

(No Model.)

W. CRAHAN & T. NESOM. 2 Sheets—Sheet 1.

EMBOSSING MACHINE.

No. 483,247.

Patented Sept. 27, 1892.

FIG. 1.

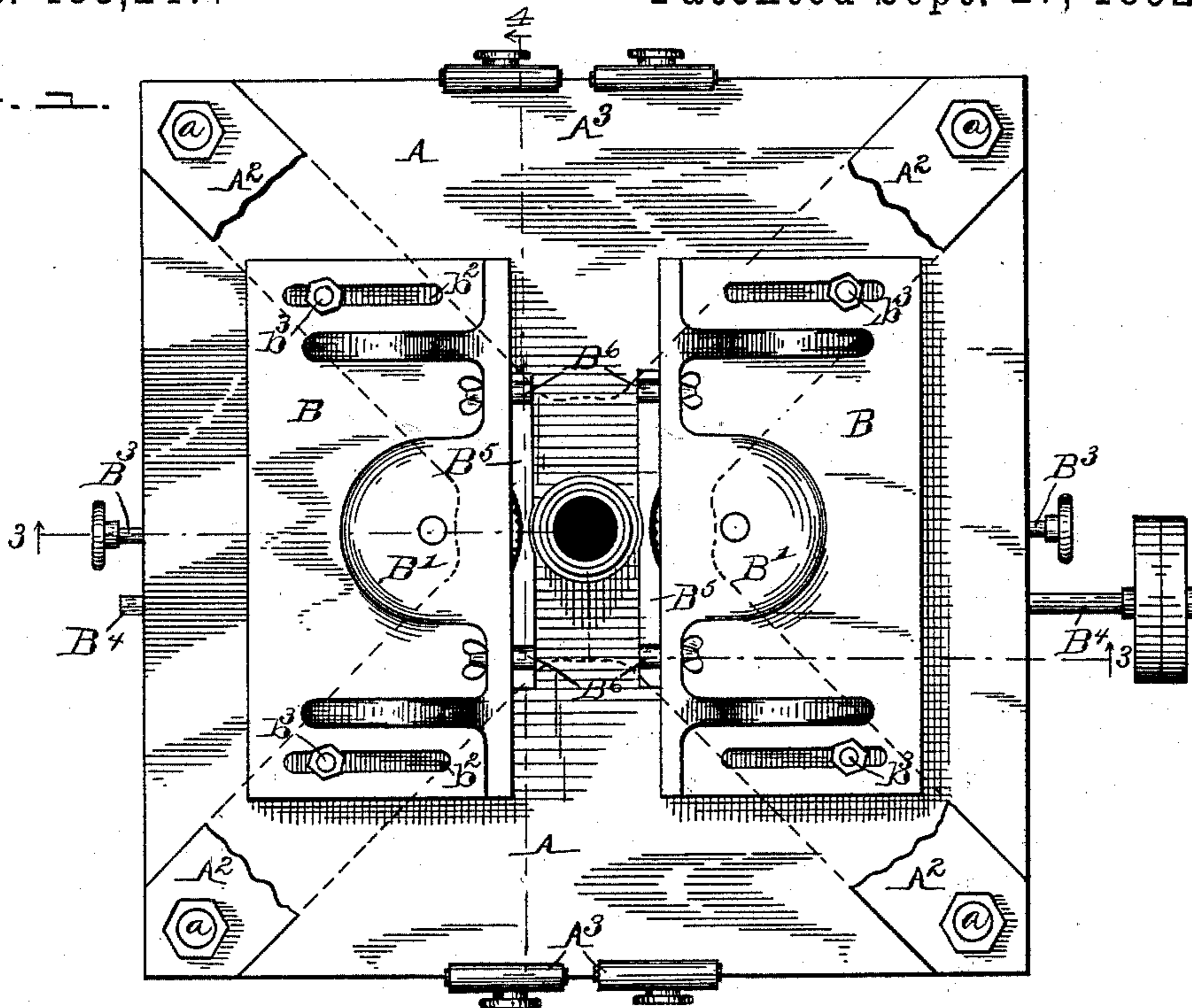
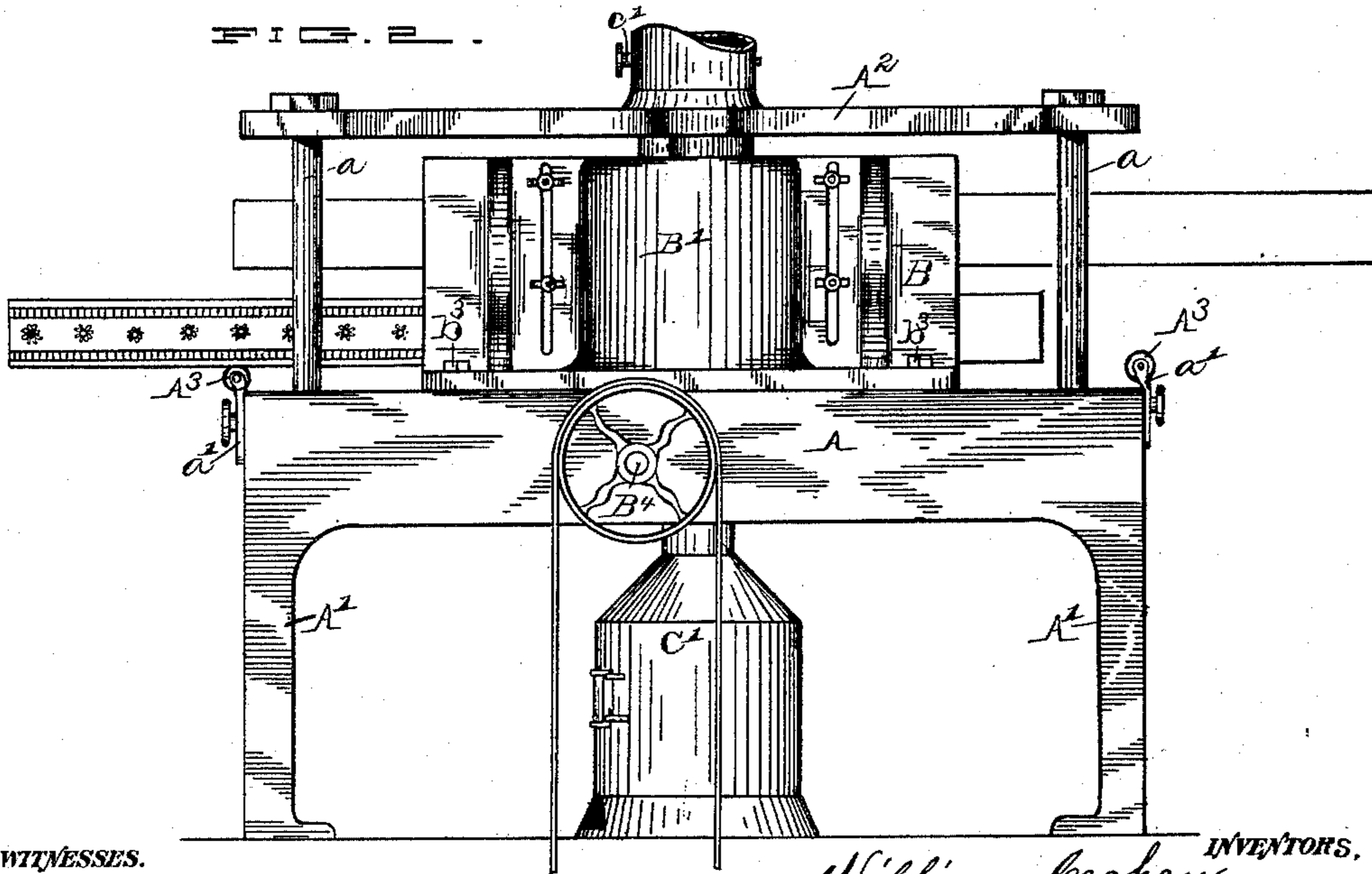


