Oct. 14, 1952 R. C. HUBER 2,613,661

MASONRY CUTTER

Filed Feb. 16, 1950

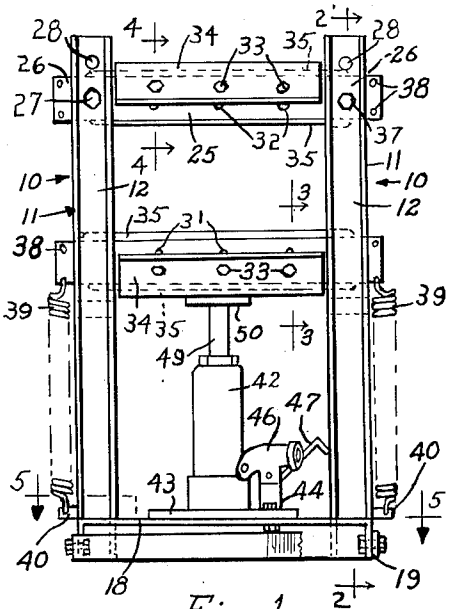


Fig. 1

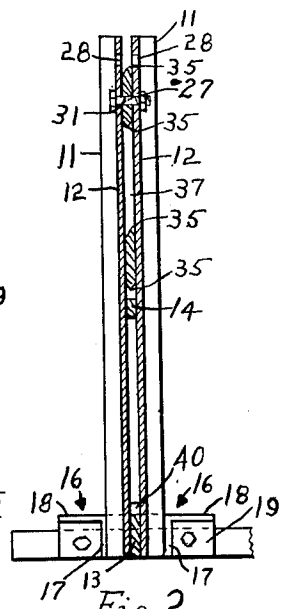


Fig. 2.

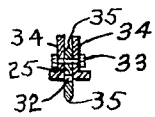


Fig. 4

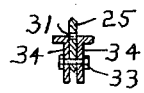


Fig. 3.

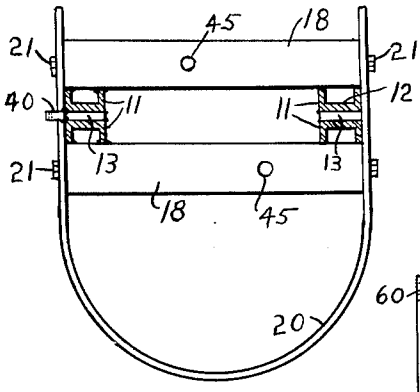


Fig. 5

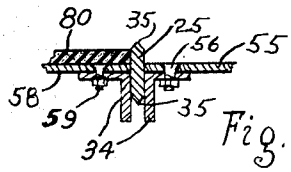


Fig. 7

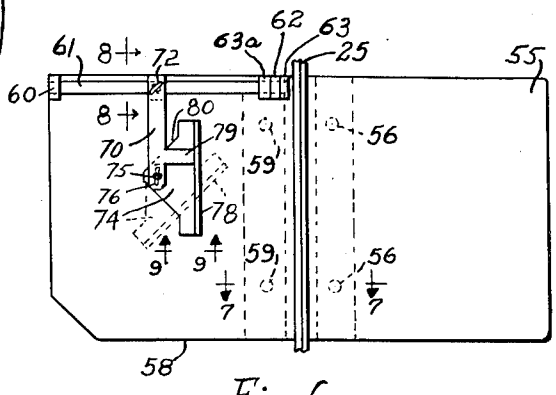


Fig. 6

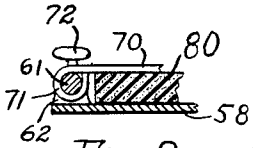


Fig. 8

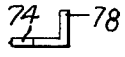


Fig. 9

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MASONRY CUTTER

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7 Claims. (Cl. 125—23)

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This invention relates generally to cutting devices and relates more particularly to masonry cutters for cutting bricks, tile, blocks and the like.

As is well known, it is often difficult to properly cut bricks, tile and the like, and it is therefore an object of the present invention to provide a cutter which will easily and accurately cut such articles.

Another object of the invention is to provide a device of this character wherein the movable blade operates smoothly, will not bind and accommodates itself to uneven surfaces should such be encountered.

