LATERAL AND LONGITUDINAL SHOE STRETCHER

Joel Koscela, New York, N. Y.

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8 Claims. (Cl. 12—132.3)

This invention relates to new and useful improvements in a shoe stretcher and proposes certain improvements in the construction disclosed in my prior U. S. Patent No. 2,233,454 granted March 4, 1941.

More specifically, the present invention proposes an improved shoe stretcher which is ideal for "breaking in" new shoes by removing all stiffness and softening the inner sole to conform to the natural shape of the foot.

Still further, the present invention proposes an improved shoe stretcher having various adjustments for accomplishing the following operations on a shoe:

1. Lengthening the shoe.
2. Stretching and widening the toe box and instep jointly.
3. Stretching and widening the instep independently.
4. Stretching the instep and raising any portion of it to any desired degree by a unique raising action.
5. Shaping the toe box to accommodate bunions and other toe deformities.

The shoe stretcher is designed so that any of the above operations can be easily combined in a manner to stretch and widen any part of the shoe.

Another object of the present invention proposes constructing the shoe stretcher to include a pair of superimposed complementary blocks for insertion into the toe box of the shoe with means for spreading the blocks about their interconnected rear ends in a manner to stretch and widen the toe box.

The present invention further proposes providing the shoe stretcher with a heel piece which functions in conjunction with the superimposed blocks to lengthen the shoe and which is mounted in position in a manner to be rapidly brought into position within the heel of the shoe after which the position of the heel piece can be adjusted by a threaded, rotatably mounted tube for obtaining the desired tension on the shoe.

Still another object of the present invention proposes providing the upper block with adjustable plates raisable about the pivotally mounted front end of one of the plates in a manner to stretch and raise the instep portion of the shoe.

Another object of the present invention proposes providing the lower block with removably attached side pieces which can be independently attached to the sides of the lower block to stretch and shape either the right or the left side of the shoe or which can both be attached to the sides of the lower block in a manner to stretch the toe box to provide extra width.

The present invention further provides individual bunion pads which can be used separately or in various combinations and which can be mounted on the adjustable plates of the upper block or directly on the upper block when the adjustable plates are not being used for shaping the toe box to accommodate bunions and other toe deformities.

It is a further object of the present invention to construct an improved shoe stretcher which is simple and durable, which can be manufactured and sold for a reasonable cost and which is effective for its intended purpose.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a side elevational view of a shoe stretcher of the present invention as it would appear in position within the left shoe of a pair of shoes illustrated in outline by the dot and dash lines.

Fig. 2 is a front elevational view of the shoe stretcher.

Fig. 3 is a partial elevational view of the shoe stretcher looking at the rear side of Fig. 1.

Fig. 4 is a partial plan view of Fig. 1.

Fig. 5 is a longitudinal sectional view taken on the line 5—5 of Fig. 4.

Fig. 6 is an enlarged perspective view of the mechanism contained between the adjacent faces of the blocks of the shoe stretcher.

Fig. 7 is an enlarged partial longitudinal sectional view taken on the line 7—7 of Fig. 6.

Fig. 7A is an enlarged detailed view looking in the direction of the line 7—7 of Fig. 6.

Fig. 8 is a view similar to a portion of Fig. 8, but showing a different position of the parts.

Fig. 9 is a side elevational view of the upper of the blocks with the upper plate shown in longitudinal section.

Fig. 10 is a plan view of the lower block with one of the side pieces removed and with a portion of the view shown in section.

Fig. 12 is an inside elevational view of one of the side pieces, per se.
Fig. 13 is an enlarged partial longitudinal sectional view taken on the line 13-13 of Fig. 12. Fig. 14 is an enlarged transverse sectional view of the heel piece taken on the line 14-14 of Fig. 1.

Fig. 15 is a view similar to Fig. 14, but showing a different position of the parts. Fig. 16 is a longitudinal sectional view of the heel piece taken substantially on the line 16-16 of Fig. 5.

Fig. 17 is an enlarged sectional view through the bunion pad taken substantially on the line 17-17 of Fig. 1.

Fig. 18 is a view similar to Fig. 17, but showing several bunion pads in a stacked position.

Fig. 19 is a bottom perspective view of one of the bunion pads, per se.

