

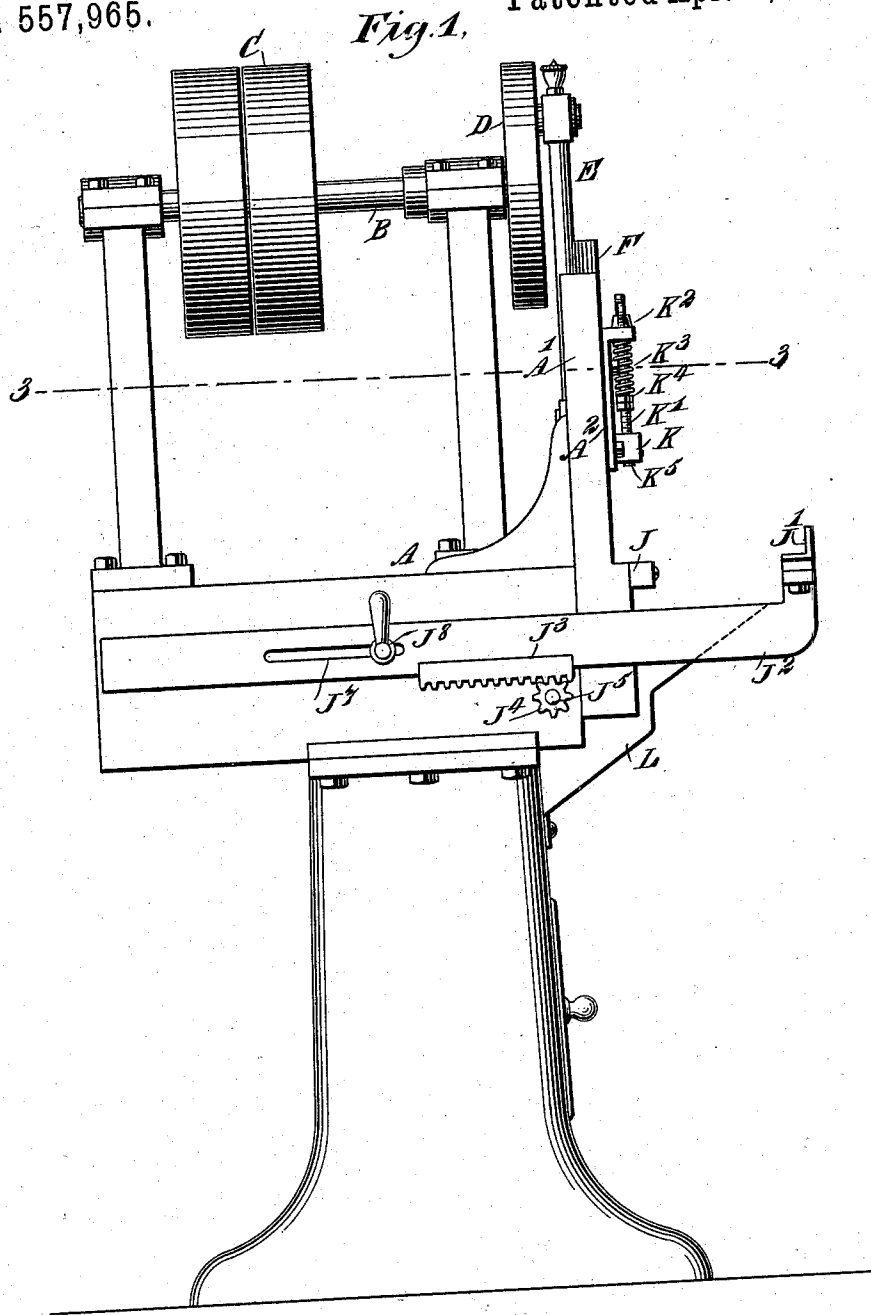
(No Model.)

