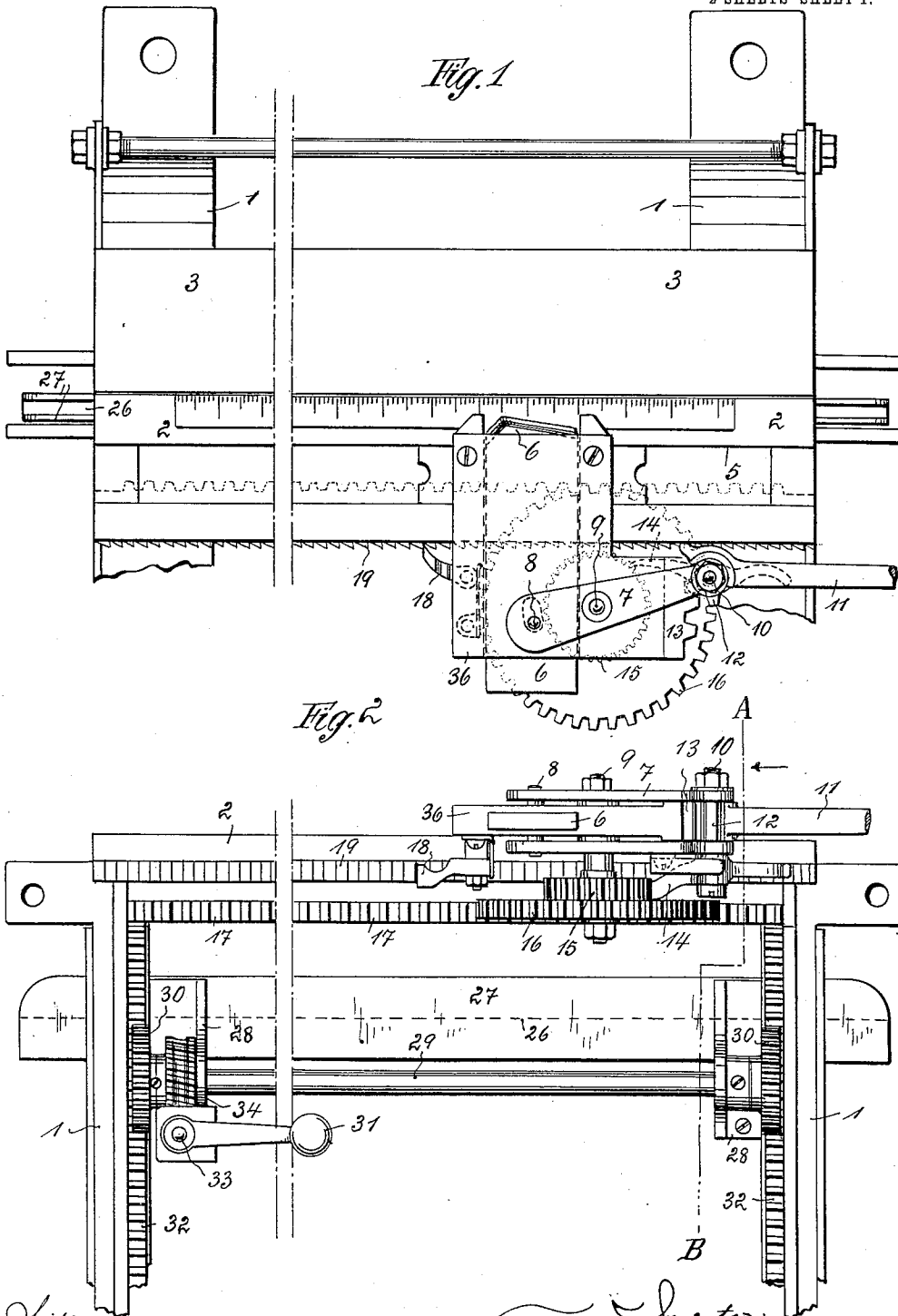


F. WUGGENIG.
MACHINE FOR CUTTING SHEET METAL.
APPLICATION FILED MAR. 7, 1912.

1,050,194.

Patented Jan. 14, 1913.

