

July 13, 1937.

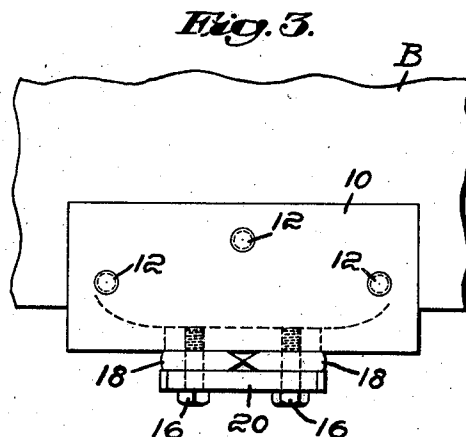
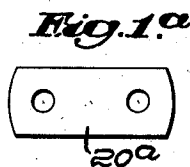
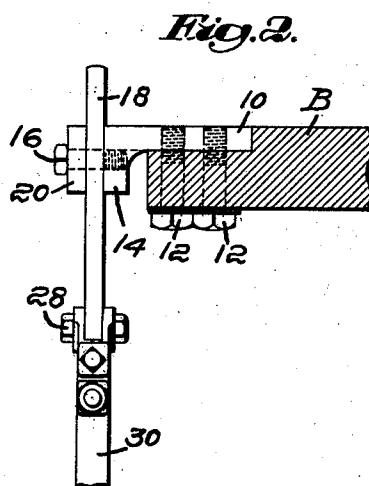
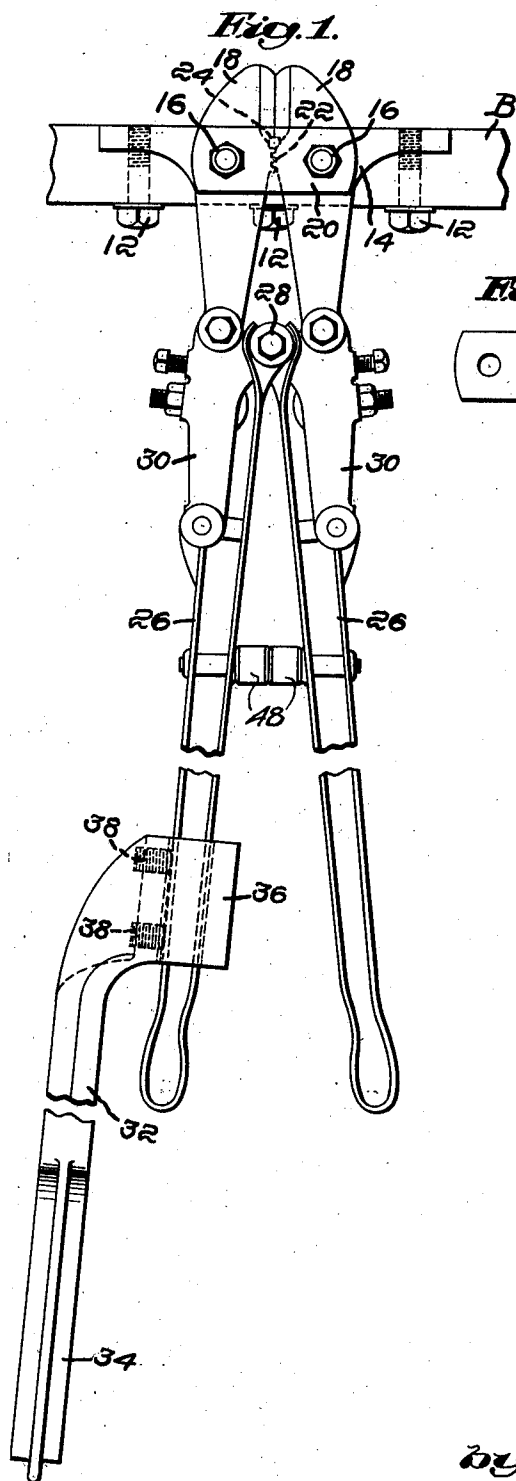
J. W. GEDDES

