Jan. 13, 1953 E. A. ZUZELO 2,624,984

MASONRY SAW

Filed Oct. 4, 1950 2 SHEETS—SHEET 1

Fig. 1.

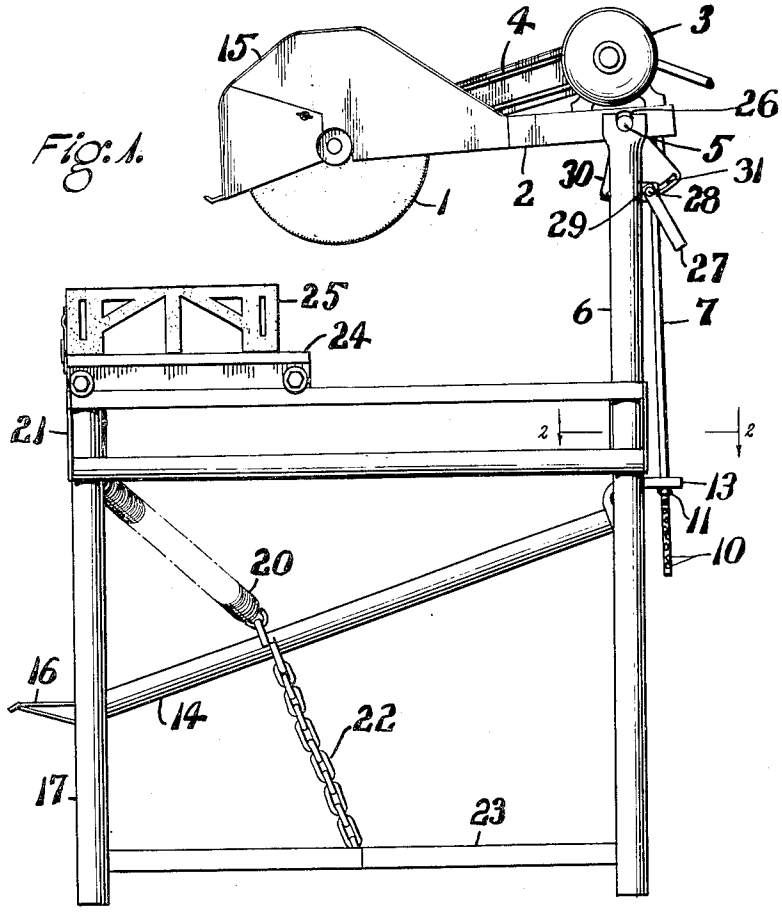
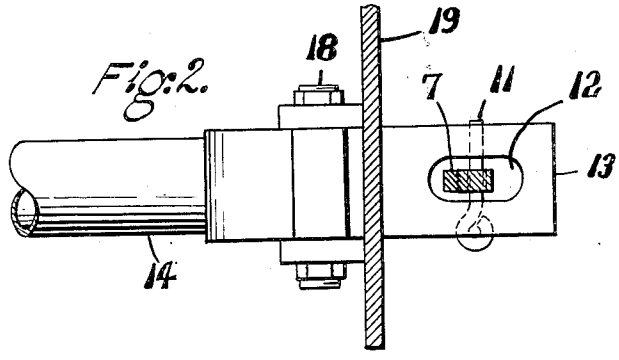


Fig. 2.

