

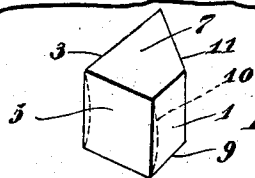
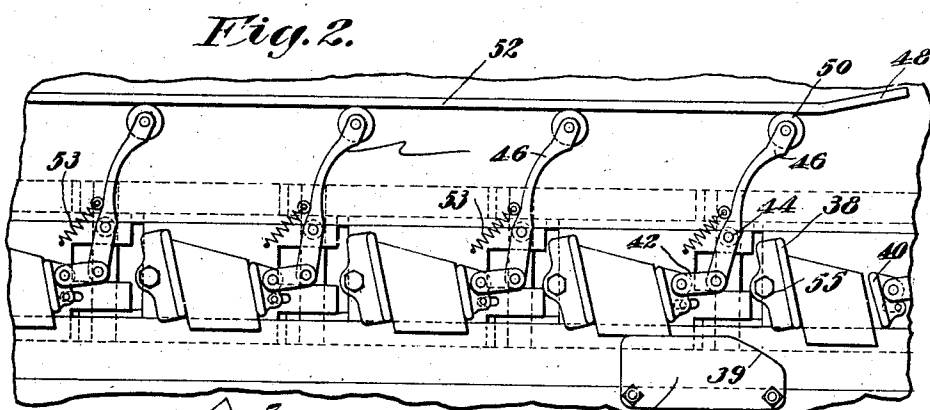
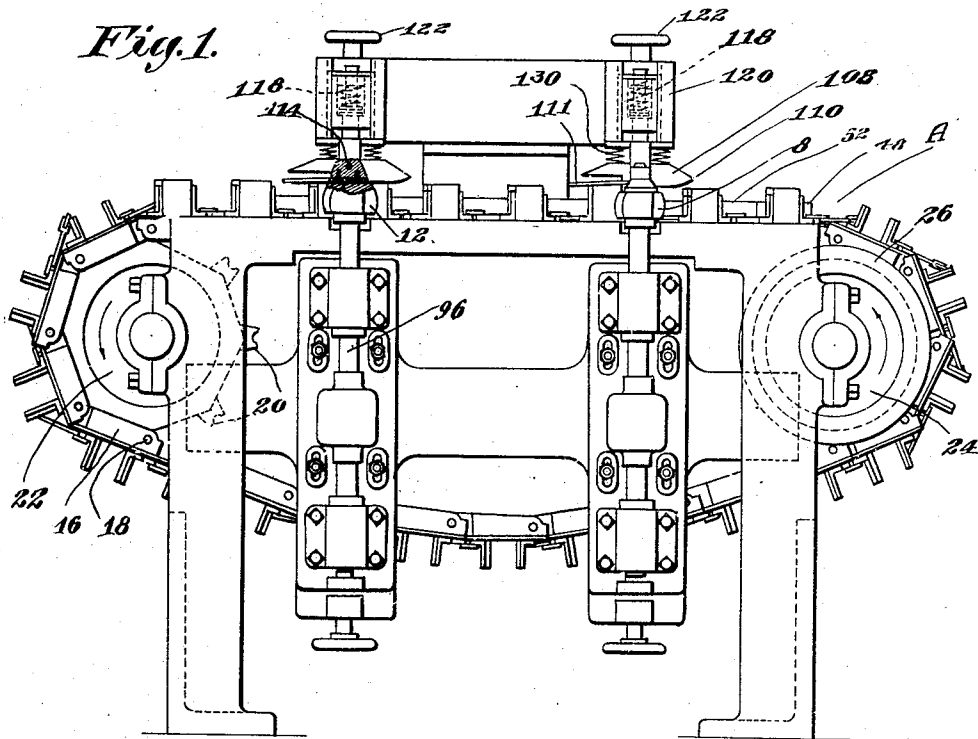
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MACHINE FOR GROOVING WOOD HEEL BLOCKS

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MACHINE FOR GROOVING WOOD-HEEL BLOCKS

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The present invention relates to machines for grooving the breasts of wood-heel blocks, and more particularly Cuban-heel blocks. The term "Cuban" will be used in the specification and claims to denote heels of the type herein described, and as distinguished from "Louis" or "French" heels. The heels known in the trade as "military" heels, for example, will be included herein in the designation "Cuban."

