

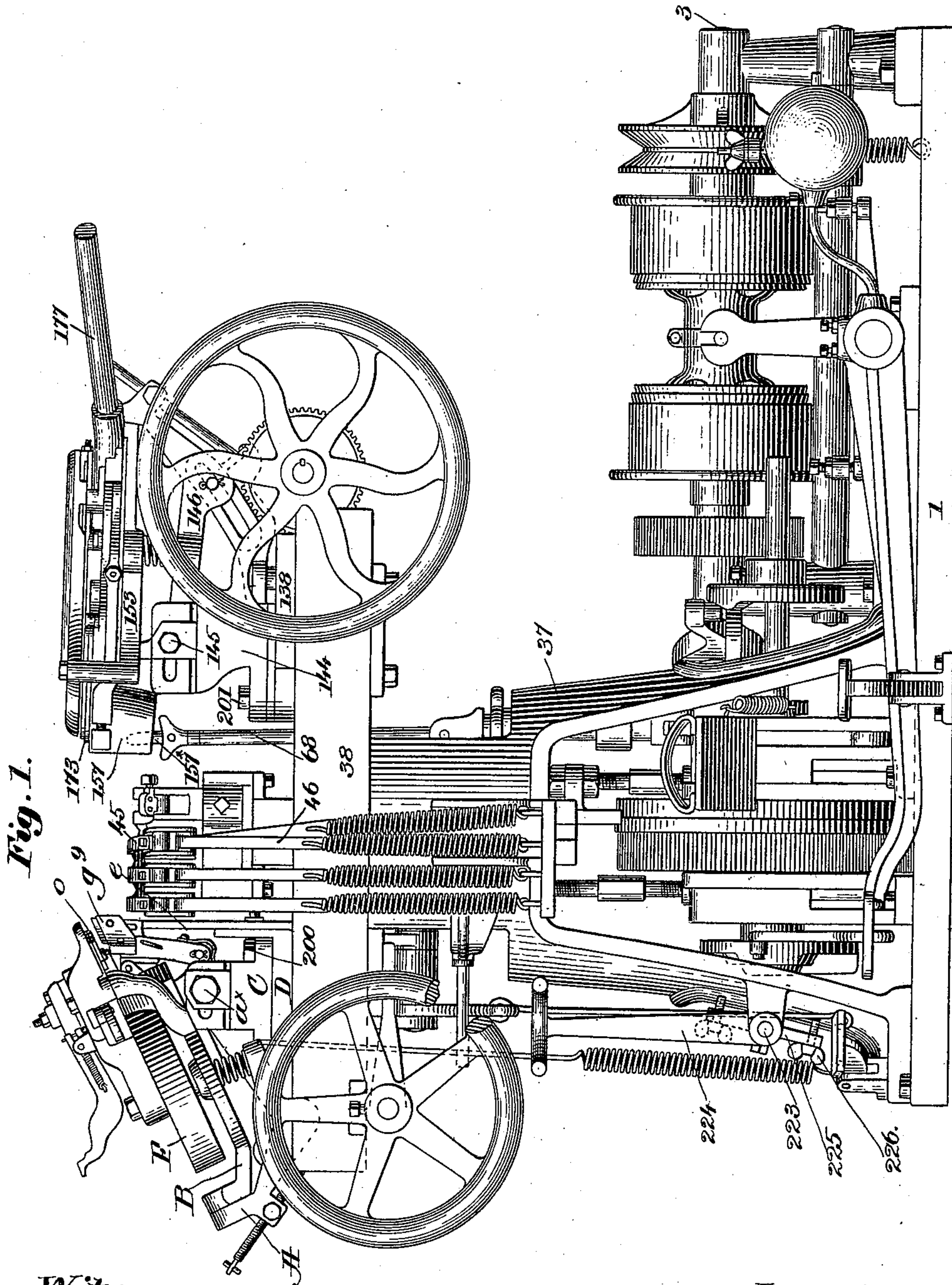
(No Model.)

3 Sheets—Sheet 1.

M. BROCK,  
LASTING MACHINE.

No. 601,940.

Patented Apr. 5, 1898.



**Witnesses:**  
*Walter C. Lombard*  
*A. C. Harmon*

**Inventor:**  
*Matthias Brock,*  
*by Crosby & Gregory*  
*Attys.*

(No Model.)