Still another object of the invention is to provide a device of this character wherein there are two cutting blades which cooperate to effect cutting, each blade having cutting edges in substantial alignment.

A further object of the invention is to provide a device of this character which will provide a quick, clean cut.

A still further object of the invention is to provide a device of this character wherein the blades are reversible.

Another object of the invention is to provide a device of this character having a mitre arrangement for determining the angle of the cut.

Still another object of the invention is to provide a device of this character wherein the mitre possesses novel features.

A further object of the invention is to provide a device of this character which is portable and compact.

A still further object of the invention is to provide a device of this character that is easily operated by hand.

A further object of the invention is to provide a device of this character that is simple in construction and operation, and that is relatively inexpensive to manufacture.

Other objects and advantages of the invention will be brought out in the following part of the specification.

Referring to the drawings, which are for illustrative purposes only,

Fig. 1 is a front elevational view of a cutting device embodying the invention;

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a sectional view through the movable blade, taken on line 3—3 of Fig. 1;

Fig. 4 is a sectional view through the stationary blade, taken on line 4—4 of Fig. 1;

Fig. 5 is a sectional view taken on line 5—5 of Fig. 1;

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Fig. 6 is a top plan view of the blade with the mitre tray and receiving tray attached thereto;

Fig. 7 is a sectional view taken on line 7—7 of Fig. 6;

Fig. 8 is a sectional view taken on line 8—8 of Fig. 6; and

Fig. 9 is an end view of the swingable mitre member as seen from line 9—9 of Fig. 6.

Referring more particularly to the drawings the device is shown as comprising a frame having upright blade supporting and guiding means, indicated generally at 10. The upright blade supporting and guide means are spaced apart and each comprises a pair of channel members 11 with the closed sides 12 facing each other and spaced apart. Spacers are provided between the channel members 11, there being a spacer 13 adjacent the lower end of each of the upright frame parts and a spacer 14 intermediate the ends of the respective pairs of channel members, said spacer 14 serving as stop means for limiting downward movement of the movable blade which will be described more particularly hereinafter. The spacers 13 and 14 are welded, brazed or otherwise suitably secured to the adjacent channel members.

Support means for the upright blade supporting and guide means or frame parts is provided and comprises a base formed of oppositely arranged angle members 16, one side 17 of said members being in abutment with the adjacent flanges of the respective channels 11 and welded, brazed or otherwise secured thereto, the other side 18 of the angle members 16 being substantially horizontal and spaced upwardly from the lower end of the device. At the ends of the angle members 16 are end pieces 19 which extend across the adjacent ends of both angle members 16 and are welded or brazed to adjacent parts thereof. A stabilizer is also provided at the front of the device and comprises a generally U-shaped strip of metal 20 which has its arms secured to the end pieces 19 of the base by bolts 21 or by other suitable means.

Adjacent the upper ends of the upright frame parts 10 is a stationary cutting blade 25 having end portions 26 received between the channel members 11 of the respective frame parts and secured in position by bolts 27, said end portions 26 extending outwardly of the adjacent frame parts.

It is to be noted that the channels of each upright frame part are spaced apart, by spacers 13 and 14, a distance slightly greater than the thickness of the blades, and hence thin shims, not

shown, are interposed between each side of the blade 24 and the bottom walls 12 of said channels.

The bolts 27 are received in openings provided therefor in the blade 25 and the lower bolt holes in the bottom walls 12 of the channel members 11, there being other holes 28 spaced upwardly therefrom in said walls 12 so that the blade may be secured in a higher location if necessary to accommodate large bricks, blocks or the like.

The blade 25 is provided with two sets of longitudinally spaced holes 31 and 32, the respective holes of each set being laterally spaced apart. These holes are for reception of bolts 33 for securing reinforcing angle members 34 to the sides of the blade, said angle members extending longitudinally of the blade between the upright frame parts 10. The angle members 34 have their outwardly extending flanges adjacent the lower edge of the blade but spaced from said edge so as not to interfere with the effectiveness of the blade when cutting.

The blade 25 is provided with sharpened cutting edges 35 along each side edge so that the blade is reversible, and the respective sets of holes 31 and 32 permit suitable attachment of the reinforcing angle members 34, depending upon which cutting edge is being used.