3 Sheets—Sheet 1.

E. J. CAMPBELL & P. J. HAGGERTY.
BOOKBINDER'S RASPING MACHINE.

No. 557,965.

Patented Apr. 7, 1896.



WITNESSES:

Edward Thorpe.
Rev. J. Hostetler,

INVENTORS

E. J. Campbell
P. J. Haggerty
BY
Munn & Co.
ATTORNEYS.

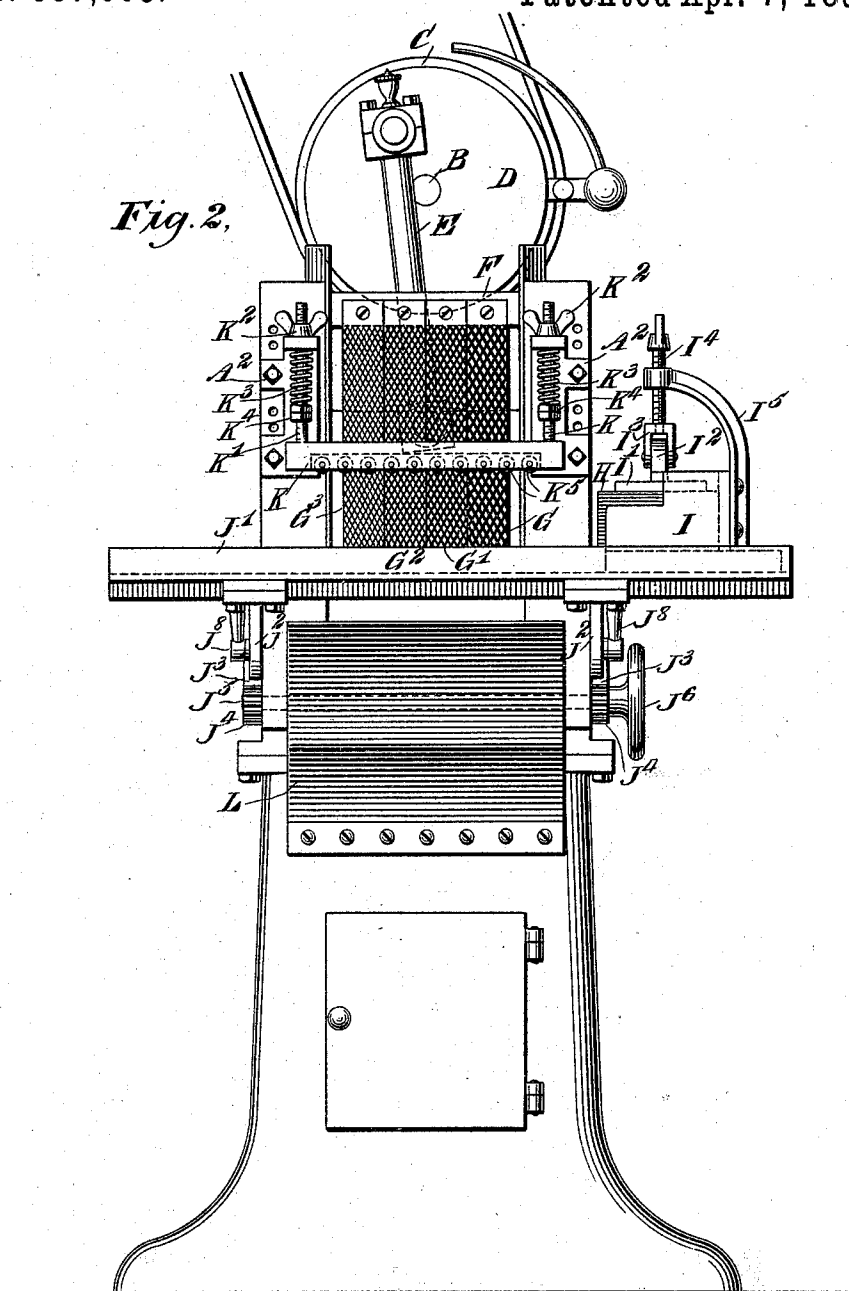
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No. 557,965.