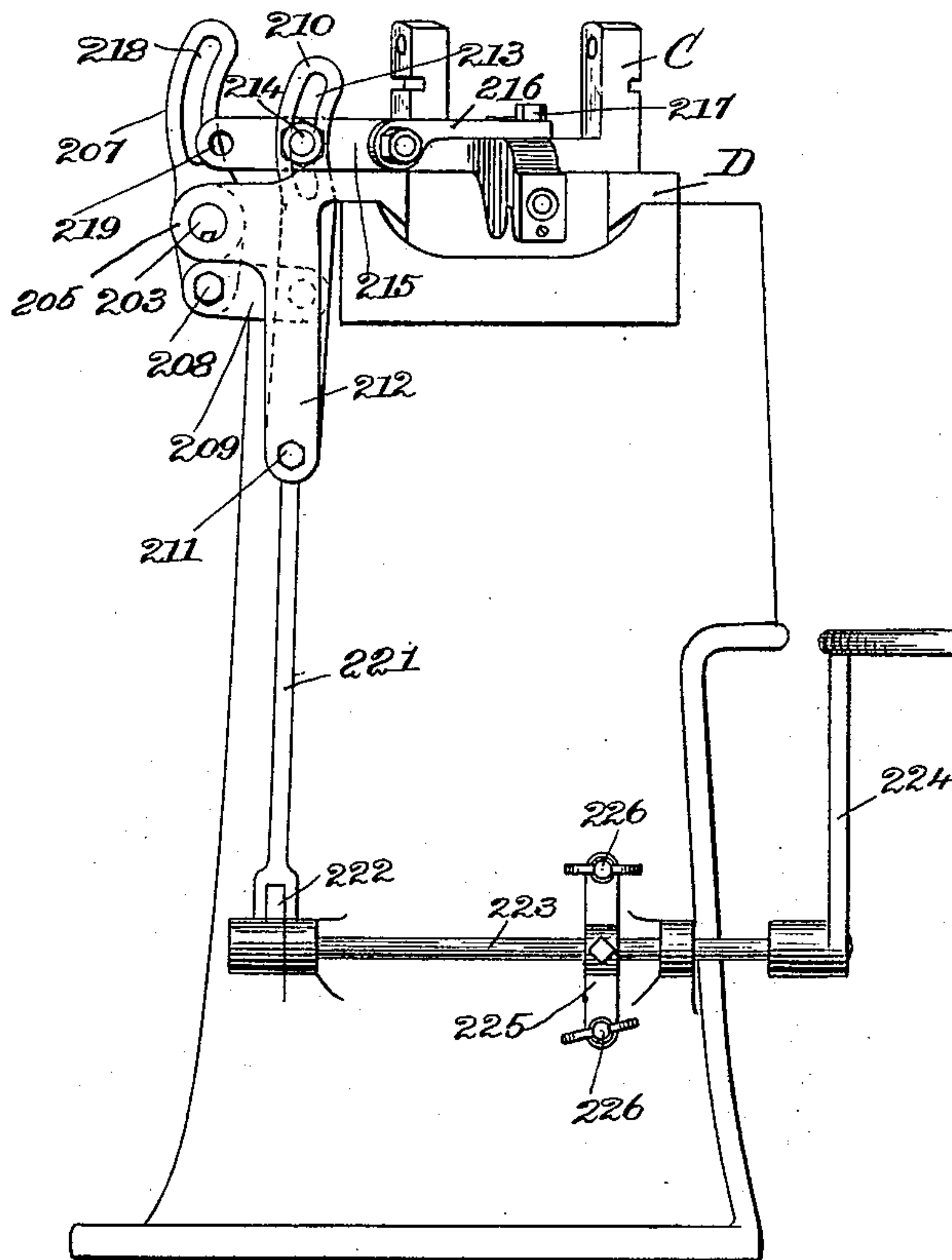
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M. BROCK.  
LASTING MACHINE.