Before proceeding with the description of the shoe stretcher, it is to be understood that they are constructed in pairs for use in each of the shoes of a pair of shoes with the stretcher blocks suitably shaped for use in ladies', men's or children's shoes. On the drawings, there is illustrated a single stretcher of a pair of stretchers shaped for use in a lady's shoe. The stretcher illustrated is the left one and it is appreciated that the right one would be similarly constructed with appropriate parts of opposite hand to conform to the right shoe of the pair.

The shoe stretcher, according to the present invention, includes a bottom block 20 upon which there is superimposed an upper block 21. The blocks 20 and 21 are molded of any desired light metallic alloy, but if desired could be cut from hardwood or other materials. The adjacent faces of the blocks 20 and 21 are formed with wedge hollows 22, see particularly Fig. 5. The wedge hollows are elongated longitudinally of the blocks 20 and 21 and are located substantially midway of the front and rear ends of the blocks.

Rearward of the wedge hollows 22, the superimposed blocks 20 and 21 are formed with vertically extended aligned holes 23 which are converged away from the meeting faces of the blocks. A vertically extended stud 24 has its opposed end portions extended into the holes 23 so as to retain the blocks 20 and 21 against relative longitudinal movement. The holes 23 are substantially larger than the end portions of the stud 24 so that the blocks 20 and 21 are free for slight movement relative to each other and with relation to the stud 24. Extended rearward from the stud 24, there is a tubular extension 24a integral with the stud and concentric with a hole 24b formed in the stud intermediate of its ends. The hole 24b of the stud 24 and the interior of its tubular extension 24a are provided with a continuous interior thread, see particularly Fig. 7.

Extended through the stud 24 and its tubular extension 24a, there is an elongated shaft 25. The front end of the shaft 25 is provided with threads matching the internal threads of the stud 24 and its tubular extension 24a so that as the shaft is turned in one direction or the other the shaft will be moved longitudinally. Fixedly mounted on the rear end of the shaft 25 there is a handle 26, see Figs. 1 and 2, by which the shaft can be conveniently turned in one direction or the other. The front end of the shaft 25 extends from the stud 24 and carries a wedge 27 which is positioned within the wedge hollows 22, see Fig. 5. The wedge 27 is frustoconical in shape, is molded of metal and has a recess 28 extended in from its flat rear face, see Figs. 5 and 7. Positioned within the recess 28 against the base wall of the recess 28 there is a floating ball 29. The front end of the shaft 25 is extended into the recess 28 and abutted against the ball 29, as best shown in Fig. 7. Within the recess 28, the shaft 25 is formed with a reduced neck portion 30. The wedge 27 is retained in position on the front end of the shaft 25 by means of spaced pins 31 which pass through the recess 28 of the wedge on opposite sides of the reduced neck portion 30, with the ball 29 functioning as a bearing between the inner end of the shaft 25 and the base wall of the recess 28. With this construction, the wedge 27 is universally mounted leaving the shaft 25 free for independent rotation and at the same time leaving the wedge 27 free to adjust its position with relation to the ball portion 29.

As the shaft 25 is turned to thread itself inward, the wedge 27 is moved forward between the adjacent faces of the blocks 20 and 21. The wedge 27 is positioned in the wedge hollows 22 which have their adjacent faces converged forward so that as the wedge 27 is moved forward the blocks 20 and 21 are caused to move apart. Rearward movement of the wedge 27 frees the blocks 20 and 21.

Lock means is provided for connecting the rear ends of the blocks 20 and 21 together to provide a fulcrum about which the blocks will move apart as the wedge 27 is moved forward. The blocks are shaped to be extended into the toe box of a shoe, indicated in outline by the dot and dash lines 32 on Fig. 1, so that as the front ends of the blocks 20 and 21 are moved apart about their connected rear ends, the toe box will be stretched.

The lock means for the rear ends of the blocks 20 and 21 is characterized by a locking member 33, see particularly Figs. 5 and 7 to 9, which is rotatorily positioned on the tubular extension 24a of the stud 24. The locking member 33 has on diametrically opposite sides, latch elements 34 which are directed in opposite directions. Extended rearwardly from the latch elements 34 there are lugs 35 by which a finger grip can be had on the locking member 33 for turning the same in one direction or the other.

The rear ends of the blocks 20 and 21 are hollowed out to receive the locking member 33, see Fig. 5, and each of the blocks within its hollowed out portion is formed with a keeper element 36. As in the case of the latch elements 34, the keeper elements 36 are cam shaped to slide over one another so as to draw the rear ends of the blocks 20 and 21 together when the locking member 33 is turned to its locked position shown in Fig. 5. However, there is sufficient looseness in the fit of those interengaged parts to permit the blocks 20 and 21 to move away from each other about their connected rear ends.

