

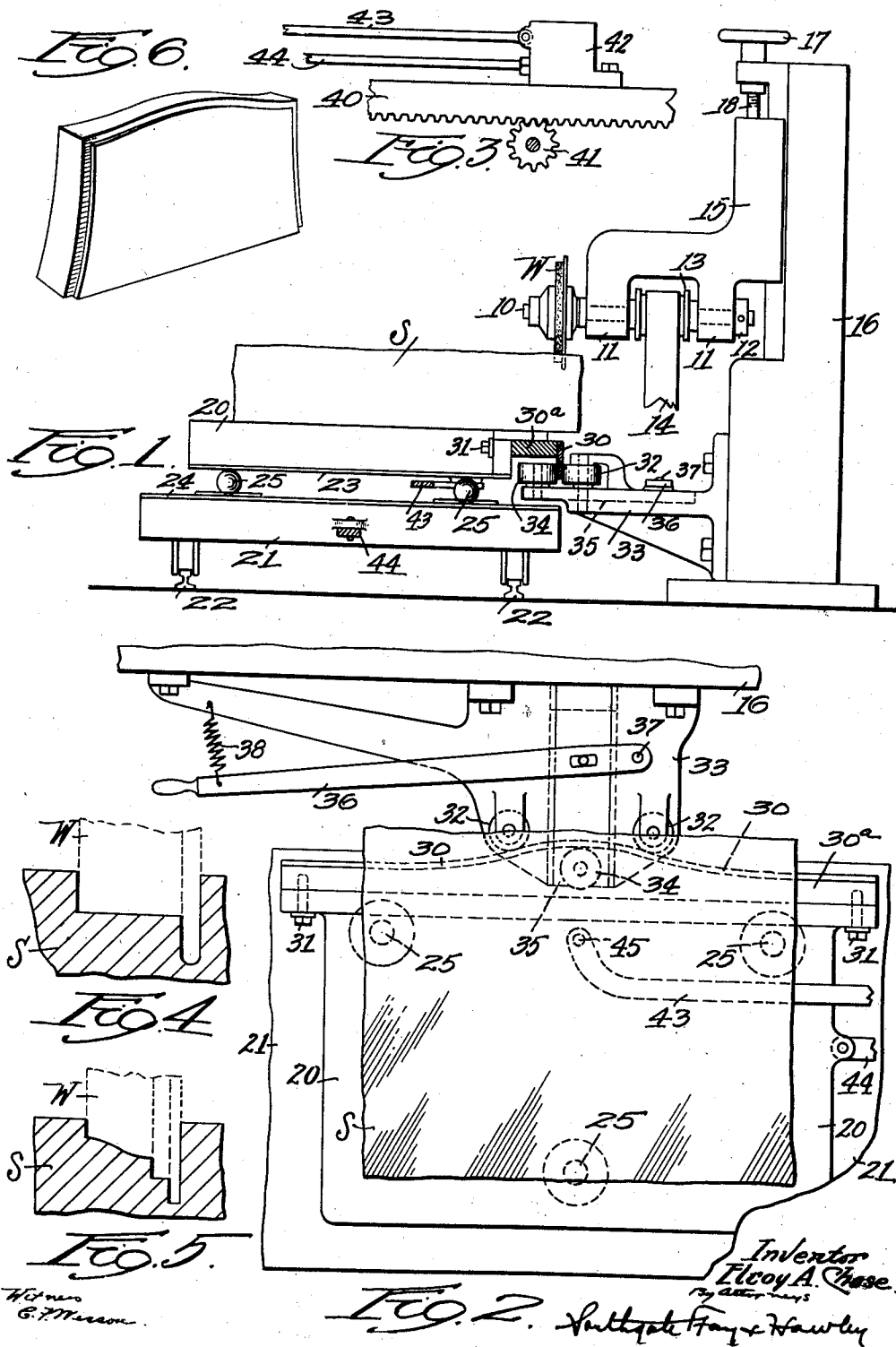
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EDGE TRIMMING MACHINE FOR STONE BLOCKS

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EDGE-TRIMMING MACHINE FOR STONE BLOCKS.

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This invention relates to a machine for trimming the edges of blocks of stone and particularly for trimming the edges of granite blocks as used for ornamental or memorial purposes.

It is the general object of my invention to improve the construction of such trimming machines as heretofore used, one such prior machine being disclosed in my prior Patent No. 1,509,585.

Further objects of my invention are to provide a machine which will be more general in its utility than the prior machines, more convenient in operation, more compact in construction, and more readily adapted to a wider range of designs.

With these general objects in view, my invention relates to arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

A preferred form of the invention is shown in the drawings, in which

Fig. 1 is an end elevation of my improved machine;

Fig. 2 is a plan view thereof, with the grinding wheel omitted for the sake of clearness;

Fig. 3 is a side elevation of certain actuating mechanism;

Figs. 4 and 5 are detail views, illustrating the use of different shapes of wheels to produce different edge forms by the use of my machine; and

Fig. 6 is a perspective view of a stone block having its edges trimmed by the use of my invention.

Referring to the drawings, my improved edge trimming machine comprises a grinding wheel W of carborundum or other suitable abrasive, mounted on a wheel shaft 10 rotatable in bearings 11 and held from axial movement therein by a collar 12. The wheel W may be rotated by a pulley 13 and belt 14 or in any other convenient manner.

The bearings 11 are formed on a bracket or stand 15 slidably mounted on a post or support 16 and vertically adjustable by a hand wheel 17 and feed screw 18 or in any other convenient manner. The stone S is mounted on a floating support or platform 20, which in turn is mounted upon a carriage 21 movable longitudinally past the grinding wheel W on tracks or rails 22.

