Feb. 22, 1927. 1,618,585

G. F. FEISTER

METAL SAW

Filed Nov. 21, 1925

Fig. 1.

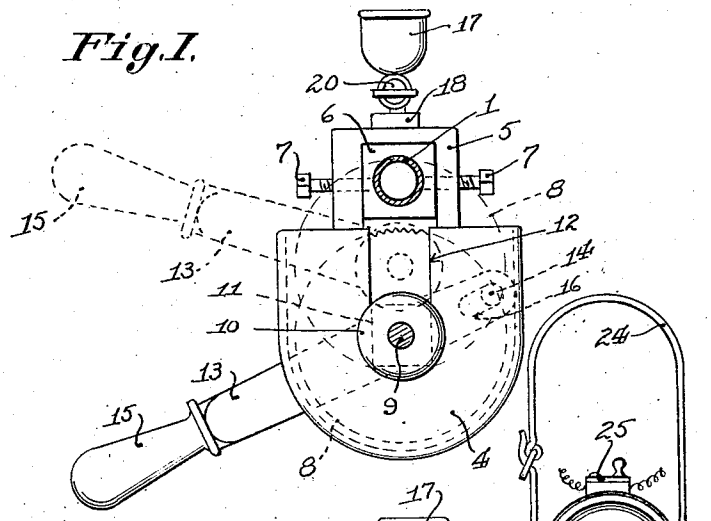


Fig. 3.

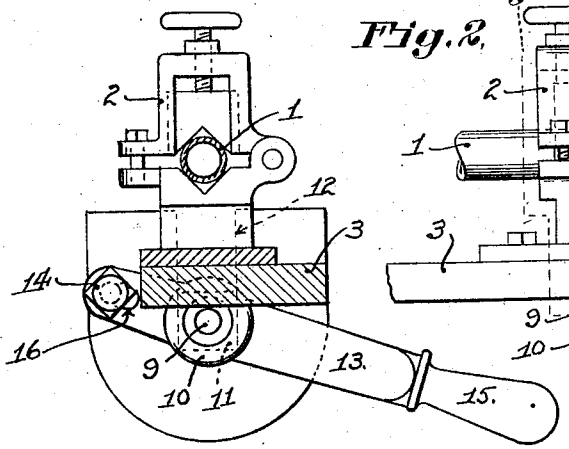
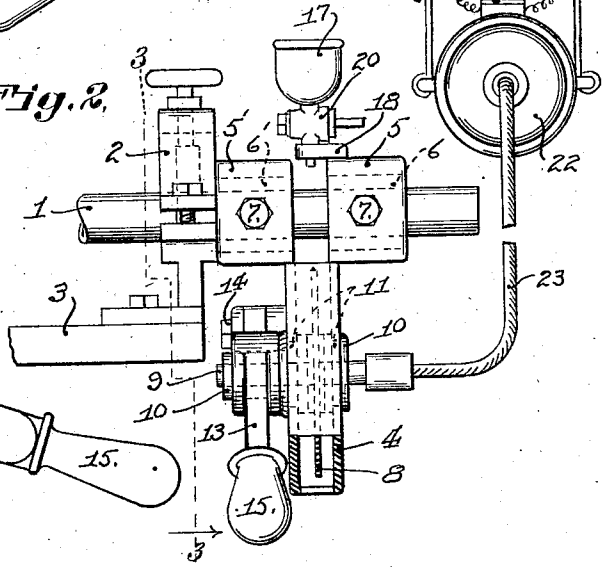


Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE F. FEISTER, OF MARICOPA, CALIFORNIA.

METAL SAW.

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My invention relates to power driven saws especially adapted for cutting metal, particularly of such shapes as pipe, bars, and the like.

The principal object of my invention is to provide a simple and easily portable device of the described type which may be used by the plumber or metal worker in place of the usual hand operated hack-saw or pipe cutter. Other objects and advantages of the invention will be apparent from the following description, which should be read with the understanding that the form, proportion, and arrangement of the several parts of the device may be varied, within the limits of the claims hereto appended, without departing from the spirit of the invention as expressed in said claims. It is also to be understood that my device, although particularly adapted for cutting metal, is not limited to such use.

With this in view a preferred embodiment of my invention will now be described fully with reference to the accompanying drawings, wherein:—

Fig. 1 is a front end elevation of my device in operative position, the drive cable and motor being omitted.

Fig. 2 is a part sectional side elevation of the complete device.

Fig. 3 is a sectional rear view thereof, taken in the direction of the arrow on the line 3—3 of Fig. 2.

In the drawings, the reference numeral 1 designates the work to be cut, here shown as a pipe, which is suitably held in any desired manner, as for example by a vise, indicated at 2, mounted upon a bench or other fixed support 3.