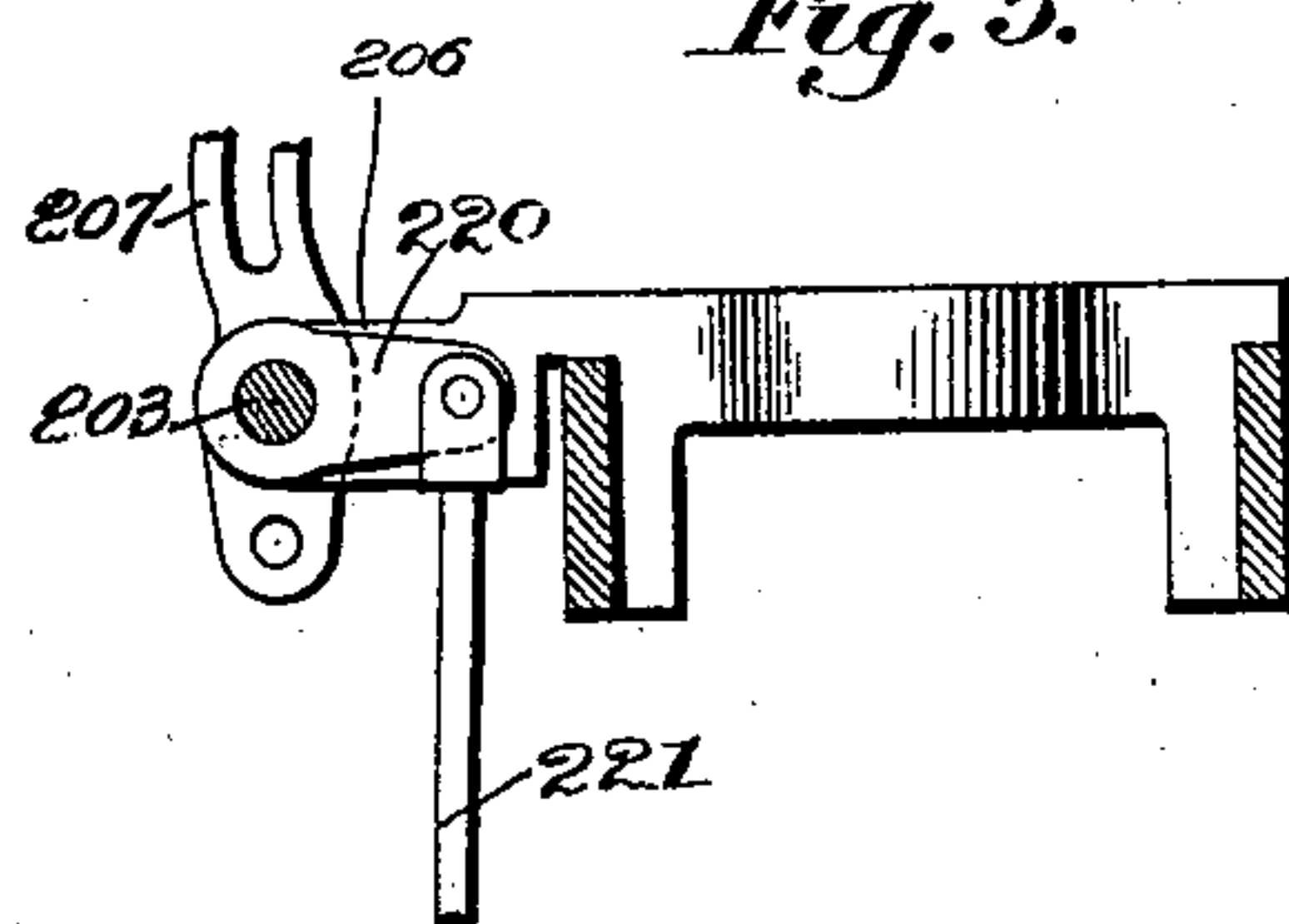
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*Fig. 2.*