Articulately shaped springs 31 are secured intermediate of their ends on the outer faces of the keeper elements 36. The free ends of the springs 37 at the sides of the keeper elements 36 engaged by the latch elements 34, are formed with inwardly extended hook portions 38. The hook portions engage the latch elements 34, in the closed position of the locking member 33 shown in Fig. 6, to retain the latch elements 34 in engagement with the keeper elements 36. However, by grasping the locking member 33 by
the lugs 35 it can be turned in a counter-clockwise direction as viewed in Fig. 8 to move the outer faces of the latch elements 34 past the hold portion 33 to the position shown in Fig. 9. In that position, the latch elements 34 are completely disengaged from the keeper elements 35 and the top block 28 is free to be lifted off the base block 21. To reassemble the block 28 and 21 the above procedure is reversed.

Pitted into position over that portion of the shaft 25 which extends rearward from the rear end of the tubular extension 24- of the stud 24, there is an externally threaded tube 40. The tube 40 is considerably shorter than the shaft 25 and is formed at its front end with a reduced portion 40- forming an outwardly extended flange 41 of the same external diameter as the tubular extension 24-.

The flange 41 has its front face resting against the rear end of the tubular extension 24-, as seen in Fig. 8. A collar 42 encircles the rear end of the tubular extension 24- and the front end of the tube 40. The collar 42 is secured to the tubular extension 24- by several pins 43 extended radially inward from opposite sides of the collar. At its rear end over the reduced portion 40-, the collar 42 is formed with oppositely disposed slots 42-. A metal band 44 is forced through one of the slots 42- and engaged about the reduced portion 40- of the tube 40 behind the flange 41 rotatively connecting the tube to the collar 42.

In Figs. 7 and 7A the thicknesses of the parts is somewhat exaggerated but their relationship is shown. Thus, the collar 42 functions to rotatively connect the tube 40 to the rear end of the tubular extension 24- and to maintain the locking member 53 rotatively in position upon the tubular extension.

The tube 40 is free to be rotated in one direction or the other relative to the tubular extension 24- and relative to the shaft 25. As in the case of the shaft 25, the rear end of the tube 40 is provided with a handle 45. In Figs. 1 to 3, by which the tube 40 can be conveniently turned in one direction or the other.

Adjustably positioned on the tube 40 between the collar 42 and the handle 45, there is a heel piece 46. The heel piece 46 consists of a metallic block 47 formed at its front end with a depending portion 48 which has its rear face rounded to conform to the shape of the heel portion of shoes within which it is to be fitted. The front face of the depending portion 48 is formed with a recess 49, as seen in Fig. 2, for receiving the metallic mass and so lighten the heel piece 46. The block 47 is formed with a longitudinally extended passageway 50 which is unthreaded and through which the tube 40 has a sliding fit, as seen in Fig. 16. Between its ends, the top of the block 47 is formed with a cutout 51 which exposes the threaded top portion of the tube 40 where it passes through the passageway 50. Slidably fitted in the cutout 51 for vertical movement, there is a latch block 52 which has a threaded bottom face to fit over the top of the tube 40 in threaded engagement therewith, as shown in Fig. 14, requiring rotation of the tube to move the heel piece 46 along the length of the tube.

The latch block 52 is retained in position within the cutouts 51 for the required vertical sliding movement by a roof wall 53 which has depending side portions secured to the block 47 at the upper portions thereof by screws 54.

The latch block 52 is moved upward out of engagement with the threads of the tube 40 by 75 expansion springs 55 located on opposite sides of the tube. The bottom ends of the springs 55 are extended into holes 56 formed in the top face of the block 47 and the top ends of the springs are extended into holes 57 formed in the bottom face of the latch block 52. The springs 55 urge the latch block 52 upward against the inner face of the roof wall 53 disengaging the threads of the latch block from the threads of the tube 40 leaving the heel piece 46 free to be slid to the desired position along the length of the tube 40.