The breasts of Louis-heel blocks have been grooved by machinery for many years. The blocks are placed, heel-seat down, upon a carrier which carries them past a breast-grooving cutter. The cutter is so shaped, and the path of travel of the blocks past the cutter is such, that the resulting groove in the breast is transversely curved in cross-section from the heel seat to the tread.

The corresponding cross-sectional curve of a Cuban heel extends, however, from side to side of the heel, in a direction at right angles to that from seat to tread. In order to groove the breasts of Cuban-heel blocks, therefore, it is impossible or impracticable to use the automatic machinery designed for breasting Louis heels. The difficulties connected with the automatic grooving of Cuban heels have no counterpart in the breasting of Louis heels and, so far as known, no one, prior to the present invention, has ever succeeded in building a satisfactory machine for performing this operation. Cuban heels are still grooved slowly and laboriously with hand-operated tools.

It is therefore an object of the present invention to provide automatic machinery of novel character for grooving Cuban-heel blocks. Other objects will be explained hereinafter and will be particularly pointed out in the appended claims.

The invention will now be described in connection with the accompanying drawings; in which Fig. 1 is a diagrammatic view, in front elevation, illustrating one embodiment of the invention, a part being broken away for clearness; Fig. 2 is an enlarged plan of a portion of the same; and Fig. 3 is a perspective view of a Cuban-wood-heel block.

Cuban-heel blocks, before they are operated upon in the illustrative machine, have the shape indicated in Fig. 3 by full lines. The tread portion of the heel block is shown at 1 and the heel-seat portion at 3. The breast 5 is bounded by the tread and the heel-seat portions 1 and 3 and the side faces 7 and 9. The face 11 opposite to the breast 5 inclines upward from the tread portion 1 to the heel-seat portion 3.

Blocks of this shape are placed upon an endless carrier, with the side face 9 resting upon the carrier, and with the breast portion 5 disposed at one side; and are advanced by the carrier to a rotating grooving cutter 8, by which the breast portions 5 of the blocks are successively cut longitudinally along the dot-and-dash lines 10, shown in Fig. 3, from the tread 1 to the seat 3. The cut 10 may, if preferred, be effected in two stages, the second stage of the cut being effected by a second cutter 12 of larger diameter.

The endless carrier comprises a plurality of links 16 connected by pintles 18 that are adapted to be engaged by teeth 20 of a driving wheel 22 over which the carrier is mounted. The driving wheel 22 may be driven from any desired source of power (not shown). The driving wheel 22 is shown in Fig. 1 at the left-hand end of the machine. The carrier 6 is mounted also over an idler wheel 24 at the right-hand end of the machine. The idler wheel 24 is provided with a circular periphery and with flanges 26 between which the links of the carrier 6 are confined. The periphery of the driving wheel 22, however, is flat-sided, as shown more particularly in Fig. 1, in order that the links 16 may rest snugly against the sides thereof while the teeth 20 engage the pintles 18 to drive the carrier 6. The carrier travels on substantially straight tracks (not shown), ensuring that the portion of the path of travel of the carrier between the driving wheel 22 and the idler wheel 24 shall be substantially straight.

The blocks must, of course, be firmly clamped in position during their travel to and by the cutters. According to the preferred embodiment of the present invention,

the clamping is effected by means of clamping jaws that are mounted upon the carrier so as to move with the carrier. The clamping jaws are arranged in cooperating pairs, and a block is adapted to be clamped between each cooperating pair of jaws. The jaws are mounted in pairs upon each link of the carrier. As the pairs of jaws are substantially alike, it will suffice to describe one pair of jaws only.