Patented Apr. 7, 1896.



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(No Model.)

3 Sheets—Sheet 3.

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Fig. 3.

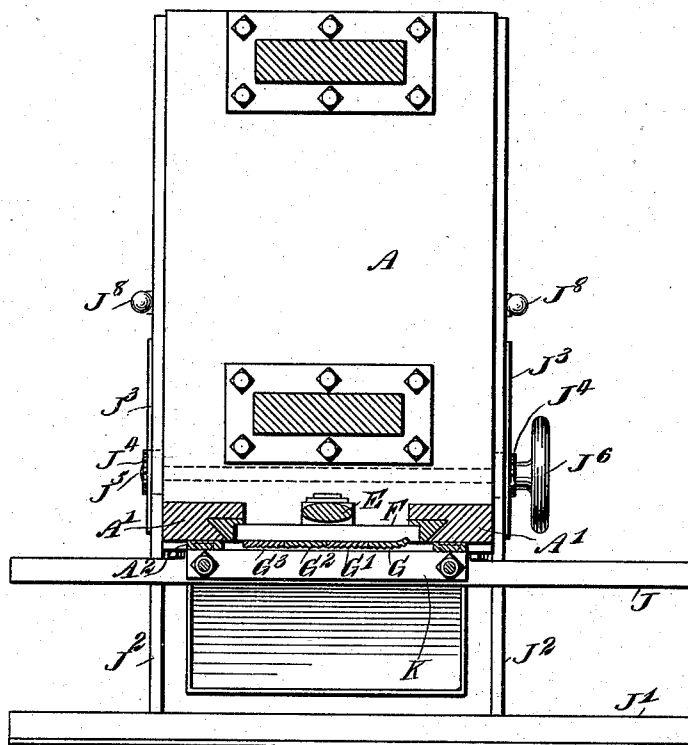
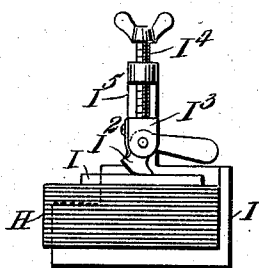


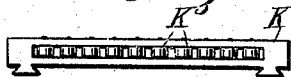
Fig. 4.



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Fig. 5.



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UNITED STATES PATENT OFFICE.

EDWARD J. CAMPBELL AND PATRICK J. HAGGERTY, OF BROOKLYN,
NEW YORK.

BOOKBINDER'S RASPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 557,965, dated April 7, 1896.

Application filed August 12, 1895. Serial No. 559,054. (No model.)

To all whom it may concern:

Be it known that we, EDWARD J. CAMPBELL and PATRICK J. HAGGERTY, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Rasping-Machine, of which the following is a full, clear, and exact description:

The invention relates to book-making machinery; and its object is to provide a new and improved rasping-machine, more especially designed for rasping or roughening the edges of the leaves of books, papers, cardboard, &c., and to produce an uneven ragged or jagged edge thereon.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement. Fig. 2 is a front elevation of the same. Fig. 3 is a sectional plan view of the same on the line 3 3 of Fig. 1. Fig. 4 is a rear elevation of the carriage for supporting the work, and Fig. 5 is an inverted plan view of a guide-bar.

In making books and other similar articles it is desirable to mechanically produce ragged or jagged edges on the front and bottom edges of the book to imitate the natural rough edge of the leaves of hand-made paper used for some styles of books. To produce this result, it was heretofore necessary to rasp the edges of the book by hand previously to applying the covers, but this process is rather tedious and unsatisfactory. Now in order to successfully treat a number of books (previously to attaching the covers) to produce the above-mentioned result in a very simple, cheap, and effective manner is the object of the invention presently to be described in detail.