Means is provided for retaining the latch block 52 in a lowered operative position against the action of the springs 55 so that the heel piece 46 can only be moved along the length of the tube 40 by rotating the same. The latch block 52 retaining means comprises an elongated rod 58 of a length corresponding to the length of the metallic block 47 and which is rotatively supported between the upstanding end portions of the block 47 and the roof wall 53. Extending radially from the rod 58, there is an elongated handle 59 which projects through a laterally extended slot 60 formed in the roof wall 53. Intermediate of its ends, the elongated rod 58 is formed with a cutout 61, as seen in Figs. 14 to 16, which is on the side opposed to the handle 59 and which is of a length slightly greater than the length of the latch block 52. When the handle 59 is in the lowered position shown in Fig. 14, the rounded side of the rod 58 bears against the top face of the latch block 52 and retains that latch block lowered against the action of the springs 55.

On the other hand, when the handle is raised to the vertical position shown in Fig. 15, the rod 58 is turned to a position in which its cut out 61 is aligned with the latch block 52 freeing the same to be urged upward by the springs 55. In that position, the threads of the latch block 52 will be disengaged from the threads of the tube 40 so that the heel piece 46 is free to be slid along the length of the tube to the desired position at which the heel piece 46 is to be located in the heel of the shoe.

The latch block 52 is then lowered against the action of the springs 55 to engage the threads of the tube 40 so that final adjustments of the heel piece 46 within the heel of the shoe 32 are accomplished by turning the tube 40 by means of the handle 45. Adjustments of the heel piece 46 within the heel of the shoe 32 will force the superimposed blocks 20 and 21 into position in the toe box to lengthen the shoe.

As shown in Fig. 16, a coil spring 62 is engaged about a reduced portion 58a of the rod 58. The coil spring 62 is under tension and has one end secured to the reduced portions 58a and its other end anchored to the material of the block 47 turning the rod 58 to the position in which it holds the latch block 52 in its lowered operative position shown in Fig. 14. Positioned at the side of the heel piece 45 opposed to the side from which the handle 59 extends, when in its lowered position shown in Fig. 14, there is an inverted U-shaped handle 63. The bottom ends of the U-shaped handle 63 are mounted in position by the same screws 54 which secure the adjacent side of the roof wall 53 in position. By simultaneously gripping the handles 59 and 63 and squeezing the handle 59 toward the handle 63 against the action of the spring 62, a convenient grip is provided for moving the rod 58 to its inoperative position shown in Figs. 15 and 16 in which the latch block 52 is freed to be urged upward by the springs 55. Immediately as the grip on the handles 59 and 63 is released, the coil
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spring 62 will turn the rod 58 back to its starting position shown in Fig. 14.

The top face of the upper block 21 is cut away and has an end to accommodate the front edge of an instep plate 64 which is curved laterally to extend across the top face of the block 21. The front end of the instep plate 64 is pivoted to the upper block 21 by means of a loose nut and bolt assembly 65, see particularly Fig. 5. At its free rear end, the instep plate 64 is provided with a pivoted mounted latch lever 66 having an intermediate portion extended pivotally through a slot 67 formed in the instep plate 64. Above the slot 67, the latch lever 66 continues into a curved handle portion 66a by which a grip can be had for lifting the instep plate 64 about its pivoted front end. The latch lever 66 at the bottom face of the instep plate 64 is formed with laterally extended shoulders 66b, see Fig. 4, which engage the material of the instep plate 64 at the ends of the slot 61 holding the latch lever 66 from being pulled upward through the slot 67. The top face of the upper block 21 beneath the instep plate 64 is formed with transversely extending notches 68 with which the free end of the latch lever 66 is selectively engageable for holding the instep plate 64 in various raised positions about the pivoted front end of that plate. When the latch lever 66 is disengaged from the notches 68, the instep plate 64 can be laid flat against the top face of the upper block 21 with the latch lever in position between the adjacent faces thereof. In its various raised positions, the instep plate 64 will function to stretch and widen the instep of the shoe 32 independent of any other adjustments made to the shoe.

Provided for use in connection with the instep plate 64, there is an arched plate 69 which extends across the entire width of the instep plate 64 and from the front end of the upper block 21 to the rear edge of the instep plate. At its rear end, the arched plate 69 is formed with transverse slots 78 by which the arched plate 69 can be hooked in position over the free end of the handle portion 66a of the latch lever 66. With the arched plate 69 in position, raising of the instep plate 64 will cause the arched plate 69 to assume an inclined position between the front end of the upper block 21 and the rear edge of the instep plate 64. Thus, with the arched plate 69 in position, the toe box of the shoe will be stretched simultaneously with widening and stretching of the instep of the shoe. However, the arched plate 69 can be removed, when it is not to be used, by lifting its front end while moving the rear end along the handle portion 66a to slip the slotted end of the arched plate off the free end of the handle portion 66a of the latch lever 66.

