

The frame I, the bearings J M *k*, and the fixed parts connected therewith are all to be cast together.

o is a revolving pin or short shaft located in the end of the shaft N. Its inner end is provided with a groove, *p*, into which a pin, *q*, which is fixed in the shaft N, enters. This pin *o* can rotate independently of the shaft N. It is provided with a square end to receive a crank or other operating device. On this revolving pin *o* is a pinion, *r*.

s is a gear-wheel on the shaft *v*.

t is a pinion on the shaft *v*.

u is a gear-wheel on the shaft N.

When the plate *i* and wheel *g* are removed, the pinion *f* can be inserted into the chamber Q. Then the shaft P can be inserted through the pinion and be secured in place. The beveled wheel *j* can also be inserted in the chamber and placed upon its shaft. Then the wheel *g* and the plate *i* can be replaced.

The operation is as follows: The machine is to be secured to the material to be operated upon by means of the clamping-jaws, which can be firmly clamped upon the article by means of the screw H. Then by rotating the revolving pin *o* motion will be given through the pinion *r* and wheel *s* to the beveled wheel *j*, which, engaging with the wheel *g*, will cause it to rotate, revolving the shaft K and giving motion to the saw L. At the same time motion will be given to the saw O through the pinion *t* and wheel *u*, the latter being upon the shaft N, which carries the saw O. At the same time the rotation of the shaft K will, through the worm *e*, cause the pinion *f* to ro-

tate upon the screw-shaft P, which motion will cause the frame I, which carries the saws, to move on the guide G. When the saws are arranged as shown, the saw L will cut into the beam at right angles and the other saw, O, will cut on an inclined line, cutting out a piece from the beam. When the saws have completed their work, they can be restored to their former positions by removing the pin *m* and rotating the shaft P in the proper direction, moving the frame I upon the guide G.

In actual use it will probably be desirable, usually, to place the beam upon its side, and then the frame will move in a vertical direction instead of in a horizontal direction. If Fig. 1 be regarded as a plan view instead of a side elevation, it will represent the position of the machine and beam when arranged as last mentioned.

The saws of different machines can be arranged at different angles, as required for the work to be performed, and they may be driven in the same direction or in opposite directions.

I do not limit myself to the exact arrangement of operating devices shown.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. A guide, as G, adapted to be secured to the material to be cut, in combination with a sliding frame, as I, carrying two saws, as L and O, supported by shafts in bearings connected with the sliding frame, substantially as and for the purpose specified.

2. A guide, as G, adapted to be secured to the material to be cut, in combination with a sliding frame, as I, carrying two saws, as L and O, supported on shafts in bearings connected with the sliding frame, and shaft K, provided with a screw-thread, *e*, and worm-pinion *f*, and screw-threaded shaft P, substantially as and for the purposes specified.

CHARLES W. TROWBRIDGE.

Witnesses:

ALBERT H. ADAMS,
HARRY T. JONES.