Each cooperating pair of jaws comprises one jaw 38 that is stationary with respect to the carrier 6, and one jaw 40 that is movable with respect to the carrier in the direction of the path of travel of the carrier. The jaws 38 and 40 are normally separated from each other by a distance greater than the distance from the heel seat 3 to the tread 1 of a heel block, and each movable jaw 40 is moved towards the corresponding stationary jaw 38 to effect between them the clamping of a block that is resting longitudinally on the carrier. In the specific embodiment of the invention that is herein illustrated and described, this is effected by linking the movable jaw 40 at 42 to a pivoted lever 46. By pivotally actuating the lever 46 about its pivot 44, the jaw 40 will be moved towards and from the jaw 38.

To effect this pivotal movement, the lever 46 is constructed to extend beyond and to one side of the carrier, in substantially the plane of the substantially straight path of the carrier. The actuation is effected automatically during the travel of the carrier, and at a time when the jaws 38 and 40 are positioned along the substantially straight portion of the path, by a cam 48 that is adapted to be engaged by a roller 50 at the free end of the lever 46. The cam 48 is located to one side of the carrier, as will be understood by referring more particularly to Fig. 2, at a predetermined position in the path of travel of the carrier, in advance of the cutter 8, such that the clamping effect may be obtained after the block has been placed upon the carrier, and before it has been advanced to the cutter 8. During the travel of the carrier from right to left, as viewed in Fig. 2, at a predetermined position in advance of the cutter 8, therefore, the lever 46 is actuated by the cam 48 about its pivot 44, forcing the movable jaw 40 towards the stationary jaw 38, and causing the block 2 to become clamped between the jaws, as before described. By the time that the block has been advanced as far as the cutter 8, it has become firmly clamped in position upon the carrier.

A wall 52 that forms an extension of the cam 48 maintains the arm 46 in position, to maintain the block clamped between the jaws, until after the block has been advanced beyond the cutter 12. At a predetermined position beyond the cutter 12, the lever 46 is returned to its normal position by a spring 53,

and the jaws, therefore, release the block. Though the jaws move with the carrier on both the upper and lower levels of the carrier, they are positioned in clamping engagement with the heel block during their travel only between limits on the upper level.

The link 42 permits the jaw 40 always to align itself against the tread, and thus automatically to produce a firm clamping action, notwithstanding variations such as ordinarily occur in the shape and the tread-to-seat dimensions of the blocks. Blocks of considerably varying width are, in that manner, clamped with equal effectiveness.

In order to control accurately the position of the groove 14 upon the block 2, it is also necessary to have the block rest snugly on the carrier. If the block is raised even slightly above the carrier, the groove will be cut too low. Provision is therefore made for holding the block tightly against the carrier during the clamping movement of the movable jaw 40.

To this end, the block 2, after it has been positioned on the carrier, is caused to travel under a shoe 108 that presses down firmly against the block. The forward portion of the shoe 108 is bevelled, as shown more particularly at 110, so that the block may enter thereunder the more readily. As the block is carried forward by the carrier, it is caused to travel under the shoe. The movable jaw is caused to clamp the block at this time. At the time that the block is presented to the cutter, it is held snugly along the faces 7 and 9, both below and above the cutter, and is at the same time clamped between the jaws at the seat 3 and the tread 1, the cutter acting at a point intermediate between the carrier below and the shoe above, and to one side of the carrier and the shoe. During the further advance of the block by the carrier, after the block has become clamped, the holding action of the shoe is no longer needed, and the carrier therefore advances the block beyond the range of action of the shoe, so as to cause the shoe to release the block. The shoe continues its holding action, however, until after the cutter has cut the groove, so that the block is at this time clamped on all four sides. Two shoes 108 are provided, one for each of the cutters, as will be clear from the showing of Fig. 1. It will be unnecessary to describe more than one, as they are substantially alike. In order that the release of the block by the shoe may be gradual, the forward portion of the shoe is provided with a spring arm 111 that may be secured to the underside of the shoe in any desired manner, as by means of screws.