2,086,863

BENCH CUTTER

Filed Aug. 20, 1935

3 Sheets-Sheet 1



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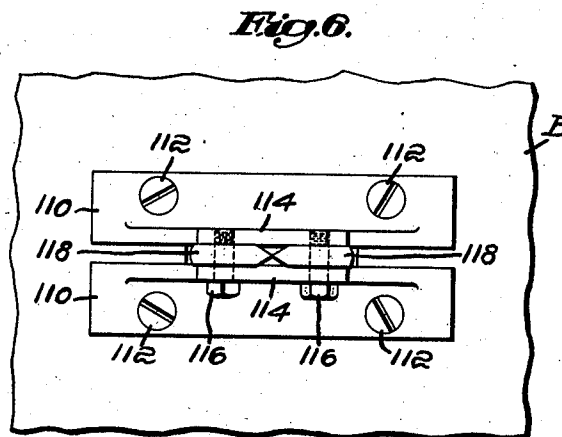
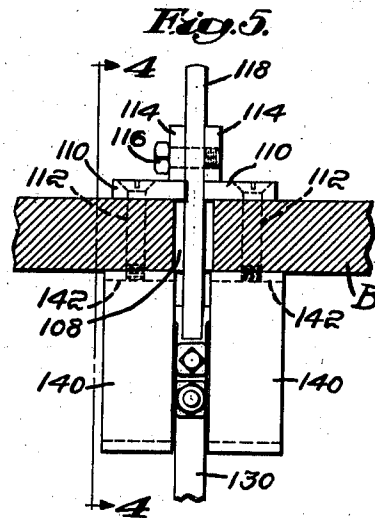
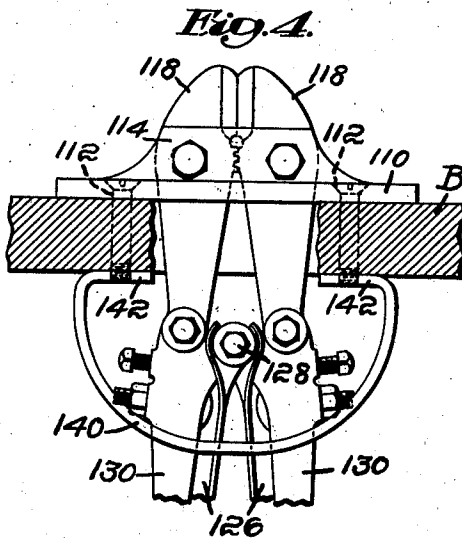
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BENCH CUTTER

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3 Sheets-Sheet 2



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BENCH CUTTER

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3 Sheets-Sheet 3

Fig. 7.

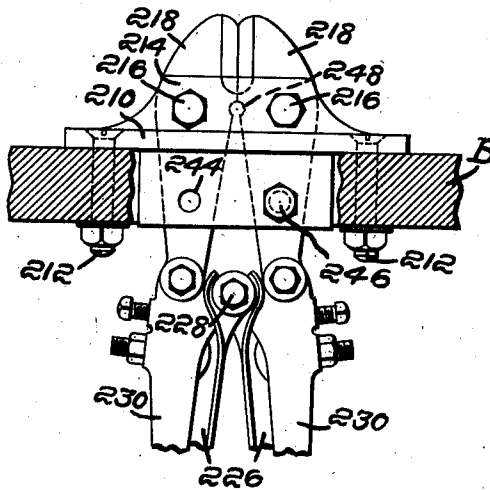


Fig. 8.

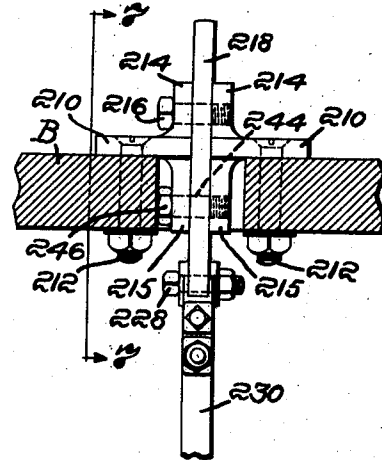
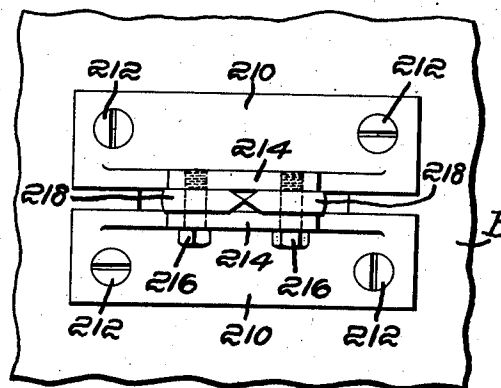


Fig. 9.