*Fig. 5.*



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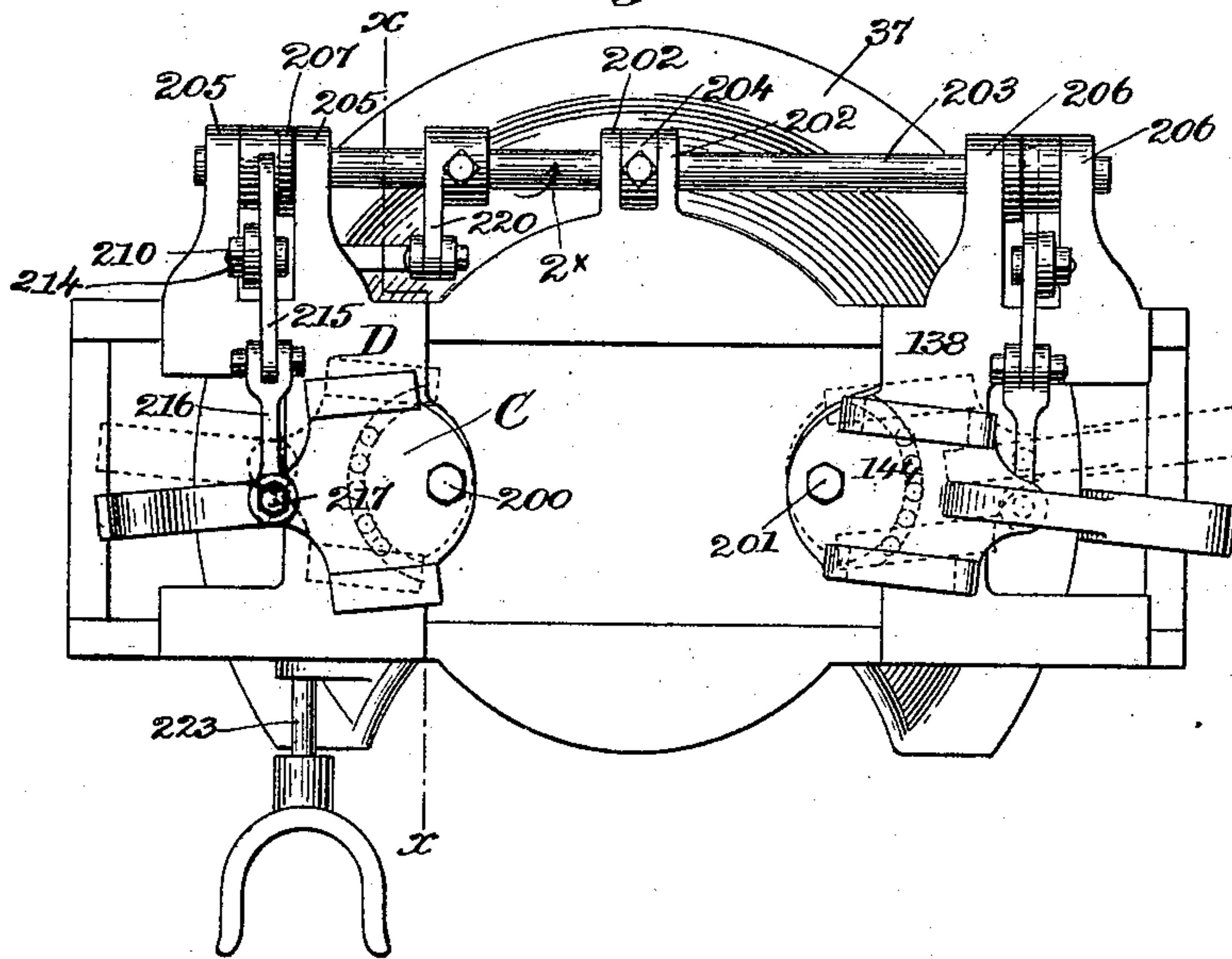
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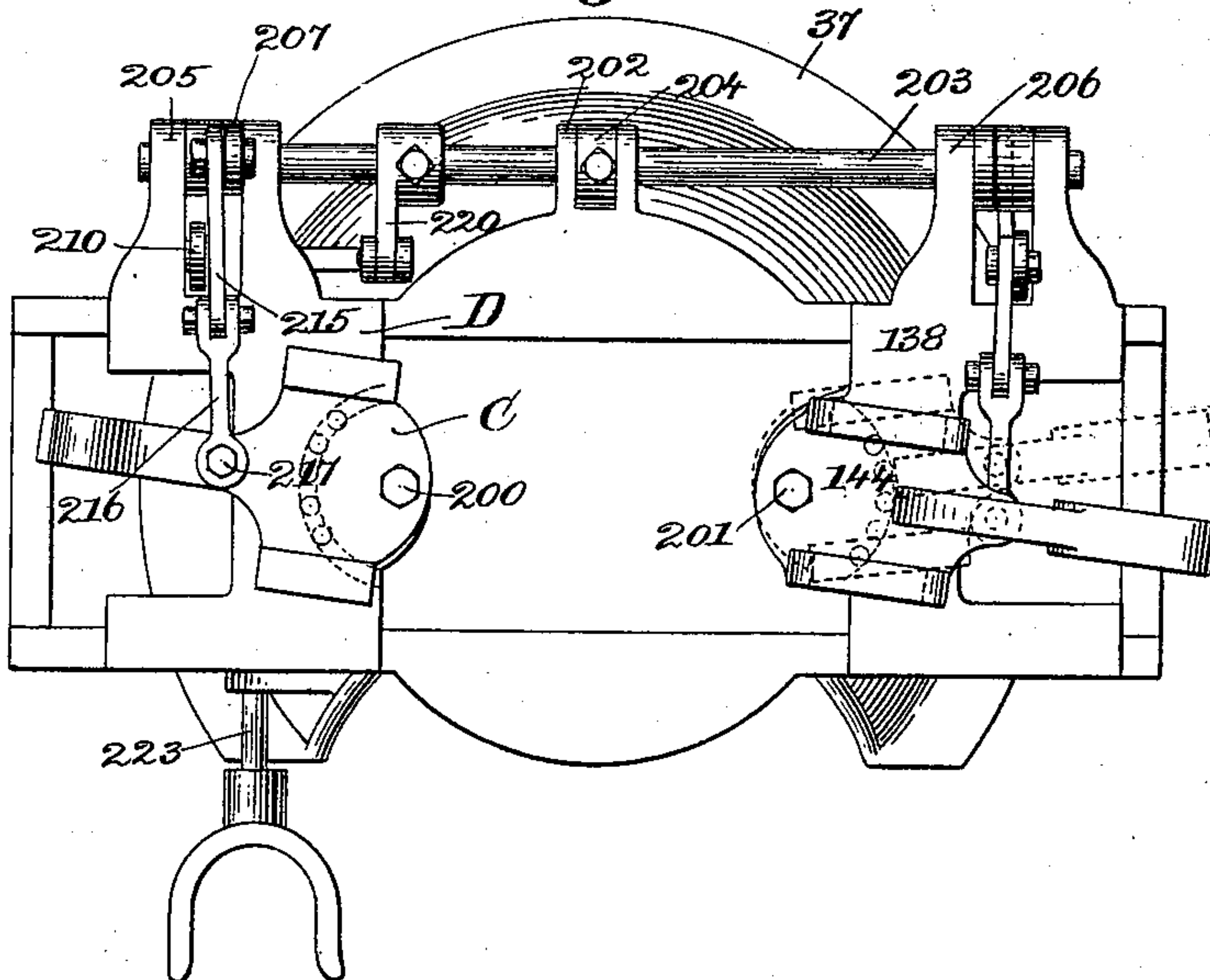
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*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