The shoe 108 is intermediately pivoted at 114 upon a vertically yieldable plunger, in opposition to the action of a stiff coil spring 118 in a framework 120 that is vertically adjustable by means of a handwheel 122.

The pivotal movement of the shoe 108 about its intermediate pivotal point 114 is yieldingly resisted by two coil springs 130 mounted between the framework 120 and the shoe on each side of the pivot. When a block is forced under the shoe, the first spring 130 is first compressed. The second spring 130 is compressed later, as the block is advanced beyond the shoe. The spring 118 is called into play for blocks of extra thickness.

The blocks are successively placed upon the carrier 6 at A, with the breast portion 5 projecting at one side of the carrier. As each block is advanced forward toward the cutters, its breast 5 engages an alining face 39 of an alining gage 41 which, positioned at one side of the path of travel of the jaws, pushes the block transversely across the carrier, into proper position to be engaged by the cutters. In this position, the breast 5 of the block extends slightly sidewise beyond the carrier in the range of action of the cutter 8. The above-described clamping effect is thus obtained after the block has first become properly positioned, but before it has been advanced to the cutter 8. At the time that the breast 5 of the block is presented to the cutter, it is firmly clamped between the jaws along the tread 1 and the heel seat 3, the cutter acting at a point intermediate between the carrier 6 below and the jaw 40 above, and to one side of the carrier 6 and the jaw 40. Unless the block is thus firmly clamped, with the block resting snugly on the carrier, the groove 10 will not be accurately positioned in the block. The position of the groove 10 upon the block 2 will depend upon the height of the cutters 8 and 12. These should be situated substantially in the plane of movement, and to one side of the path of travel of the jaws 38, or slightly above the links 16 at intermediate positions of the carrier 6, as illustrated. The cutters are therefore mounted upon vertically adjustable spindles 96.

Though Cuban-heel blocks are of the general shape heretofore described, they vary somewhat in size and in the inclination or angle of the breast 5 to the tread 1 and heel-seat portion 3. In this respect, among others, the breasting by machinery of Cuban-heel blocks presents problems that are not existent in the case of Louis heels; for it becomes necessary to provide different jaws for practically every different shape and size of heel block. According to a feature of the present invention, however, it is possible to use the same jaws for all sizes and shapes of Cuban-heel blocks that are used in actual practice, merely by providing a suitable adjustment for the jaw 38. Though the jaw 38 is stationary in use, it is intermediately pivotally adjustable upon its link 16 about a bolt 55 so as to adapt it to take up different angular positions upon the link. The bolt 55 serves also to secure the jaw 38 in pivotally adjusted position. The

link 42 permits the jaw 38 to adjust itself automatically to all adjustments of the jaw 40, in the same manner as before described.

Modifications may be made within the spirit and scope of the invention, as will readily occur to persons skilled in the art. It will therefore be understood that the machine illustrated and described herein is illustrative only, and that the invention is not restricted thereto, but is defined by the appended claims.

What is claimed is:

1. A machine for grooving in a longitudinal direction the breasts of Cuban-heel blocks; the treads and the heel-seat portions of which are inclined to the breasts; the said machine having, in combination, an endless carrier comprising a plurality of links, two clamping jaws mounted upon each link of the carrier so as to travel with the carrier, the clamping faces of the jaws being inclined to the direction of the path of travel of the carrier at angles corresponding to the inclination of the said treads and heel-seat portions to the said breasts, a gage situated at one side of the path of travel of the jaws and adapted to be engaged by the sidewise projecting breast of a Cuban heel block that is supported longitudinally on the carrier between two co-operating jaws to cause the block to be positioned on the carrier in predetermined relation to the said two jaws such that the treads and heel-seat portions of the block shall be substantially parallel to the respective jaws, one of the said two jaws being angularly adjustable on the link so as to correspond to the breast angle of different heel blocks, the other of the said two jaws being self-alining, means situated at a predetermined position in the path of travel of the carrier and operable during the actuation of the carrier to relatively actuate the jaws in the direction of the path of travel of the carrier so as to cause the block to become clamped between the said two jaws in the said predetermined relation with the breast extending beyond the said two jaws at one side of the carrier, means for actuating the carrier, and a heel-block-grooving cutter situated in the path of travel of the breast, whereby the carrier is adapted to advance the breast to the cutter in position such that the cutter shall cut a groove in the breast in a longitudinal direction.

2. A machine for grooving in a longitudinal direction the breasts of Cuban-heel blocks the treads and the heel-seat portions of which are inclined to the breasts; the said machine having, in combination, an endless carrier comprising a plurality of links, two clamping jaws mounted upon each link of the carrier so as to travel with the carrier, the clamping faces of the jaws being inclined to the direction of the path of travel of the carrier at angles corresponding to the inclination of the said treads and heel-seat portions to the said breasts, one of each of the said two jaws

being stationary with respect to the carrier and the other of each of the said two jaws being movable with respect to the carrier towards a cooperating stationary jaw, a gage
 5 situated at one side of the path of travel of the jaws and adapted to be engaged by the sidewise projecting breast of a Cuban heel block that is supported longitudinally on the carrier between two cooperating jaws to
 10 cause the block to be positioned on the carrier in predetermined relation to the said cooperating jaws, such that the treads and heel-seat portions of the block shall be substantially parallel to the respective jaws, means
 15 situated at a predetermined position in the path of travel of the carrier and operable during the actuation of the carrier to actuate the said movable jaw towards the said stationary jaw to clamp the block on the carrier
 20 in the said predetermined relation with the breast extending beyond the said stationary jaw and the said movable jaw at one side of the carrier, means for actuating the carrier, and a heel-block grooving cutter in the path
 25 of travel of the breast, whereby the carrier is adapted to advance the breast to the cutter in position such that the cutter shall cut a groove in the breast in a longitudinal direction.

3. A machine for grooving in a longitudinal direction the breasts of Cuban-heel blocks the treads and the heel-seat portions of which are inclined to the breasts, the said machine having, in combination, a carrier, clamping
 35 jaws mounted in pairs upon the carrier so as to travel with the carrier, the clamping faces of the jaws being inclined to the direction of the path of travel of the carrier at angles corresponding to the inclination of the said
 40 treads and heel-seat portions to the said breasts, one of the jaws of each pair being stationary with respect to the carrier and the other jaw of each pair being movable with respect to the carrier in the direction of the
 45 path of travel of the carrier, the jaws being angularly adjustable on the carrier so as to correspond to the inclination of the treads and the heel-seat portions to the breasts of different heel blocks, means situated at a predetermined
 50 position in the path of travel of the carrier and operable during the actuation of the carrier to actuate the movable jaw of the pair of jaws towards the stationary jaw of the pair of jaws to clamp the block on the carrier between the pair of jaws with the
 55 breast extending beyond the pair of jaws at one side of the carrier, means for actuating the carrier, and a heel-block grooving cutter in the path of travel of the breast, whereby the carrier is adapted to advance the breast to the cutter in position such that the cutter shall cut a groove in the breast in a longitudinal direction.