The improved rasping-machine is provided with a suitably-constructed frame A, in the upper part of which is journaled a transversely-extending shaft B, carrying fast and loose pulleys C, connected by belt with other machinery for imparting a rotary motion to the said shaft B. On the front end of the latter

is secured a crank-disk D, connected by a pitman E with a slide F, mounted to reciprocate vertically in suitable guideways A', forming part of the main frame A.

On the slide F are secured a series of vertically-disposed rasping-plates G, G', G², and G³, of which the rasping-plate G has its side edge curved or beveled rearwardly, as plainly indicated in Fig. 3, to permit of readily passing the work H to the faces of the said rasping-plates to produce an uneven ragged or jagged edge, as hereinafter more fully described.

The rasping-plates G G' G² G³ are graduated—that is, the rasping-plate G is provided with coarse rasping-teeth, while the next rasping-plate, G', is finer, the next one, G², is still finer, and the last rasping-plate, G³, is quite fine for finishing the work.

The work H is placed in a carriage I, adapted to be moved past the rasping-plates in front of the main frame A by causing the said carriage to slide on guideways J and J', of which the guideway J is fixed to the guideways A' and the other guideway J' is secured on two transversely-extending bars J², fitted to slide on the sides of the main frame A. Each bar J² is provided with a rack J³ (see Fig. 1,) in mesh with a pinion J⁴, and the two pinions—one at each side of the machine—are secured on a single shaft J⁵, journaled in suitable bearings in the frame A.

On one end of the shaft J⁵ is secured a hand-wheel J⁶, adapted to be turned by the operator to move the bar J² inward or outward to bring the guideway J' nearer to or farther from the other guideway J, according to the width of the carriage I carrying the work. It is understood that for different-sized work a different-sized carriage I is employed.

In order to fasten the bars J² in place after the adjustment is made for a particular-sized carriage, we provide each bar with a longitudinally-extending slot J⁷, through which passes a clamping-bolt J⁸, engaging the frame A and serving to clamp each bar J² in place.

The carriage I is in the form of a box, open at the top and on two adjacent sides, so that the leaves of a book, papers, cardboard, and the like placed in the box project on that side nearest to the rasping-plates G G' G² G³, so

that when the carriage is moved past the rasping-plates while the latter reciprocate the edges of the leaves are cut by the roughened surfaces of the plates.

5 The movement of the carriage I with the work is from right to left, so that the leaves readily pass against the roughened surfaces of the rasping-plates, being first operated on by the beveled edge of the first rasping-plate
10 G. The leaves, papers, cardboard, &c., are held in place in the carriage I by a presser-foot I', adapted to be engaged by a cam-lever I², fulcrumed in the head I³ of a screw I⁴, screwing in a bracket I⁵, secured to the carriage I, as is plainly shown in Figs. 2 and 4.

15 In order to prevent the carriage from being pulled upward on the upstroke of slide F, carrying the rasping-plates G G' G² G³ we provide a yielding bar K, mounted to slide
20 vertically in guideways A², attached to the guideways A'. This bar K extends in front of the rasping-plates and is hung on screw-rods K', adapted to be raised or lowered by their nuts K², as will be readily understood
25 by reference to Figs. 1 and 2. Springs K³ are coiled on the screw-rods K' and rest with their upper ends on the bearings for the screw-rods and at their lower ends rest on nuts K⁴, screwing on the screw-rods K'. By this arrangement the bar K is yieldingly mounted
30 and can be adjusted vertically to suit the different heights of the carriages I.

In the under side of the bar K are journaled a series of friction-rollers K⁵, adapted
35 to engage the top surface of the presser board or foot I' of the carriage I, so that the upward movement of the rasping-plates will not lift the carriage off the guideways at the time the said rasping-plates engage the edges of the
40 work H contained in the carriage I.

On the front of the main frame A is arranged a box L, into which drop the cuttings produced by the rasping-plates in cutting the edges of the work.