Bunion pads 71 are provided for use with the arched plate 69 or for use with the instep plate 64. Each upper block 21, when the arched plate 69 is not being used, for deforming the side walls of the toe box of the shoe 32 to accommodate bunions or other toe deformities. The bunion pads 71 are hollow elliptically shaped members formed in the side walls of the hollow faces and extended from the open sides thereof. Adjacent the pins 72 each pad 71 is formed with a hole 73. The front end of the upper block 21, the front end portion of the instep plate 64 and the front end portion of the arched plate 69 are formed with hollow faces which the pins 72 of the bunion pads 71 can be selectively engaged, as shown in Figs. 17 and 18.

The arrangement of the holes 74 is such that the pads 71 can be positioned at the desired position with relation to the portion of the toe box of the shoe which is to be deformed. Each stretcher is provided with a group of bunion pads 71 of different circumferential sizes for selective use or for use in combination with each other as shown in Fig. 18. The bunion pads 71 when used in combination are stacked with the largest one located immediately adjacent the stretcher and in diminishing size outward therefrom. The pins 72 of the lowermost pad 71 is engaged with the respective hole 74 of the respective part of the shoe stretcher and the pins 72 of the outermost pads 71 are engaged with the holes 73 of the underneath pads. When several of the bunion pads are stacked extreme deformation of the toe box is achieved to provide for extremely large, troublesome bunions.

Extended along the sides of the bottom block 22, there are side pieces 73 constructional details of which are shown in Figs. 11 to 13. Each of the side pieces 73 molded of metal and shaped to fit snugly against its respective side of the bottom block 22. Inwardly of the sides of the side walls of the bottom block 22, there are recesses 74, along opposite sides of the respective wedge hollow 32, see Fig. 11, for slidably engaging side walls 75. Each side wall 75 is formed with a spaced pair of holes 76 and 77. The inner face of each side piece 73 is formed with a fixed hook which extends into the respective hole 76. The hooks 79 are of tapered construction with their ends adjacent the side piece 73 of the same width as the respective holes 78 so as to hold the side pieces 73 against longitudinal movement relative to the bottom block 22.

Rearward of the hooks 79, the inner faces of the side pieces 73 are formed with cutouts 70, see Figs. 12 and 13, which open to the rear ends of the side pieces 73. Positioned within the cutout 79, there are elongated arms 80 which are pivotally supported at their front ends on pins 81 mounted across the cutouts 70 at the front ends thereof. Extended laterally inward from the inner faces of the arms 80, there are hooks 82 which are passed through the holes 77 and engaged with the material to the side walls 75 at the front ends of the holes 77. The hooks 79 are large enough to extend the arms 80 in the hooks 82 and to permit the required forward movement of the side pieces 73 as controlled by the engagement of the hooks 79 with the holes 78.

The free rear ends of the arms 80 continue into grip portions 83 which extend from the open rear ends of the cutouts 79 and by which the arms 80 can be pivotally disengaged from hooks 82 from the material of the walls 78 to free the side pieces 73 to be removed when desired. The arms 80 are resiliently retained in their operative positions by means of springs 85 positioned in the cutouts 79 between the material of the side pieces 73 defining the outer sides of the cutouts and the adjacent sides of the arms 80. The springs 85 have the free ends of their arms turned outward to engage holes 86 formed in the material of the side pieces 73 and the molded inserts 87 formed in the arms 80 intermediate of their ends and rearward of the pivot pins 81.

The front ends of the arms 80 are shaped to provide cams 88, see Fig. 13, which are shaped to engage the material of the side pieces 73 at the front with holes 74 with which the pins 72 of the arms 80 are formed in the material of the side pieces 73 engaging under the action of the springs 85 in pivoting the arms 80 outward. Pivoting is limited at the point where the hooks 82 will be engaged with the material.
of the side walls 15 at the front of the holes 17, as best shown at the top of Fig. 11. To free the side pieces 13 to be removed, it is merely neces-
sary to pivot the arms 60 outward by means of the grip portions 83 and against the action of the springs 85. Such pivotal action disengages the books 82 from the material of the side walls 15 and frees the side pieces 13 to be pivoted out-
ward about the front ends thereof withdrawing the books 78 from the holes 76 completely dis-
engaging the side pieces.