4. A machine for grooving in a longitudinal direction the breasts of Cuban-heel blocks

the treads and the heel-seat portions of which are inclined to the breasts, the said machine having, in combination, a carrier, clamping
 jaws mounted in pairs upon the carrier so as to travel with the carrier, the clamping
 70 faces of the jaws being inclined to the direction of the path of travel of the carrier at angles corresponding to the inclination of the said threads and heel-seat portions to the said breasts, one of the jaws of each pair being
 75 stationary with respect to the carrier, a plurality of pivoted levers, the other jaw of each pair being mounted upon one of the levers, the jaws being angularly adjustable on the carrier so as to correspond to the inclination
 80 of the treads and the heel-seat portions to the breasts of different heel blocks, a cam situated at a predetermined position in the path of travel of the carrier and adapted to be engaged by the said one lever during the actuation
 85 of the carrier to effect the actuation of the movable jaw of each pair of jaws towards the stationary jaw of each pair of jaws to clamp the block on the carrier between the pair of jaws with the breast extending beyond the pair of jaws at one side of the carrier, means for actuating the carrier, and a heel-block-grooving cutter in the path of travel of the breast, whereby the carrier is adapted to advance the breast to the cutter in position such that the cutter shall cut a groove in the breast in a longitudinal direction.

5. A machine for grooving in a longitudinal direction the breasts of Cuban-heel blocks the treads and the heel-seat portions of which are inclined to the breasts, the said machine having, in combination, a carrier, clamping
 100 jaws mounted upon the carrier so as to travel with the carrier, the jaws being angularly adjustable on the carrier so as to correspond to the inclination of the treads and the heel-seat portions to the breasts of different heel blocks, means situated at a predetermined position in the path of travel of the carrier and operable during the actuation of the carrier to relatively actuate the jaws in the direction of the path of travel of the carrier to clamp the block on the carrier between the pair of jaws with the breast extending sidewise beyond the said two jaws at one side of the carrier, means for holding the block against the carrier during the relative actuation of the jaws, means for actuating the carrier, and a heel-block-grooving cutter in the path of travel of the breast, whereby the carrier is adapted to advance the breast to the cutter in position such that the cutter shall cut a groove in the breast in a longitudinal direction.

6. A machine for grooving in a longitudinal direction the breasts of Cuban-heel blocks the treads and the heel-seat portions of which are inclined to the breasts, the said machine having, in combination, a carrier comprising

a plurality of pairs of jaws, the clamping faces of the jaws being inclined to the direction of the path of travel of the carrier at angles corresponding to the inclination of the said treads and heel-seat portions to the said breasts, the jaws being angularly adjustable on the carrier so as to correspond to the inclination of the treads and the heel-seat portions to the breasts of different heel blocks, means for relatively moving the jaws of each pair of jaws to clamp the block between each pair of jaws on the carrier with the breasts extending beyond the jaws of each pair of jaws at one side of the carrier, means for actuating the carrier, and a heel-block grooving cutter situated in the path of travel of the breasts, whereby the carrier is adapted to advance the breasts to the cutter in position such that the cutter shall cut a groove in the breast of each heel block in a longitudinal direction.

7. A machine for grooving in a longitudinal direction the breasts of Cuban-heel blocks the treads and the heel-seat portions of which are inclined to the breasts, the said machine having, in combination, a carrier, clamping jaws mounted upon the carrier so as to travel with the carrier, the clamping faces of the jaws being inclined to the direction of the path of travel of the carrier at angles corresponding to the inclination of the said treads and heel-seat portions to the said breasts, the jaws being angularly adjustable on the carrier so as to correspond to the inclination of the treads and the heel-seat portions to the breasts of different heel blocks, means situated at a predetermined position in the path of travel of the carrier and operable during the actuation of the carrier to relatively move the jaws in the direction of the path of travel of the carrier so as to cause the block to become clamped between the jaws with the breast extending beyond the jaws at one side of the carrier, and a heel-block-grooving cutter situated in the path of travel of the breasts, whereby the carrier is adapted to advance the breast to the cutter in position such that the cutter shall cut a groove in the breast in a longitudinal direction.