2 SHEETS—SHEET 1.



Witnesses:
C. H. Crawford

Inventor:
F. Wuggenig
By C. Singer Atty

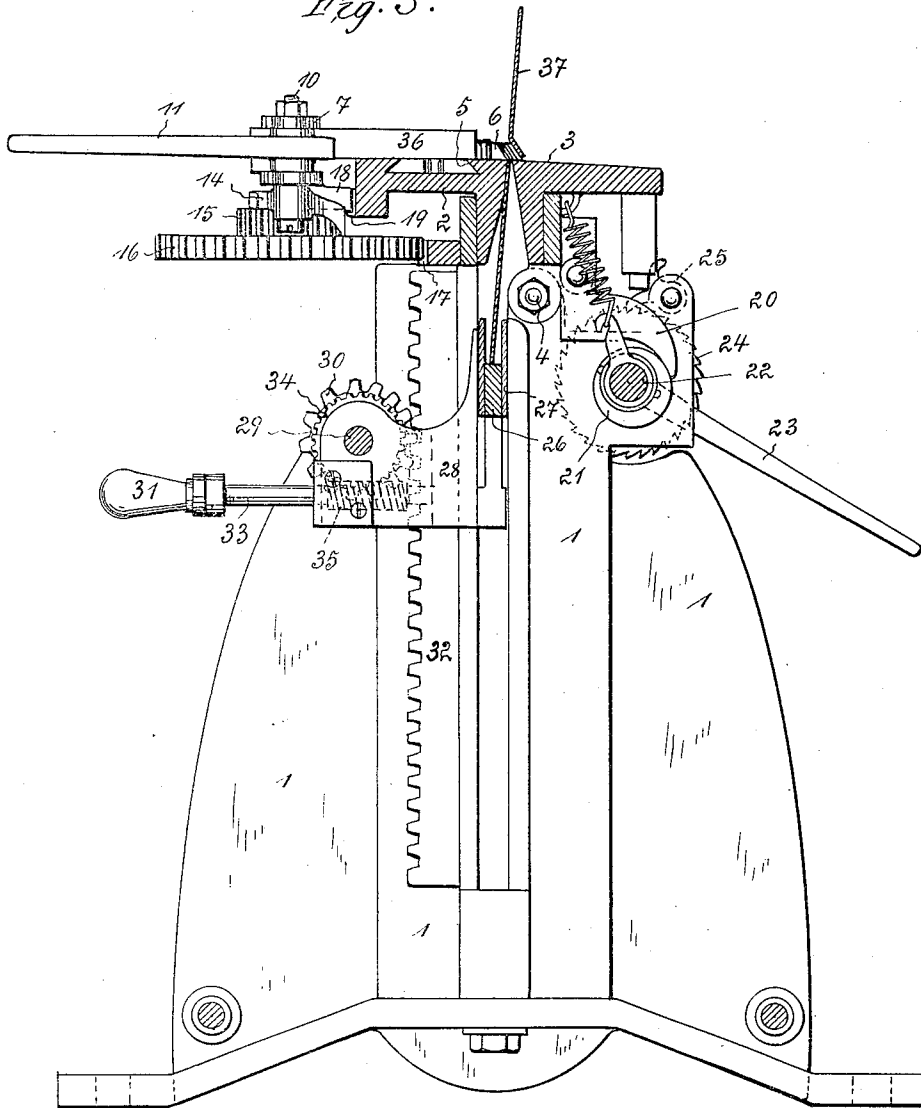
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Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANZ WUGGENIG, OF FELDKIRCH, AUSTRIA-HUNGARY.

MACHINE FOR CUTTING SHEET METAL.

1,050,194.

Specification of Letters Patent.

Patented Jan. 14, 1913.

Application filed March 7, 1912. Serial No. 682,123.

To all whom it may concern:

Be it known that I, FRANZ WUGGENIG, a subject of the Emperor of Austria-Hungary, residing at Feldkirch, district of Vorarlberg, Empire of Austria-Hungary, have invented a new and useful Improvement in Machines for Cutting Sheet Metal, of which the following is a specification.

This invention relates to a machine for cutting sheet metal and metal plates and the object of this invention is to afford facilities for cutting out rectilinear pieces at any distance from the border of the sheet metal. The machine may also serve for making straight cuts extending either through the inner part of the plate or extending through the whole plate or for cutting out rectilinear pieces at the border of a plate. I attain this object by the construction hereinafter described and shown in the accompanying drawing, in which—

Figure 1 is a top-view of the machine; Fig. 2 a front view of the machine; and Fig. 3 a vertical section on the line A B Fig. 2.

The machine consists essentially of three parts viz. a sheet metal rest or carrier, which may be raised and lowered, a clamping device and the cutting device.

The sheet-metal to be cut is held in place by clamping it between the jaws 2 and 3. The jaw 2 is rigidly secured to the frame 1, while the jaw 3, which is a chamfered knife edged cutting and clamping jaw, is movable. To the jaw 3 pivoted at 4 is fastened the arm 20 resting upon the eccentric 21 keyed on the shaft 22 revoluble by the hand-lever 23. Keyed on the same shaft is a ratchet-wheel 24 coacting with the pawl 25 to hold the sheet-metal in the clamped condition. For supporting the sheet metal to be cut there is provided a carrier 26 having a groove 27 for the reception of the sheet-metal 37. The carrier 26 has two brackets 28 supporting the revoluble shaft 29 and the gear-wheels 30 which mesh with the toothed racks 32, of the machine frame. On the shaft 29 is fastened a worm-wheel 34 gearing with a worm 35. A handle 31 keyed on the shaft 33 of the worm 35 serves for elevating or lowering the sheet metal carrier 26.