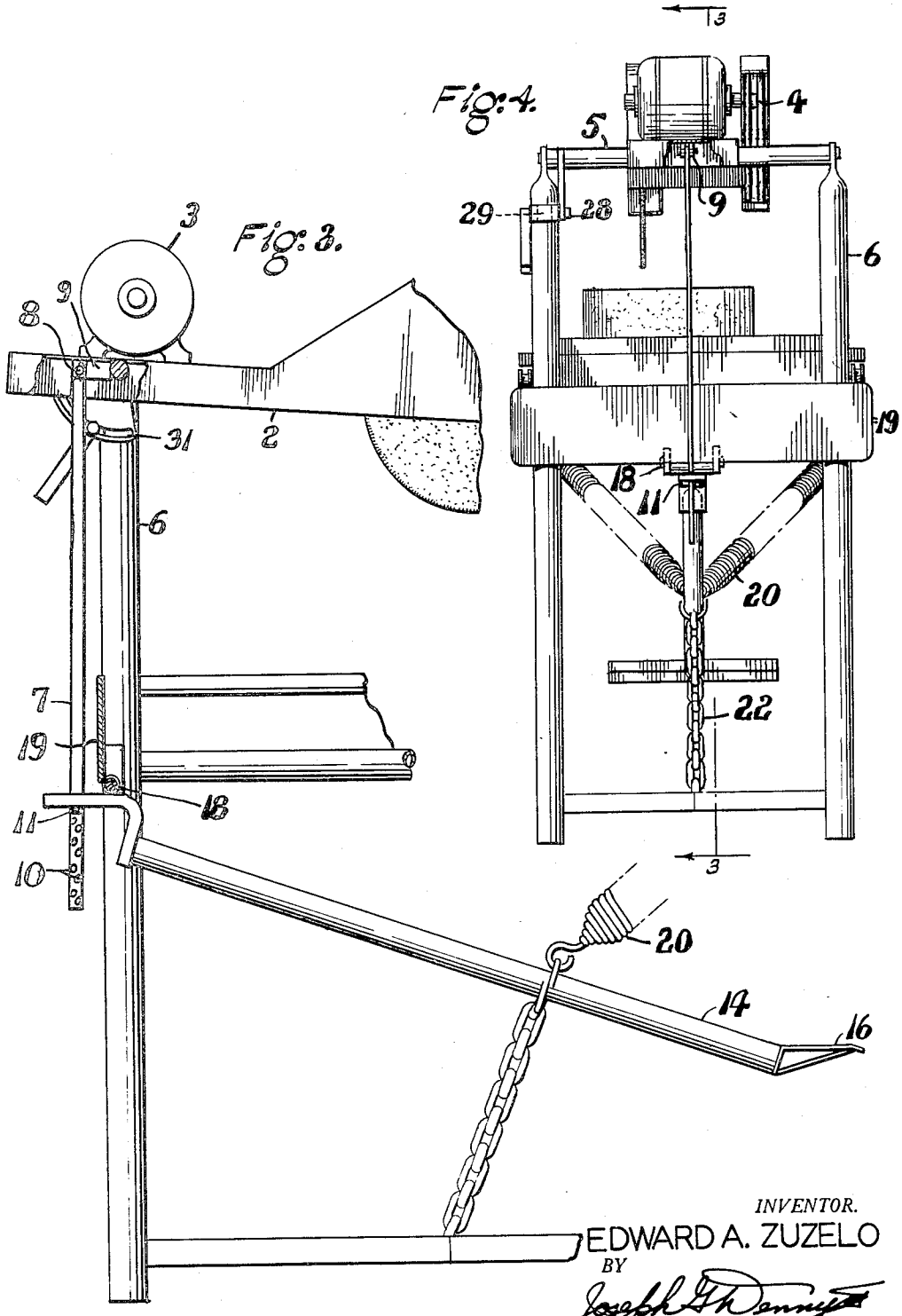


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2,624,984

MASONRY SAW

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1 Claim. (Cl. 51—92)

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My invention relates to improvements in masonry or tile saws and in particular to the manner of securing the head of the saw in a given position and in the manner of guiding and controlling the cutter head and the foot lever.

Saws of this type are employed in the cutting of brick, tile, terra cotta, stone and like material particularly in construction industries. The operator guides a rotating disk of abrasive material into contact with the material to be cut by means of a foot lever as illustrated in my Patent No. 2,514,826. The life of the blade is dependent upon its proper use and the blade cannot be jammed into the material without disastrous consequences to the blade and to the material to be cut. Thus, the control means should permit of easy and accurate adjustment consistant with a good cutting speed.

The principal objects of my invention are to provide a masonry saw having a foot lever with a large leverage ratio; to provide reaction means linked to the foot lever out of the way of the operator's foot; and to provide a simple and effective means of locking the cutting head in any desired position for extended use in that position.

The principles and characteristic features of my invention and the manner of making and constructing and using my improved masonry saw will further appear in the accompanying drawings and the following description explaining the best modes in which I have contemplated using such principles.

Fig. 1 is a side elevational view of a masonry saw embodying my improvements; Fig. 2 is a fragmentary top plan view of a portion of the foot lever and vertical depending arm taken along the line of 2—2 of Fig. 1; Fig. 3 is a fragmentary side elevational view, partly in cross section, taken from the side opposite that shown in Fig. 1 and along the line 3—3 of Fig. 4; and Fig. 4 is a rear elevational view, partly broken away, of the masonry saw shown in Fig. 1.

As illustrated in the drawings, my preferred form of masonry saw comprises a cutting blade 1 journaled on a shaft which is mounted on the platform 2 on which is also mounted the motor 3 for driving the blade 1 by means of endless belts 4 moving on rotors secured to the shafts of the motor 3 and the cutting blade 1.

The platform 2 is mounted on a transverse bar 5 whose ends are mounted in the slots 26 cut in the upper portion of the columns 6 which furnish the rear support for the masonry saw. Depending from the rear portion of the platform 2 is a

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vertical arm 7 which pivots about a rod 8 held by a pair of lugs 9 secured to the underbody of the platform 2 and to the transverse bar 5. The lower portion of the arm 7 is pierced with a series of holes 10 in one of which a pin 11 is inserted. The arm 7 extends through a slot 12 cut in the extension piece 13 forming part of the foot lever 14. As may be seen in Fig. 2, the arm 7 extends through the slot 12 but is not joined therewith, though the arm 7 may be prevented from moving in an upwardly direction by reason of the pin 11 pressing upon portions of the extension piece 13.

The motor 3 is mounted on the platform 2 so that its transverse axis is forward of the transverse bar 5. Thus, the major portion of the weight of the motor 3 together with the weight of cutting blade 1 and the appurtenances thereto including the shield 15 tend to rotate the platform 2 in a counter-clockwise direction, as seen in Fig. 1.

