P. SAULNIER.

Planing Metal.

No. 9,504. Patented Dec. 28, 1852.

Fig: 2.

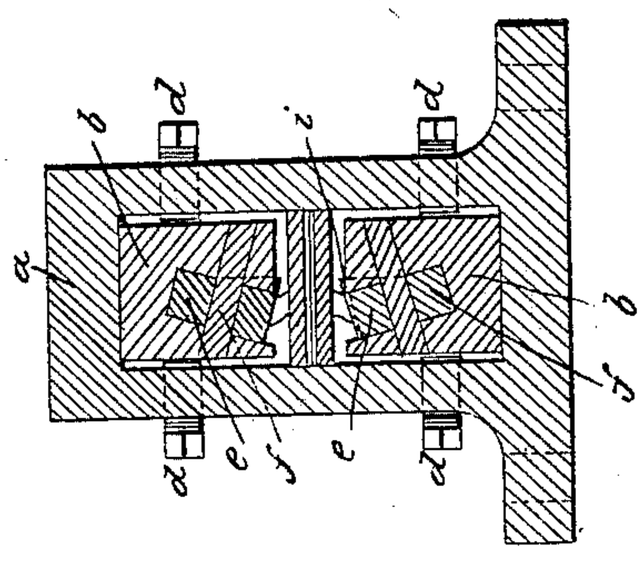

Fig: 1.

N. PETERS. Photo-Lithographer. Washington. D. C.

UNITED STATES PATENT OFFICE.

PIERRE SAULNIER, OF NEW YORK, N. Y., ASSIGNOR TO JOHN THEOS. BRUEN.

MODE OF MOUNTING THE CUTTERS OF MACHINES FOR PLANING METALS, &c.

Specification of Letters Patent No. 9,504, dated December 28, 1852.

To all whom it may concern:

Be it known that I, PIERRE SAULNIER, late of Falaise, in the Republic of France, but now of the city, county, and State of New York, have invented a certain new and useful Improvement in the Method of Mounting Reciprocating Cutters for Planing and Cutting or Dressing Metals and other Substances, and that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is a perspective view, and Fig. 2, a horizontal section of a cutter stock with the cutters mounted therein on my improved plan.

The same letters indicate like parts in the two figures.

The object of my invention is to relieve the whole of the cutting edge of the cutter from the cut or planed surface on the return motion when the cutter stock is set perpendicular to the plane of the surface to be produced, and also to adapt the machine with one cutter stock to plane or cut in both directions, back and forth and at the same time relieve the cutting edges on the return motions.

The nature of the first part of my invention consists in jointing the cutter to the cutter stock with the axes of the joint diagonal to the line of cutting motion and in a plane parallel with the surface to be cut, so that when the cutter stock is set perpendicular to the plane of the surface to be produced on the back motion a very slight vibration of the cutter will relieve the whole of the cutting edge from the surfaces left by the preceding cut, and my invention also consists in combining in one cutter stock, two cutters hung as above, with the obliquity of the axis of the two reversed to each other, so that when the cutter head or stock moves in one direction, one of the cutters shall be in action and the other relieved from both the surfaces formed by the previous cut, and on the return motion the one previously in action shall be relieved in like manner and the other one brought into action.

In the accompanying drawings *a* represents a metal stock or head such as may be used in a machine for planing metal and to be connected with, or attached to the machine in any well known or appropriate manner. Within this stock which is hollow for the purpose are fitted two metal blocks *b*, *b*, which are free to slide therein for adjustment by means of two temper screws *c*, *c*, and which when adjusted can be secured and held in place by other gripping screws *d*, *d*, *d*, *d*. These blocks are both of them cut out from their inner faces diagonally—the angle of the two being reversed—for the reception of the two cutters *e*, *e*, which are secured therein each by a joint pin *f*. These cutters should fit the recesses in the blocks accurately but be free to move therein.

Between the two cutters is placed a double spring or its equivalent, attached at the top to the cap piece *h*, of the stock, and with each leaf bearing against one of the cutters, so that the tension of the spring tends constantly to keep the back of the cutters against the back of the recess or cavity in the blocks, and when held in that position the cutting edges *i*, *i*, are in the proper situation for cutting.

From the foregoing it will be seen that when the piece of metal or other substance moves in one direction, the cutting action will maintain one of the cutters in the position represented in the drawing, and the other cutter will be relieved or thrown in the position represented by dotted lines at *i'* in Fig. 1. And that when the cutting motion is reversed that the relative position of the two cutters will be also reversed. And it will also be seen that when the cutters are moved inward, by reversing the cutting motion, the cutting edge rises from the surface planed and also from the surface formed by the metal that is being cut away. In other words the bottom edge of the cutter rises from the horizontal surface or plane by reason of the cutter's motion on its axis, and the side cutting edge is relieved laterally by reason of the line of the axis being diagonal to the line of cutting motion.

I have thus described the mode of mounting cutters as I have applied them to machines for planing metals, but it will be obvious that it is equally applicable to machines for cutting, gearing, stone, etc., and to numerous other purposes not necessary to enumerate.

Instead of moving the substance to be

planed, to, and by the cutters, this may be reversed by giving the cutting motion to the cutter stock.

I wish it to be understood that I do not limit myself to the special mode of construction herein specified, as this may be changed at pleasure so long as the principle or character of my invention is retained.

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

1. Hanging the cutters to the stock by means of a joint-pin, or its equivalent, whose axis is diagonal to the line of cutting motion and in a plane parallel with the surface being cut, substantially as specified, for the purpose of relieving the cutting edge in two directions as specified when the cutter stock is set perpendicular to the plane of the surface to be produced.

2. And I also claim combining together in one cutter stock two cutters hung substantially as specified, and with the angle of the axis of the two joint pins reversed as specified, for the purpose of relieving both cutters from the two surfaces when cutting in both directions, as specified.

P. SAULNIER.

Witnesses:
WM. H. BISHOP,
CRANSTEN BOWNE.