45 The operation is as follows: The books are placed in the carriage so as to rest with the back and top edges on the corresponding sides of the carriage and to project the front and bottom edges of the book beyond the corresponding sides of the carriage I. The presser
50 board or foot I' is now placed on the top leaf of the book and the operator brings the cam-lever down upon the presser-board to securely hold the book in place. The carriage is now
55 placed in the right-hand end of the guideways J J', with one of the projecting sides to the rear—that is, toward the rasping-plates. When the shaft B is in motion, a continuous reciprocating movement is given to the rasping-plates G G' G² G³, and the operator in
60 pushing the carriage I containing the work H from the right to the left brings the projecting edges of the work successively against the roughened faces of the rasping-plates G G' G² G³, so that the edge of the work is acted
65 on and is ragged or jagged, it being understood that the graduated rasping-plates first

cut the edges roughly and finally finish off by the finer graduated rasping-plate G³. When one side of the work has thus been
70 treated, the carriage is removed from the left end of the guideways and lifted to the right-hand end thereof and given one-quarter turn, so that the other side or bottom of the book is next to the rasping-plates. The above-described operation is then repeated—that is,
75 the carriage I is moved to the left on the guideways J J' to bring the work to the rasping-plates for roughening the edges of the leaves on this side of the books under treatment. As the carriage is made square at the
80 bottom, the guideways need not be adjusted for the particular carriage unless different-sized books are treated and placed on a larger or smaller carriage.

85 We do not limit ourselves to the particular construction of the machine shown and described, as it is evident that the same can be varied without deviating from our invention. For instance, the rasping-plates, instead of
90 being mounted on a slide to reciprocate, may be placed or formed on a revoluble cylinder to produce the same result.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. A rasping-machine of the class described, provided with movable, graduated rasping-surfaces, and means for moving the work to and past the said surfaces, to cause the latter
100 to roughen the side of the work, substantially as shown and described.

2. A rasping-machine of the class described, provided with a series of graduated reciprocating rasping-plates, substantially as shown
105 and described.

3. A rasping-machine of the class described, comprising a carriage adapted to contain the work and mounted to travel, and a series of reciprocating, graduated rasping-plates
110 adapted to engage the edge of the work as the carriage is moved past the said rasping-plates, substantially as shown and described.

4. A rasping-machine of the class described, comprising a carriage adapted to contain the
115 work and mounted to travel, a series of reciprocating, graduated rasping-plates adapted to engage the edge of the work as the carriage is moved past the said rasping-plates, and a yieldingly-mounted bar adapted to engage
120 the top of the said carriage, to hold the latter on the guideways during the upstroke of the rasping-plates, substantially as shown and described.

5. A rasping-machine, comprising a reciprocating series of graduated rasping-plates,
125 a carriage adapted to contain the work, and adapted to be moved past the said rasping-plates, an adjustable guideway for the said carriage, and a yieldingly-mounted bar adapted to engage the top of the carriage, substantially as shown and described.

6. A device of the character described comprising a frame, a series of graduated rasping

devices movable thereon, means for moving said rasping devices, and means for moving the work transversely to the path of the graduated rasping devices to cause said devices to act successively on the work substantially as specified.

7. A device of the character described comprising a frame, a slide mounted to reciprocate therein, means for actuating said slide, a graduated series of rasping devices carried on said slide and adapted to act successively on the work, and means for moving the work transversely to the path of the said slide, substantially as specified.

8. A device of the character described, com-

prising a frame, a rasping device movable thereon, means for actuating said rasping device, guides arranged transversely to the path of the rasping device, one guide being movable toward the other, a locking device for the movable guide, a carriage movable along said guides, and a yielding bar on the frame to engage the carriage at a point opposite said guides, substantially as specified.

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PATRICK J. HAGGERTY.

Witnesses:

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JAMES B. SHAW.