MATTHIAS BROCK, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE CONSOLIDATED & MCKAY LASTING MACHINE COMPANY, OF PORTLAND, MAINE.

## LASTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 601,940, dated April 5, 1898.

Application filed August 14, 1897. Serial No. 648,239. (No model.)

*To all whom it may concern:*

Be it known that I, MATTHIAS BROCK, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Lasting-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This invention has for its object to provide an improved lasting-machine of the type wherein are employed separate side and end lasting devices, as distinguished from machines operating by the step-by-step process and employing a single pair of nippers which engage the material successively at different points.

My invention has especial reference to means for transversely adjusting the end lasting devices to meet lasts of different swing or lasts, either rights or lefts, having their ends presenting different degrees of swing.

Prior to my invention lasting-machines have been devised wherein end lasting devices have been made transversely adjustable for this purpose—such, for instance, as shown in United States Patent to Stirekler, No. 548,671, issued October 29, 1895, and also as shown in my application for patent, Serial No. 637,850, filed May 24, 1897—but in such machines the transverse adjustment referred to for the heel and toe ends of the machine must be separately effected.

The object of this present invention is to provide novel means for simultaneously effecting transverse adjustment of the heel and toe lasting mechanisms. This, with other features of my invention, will be hereinafter fully set forth.

In the drawings, Figure 1 is a side elevation of a lasting-machine containing one embodiment of my invention; Fig. 2, a left-hand end elevation of a sufficient portion of the machine, Fig. 1, to enable my invention to be understood, many of the working parts not vital to my invention being here omitted for the sake of clearness. Fig. 3 is a top or plan view of the parts shown in Fig. 2; Fig. 4, a similar view with the parts in different po-

sition; and Fig. 5, a sectional detail on the dotted line  $x x$ , Fig. 3, to be referred to.

In the embodiment of my invention selected for illustration herein and shown in the drawings the base 1, the driving-shaft 3, mounted thereon, the column 37, the table 38, the jack-post 68 and its last-supporting pin 157<sup>x</sup>, the vertically-movable tipping-plate holder 146, mounted on pivots 145, the rolling or tipping plate 153, the heel-clasp 157, the heel-lasting devices, shown as plates 173, the operating-handle 177, and the side lasting devices 45 46 and the parts cooperating therewith and actuating the same are and may be the same as the correspondingly-numbered parts of the machine shown and described in my application for patent filed May 24, 1897, Serial No. 637,850, to which reference may be had for a fuller description of the construction and operation of the said parts. The construction and operation of such parts will, however, so far as their application to the present invention is concerned be in the main understood by those conversant with the art without particular reference to said application.

The tipping-plate holder A, mounted upon pivots  $a^x$  and carrying the tipping and rolling plate B, the toe-pad  $g^9$ , the toe-post  $e$ , the toe-lasting devices, shown as wipers  $o$ , and the actuating-cam F are substantially the same as the corresponding parts, similarly lettered, shown, and described in my application for patent filed April 14, 1896, Serial No. 587,488, to which reference may be had for a fuller description of the construction and operation of such parts, although they too, so far as concerns my present invention, will in the main be understood by those conversant with the art without reference to such application.

In accordance with that embodiment of my invention herein illustrated I have pivotally mounted the stand C, which carries the trunnions  $a^x$  for the toe-lasting devices, upon its sliding carriage D, a pivot being indicated at 200 and being preferably vertically beneath the center of the toe of the last when in position in the machine, and I have also pivotally mounted the stand 144, carrying the piv-



ots 145 for the heel-lasting devices, upon its sliding carriage 138, the pivots referred to being shown at 201 and being preferably located vertically beneath the center of the heel of the last when the latter is in working position in the machine. In this connection it should be stated that for the best results these pivots 200 and 201 for the stand for the toe and heel lasting devices should be so positioned beneath their respective ends of the last that when the said heads are swung about said pivots the lasting devices carried thereby will swing so as to approximately or perfectly follow the swing in the adjacent end of the last to enable said lasting devices to properly act upon the material upon and in the vicinity of such end of the last.