8. A machine for grooving in a longitudinal direction the breasts of Cuban-heel blocks the treads and the heel-seat portions of which are inclined to the breasts, the said machine having, in combination, a carrier, two means for respectively engaging two opposite faces of the block, one of the means being adapted to press the block towards the other means to hold the block firmly in position, means for engaging the other two opposite faces of the heel block to clamp the heel block on the carrier, means permitting angular adjustment of the means for engaging the heel-seat and the tread so as to correspond to the breast angle of different heel blocks, means situated at a predetermined position in the

path of travel of the carrier and operable during the actuation of the carrier to relatively move the two means for engaging the heel seat and the tread so as to cause the block to become clamped between the jaws with the breast extending at one side of the carrier, and a heel-block-grooving cutter situated in the path of travel of the breast, whereby the carrier is adapted to advance the breast in position such that the cutter shall cut a groove in the breast in a longitudinal direction.

9. A machine for grooving the breasts of heel blocks having, in combination, a carrier, a pair of clamping jaws mounted upon the carrier so as to travel with the carrier, one of the jaws being stationary with respect to the carrier, a pivoted lever upon which the other jaw is mounted, means for pivoting the lever to actuate the relatively inovable jaw towards the relatively stationary jaw in the direction of the path of travel of the carrier so as to clamp a heel block between the jaws with the breast extending beyond the jaws, means for actuating the carrier, and a heel-block grooving cutter in the path of travel of the breast, whereby the carrier is adapted to advance the breast in position such that the cutter shall cut a groove in the breast.

10. A machine for grooving the breasts of heel blocks having, in combination, an endless carrier comprising a plurality of links, two jaws mounted upon each link of the carrier so as to travel with the carrier, a gage situated at one side of the path of travel of the jaws and adapted to be engaged by the breast of the heel block to cause the block to be positioned on the carrier in predetermined relation to the said two jaws, one of the said two jaws being angularly adjustable on the link, the other of the said two jaws being self-aligning, means situated at a predetermined position in the path of travel of the carrier and operable during the actuation of the carrier to relatively move the jaws in the direction of the path of travel of the carrier so as to cause the block to become clamped between the said two jaws in the said predetermined relation with the breast extending beyond the said two jaws at the side of the carrier, means for actuating the carrier, and a heel-block-grooving cutter situated in the path of travel of the breast, whereby the carrier is adapted to advance the breast to the cutter in position such that the cutter shall cut a groove in the breast.

11. A machine for grooving the breasts of heel blocks having, in combination, a carrier, clamping jaws mounted upon the carrier so as to travel with the carrier, the jaws being angularly adjustable on the carrier, means situated at a predetermined position in the path of travel of the carrier and operable during the actuation of the carrier to relatively actuate the jaws in the direction of the

path of travel of the carrier to clamp the block on the carrier with the breast extending sidewise beyond the said two jaws at the said side of the carrier, means for holding the block against the carrier during the relative actuation of the jaws, means for actuating the carrier, and a heel-block-grooving cutter in the path of travel of the breast, whereby the carrier is adapted to advance the breast to the cutter in position such that the cutter shall cut a groove in the breast.

12. A machine for grooving in a longitudinal direction the breasts of Cuban-heel blocks the treads and the heel-seat portions of which are inclined to the breasts, the said machine having, in combination, an endless carrier comprising a plurality of links, clamping jaws mounted in pairs upon the carrier so as to travel with the carrier, the clamping face of one of the jaws of each pair being inclined to the direction of the path of travel of the carrier at an angle corresponding to the inclination of the said heel-seat portions to the said breasts, the said one jaw of each pair being stationary with respect to the carrier and the said other jaw of each pair being movable with respect to the carrier towards a cooperating stationary jaw, means situated at a predetermined position in the path of travel of the carrier and operable during the actuation of the carrier to actuate the said movable jaws towards the said cooperating stationary jaws to cause a block to become clamped on the carrier between a pair of jaws with the breast extending beyond the said pair of jaws at one side of the carrier, means for actuating the carrier, and a heel-block grooving cutter in the path of travel of the breast, whereby the carrier is adapted to advance the breast to the cutter in position such that the cutter shall cut a groove in the breast in a longitudinal direction.