The movable blade is similar to the hereinabove described blade and the cooperating cutting edges of said blades are in substantial alignment with each other. The reinforcing angle members 34 for the lower blade are attached by means of the lower set of holes 32 so that the operative cutting edge of the movable blade will extend a suitable distance above the outwardly extending flanges of the angle members 34 which are adjacent the cutting edge being used. The angle member ends are spaced inwardly somewhat of the adjacent channel members to provide operating clearance.

Due to the fact that the channel members 11 are spaced slightly apart a greater distance than the thickness of the blades, the movable lower blade will freely slide upwardly and downwardly between said channel members in the spaces 37 between the channel members of the upright frame parts and will not bind if said blade should tilt somewhat.

Each of the blades 25 is provided with a small hole 38 adjacent each of the corners thereof for reception of the hooked ends of springs 39, the opposite ends of said springs are also provided with hooks which are received in openings provided therefor in anchor ears 40 welded or otherwise suitably secured to the respective pairs of channel members 11 comprising the upright frame parts 10. The springs 39 serve to urge the movable cutting blade downward with substantially balanced force.

Means for moving the blade upwardly is provided and comprises a jack 42, shown as being a hydraulic jack, which has a base 43 secured to the flanges 18 by bolts 44 which are received in openings 45 in said flanges 18. A pivoted pumping member 46 is provided for the jack which also has a release valve operating rod 47. The jack plunger 49 carries a plate 50 at its upper end which engages the lower edges of the angle members 14 attached to the movable blades and centrally thereof so the force of the jack will be uniformly applied to the blade throughout its length. Because of this arrangement the blade will tilt slightly to accommodate uneven brick surfaces which may be encountered.

Referring more particularly to Figs. 6 to 9 inclusive, the device is provided with a receiving tray 55 which comprises a sheet of metal or other suitable material and receives pieces of bricks, tile, blocks or the like which have been cut off. The tray is provided with bolts 56 which are countersunk and welded or brazed to said tray. The bolts 56 are received in holes provided therefor in the outwardly extending flange of the angle member 34 at the back side of the movable blade.

To the outwardly extending flange of the front angle member of the movable blade is secured a mitre tray 58 having bolts 59 secured to said tray 58 in the same manner as the bolts 56 are secured to the tray 55. It is to be noted that the trays are secured to the upper sides of the respective angle member flanges.

Adjacent the end of one side edge of the tray 58 is an ear 60 having a bore therein for reception of a rod 61 which extends along said tray edge in upwardly spaced relation thereto. Adjacent the other end of said edge is a similar ear 62 which, however, is spaced from the adjacent corner of the tray so as to accommodate a collar 63 which is secured to the rod 61 by a set screw or the like, not shown. At the other side of said ear 62 is another collar 63a which is similarly secured to said rod. The rod is thus held against longitudinal movement.

Slidable on the rod 61 is an arm 70 which has an end portion 71, Fig. 8, turned about said rod in slidable engagement therewith and a winged screw 72 is provided in said arm for securing same against longitudinal movement on the rod so as to hold the arm in adjusted positions. It is to be noted that the arm 70 is movable toward and away from the movable blade 25 in substantially parallel relationship at all times.

Adjacent to the free end of arm 70 is a mitre member 74 which has an upstanding screw 75 secured thereto and which extends upwardly through an opening provided therefor in said arm 70. Thus the mitre member 74 is pivoted to said arm and said member is held in pivotally adjusted positions by a winged nut 76.

Mitre member 74 is provided with an upturned flange 78 adjacent its outer end and when the flange is parallel with the blade 25 the side thereof away from said blade engages a laterally extending part 79 of the arm 70. The mitre member 74 is also provided with an edge 80 at a 45° angle to the flange 78 and when the edge 80 corresponds with the adjacent edge of the part 79 the flange 78 is at a 45° angle to the blade 25. It is to be understood that mitre member 74 may be adjusted to other desired angular positions and said member is securable in all the various adjusted positions by the nut 76. The mitre arrangement provides for uniform angle cuts.

A pad 85 of sponge rubber or other suitable resilient material is disposed on the tray 58 beneath the arm 70 and mitre member 74 so that bricks or other articles to be cut may be placed thereon. The upper surface of the pad is below the sharp upper edge of the cutting blade, as best shown in Fig. 7, said pad yielding when a cut is made so that the brick or the like will be cleanly and evenly cut without fragmentation or chipping.