Referring now particularly to Figs. 2 and 3, the column 37 at its rear side is shown provided with bearings 202, in which is journaled the horizontal shaft 203, restrained against endwise movement herein by a collar 204, fast on the said shaft between its bearings 202. The ends of this shaft 203 are further supported in bearings 205 on the sliding carriage D and 206 on the sliding carriage 138, so that such ends of the said shaft are rotatably supported in said bearings, although the said bearings are free to slide along the said shaft, as their respective carriages D and 138 are made to slide in the adjustment of the machine to meet lasts of varying lengths. Between the bearings 205 the shaft 203 has splined upon it a vertically-arranged lever 207, to the lower end of which is jointed at 208 one end of a link 209, (see Fig. 2,) jointed at its opposite end to the vertically-arranged lever 210, fulcrumed at its lower end at 211 in the depending arm 212 on the sliding carriage D.

The upper end of the lever 210 is slotted at 213 to receive the pivot 214 in the rear end of a link 215, in turn jointed to one end of the link 216, which latter is pivotally connected at 217 with the swinging stand C referred to. It is clear that rotation of the shaft 203—for instance, in the direction of the arrow  $2^x$ , Fig. 3—will operate through the parts described to swing the stand C into its full-line position. (Also shown in Fig. 3.) The upper end of the lever 207 referred to is also slotted, as at 218, and the link 215 is extended beyond the lever 210 and provided at its extreme end with a perforation 219, through which and the said slot 218 the bolt 214 referred to may be passed and to which the said bolt may be secured to thereby connect the said link with the said lever 207, in which event rotation of the shaft 203 in the same direction—viz., as indicated by the arrow  $2^x$ —will, when so connected, move the same stand C in an opposite direction—that is, into a position such, for instance, as indicated in full lines, Fig. 4, and dotted lines, Fig. 3. At its opposite end—that is, adjacent the heel end of the machine—the shaft 203

is connected with the heel-stand 144 through similar connections similarly lettered, whereby rotation of the said shaft in the direction of the arrow  $2^x$  will in the one instance move the heel-stand 144 into the full-line positions indicated in Figs. 3 and 4, and in the other instance into an opposite position, as indicated by dotted lines in Figs. 3 and 4.

Assuming now that the last for the time being to be used in the machine is an extreme Waukenphast last having a considerable swing from its toe to its heel, the links 215, connected with the toe and heel stands C and 144, would be connected with the levers 210, as indicated in Figs. 2 and 3, and when so connected the shaft 203 would be rotated in the direction of the arrow  $2^x$  to position the said stands, as indicated in Fig. 3—that is, standing in opposite angular positions for a left last—and for a right last said shaft would be rotated in an opposite direction to swing the said stands into their dotted positions, Fig. 3. If, however, a last should be of such model or shape that the toe and heel ends stand in the same angular positions, as is occasionally the case, one or the other of the links 215—for instance, that at the toe end of the machine—would be connected, as described, with the other lever 207, as shown in Fig. 4, and when so connected rotation of the said shaft, as before, will swing the said stands C and 144 always into positions having corresponding angles, first to one side of the median line for a right shoe and then to the opposite side of the median line for a left shoe.

To operate the shaft 203 manually, I have provided the same with a crank 220, which (see Figs. 2 and 5) is connected by a rod 221 with a crank 222 on one end of an operating-shaft 223, journaled in bearings on the side of the column and provided at its front, in a position convenient to the operator, with a suitable operating lever or handle—for instance, the knee-lever 224. (Shown best in Figs. 1 and 2.) By means of this knee-lever the operator can conveniently rotate the shaft 203 in one or the other direction when necessary and as necessary to impart desired swinging movements to the stands C and 144, the parts being connected as shown in Fig. 3 when the said stands for any particular line of lasts are to be swung into opposite angular positions, and connected as indicated in Fig. 4 when the said stands are to be swung into corresponding angular positions, the direction of swing depending always upon the direction of rotation of the shaft 203.

To vary the extent of swing of the stands and to enable the swing of one stand to exceed that of the other stand with the same rotation of the shaft 203, I have slotted the ends of the operating-levers 207 and 210, as shown, at 213 and 218, in order that the position of the connecting-bolt 214 therein may be shifted into positions at a greater or less



distance from the fulcrum of the said levers to thereby vary the throw of the links 215 and the corresponding swinging movements imparted to the connected stands.