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UNITED STATES PATENT OFFICE

2,086,863

BENCH CUTTER

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tion of Massachusetts

Application August 20, 1935, Serial No. 37,031

12 Claims. (Cl. 164—46)

This invention relates to bench cutters and the object is to provide a simple, effective and powerful device of this nature adapted to be fixedly mounted on a bench or like support and operated by foot power. For carrying out the purpose I provide a construction wherein many of the parts may duplicate parts utilized in hand-operated bolt cutters. The preferred form of cutter here shown is therefore in a sense convertible in that by a few simple changes and substitution of parts, which may be effected by hand operations by an unskilled person, it may be converted into a portable, hand-operated cutter. Conversely a simple kit provided as a unit of sale will enable owners of hand-operated cutters of well known type to convert them into bench cutters embodying the present invention.

My invention will be well understood by reference to the following description of certain illustrative embodiments thereof shown by way of example in the accompanying drawings, wherein:

Fig. 1 is a front elevation of a cutter mounted on a bench with parts broken away;

Figure 1a is an elevation of an element to be utilized in converting the same into a hand-operated tool;

Fig. 2 is a section through the bench showing the cutter in side elevation;

Fig. 3 is a plan;

Fig. 4 is a section on the line 4—4 of Fig. 5 with part broken away and showing a modified form in front elevation;

Fig. 5 is a section showing the same in side elevation;

Fig. 6 is a plan; and

Figs. 7, 8 and 9 are views similar to Figs. 4, 5 and 6 showing a still further modification.

Referring to the modification shown in Figs. 1, 2 and 3, the cutter there shown is mounted on the bench B by means of a suitable base having a horizontal portion 10 adapted to be secured to the bench by means of the vertical bolts 12, it being herein shown as countersunk flush with the top of the bench. A vertical flange 14 overhung therefrom (and herein extending downwardly) has a face which is exposed in the sense that there are no obstructions above or below in its plane so that the levers hereinafter referred to may be mounted on said face and swing freely without obstruction. Pivotaly mounted on the face of the member 14 by means of the horizontal pins or bolts 16 entering suitable openings in the flange are the jaw levers 18 whose cutting edges project vertically above the base. Herein the bolts are supported on the side of the levers

opposite the part 14 from which the cutter as a whole is overhung by a strap 20. Gear teeth 22 between the levers enforce equal and opposite movement thereof. As the throat between the cutting edges of the levers opens upwardly and work is entered therein from above to prevent it from passing below the cutting edges of the levers, particularly from being jammed into the gear teeth 22, I preferably arrange the upper surface of the base and of the strap 20 at a level substantially above these teeth and preferably at least slightly above the lower ends of the cutting edges, as shown in Fig. 1. For the same purpose I may insert between the jaw levers and between the vertical face of member 14 and the strap 20 a plug 24 of rubber which will not interfere with the operating movement of the jaw levers but will prevent objects from falling down between them.

The tails of the jaw levers depend at the under side of the bench and are organized as a part of a compound lever system. I herein shown actuating levers 26 pivoted together at 28 and pivoted respectively to the tails of the jaw levers 18, herein by means of so-called adjusting sections 30. One of the levers is adapted for operation as a pedal by means of the foot. Herein I show levers 26 which are substantial duplicates and are in fact the same as the handle levers of the type used in hand-operated cutters, such as that shown in the patent to Porter No. 484,670, Oct. 18, 1892, to which reference may be made for more detailed description of the adjusting sections 30. Where levers such as these are used not in themselves provided with a foot-engaging portion a pedal may be provided as shown by a separable attachment, herein consisting of a rod 32 having a stirrup 34 at its lower end and at its other end a box 36 adapted to be slid over and along one of the handles 26 and to be secured in desired position thereon, as by means of the set screws 38. If the pedal attachment is removed and the bolts 16 withdrawn, releasing the lever system from the base, it is only necessary to provide a strap 20a, as illustrated in Fig. 1a, into which the ends of the bolts may be tapped and opposing strap 20 to provide a portable cutter for hand operation, and the parts shown in Fig. 1 and in Fig. 1a constitute a complete kit from which either a stationary foot-operated bench cutter may be assembled or a hand-operated portable cutter and a change may readily be made from one to another.