In the fixed jaw 2 is arranged a dovetailed guide 5 for the support or slide 36 bearing the cutting-blade 6. The cutter 6 is sliding in the support 36 perpendicularly to the guide 5 and moved by means of the lever 7

hinged to it at 8 and oscillating around a bolt 9 fixed to the support 36. At the other end to the lever 7 is fixed a bolt 10, upon which may be oscillated the hand-lever 11. The hub of the hand-lever 11 forms a pinion 12 gearing with the toothed rack 13 of the support 36. On pulling the lever 11 away from the machine the cutter-blade 6 is moved against and pressed into the sheet-metal 37. During the pulling of the hand-lever 11 in the named direction a ratchet 14 pivoted likewise around the bolt 10 rides idle on the periphery of the ratchet-wheel 15 turning on the bolt 9. But when turning the hand lever 11 toward the machine and removing the cutter-blade 6 away from the sheet metal, the pawl 14 engages the ratchet-wheel 15 and revolves it in the opposite direction of the clock-hand. With ratchet-wheel 15 is combined to revolve with it the gear-wheel 16 which meshes with rack-bar 17 of the machine-frame 1 to move the support 36 in the guideway 5. In this way in moving the hand-lever 11 in one or the other direction either the cutting of the sheet metal or the movement of the support 36 is effected.

It will be obvious that if the lever 11 is not completely returned from a full outward position, as shown in Fig. 1, the pawl 14 will have passed over fewer teeth of the wheel 15 than if a full and complete outward movement of the lever 11 had been made. Therefore on the complete return of the lever to the Fig. 1 position there will be a reduced extent of traveling movement imparted to the carriage 36 with respect to the extent of movement imparted thereto on a complete outward stroke of the lever 11.

It will be seen from the foregoing that the extent to which the lever 11 is moved, outwardly, determines the extent of traveling movement of the carriage 26 upon the return movement of the lever 11. A pawl 18 pivoted directly to the support 36 and engaging into the rack-bar 19 prevents a movement of the support in a direction opposite to the cutting direction.

It will be obvious that the machine described affords many advantages. The machine makes it possible to cut out rectilinear pieces at any place of the sheet-metal without the help of a chisel. It gives a nice and even cut as the cutter coacting with the chamfered knife edge cutting and clamping jaw 3 does not bend the borders of the sheet-

metal. The new machine affords a great saving of time and can be operated by one man only. The clamping jaw 3 serves at the same time as the second or stationary cutting blade. The cutting edge of the narrow blade 6 is inclined so that very short cuts may be executed in the inner part of a metal plate. Such cuts may when combined form triangles, squares or other rectilinear figures.

10 What I claim is:

1. In a shearing machine, the combination of a fixed jaw, a combined shearing and clamping blade movable toward said jaw to clamp material therebetween, and a shearing blade having a shearing movement in a direction parallel with the direction of movement of said combined shearing and clamping blade, substantially as described.

2. In a shearing machine, the combination with a fixed jaw, a combined shearing and clamping blade movable toward said jaw to clamp material therebetween, and a shearing blade having shearing movement in a direction parallel with the direction of movement of the combined shearing and clamping blade and in a direction opposite to the clamping movement thereof, substantially as described.

3. In a shearing machine, the combination with a fixed jaw, a combined shearing and clamping blade movable toward said jaw to clamp material therebetween, a carriage slidable in said fixed jaw, a shearing blade slidable in said carriage and adapted to be projected across said fixed jaw and the edge of said shearing and clamping blade, mechanism mounted on said fixed jaw for imparting shearing movement to said shearing blade and traveling movement to said carriage, substantially as described.

4. In a shearing machine, the combination with means for clamping the material, a shearing blade, a carriage for said blade, a lever mounted on said carriage for imparting shearing movement to said blade, a manually operable lever jointed to said first named lever, a rack on said carriage, a gear meshing with said rack and connected for operation by said manually operable lever, and mechanism operable upon movement of said manually operating lever in one direction for advancing said carriage.

5. In a shearing machine, the combination with a clamping jaw, a knife edge shearing and clamping blade movable toward said jaw for holding the material, and a shearing blade movable with respect to the material for cutting the same, substantially as described.

6. In a shearing machine, the combination with a clamping jaw, a chamfered knife edge shearing and clamping blade movable toward said jaw to hold the material, and a movable shearing blade for cutting the material, substantially as described.

7. In a shearing machine, the combination with a jaw, a combined shearing and clamping blade movable toward said jaw to clamp the material therebetween, and a shearing blade having a shearing movement parallel with the shearing face of the clamping blade for cutting the material, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANZ WUGGENIG.

Witnesses:

EUGENE NUBEL,
RANDALL ATKINSON.