It is to be noted that the arm 70 is offset upwardly on the rod 61 so as to accommodate the pad 80.

I claim:

1. A masonry cutting device, comprising: a pair of guide means in laterally spaced relation,

each guide means comprising a pair of upright channel members having their closed sides facing each other; means spacing said channel members apart to provide guide openings extending longitudinally of said guide means; base means comprising a pair of angle members, one at each side of the guide means adjacent the lower ends thereof and secured thereto, each of said angle members having one side engaging the adjacent channel members and the other side arranged horizontally and extending outwardly from the upper edge of the respective sides engaging the channel members of the guide means; a fixed blade having end portions secured between the channel members of the respective guide means, said blade being located in upwardly spaced relation to the base means; movable blade means having portions adjacent the ends thereof slidable in the guide openings toward and away from said fixed blade, and means limiting movement of said movable blade means longitudinally thereof; a manually operable jack on the base means and having an operating member for applying operating force to the movable blade means; and spring means for exerting yielding force on said movable blade means urging said blade means away from the fixed blade.

2. A masonry cutting device, comprising: a pair of guide means in laterally spaced relation, each guide means comprising a pair of upright channel members having their closed sides facing each other; means spacing said channel members apart to provide guide openings extending longitudinally of said guide means; base means comprising a pair of angle members, one at each side of the guide means adjacent the lower ends thereof, each of said angle members having one side engaging the adjacent channel members and the other side arranged horizontally and extending outwardly from the upper edge of the respective sides engaging the channel members of the guide means; a fixed blade having end portions secured between the channel members of the respective guide means, said blade being located in upwardly spaced relation to the base means; movable blade means having portions adjacent the ends thereof slidable in the guide openings towards and away from said fixed blade, and means limiting movement of said movable blade means longitudinally thereof; a manually operable jack on the base means, said jack having an operating member for applying operating force to the movable blade means, said operating member being engageable with the movable blade means adjacent the longitudinal center thereof and said movable blade means being tiltable on said operating member; means limiting movement of the movable blade means toward said jack; and spring means for exerting yielding force on said movable blade means urging said blade means at locations substantially equi-distant from and at opposite sides of the location where the operating force is applied to said movable blade means, said spring means urging the movable blade away from the fixed blade.

3. In a masonry cutting device: a frame, including a base and a pair of upright guide means spaced from each other, said guide means being secured to said base; movable means, including a cutting blade extending between said guide means and guided thereby; a fixed blade extending between said guide means and disposed above the movable blade, said fixed blade being secured to said frame; actuating means comprising a manually operable hydraulic jack reacting between said base and said movable blade and having an operating member for applying operating force to the movable means at a location intermediate the ends thereof for moving said blade toward the fixed blade; and spring means for exerting yielding force on said movable means at locations substantially equidistant from and at opposite sides of the location where operating force is applied to said movable means, said spring means urging the blade away from the fixed blade.

4. In a masonry cutting device: a frame comprising base means and guide means adjacent each end of the base, each guide means including a pair of substantially parallel upright members spaced apart to provide guide openings; movable means, including a cutting blade, extending between said guide means and guided in said guide openings; fixed blade means extending between said guide means and disposed above the movable blade, said fixed blade means being secured to the members of the guide means in upwardly spaced relation to said base; and actuating means comprising a manually operable jack on said base, said jack having a force applying member for applying operating force to said movable means.

5. The invention defined by claim 4, including tray means carried by said movable means and disposed at one side thereof.

6. The invention defined by claim 4, including tray means carried by said movable means at one side thereof; a mitre device on said tray means.

7. A masonry cutting device, comprising: a pair of angle members forming a base; guide means at each end of said base and upstanding therefrom, each guide means comprising a pair of channel members having their closed sides facing each other and having lower end portions disposed between said angle members; means spacing said channel members apart to provide guide openings extending longitudinally of said guide means; a fixed blade having end portions secured between the channel members of the respective guide means, said blade being located in upwardly spaced relation to the base means; movable blade means between the fixed blade and said base and having portions adjacent the ends thereof slidable in the guide openings toward and away from said fixed blade, and means limiting movement of said movable blade means longitudinally thereof; and a manually operable jack reacting between said base means and movable blade means for applying operating force to the movable blade means.

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