Referring to Fig. 1 I have there shown each lever 26 as provided with a yieldable buffer 48 the

two buffers engaging one another when the tool is closed. A foot operated cutter is subject to heavy stresses. While in a sense the movement of the lower portion of the right hand lever 26 is an idle one provision is made thereby for incorporating in the tool two buffers meeting in this manner and giving a correspondingly increased cushioning effect.

In the modification shown in Figs. 4 to 6, the cutter is mounted in a slot 108 in the bench B and the base which supports it comprises horizontal members 110 adapted to be secured at either side of the slot secured by the vertical bolts 112. Upwardly projecting flanges 114 receive between them the jaw levers 118 similar to the levers 18 of the previous modification and operated in a similar manner, the parts 126, 128 and 130 corresponding to the parts 26, 28 and 30 in Fig. 1. Herein the flanges 114 take the place of the straps such as 20 and 20a of a cutter of the hand-operated type and the latter may be substituted for them in converting the tool into one of the latter type.

In the modification shown in Figs. 4 to 6, I show means for maintaining the plane of motion of the operating levers against a thrust of the foot applied at an angle to that plane, and in the example illustrated I have provided such guiding means at both sides of the operating levers. The guides herein take the form of suitably bowed pieces 140 having inbent ends 142 adapted to rest against the lower side of the bench and provided with openings by which they are mounted on the vertical bolts 112, the arrangement being such that they are positioned by these bolts to lie closely adjacent the sides of the operating levers 126, or herein the adjusting sections 130 which form a part thereof, to guide them in their swinging movement.

In Figs. 7, 8 and 9 the cutter is mounted in a slot in the bench, as in the case of Figs. 4, 5 and 6, but the supporting members are of T-shaped form embodying the horizontal portions 210 for bolting to the bench by bolts 212, upwardly extending flanges 214 and depending flanges 215, between which the jaw levers 218 are mounted on the bolts 216 for operation by a foot-actuated lever system beneath the bench comprising levers 226 pivoted together at 228 and secured thereto through the adjusting sections 230. One of the levers 226 is operated by a pedal attachment as in Fig. 1.

In Figs. 7, 8 and 9 I have shown an arrangement whereby the angular movement of the pedal lever may be increased or decreased as desired. For this purpose the jaw levers are provided with holes 244 remote from the pivot openings and the depending flanges 215 are provided with openings which are in alignment with these holes 244 in the closed position of the jaws. A pin or bolt, as 246, may be inserted to lock one or the other of the jaw levers 218 against movement. The required movement of one of the actuating levers by means of the foot is increased or decreased for a given cutting stroke of the jaws accordingly as whether one or the other of the jaw levers is held stationary.

In the construction shown in Figs. 7, 8 and 9, when one of the jaw levers is locked by pin 246, the two cannot be interengaged by means of gear teeth as in the other modifications. I may, however, provide the opposed faces of the levers in the line of the pivot pins with opposed, partly cylindrical recesses 248. If the levers are dis-

20 and 20a applied at either side of the levers 218, a cylindrical pin may be inserted in the recesses 248 between the straps. This will operate in the hand-operated tool in the same manner as the teeth 22 but somewhat less effectively.

The cutter described is simple, powerful and may be constructed very cheaply. The upwardly opening throat renders it convenient for many uses.

I am aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive; reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

I claim:

1. A foot-operated cutter for application to a bench to expose its cutting edges above the same comprising a base having provision for attaching it to a bench and presenting a face vertical when the base is so attached, which is free of obstructions above or below its plane, a pair of jaw levers pivotally supported on the base to swing parallel to said plane and having cutting edges projecting upwardly beyond the base, a pair of inter-pivoted levers pivotally supported from the lower ends of the jaw members independently of said base, and a pedal carried by one of the levers.

2. A cutter as defined in claim 1, wherein the levers are formed as handles and the pedal is removably attached to one of them whereby the cutter may readily be converted into a portable hand-operated tool on detachment from said base.

3. A foot-operated cutter for application to a bench to expose its cutting edges above the same comprising a base having provision for attaching it to a bench and presenting a face vertical when the base is so attached, which is free of obstructions above or below its plane, a pair of jaw levers pivotally supported on the base to swing parallel to said plane and having cutting edges projecting upwardly beyond the base, a pair of inter-pivoted levers pivotally supported from the lower ends of the jaw members independently of said base by links pivoted to the jaw members and angularly adjustable on the levers, and a pedal carried by one of the levers.