13. A machine for grooving in a longitudinal direction the breasts of Cuban-heel blocks the treads and the heel-seat portions of which are inclined to the breasts, the said machine having, in combination, an endless carrier comprising a plurality of links, clamping jaws mounted in pairs upon the carrier so as to travel with the carrier, the clamping face of one of the jaws of each pair being inclined to the direction of the path of travel of the carrier at an angle corresponding to the inclination of the said heel-seat portions to the said breasts, the said one jaw of each pair being stationary with respect to the carrier and the said other jaw of each pair being movable with respect to the carrier in the direction of the path of travel of the carrier, the said one jaw of each pair being angularly adjustable on the carrier so as to correspond to the inclination of the said heel-seat portions to the breasts of different heel blocks, means situated at a predetermined

position in the path of travel of the carrier and operable during the actuation of the carrier to actuate the said movable jaws towards the said cooperating stationary jaws to cause a block to become clamped on the carrier between a pair of jaws with the breast extending beyond the said pair of jaws at one side of the carrier, means for actuating the carrier, and a heel-block grooving cutter in the path of travel of the breast, whereby the carrier is adapted to advance the breast to the cutter in position such that the cutter shall cut a groove in the breast in a longitudinal direction.

14. A machine for grooving in a longitudinal direction the breasts of Cuban-heel blocks the treads and the heel-seat portions of which are inclined to the breasts, the said machine having, in combination, a carrier, clamping jaws mounted in pairs upon the carrier so as to travel with the carrier, the clamping face of one of the jaws of each pair being inclined to the direction of the path of travel of the carrier at an angle corresponding to the inclination of the said heel-seat portions to the said breasts, one of the jaws of each pair being stationary with respect to the carrier, a plurality of levers, the other jaw of each pair being mounted upon one of the levers, the said one jaw of each pair being angularly adjustable on the carrier so as to correspond to the inclination of the said heel-seat portions to the breasts of different heel blocks, a cam situated at a predetermined position in the path of travel of the carrier and adapted to be engaged by the said one lever during the actuation of the carrier to effect the actuation of the movable jaw of each pair of jaws towards the said stationary jaw of each pair of jaws to clamp the block on the carrier between, the pair of jaws with the breast extending beyond the pair of jaws at one side of the carrier, means for actuating the carrier, and a heel-block-grooving cutter in the path of travel of the breast, whereby the carrier is adapted to advance the breast to the cutter in position such that the cutter shall cut a groove in the breast in a longitudinal direction.

15. A machine for grooving in a longitudinal direction the breasts of Cuban-heel blocks the treads and the heel-seat portions of which are inclined to the breasts, the said machine having, in combination, an endless carrier comprising a plurality of links, clamping jaws mounted in pairs upon the carrier so as to travel with the carrier, the clamping face of one of the jaws of each pair being inclined to the direction of the path of travel of the carrier at an angle corresponding to the inclination of the said heel-seat portions to the said breasts, the said one jaw of each pair being angularly adjustable on the carrier so as to correspond to the inclination of the said heel-seat portions to the breasts of dif-

ferent heel blocks, means for relatively moving the jaws of each pair of jaws to clamp the block between each pair of jaws on the carrier with the breasts extending beyond the jaws of each pair of jaws at one side of the carrier, means for actuating the carrier, and a heel-block grooving cutter in the path of travel of the breast, whereby the carrier is adapted to advance the breasts to the cutter in position such that the cutter shall cut a groove in the breast of each heel block in a longitudinal direction.

In testimony whereof, I have hereunto subscribed my name.

WESLEY J. SHAW.