FIG. 2.



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2 Sheets—Sheet 2.

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FIG. 3.

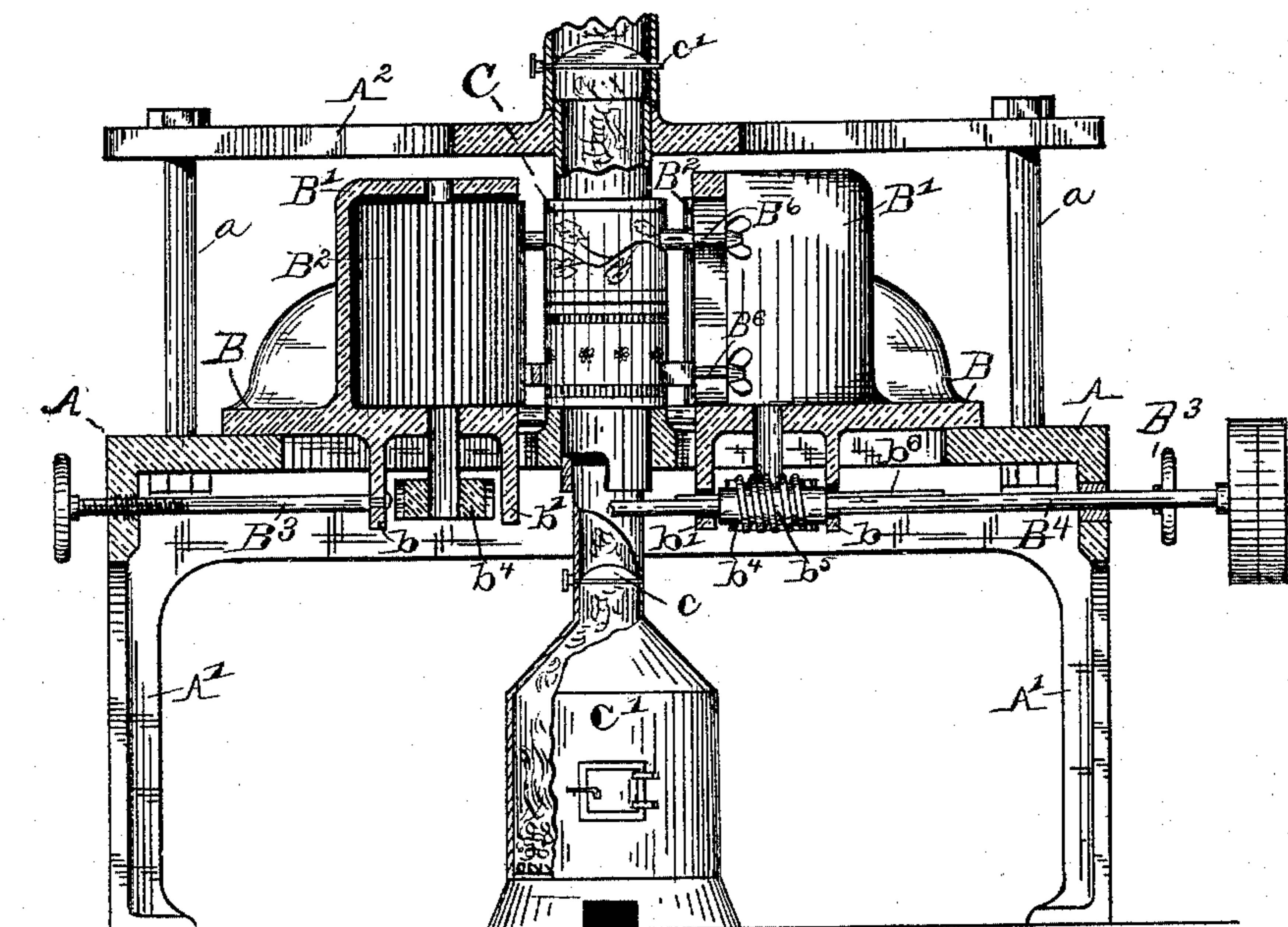
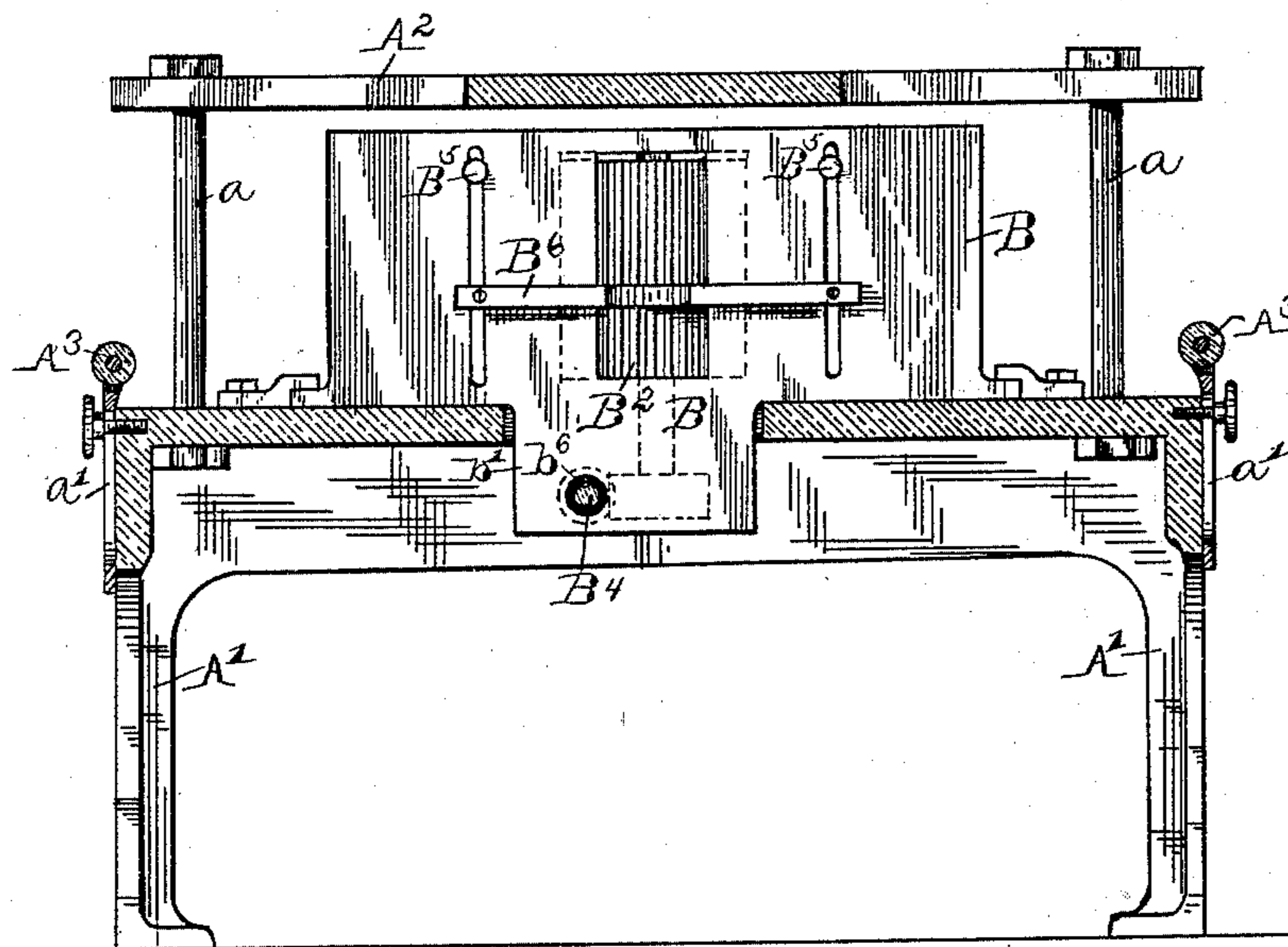