The foot lever 14 has a foot rest 16 joined thereto which projects forward of the columns 17 forming the front supports of the saw. The foot lever 14 pivots about a rod 18 supported by a pair of lugs depending from the end plate 19. Movement of the foot lever is restrained by springs 20 linked to the foot lever slightly forward of the mid-point between the foot rest 16 and the extension piece 13, the springs being supported from the upper portion of columns 17. A chain 22 secured at one end to the junction of the rigid X-strips 23 is also linked to the foot lever 14 in juxtaposition to the joinder of the springs 20 with the foot lever.

In the at-rest position, the springs 20 keep the foot rest portion of the foot lever in an elevated position and the extension piece 13 in a relatively depressed position as can be seen in Fig. 1. Thus, the extension piece 13 bears down upon the pin 11, seated in one of the holes 10, thereby holding down the arm 7 which necessarily keeps the cutting blade 1 elevated and out of contact with the carriage 24 or the material 25 thereon. When the operator depresses the foot rest 16, the foot lever 14 pivots counter-clockwise about the rod 18 so that the extension piece 13 momentarily moves out of contact with pin 11. However, as the platform 2 is unbalanced it promptly pivots about the transverse axis 5 in a counter-clockwise direction until the arm 7 is moved upwardly to a position where the pin 11 makes contact with the extension piece 13 or until the blade 1 makes contact with the material 25 on the carriage 24. If the latter occurs, the opera-

tor pushes the carriage 24 along the tracks thereby making a lengthwise cut along the material 25. As soon as the blade has passed through the material lengthwise, the operator releases the foot pedal 16 whereupon the springs 20 return the foot lever 14 to the original position thereby forcing the extension piece 13 down upon the pin 11 thereupon forcing the arm 7 down and returning the cutting blade to an elevated, non-cutting position.

It is to be understood that in cutting this type of material the cutting blade does not usually cut through the entire depth of the material 25 in one pass but on the contrary the material is passed under the cutting blade several times in order to obtain a complete depthwise cut, otherwise the material or blade or both are likely to fracture or break.

To permit of a uniform depth of cut requires a steady blade and platform height and consequently a uniform foot height. Where the foot lever ratio with the movement of the cutter head arm is small, only a slight variation in the foot height is permissible but where the foot lever ratio to the movement of the cutter head arm is large, a relatively great variation in foot height will not adversely affect the depth of cut. My foot lever forms approximately a triangle with the uprights and cutting platform when the foot lever is in a fully depressed position and in such a position the foot lever forms the hypotenuse of the triangle. Thus, a maximum length of lever is placed in a given unit space. As distance between the pivot point and the place wherein the arm 7 extends through the extension piece 13 is quite small, relatively large variations in the operator's foot position is possible without causing objectionable changes in the depth of cut in any particular pass of the blade through the material.

When the material to be cut is relatively thin and not frangible, a one pass cut may completely sever the material without injury to the cutting blade. When the operator has a quantity of such material all of a given thickness, it may be desirable, from the operator's viewpoint, to hold the cutting head in one position and pass the material under the cutting blade without the use of the foot lever. I provide a simple, effective hand lock to hold the cutting blade and platform in any desired position. The lock comprises a hand lever 27 threaded on a bolt 28, both of which are supported by a boss 29 and a sector 30 secured to the transverse bar 5. The bolt 28 passes through the boss 29 and an arcuate slot 31 cut in the outer portion of the sector 30. When the hand lever is turned in a clockwise direction, the head of the bolt 28 draws the sector 30 into frictional engagement with one side of the boss 29 thereby holding the cutting platform in any selected cutting position. Contrawise, when the hand lever 27 is turned in a counter-clockwise direction, the sector and boss tend to part thereby permitting free movement of the cutting platform about its axis as the arcuate slot 31 is sufficiently long to permit full movement of the cutting platform.

Abrasive cutting blades are worn down comparatively rapidly, depending upon the material being cut and the manner in which it is done. As it is desirable that the position of the foot lever be of a given height for a given thickness of material to be cut, I have provided a series of holes 10 in the arm 7 by which the gradual wearing of the blade can be compensated for by placing the pin 11 in successively lower holes in the arm 7. By the time the lower-most hole is reached, the blade is ready for discard.

Having described my invention, I claim:

A masonry saw comprising supporting columns, a platform pivotly mounted on two of said columns, a cutting blade and motor mounted forward of the transverse axis of said platform, said cutting blade and platform rotatable about said transverse axis, a slotted sector secured to said transverse axis, a boss and a lever mounted on a column below one of said pivot points and engageable with said sector for securing said cutting blade and platform in a given position.

EDWARD A. ZUZELO.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,171,024	Coates	Aug. 29, 1939
2,180,743	Martin	Nov. 21, 1939
2,213,011	Martin	Aug. 27, 1940
2,514,826	Zuzelo	July 11, 1950