The cutting device comprises an enclosed frame or casing 4 which is secured to and depends from a pair of spaced yoke members 5 and 5′ adapted to surround the pipe 1 to form a support for said casing. In order to adapt the device to pipe or bars of various size and shape, I provide removable bushings 6 and 6′ fitted within the yokes or hangers 5 and 5′ respectively, and bored to fit over and around the pipe. Set screws 7, screwed through the yokes 5 and 5′ and passing through the bushings 6 and 6′, may be set against the pipe to clamp the device firmly thereupon. It is understood, of course, that a set of several pair of bushings 6 and 6′ will be provided with each device, such bushings having different interior sizes and shapes to fit upon various sizes and shapes of pipe or bars.

A circular saw 8 is positioned within the casing 4, and is secured upon a shaft 9 which is rotatably mounted in journal members 10. These journal members are provided with square or rectangular portions 11 which are free to slide without rotating in vertical slots 12 formed in the side plates of the casing 4. A lever 13 is secured to one of the journal members 10 outside the casing, and is fulcrumed upon a fixed pin 14 projecting from said casing. Thus by lifting up the handle 15 of the lever 13, the saw 8 is raised into contact with and through the work 1, as shown in dotted lines in Fig. 1, and when said handle is released, the saw returns into the casing 4 by gravity. A slotted connection 16 is provided between the lever 13 and its fulcrum pin 14.

In order to provide means for lubricating the cutting edge of the saw, I mount an oil cup 17 upon a bracket 18 secured to the yoke 5, the spout 19 of said cup being positioned in vertical alignment with the saw 8. A valve 20 controls the flow of oil from said cup. The casing 4 is provided with an opening in its bottom to allow the escape of excess oil and chips and cuttings, as shown in Fig. 2.

I prefer to employ a portable electric motor, indicated at 22 in Fig. 2, to drive the saw 8, said motor being connected with the saw shaft 9 by a flexible drive shaft or cable 23 of well known form. A strap or loop 24 may be provided for suspending the motor 22 from the arm or shoulder of the operator, or from any other convenient support. A switch for controlling said motor is indicated at 25.

In using the device, the pipe or bar to be cut is first placed in the vise 2, or in any other suitable holding means. The yokes 5 and 5′, with bushings 6 and 6′ of suitable interior size and shape within them, are then slipped over the free end of the pipe, and clamped thereupon by the set screws 7 with the casing 4 hanging down. The motor 22 is then started, and the handle 15 raised. Continued upward pressure on said handle feeds the rotating saw 8 into and through the pipe, in the space between the yokes 5 and 5′, the journal members 10 sliding upwardly in the slots 12. At the completion of the cut, the

handle 15 is released, whereupon the saw 8 returns to its lower position within the casing 4, by its own weight.

It is to be noted that the entire device is rigidly supported by the clamp member or yoke 5′ and the bushing 6′ from the uncut portion of the work, so that the cut is true and accurate, and there is no possibility of the saw becoming jammed, even at the end of the cut, for the cut portion of the work is also rigidly held, by the clamp-member or yoke 5 and the bushing 6. It is also to be noted that the casing 4 serves not only as a guard to protect the operator from accidental contact with the saw, but also as a supporting frame in which the journal members 10 are slidably mounted.

I claim:—

1. A device for cutting pipe, bars, and the like, comprising a yoke member; a bushing removably mounted in said yoke member and adapted to fit over and closely embrace the work; means for clamping said yoke and said bushing upon the work; a frame secured to said yoke member; a rotatable saw carried by said frame; and means for moving said saw bodily into and out of cutting relation with the work.

2. A device for cutting pipe, bars, and the like, comprising a yoke having spaced arms adapted to fit over the work; means for clamping said yoke upon the work; a frame secured to said yoke and provided with a guide way; a journal member movably mounted in said guide way; a saw rotatably carried in said journal member; and means for moving said journal member in said guide way to carry the saw into and out of cutting relation with the work in the space between the arms of said yoke.

3. A device for cutting pipe, bars and the like comprising a pair of spaced clamp members adapted to be secured upon the work; a frame secured to said clamp members and provided with a guide way; a journal member movably mounted in said guide way; a saw rotatably carried in said journal member and aligned with the space between said clamp members; and means for moving said journal member in said guide way to carry the saw through the work in the space between said clamp members.

4. A device for cutting pipe, bars and the like comprising a hanger adapted to be secured to the work; a frame secured to and depending from said hanger and provided with a substantially vertically disposed guide way; a journal member movably mounted in said guide way; a saw rotatably carried in said journal member; and a lever pivotally mounted upon said frame and associated with said journal member for moving it in said guide way to raise the saw into cutting relation with the work.

In testimony whereof I have signed my name to this specification.

GEORGE F. FEISTER.