It is appreciated that the shoe stretcher can be used without either of the side pieces 73. If desired, both of the side pieces 73 can be mounted in position at the sides of the bottom block 20 so as to provide extra width in the shoe 32 as the superimposed blocks 20 and 21 are forced into position within the toe box of the shoe. On the other hand, the shoe stretcher can be used with the other or the other of the side pieces 73 mounted in position at the side of the bottom block so as to stretch either the right or the left side of the shoe 32.

While I have illustrated and described the pre-
ferred embodiment of my invention, it is to be
understood that I do not limit myself to the pre-
cise construction herein disclosed and the right is reserved to all changes and modifica-
tions coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. A shoe stretcher comprising a pair of superimposed complementary blocks having aligned wedge hollows in their adjacent faces, a vertically extended stud mounted between the rear ends of said blocks retaining said blocks against rela-
tive longitudinal movement, a shaft engaged through said stud intermediate of its ends and having threaded engagement therewith, a wedge rotatively mounted on the front end of said shaft and engaged said wedge hollows for moving said blocks apart as said shaft is turned, a keeper element formed within a hollow in the rear end of each of said blocks, a tubular extension ex-
tended rearward from said stud concentric with said shaft, a locking member freely rotatively mounted on said extension and having latch ele-
ments engaging said keeper elements to join the rear ends of said blocks, a tubular extension and having latch elements engag-
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2. A shoe stretcher, comprising a pair of superim-
posed complementary blocks having aligned wedge hollows in their adjacent faces, a vertically extended stud mounted between the rear ends of said blocks retaining said blocks against relative longitudinal movement, a shaft engaged through said stud intermediate of its ends and having threaded engagement therewith, a wedge rotatively mounted on the front end of said shaft and engaging said wedge hollows for moving said blocks apart as said shaft is turned, a keeper ele-
ment formed within a hollow in the rear end of each of said blocks, a tubular extension extended rearward from said stud concentric with said shaft, a member freely rotatively mounted on said extension and having latch elements engag-
ing said keeper elements to join the rear ends of said blocks, springs on said keeper elements and engaging said latch elements for retaining said member in a rotative position in which said latch elements are engaged with said keeper elements, a tube rotatively engaged over the rear end of said shaft and abutted against the rear end of said ex-
tension, a heel piece adjustable mounted on said tube, and a collar rotatively connecting said tube to the rear end of said instep plate for holding the same in a rea-
wardly inclined position relative to said upper last block, said instep plate holding means including a handle portion extended rearward from the rear edge of said instep plate, and an arched plate positioned over said instep plate from the front end of said upper block to the upper rear edge of said instep plate, said arched plate having a slot in its rear end by which said arched plate can be removable engaged in posi-
tion over said handle portion.

3. A shoe stretcher comprising a pair of superim-
posed complementary blocks having aligned wedge means, a thread shaft rotatably engag-
ing said blocks, a heel piece adjustable mounted on said shaft, a latch block on said shaft in com-
plementary engagement with said heel piece, res-
ilent means on said heel piece urging said latch block into a position to be raised off said shaft, and cam means rotatably held on said latch block to move said latch block against the force of the resilient means.

4. The structure of claim 3, wherein said heel piece and latch block include aligned apertures, said resilient means being retained within said apertures, and a depending portion on said said heel piece with a rear face rounded to conform to the shape of the heel portion of a shoe.

5. The structure of claim 3, wherein said heel piece includes a longitudinal passageway to fit around the shaft, and a cut-out in said heel piece, said latch block being slidably fitted in the cut-out for vertical movement.

6. The combination of claim 5, said longitudi-
nal passageway being unthreaded and said latch block having a threaded bottom face engaging said shaft, requiring rotation of the shaft to move the heel piece along the length of the shaft.

7. The combination of claim 6 wherein the cam means comprises an elongated rod having a cut-
out surface and an elongated handle, a roof wall
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secured to said heel piece and rotatably supporting said cam, and a coil spring anchored on said heel piece and engaging said cam means, to hold the latch block in engagement with the shaft.

8. The combination of claim 7 wherein a U-shaped handle is secured on said heel piece and is adapted to be simultaneously engaged with said elongated handle to assist in overcoming the force of the coil spring to release the latch block from engagement with the shaft.

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