

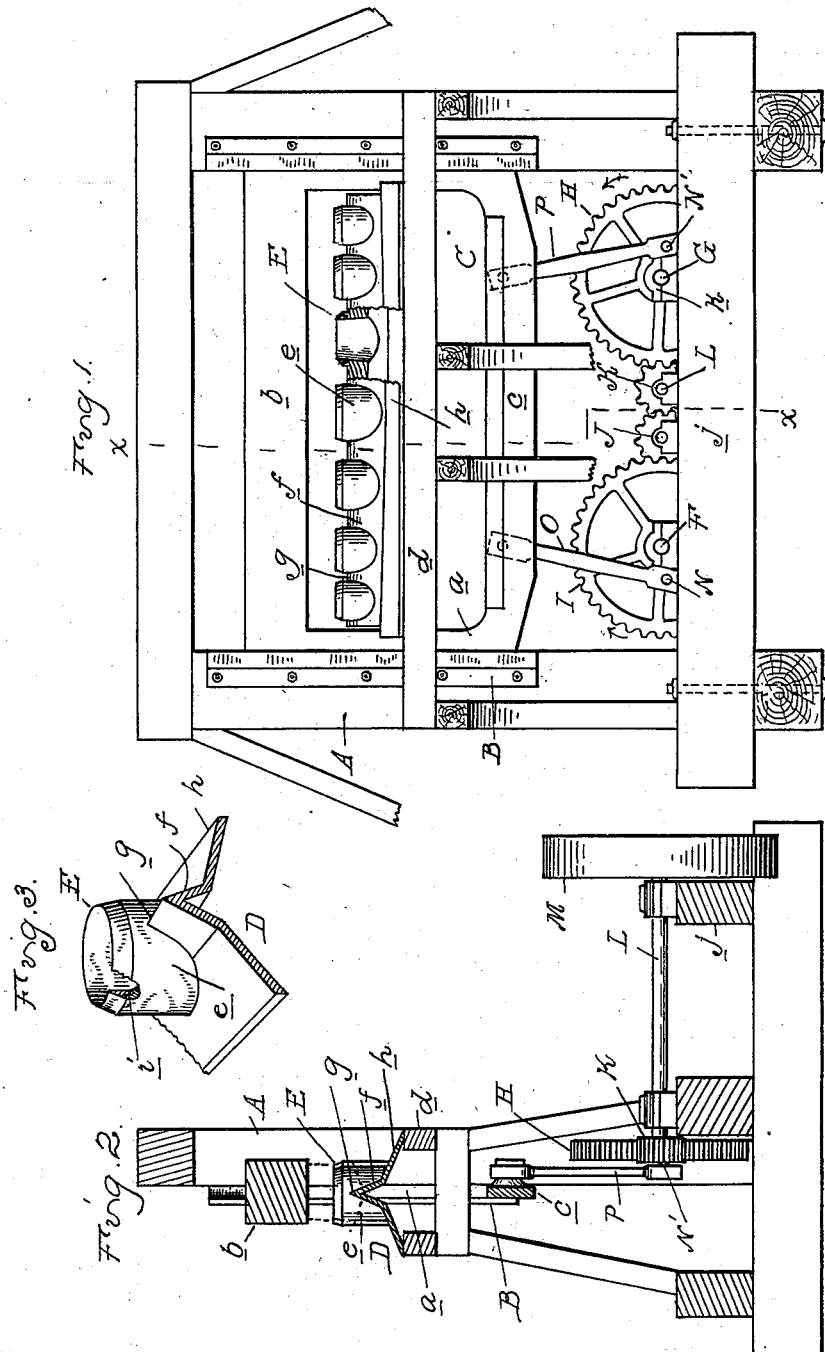
No. 650,192.

Patented May 22, 1900.

D. G. ROSS.
BLOCK CUTTER.

(Application filed Dec. 30, 1899.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

DONALD G. ROSS, OF BEAVERTON, MICHIGAN.

BLOCK-CUTTER.

SPECIFICATION forming part of Letters Patent No. 650,192, dated May 22, 1900.

Application filed December 30, 1899. Serial No. 742,050. (No model.)

To all whom it may concern:

Be it known that I, DONALD G. ROSS, a citizen of the United States, residing at Beaverton, in the county of Gladwin and State of Michigan, have invented certain new and useful Improvements in Block-Cutters, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The invention relates to machines for cutting blocks, and especially designed for removing the sap-wood from paving-blocks such as shown in prior patent issued to me January 22, 1884, No. 292,365. Said previous construction comprises a suitable frame, a reciprocating head or slide, a table, and a series of annular stationary cutters thereon for the blocks, the arrangement being such that the blocks may be forced against said cutters by
15 the reciprocation of the head, the body of the block passing through the center of the cutter and the surrounding portion passing outside thereof. As the blocks to be cut are of various sizes, the cutters used are varied in
20 size and are arranged from one side to the other of the table. In the use of the above-described machine it has been found that the operation is unsatisfactory on account of the accumulation of debris outside of the cutters
25 upon the table, which seriously interferes with the progress of the work, and, further, from the tendency of the reciprocating head to bind in its slides when the block operated upon was at either end of the machine.