5 For more conveniently varying the rotation of the shaft 203, as required, or according to the preference of the operator for maintaining the throw of the said shaft always constant, when the variation in swing is had by  
10 shifting the bolt 214 in the slotted ends of the levers, I have provided, as best shown in Figs. 1 and 2, the lever 225, centrally and rigidly mounted upon the operating-shaft 223, and in the ends of said lever have provided the  
15 readily-adjustable stop-screws 226, which, co-operating with suitable stop-surfaces on the column, furnish ready and convenient means by which the operator can regulate the extent of movement of the knee-lever and rota-  
20 tion of the shaft 203.

With the toe-pad  $g^9$  rigidly connected to the tipping-plate holder B, as provided for in my said application, Serial No. 587,488, referred to, when the said pad is raised to smooth the  
25 upper about the toe of the last, the said pad in turning to accommodate itself to the toe of the last will automatically swing the toe-stand C about its center 200, and through the shaft 203 likewise swing the heel-stand 144  
30 about its center 201, thereby automatically and simultaneously positioning the two stands, with their respective lasting devices, in proper position to act upon the last for the time being in the machine. While this capacity for automatic and simultaneous ad-  
35 justment or swinging of the lasting devices at the toe and heel ends of the last is present in the embodiment of my invention here illustrated, yet I make no broad claim to such action or capability in this present application, as the same is broadly claimed in another ap-  
40 plication, Serial No. 648,238, filed by me concurrently herewith, the main feature of the invention of this present application lying in  
45 providing the manually-operable means for positively swinging or transversely shifting the heel and toe lasting devices simultaneously into proper positions to properly act upon the ends of lasts presenting greater or  
50 less degrees of swing, whether rights or lefts, this manually-operable means being useful conjointly with and supplementally to the automatic simultaneous adjustment referred to, if such automatic adjustment be present  
55 in the machine—as, for instance, in the machine here illustrated. When, however, such automatic capacity or capability is not present in the machine, then the manually-operable means referred to constitutes the only  
60 means for simultaneously adjusting the toe and heel lasting devices for lasts, either rights or lefts, having different degrees of swing, it being intended to cover, broadly, in this present application manually-operable means for  
65 simultaneously or by one operation swinging or moving the heel and toe lasting devices into proper position to act upon lasts, either

rights or lefts, or having different degrees of swing. My invention therefore is not limited to the particular embodiment herein shown  
70 and described, for it is evident the same may be varied in its construction and application to the machine shown, or to other machines to which it is applicable, without departing from the spirit and scope of the invention. 75

It is of course immaterial whether the heel and toe lasting devices be shifted by the swinging of the supporting-stands therefor, as in the embodiment of my invention here illustrated, or be otherwise shifted or adjust-  
80 ed so long as they are brought into proper position to act upon or over the ends of the last.

It is of course evident that by proper designing and adjustment of the parts either  
85 one of the stands or either one of the sets of lasting devices, either the heel or the toe, may be permitted to remain stationary while the other is moved, this being sometimes desirable with certain models or shapes of lasts. 90

In the machine shown the tipping and rolling plate gives to the end lasting devices the capacity of tipping to adapt themselves to the spring of a last and of rolling to accom-  
95 modate the roll of a last, and of course as the stands swing the toe and heel pads or clasps likewise swing.

In the claims I have referred to what I have called "manually-operable means" or "manual means," meaning by this means re-  
100 quiring special operation or attention, either by the hand, foot, or other part of the body, or by power especially operated under the control of the operator for accomplishing what is referred to as distinguished from the  
105 automatic operation, which is performed without any special attention on the part of the operator directed to what is performed by the automatic action.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is— 110

1. In a lasting-machine, the combination with heel and toe lasting devices, of manually-operable means to change by one operation the positions of the heel and toe lasting devices to meet lasts, either rights or lefts, or lasts having a difference of swing. 115

2. In a lasting-machine, the combination with toe and heel lasting devices, of manually-operable means to simultaneously shift the said toe and heel lasting devices to adapt the same to lasts, either rights or lefts, having a difference of swing. 120

3. In a lasting-machine, the combination with toe and heel lasting devices, of a manually-operable controlling member or lever, and connections between the same and the said toe and heel lasting devices, whereby movement of the said controlling member moves  
125 both said toe and heel lasting devices to accommodate lasts, either rights or lefts, or lasts having a difference of swing. 130

4. In a lasting-machine, the combination



with a support for a last, toe-lasting devices, and means for tipping the same, and heel-lasting devices and means for tipping the latter, of manually-operable means for simultaneously shifting the said lasting devices laterally to accommodate lasts, either rights or lefts, having a difference of swing.