4. A foot-operated cutter for application to a bench to expose its cutting edges above the same comprising a base having provision for attaching it to a bench and presenting a face vertical when the base is so attached, which is free of obstructions above or below its plane, a pair of jaw levers pivotally supported on the base to swing parallel to said plane and having cutting edges projecting upwardly beyond the base, the uppermost portions of said face and base being disposed above the lower ends of the cutting edges in all positions of the jaw levers, a pair of inter-pivoted levers pivotally supported from the lower ends of the jaw members independently of said base, and a pedal carried by one of the levers.

5. A bench cutter comprising a base having provision for attaching it to a bench and an exposed vertical face, a pair of jaw levers pivoted to said face and having cutting edges projecting upwardly beyond the base, a pair of inter-pivoted levers pivoted respectively to tails of the jaw levers, a depending guide disposed adjacent the sides of the levers to maintain the plane of movement thereof, and a pedal carried by one of said levers.

6. A bench cutter comprising a base having holes for receiving vertical bolts to secure it to a bench and opposed vertical faces having opposed openings, a pair of jaw levers having pivot pins received in the openings and having cutting edges projecting upwardly beyond the same, a pair of interpivotated levers pivoted to the jaw levers respectively, one of which levers has a foot engaging portion, and cheek pieces having openings to receive the vertical bolts aforesaid and, positioned thereby, being presented as lateral guides at the sides of the levers.

7. A bench cutter comprising a base having holes for receiving vertical bolts for securing it to a bench and an exposed vertical face, a pair of jaw levers pivoted to said face and having cutting edges projecting upwardly beyond the base, a pair of interpivotated levers pivoted respectively to the tails of the jaw levers, and a cheek piece having openings to receive the bolts and, positioned thereby, being received as a lateral guide at the sides of the levers.

8. A bench cutter comprising a base having a horizontally extending portion for attachment to the bench and an exposed vertically extending face, a member opposing said face, pivot pins bearing in said face and member, jaw levers pivoted on the pins between said face and member and having cutting edges extending upwardly beyond the same, means interengaging said levers for equal and opposite movement, the upper edges of the said face and member being disposed above the lower ends of the cutting edges in all positions of the levers, an elastic plug received between said face and member and between the levers above said means, a pair of interpivotated levers pivoted respectively to the tails of the jaw levers, and a pedal carried by one of said levers.

9. A bench cutter comprising a base having a horizontally extending portion for attachment to the bench and an exposed vertically extending face, a member opposing said face, pivot pins bearing in said face and member, jaw levers pivoted on the pins between said face and member and having cutting edges extending upwardly beyond the same, means interengaging said levers for equal and opposite movement, an elastic plug received between said face and member between the levers above said means, a pair of interpivotated levers pivoted respectively to the tails

of the jaw levers, and a pedal carried by one of said levers.

10. A base for mounting a portable cutter of the compound-lever, hand-operated type on a bench to provide a bench cutter having a horizontal part with holes to receive bolts to secure the base to the bench and a vertical portion having an exposed face provided with horizontal holes spaced to receive the pivot bolts of the jaw levers to support the cutter with its edges exposed upwardly beyond the base and its operating levers depending for operation from the lower side of the bench, and a cheek piece for mounting below the bench having openings to receive said securing bolts which will position the same as a guide adjacent the sides of the operating levers.

11. A bench cutter comprising a base having provision for attaching it to a bench and an exposed vertical face, a pair of jaw levers having pivot holes, a pin for pivotally mounting one of said levers on said face by its hole, a horizontally aligned pin for mounting the other lever by its hole on said face so that the edges project upwardly, means on the base for securing said other lever thereto at a point remote from its pivot hole, a pair of interpivotated levers supported respectively on the tails of the jaw levers, and a pedal carried by one of said levers, at least one of said jaw levers having an opening remote from its pivot, said face having an opening adapted to be aligned with the last mentioned opening to receive a pin whereby the jaw lever may be fixed to alter the mechanical advantage of the mechanism.

12. A bench cutter comprising a base having provision for attaching it to a bench and an exposed vertical face, a pair of jaw levers having openings defining centres of pivotal motion therefor and other openings remote therefrom, said face having openings adapted to receive pivot pins passing through the first mentioned openings to support the levers in cooperative relation with their edges exposed above the base and openings adapted to receive pins passed through the second mentioned openings whereby one or the other of said levers may be held against swinging movement, a pair of interpivotated actuating levers pivoted respectively to the tails of the jaw levers, and a pedal carried by one of said actuating levers.

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