FIG. 4.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

WILLIAM CRAHAN AND THOMAS NESOM, OF INDIANAPOLIS, INDIANA.

## EMBOSSING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 483,247, dated September 27, 1892.

Application filed October 20, 1891. Serial No. 409,255. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM CRAHAN and THOMAS NESOM, citizens of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Embossing-Machines, of which the following is a specification.

Our said invention relates to various improvements in the construction and arrangement of parts of that class of machines for ornamenting wood and other surfaces known as "embossing-machines," whereby a machine is provided capable of various and convenient adjustment to suit work of various sizes and kinds and one of unusual capacity and efficiency, as will be hereinafter more particularly described and claimed.

Referring to the accompanying drawings, which are made a part hereof and on which similar letters of reference indicate similar parts, Figure 1 is a top or plan view of a machine embodying our said invention, the top spider containing the upper bearing for the embossing-roll being broken away and indicated by dotted lines; Fig. 2, a side elevation of the machine; Fig. 3, a longitudinal section looking in the direction indicated by the arrows from the dotted lines 3 3 in Fig. 1, the shafts and cylinders being shown in elevation; and Fig. 4 a transverse section looking in the direction indicated by the arrows from the dotted line 4 4 in Fig. 1.

In the drawings the portions marked A represent the bed-plate in the frame of the machine B, adjustable frames mounted thereon carrying feed-rollers, and C the embossing-roll.

The bed-plate A is of suitable form and construction for the purpose, being mounted on suitable legs A' and provided with the necessary ways and bearings for the accommodation of the various operating parts, as will be hereinafter described.

The frames B are duplicates, each being of substantially angle-iron form, provided with a central housing B', in which feed-rollers B<sup>2</sup> are journaled. Each of said frames has ribs b b' on its lower face, which extend down through transverse openings or ways in the bed-plate provided for the purpose, and an adjusting-screw B<sup>3</sup> is mounted in a suitable

bearing in each side of the framework and extends in to engage with a perforation in the rib b of each frame, said adjusting-screw and its bearing in the frame being formed screw-threaded, whereby said frames may be adjusted transversely. In each end of each of said frames is formed a transverse slot b<sup>2</sup>, through which a set-screw or bolt b<sup>3</sup> extends into a perforation in the bed-plate, whereby the frames are rigidly secured to the adjusted position. The feed-rolls B<sup>2</sup> are so mounted that their faces, which are preferably corrugated, as shown, project through the adjacent sides of the housing B'. The lower journal of each extends down through its bearings in the frame B and is provided with a gear-wheel b<sup>4</sup>, which meshes with a worm b<sup>5</sup> on the driving-shaft B<sup>4</sup>. Said worm-gears b<sup>5</sup> are mounted on said shaft B<sup>4</sup> by means of splines b<sup>6</sup>, by which they are allowed to be adjusted or slide thereon as the frames B are adjusted back and forth, being held in position and guided by the ribs b b', between which they are mounted. The shaft B<sup>4</sup> is any suitable driving-shaft mounted in bearings on the sides of the frame and extending through bearings in the ribs b b'. To the inner face of each of said frames B is adjustably secured a support or rest B<sup>5</sup>, which consists of a straight bar held in place by means of set-screws or bolts mounted in vertical slots, as shown. Other supports B<sup>6</sup>, consisting of projecting fingers or other suitable devices, are also adjustably mounted in said slots by means of set-screws above the supports B<sup>5</sup>. By this means the lumber being operated upon may be steadied or held securely in position during the operation.

The embossing-roll C is hollow and provided with suitable journals at each end, the lower one of which is mounted in a bearing in the central portion of the bed-plate and the upper one of which is mounted in a bearing in the center of the spider A<sup>2</sup>, which spider is supported in position on uprights a at each corner of said bed-plate. The surface of the central portion of said roll is formed with the configurations which it is desired to transfer to the lumber to be operated upon and may, as will be readily understood, be of any pattern desired, or several patterns may be arranged at different intervals throughout

the length of the roll, which may be of any required length, and thus permit as many pieces of lumber as desired to be fed through and upon each side of the machine. Beneath  
 5 said embossing-roll is located the heating apparatus, which may be a stove or furnace  $O'$ , as shown, or any other apparatus found convenient. It is arranged to discharge the heat and preferably all the products of combustion  
 10 into the lower end of the hollow embossing-roll, the upper end of said roll being connected with a flue, through which said products of combustion may escape. A valve or damper  $c$  is provided just below the entrance  
 15 to the embossing-roll, and another  $c'$  in the flue just above said embossing-roll, by which the heat can be regulated in said roll, as desired. A series of rolls  $A^3$  is mounted on the frame  $A$  at each end in position to receive and support  
 20 the ends of the lumber as it is fed into and received out of the machine during the operation, said rolls being journaled in suitable bearings on standards  $a'$ , which are adjustably secured to said frame, whereby they may be adjusted  
 25 to the position required to bring them in line with the support  $B^5$  on which the lumber rests. By this construction and arrangement, as will be readily understood, the machine is capable of operating simultaneously upon lumber being  
 30 fed through on each side of the embossing-roll, thus doubling the capacity of the machine and also permitting the embossing-roll to be heated very cheaply and effectively, thus not only materially lessening the cost of doing  
 35 the work, but multiplying the amount of work performed.