35 It is the object of my present invention to overcome these objections; and to this end the invention consists in the construction hereinafter described and claimed.

40 In the drawings, Figure 1 is a front elevation of my machine, and Fig. 2 is a cross-section thereof. Fig. 3 is a perspective view of one of the cutters.

45 A is a frame of any suitable construction, having arranged upon opposite sides thereof the vertical guides B, in which is slidingly secured the cross head or sash C. This cross-head comprises the side portion *a*, the upper cross-bar *b*, and the lower cross-bar *c*. Between the cross-bars *b* and *c* and upon opposite
50 sides of the sash are arranged the cross-bars *d* of the frame, and upon these are sup-

ported the bed D for carrying the cutters, which bed is of the following construction:

e are annular supports for the cutters, arranged in series and formed integral with an inverted-V-shaped bar *f*. The cross-section
55 of this bar is preferably such as to form a comparatively-sharp angle *g* at its upper edge between the annular bearings *e*, and in order to support said bar upon the cross-bar *d* without increasing its height I provide the winged portions *h*, of lesser pitch than the portion *f*. The portions *h* are bolted or otherwise secured to the bars *d*, and the complete bed extends the full length between the bars *a* of
60 the sash. The upper end of the bearing *e* is provided with shoulders or securing flanges *i*, with which the cutter-ring E engages, the latter being preferably formed of steel. At the base of the frame are arranged the longitudinal bed-timbers *j*, upon which are secured
65 bearings *k* for the parallel shafts F and G, extending across the frame. These shafts are preferably arranged in planes which are more than half-way from the center of the sash
70 to the outer edges thereof, as shown in Fig. 1. Upon the shafts F and G are mounted, respectively, the gear-wheels H and I, and these gear-wheels mesh with two intermediate and intermeshing gear-wheels J and K. One of
75 these intermediate gear-wheels is mounted upon the drive-shaft L, which is journaled in suitable bearings in the frame and is provided with a pulley M or other means for imparting rotary motion thereto. The shafts
80 F and G are also provided with cranks N and N', which I have shown as secured to the gears H and I.

O and P are pitmen connected at their lower ends to the cranks N and N' and at their upper ends to the bar *c* of the sash.

The parts being constructed as shown and described, the operation is as follows: Motion is imparted to the shaft L through the pulley M and to the pinion K thereon, through which
85 it is transmitted on one side through the gear-wheel I to the shaft G and on the opposite side through the pinion J and gear-wheel H to the shaft F. This will cause the opposite rotation of the cranks N and N', which through
90 the pitmen O and P will impart a reciprocating movement to the sash C. The operator

now places the blocks to the cut above the proper annular cutters, whereupon the reciprocation of the sash will cause the bar *b* thereof to press the body of the blocks through the center and the cut-off portion outside the cutter. This cut-off portion will in the descent of the bar *b* be pressed against the sharp ridge *g* of the bar *f*, which will divide it in two and allow the separated halves to fall off to the side of the machine. It will be understood that in this operation the division of the annular cut-off portion of the block, together with the inclined arrangement of the bed, prevents clogging of the machine, which would occur if a flat bed were used, as in my previous construction. I would also call attention to the fact that the opposite movement of the cranks *N* and *N'* will cause the pitmen to oppose each other in lateral thrust, and thus will relieve the friction due to side thrust on the guides *B*. Moreover, as the shafts *F* and *G* are arranged nearer the ends of the sash than the center thereof the operation of the end cutters will not tend to gradually skew the sash.

What I claim as my invention is—

1. In a block-cutting machine, the combi-

nation with a reciprocating head of an annular cutter-blade arranged beneath said head, and a dividing-cutter extending from opposite sides of said annular cutter-blade and forming a support therefor for the purpose described.

2. In a block-cutting machine, the combination with a reciprocating cross-head of a series of separated annular cutters arranged in line with said cross-head and a supporting-ridge therebetween for the purpose described.

3. In a block-cutting machine, the combination with a reciprocating cross-head, of a series of separated annular cutters arranged in line with said cross-head, and the bed *D* having annular supports *e* for the cutters, the sharp dividing-ridge *f* between said cutters and the inclined wings *h* for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

DONALD G. ROSS.

Witnesses:

M. B. O'DOHERTY,

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