The support 20 is mounted for easy and convenient movement relative to the car-

riage 21 angularly in every direction, and is preferably provided with a smooth steel plate 23 forming the bottom of the support 20, the carriage 21 being provided with a similar steel plate 24. Large steel balls 25 are interposed between the steel plates 23 and 24, thus permitting universal movement of the support 20 on the carriage 21.

A pattern bar or guide 30 is secured to the edge of the support 20 by bolts 31 or other securing devices, and engages a pair of guide-rolls 32 mounted on a bracket 33 secured to the post or column 16. A third guide-roll 34 is mounted on the slide 35 supported in transverse guide-ways in the bracket 33. A lever 36 is pivoted at 37 on the bracket 33 and has a pin and slot connection with the slide 35. A spring 38 applies tension to the lever 36, thus drawing the guide-roll 34 firmly against one side of the guide-bar 30, while the rolls 32 engage the opposite side. The guide bar 30 is commonly provided with a stiffening and reinforcing bar 30^a.

Actuating mechanism is provided for moving the support 20 and carriage 21 slowly past the grinding wheel W. One form of such mechanism is illustrated in Fig. 3, in which a rack bar 40 is moved longitudinally by a pinion 41 rotated from any convenient source of power. A block 42 is secured to the rack bar 40 and is connected by long connecting rods or links 43 and 44 to the carriage 21 and to a stud 45 on the support 20. The stud 45 is preferably located at the middle of the length of the support and toward the grinding wheel.

Having described the details of construction of my improved machine, the operation thereof will be readily apparent. The pattern guide 30 may be of any desired shape and will correspond to the outline to be produced upon the stone. As the carriage and support are moved slowly past the grinding wheel, the stone and support will be moved about on the carriage by the co-operation of the guide-rolls with the pattern bar and the grinding wheel will cut a groove in the stone corresponding in general to the shape of the pattern. Wheels of different section may be used to produce different desired edges, two different forms being illustrated in Figs. 4 and 5.

The grinding wheel W may be adjusted vertically either before or during the grinding operation by the hand wheel 17. By the

construction above described, a relatively simple and compact machine is adapted to trim the edges upon stone blocks of any size or length and to provide edges of any desired contour or section merely by changing the pattern bar and wheels.

It will be noted that the operative portion of the pattern bar is always substantially beneath and in the plane of the grinding wheel.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed otherwise than as set forth in the claims, but what I claim is:—

1. An edge trimming machine comprising a grinding wheel rotatable in a vertical plane, means to adjust said wheel vertically, a carriage movable horizontally past said wheel, a stone support thereon, means to move said support, a pattern bar mounted on said stone support, and guide rolls mounted on fixed pivots and engaging said pattern bar, said rolls and bar being effective to move said support bodily toward and away from said wheel as said support is moved past said wheel, and also to change the angular relation of said stone and wheel.

2. An edge trimming machine comprising a wheel mounted to rotate in a single vertical plane, a carriage movable in a horizontal path parallel to the plane of said wheel, a stone support mounted on said carriage and movable angularly and bodily relatively thereto, a pattern bar mounted on said stone support, and guiding devices mounted in fixed positions and engaging said pattern bar to vary the position of said support and stone relative to said wheel in a horizontal plane.

3. An edge trimming machine comprising a wheel mounted to rotate in a single vertical plane, a carriage movable in a horizontal path parallel to the plane of said wheel, a stone support mounted on said carriage and movable angularly and bodily relatively thereto, a pattern bar mounted on said stone support, guide rolls mounted on fixed pivots and engaging said pattern bar to vary the position of said support and stone relative to said wheel in a horizontal plane, and means to hold said bar yieldingly in engagement with said guide rolls.

4. An edge trimming machine comprising a grinding wheel rotatable in a fixed vertical plane, a floating support for a block of stone, a carriage on which said support is mounted for movement axially of said wheel, means to move said carriage and sup-

port longitudinally past said wheel, a pattern bar fixed on said support, and positioning devices mounted in fixed position and engaging said pattern bar, said devices and bar being effective to move said support and stone bodily toward and away from the wheel as said support and carriage are moved longitudinally past said wheel and also angularly relative to said carriage.

5. An edge trimming machine comprising a grinding wheel rotatable in a fixed axial position, a floating support movable in any direction in a single plane for a block of stone, a carriage on which said support is mounted for movement axially of said wheel, means to move said carriage and support longitudinally past said wheel, a pattern bar fixed on said support, a pair of spaced rolls rotatable on fixed axes and engaging one side of said pattern bar, and a third roll yieldingly mounted between said two fixed rolls and engaging said bar on the opposite side.

6. An edge trimming machine comprising a grinding wheel rotatable in a fixed axial position but adjustable vertically, a floating support for a block of stone, a carriage on which said support is mounted for movement axially of said wheel, means to move said carriage and support longitudinally past said wheel, a pattern bar fixed on said support, and positioning devices mounted in fixed position and engaging said pattern bar to move said support and stone bodily toward and away from the wheel as said support and carriage are moved longitudinally past said wheel, the operative portion of said pattern bar being always substantially beneath and in the plane of the grinding wheel.

7. An edge trimming machine, comprising a grinding wheel, a carriage movable horizontally past said wheel, a stone support thereon, antifriction bearings between said support and said carriage, means to retain said bearings in a fixed location relative to said carriage, said bearings being freely movable in said location, means to move said support, a pattern bar mounted on said stone support, and guide rolls mounted on fixed pivots and engaging said pattern bar, said rolls and bars being effective to move said support bodily toward and away from said wheel as said support is moved past said wheel and also to change the angular relation of said stone and wheel.

In testimony whereof I have hereunto affixed my signature.

ELROY A. CHASE.