The operation of this machine is as follows: The various parts being in operative position, the supports  $B^5$  are arranged in position to  
 40 support the lower edge of the lumber in proper relation to the portion of the embossing-surface which is to operate thereon, the rolls  $A^3$  being also adjusted in line, so that the lumber will be held straight and true while being fed  
 45 through the machine. The clamps  $B^6$  are then adjusted against the top edge of the lumber and the machine started in operation, one or more pieces of lumber being fed through on each side of the machine all the time.  
 50 When two or more pieces of lumber are being fed through one side, the lower side of the supports  $B^5$  may clamp the top edge of the board beneath, or other sets of clamps and supports may be put in, as will be readily understood.  
 55

To accommodate the machine to lumber of different thicknesses it is only necessary to adjust the frames  $B$ , carrying the feed-rolls  $B^2$ , and secure them in the desired position.  
 60 Having thus fully described our said invention, what we claim as new, and desire to secure by Letters Patent, is—

1. An embossing-machine consisting of a suitable frame and driving mechanism, an embossing-roll mounted in a vertical position  
 65 and connected with a heating apparatus, and a feed-roll mounted on each side of said em-

bossing-roll, whereby lumber may be fed through said machine in both directions at the same time, substantially as set forth. 70

2. In an embossing-machine, the combination of the frame, suitable feeding mechanism, and an embossing-roll, said embossing-roll being arranged in a vertical position and connected at its lower end with the heating  
 75 apparatus and at its upper end with an exhaust-flue, substantially as set forth.

3. In an embossing-machine, the combination of the main frame, the adjustable frames carrying the feed-rolls, the driving mechanism for said feed-rolls, and the embossing-roll journaled between said feed-rolls and formed hollow, connected at one end with the heating apparatus and at its other end with  
 80 an exhaust-flue, substantially as set forth. 85

4. In an embossing-machine, the combination of the framework, the embossing-roll journaled in a vertical position centrally therein, said embossing-roll being formed hollow and connected at its lower end with a heating  
 90 apparatus and at its upper end with a flue, a feed-roll mounted on each side of said embossing-roll in an adjustable framework, means for adjusting said frames carrying said feed-rolls toward or from said embossing-roll,  
 95 each of said feeding-rolls being provided with gear-wheels on one of its journals, and a driving-shaft provided with gearing arranged to mesh with the gear-wheels on said feed-rolls, substantially as set forth. 100

5. The combination, in an embossing-machine, of the frame  $A$ , the frames  $B$ , mounted thereon, means for adjusting said frames transversely thereof, the adjustable supports  
 105  $B^5$  and  $B^6$ , the adjustable rolls  $A^3$  for supporting the ends of the lumber, and the driving-shaft provided with the worm-gears arranged to engage with the gear-wheels on the lower journal of each of said feed-rolls  $B^2$ , said worm-gears being secured on said shaft  
 110 by means of splines, whereby they are adapted to slide thereon when the frames  $B$  are adjusted, all substantially as shown and specified.

6. In an embossing-machine, the combination of the frame, the embossing-roll vertically  
 115 arranged and formed hollow and connected with a heating apparatus, a feed-roll journaled in suitable bearings on each side of said embossing-roll, a gear-wheel being provided on the end of one of the journals of  
 120 each, a driving-shaft, and worm-gears mounted on said driving-shaft, one of which meshes with each of said gear-wheels on the journals of the feed-rolls, whereby said feed-rolls are  
 125 driven and lumber may be fed through against the opposite sides of the embossing roll, substantially as set forth.

7. In an embossing-machine, the combination of the frame, the embossing-roll, the  
 130 heating apparatus connected with said embossing-roll, the feed-rolls journaled in suitable bearings in adjustable frames on each side of said embossing-roll, means for adjust-

ing said frames, and the driving-shaft provided with gears which mesh with gears on the journals of said feed-rolls, said gears being mounted on said shaft by means of  
5 splines, whereby they are adapted to slide as said frames are adjusted, substantially as set forth.

In witness whereof we have hereunto set our

hands and seals, at Indianapolis, Indiana, this 15th day of October, A. D. 1891.

WILLIAM CRAHAN. [L. S.]  
THOMAS NESOM. [L. S.]

Witnesses:

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