5. In a lasting-machine, the combination with a support for a last, toe-lasting devices, and means for rolling the same, and heel-lasting devices and means for rolling the latter, of manually-operable means for simultaneously shifting the said lasting devices laterally to accommodate lasts either rights or lefts, having a difference of swing.

6. In a lasting-machine, the combination with a support for a last, toe-lasting devices, and means for tipping and rolling the same, and heel-lasting devices and means for tipping and rolling the same, of manually-operable means for simultaneously shifting the said lasting devices laterally to accommodate lasts, either rights or lefts, having a difference of swing.

7. In a lasting-machine, the combination with a support for a last, toe and heel lasting devices, and means for moving the same toward and from each other to accommodate lasts of different lengths, of manually-operable means for simultaneously shifting the said lasting devices laterally to accommodate lasts, either rights or lefts, having a difference of swing.

8. In a lasting-machine, the combination with a support for a last, the toe and heel lasting devices, and means for moving the same toward and from each other to accommodate lasts of different lengths, said toe and heel lasting devices having respectively means for tipping and rolling the same, of manually-operable means for simultaneously shifting the said lasting devices laterally to accommodate lasts, either rights or lefts, having a difference of swing.

9. In a lasting-machine, the combination with toe and heel lasting devices, of manually-operable means for simultaneously shifting the same to meet lasts, either rights or lefts, having a difference of swing, of means for varying the shifting movement of the said lasting devices by the said manually-operable means.

10. In a lasting-machine, the combination with toe and heel lasting devices, of manually-operable means for simultaneously shifting the same to accommodate lasts, either rights or lefts, having a difference of swing, and means whereby the shifting of the said lasting devices by the said manually-operable means may be in the same or in opposite directions as necessary.

11. In a lasting-machine, the combination with toe and heel lasting devices, of the swinging stands upon which the said lasting devices are respectively mounted, and manually-operable means for simultaneously swinging the said stands to thereby shift the said last-

ing devices to meet lasts, either rights or lefts, having a difference of swing.

12. In a lasting-machine, the combination with toe and heel lasting devices, and the swinging stands carrying the same, said stands being relatively movable one toward and from the other, of manually-operable means for swinging the said stands and thereby shifting the said lasting devices to meet lasts, either rights or lefts, having a difference of swing.

13. In a lasting-machine, the combination with toe and heel lasting devices, a single shaft, and connections between the same and the said lasting devices, whereby rotation of the said shaft in opposite directions shifts the said lasting devices first in one and then in an opposite direction to meet lasts, either rights or lefts, having a difference of swing, and manually-operable means for rotating the said shaft.

14. In a lasting-machine, end lasting devices to act upon and in connection with an end of a last, of manually-operable means for shifting the said end lasting devices to accommodate an end of a last, either a right or a left, having a difference of swing, and adjustable means for varying the relative movement of said lasting devices and manually-operable means, substantially as described.

15. In a lasting-machine, toe and heel lasting devices, and means respectively for actuating the same to lay the material upon the last, of manually-operable means independent of said actuating means for shifting both said toe and heel lasting devices for lasts, either rights or lefts, presenting a difference of swing.

16. In a lasting-machine, toe and heel lasting devices, and supports therefor made movable to adapt said lasting devices to lasts, either rights or lefts, having a difference of swing, and connections between the said movable supports whereby movement of one causes movement of the other.

17. In a lasting-machine, the combination with heel and toe lasting devices, and means whereby said lasting devices automatically shift for lasts having a difference of swing, of means for manually shifting the said lasting devices to adapt the same for lasts having a difference of swing.

18. In a lasting-machine, the combination with heel and toe lasting devices, and means whereby said lasting devices automatically shift for lasts having a difference of swing, of means for manually shifting the said lasting devices to adapt the same for lasts having a difference of swing, said means for manually shifting the said plates being used alone or supplementary to the automatic means as desired.

19. In a lasting-machine, the combination with toe-lasting devices, and actuating means therefor, and supporting means for the same, and heel-lasting devices, actuating means therefor, and supporting means for the same,



of means cooperating with and for shifting both the said supporting means to adapt their said lasting devices to the opposite ends of lasts having a difference of swing.

- 5 20. In a lasting-machine, toe-lasting devices, actuating means therefor, a toe pad or clasp, and a stand or carrier supporting the same, and heel-lasting devices, a heel-clasp and a stand or carrier therefor, combined  
10 with means for simultaneously shifting the

said stands or carriers and thereby their respective lasting devices, and clasps to adapt the same for lasts having a difference of swing.

In testimony whereof I have signed my name to this specification in the presence of 15 two subscribing witnesses.

MATTHIAS BROCK.

Witnesses:

FREDERICK L. EMERY,  
LAURA T. MANIX.