

Oct. 2, 1923.

1,469,467

A. WAGENBACH

SHEARS FOR IRON AND SIMILAR MATERIALS

Filed June 17, 1921

Fig. 1.

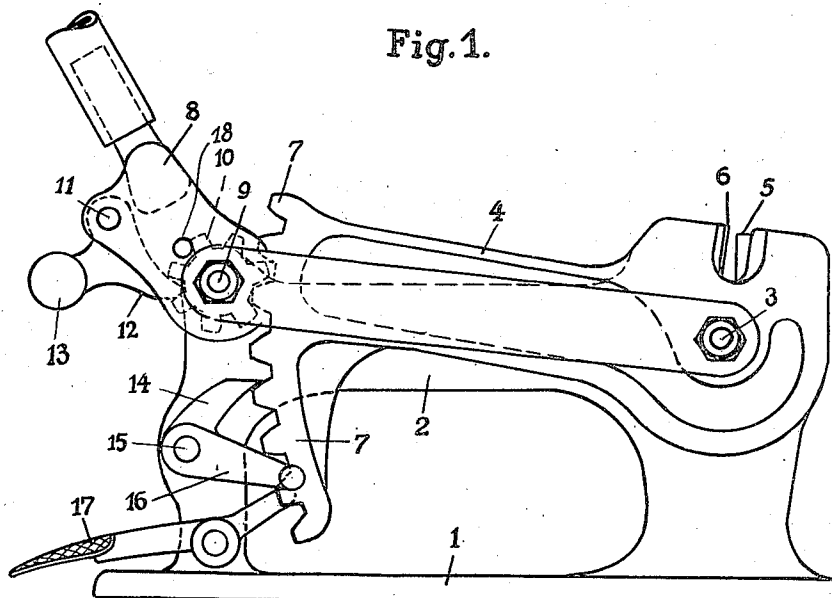
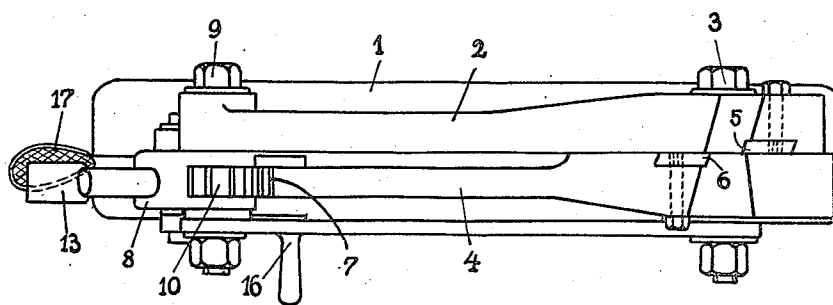


Fig. 2.



Inventor,
Anton Wagenbach
By
B. Singer, Atty

UNITED STATES PATENT OFFICE.

ANTON WAGENBACH, OF ELBERFELD, GERMANY.

SHEARS FOR IRON AND SIMILAR MATERIALS.

Application filed June 17, 1921. Serial No. 478,371.

To all whom it may concern:

Be it known that I, ANTON WAGENBACH, a citizen of the Commonwealth of Germany, and a resident of Elberfeld, Germany, have
5 invented new and useful Improvements in Shears for Iron and Similar Materials, for which I have filed application in Germany December 24, 1917 (W—50209 I/49 b 2), of which the following is a specification.

10 In shears for cutting heavy metal it is a well known practice to connect the hand lever to a driving wheel by means of a pawl thrown into engagement by its own weight, and to connect the driving wheel to a
15 movable jaw in order to enable the hand lever to effect the cutting operation by being swung up and down repeatedly.

The essential part of the present invention, on the contrary, consists principally
20 in the arrangement of the center of gravitation of the pawl in such manner that when the hand lever is very nearly in a horizontal position, the pawl disengages itself from the teeth of the driving wheel. By
25 this arrangement no clicking of the pawl on the ratchet exists during the releasing upward movement of the hand lever, and therefore the pawl and the ratchet wheel are much less subjected to wear and tear.

30 A further object of the invention consists in the fact that the releasing motion of the movable jaw is effected by its own weight, since the pawl is not adapted to effect this movement, and for clutching the movable
35 jaw against its outward movement a clutching pawl is provided, which in its turn is released by the foot of the operator for enabling the movable jaw to make the opening movement of the shears.

40 The accompanying drawing shows an example of the shears with the new pawl arrangement.

In said drawings:—

Fig. 1 is a side view.

45 Fig. 2 is an overhead view.

The shears are provided with a rigid cutter 2, built somewhat in the shape of a trestle and resting on a bottom plate 1, a movable cutter 4 being journaled on the
50 latter by means of a link bolt 3. The two cutters hold the blades 5, 6 in mouth-shaped slits.

In order to operate the cutters, the movable one 4 is fitted with a toothed wheel sector, which is engaged by a pinion or

ratchet wheel 10 journaled in a fork of the hand lever 8, which swings on a link bolt 9 on the rigid cutter 2. The ratchet wheel 10 is brought into position with respect to the hand lever by means of a shift pawl 12
60 which swings on a link 11 in the fork of the hand lever 8. The shift pawl is held engaged by the weight arm 13, as long as the hand lever 8 is in an upward oblique position. On the other hand, when the said lever
65 reaches a nearly horizontal position, the gravitation point of the pawl passes under the swivel link 11. Accordingly the pawl is disengaged from the ratchet wheel 10 as soon as the pressure arising from the downward movement of the hand lever 8 ceases.
70 The pressure on the movable jaw is sustained by means of a clutching pawl 14 swinging on a bolt 15 on the rigid cutter 2, which as a result of the weight of the counter arm 16 has the tendency to catch
75 into the teeth of the toothed wheel sector 7 of the movable cutter 4. A foot lever 17 serves to disengage the clutching pawl 14, when the cutting operation is finished, by acting upon the interior of its forked counter arm.

In the special event of a large number of easy cuts having to be performed in succession, for which it is not necessary to
85 engage and disengage the pawl separately each time, the hand lever fork 8 is provided in addition with a hole 18 for the purpose of inserting a pin between the teeth of the small ratchet wheel 10, whereby both
90 parts are rigidly locked and the hand lever is rigidly coupled to the movable cutter.

Having now particularly described and ascertained the nature of my said invention, what I claim and desire to secure by Letters
95 Patent of the United States is:—

1. Shears for iron and similar materials, provided with a hand lever, a shift pawl arranged on the said hand lever, a toothed wheel and a movable jaw with a toothed
100 arch meshing with said wheel, the said pawl being free to engage itself with the ratchet wheel by its own weight in the elevated position of the hand lever, and to disengage itself while the pressure ceases at the lowered
105 position of the hand lever.

2. Shears for iron and similar materials, provided with a hand lever, a shift pawl arranged on the said hand lever, a toothed wheel and a movable jaw with a toothed arch
110

meshing with said wheel, the said pawl being free to engage itself with the ratchet wheel by its own weight in the elevated position of the hand lever, and to disengage 5 itself while the pressure ceases at the lowered position of the hand lever and provided with a pawl clutching the driving arm of the movable jaw against the releasing downward movement, and with a foot lever adapted to release the said clutching 10 pawl.

In witness whereof I affix my signature.

ANTON WAGENBACH.