J. J. HEYS.

SHOE.

APPLICATION FILED AUG. 27, 1917.

1,436,093. Patented Nov. 21, 1922.

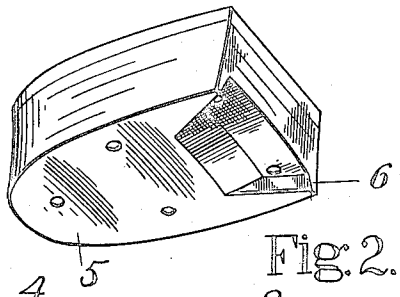


Fig. 2.

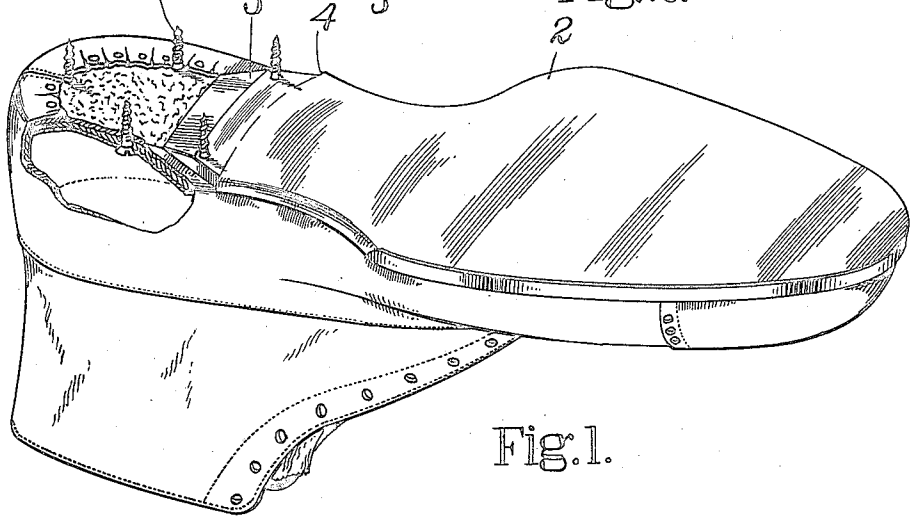


Fig. 1.

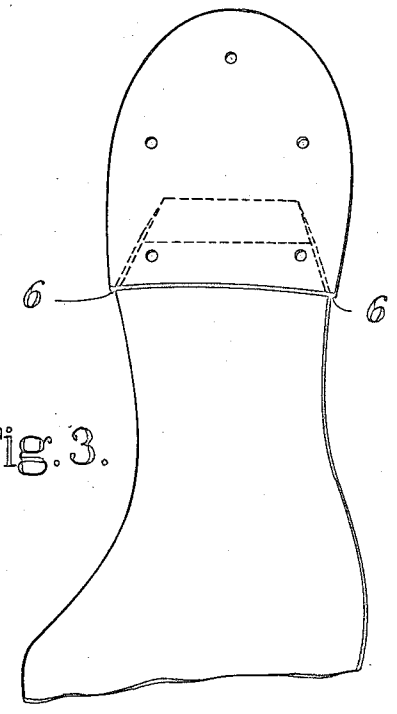


Fig. 3.

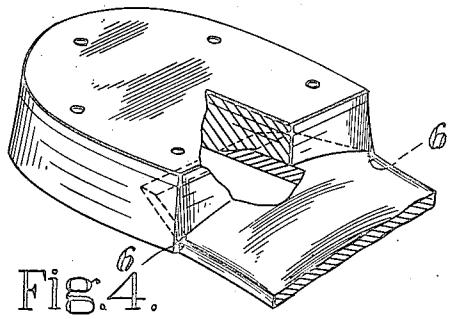


Fig. 4.

INVENTOR.

John J. Heys

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UNITED STATES PATENT OFFICE.

JOHN J. HEYS, OF LYNN, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNITED SHOE MACHINERY CORPORATION, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SHOE.

Application filed August 27, 1917. Serial No. 188,320.

To all whom it may concern:

Be it known that I, JOHN J. HEYS, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain Improvements in Shoes, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

In the development of shoe manufacture, it has been demonstrated to be practicable to make, of the usual heel materials, a completed wax-polished heel as a separate article of manufacture ready for attachment to a shoe and requiring no finishing after attachment. A serious difficulty is, however, encountered in making practical use of such a finished heel. It is found that when such a heel is attached to a shoe there will so often be a variation or deviation of the lines or dimensions of the heel and the immediately adjacent parts of the sole that either the heel or the sole must be trimmed down to fit the other part. In effecting the required cutting and fitting the finished surface of the heels is damaged and requires re-finishing to a degree that renders the practice of using prefinished heels unprofitable. The difficulty has been reduced by inventions, exemplified in United States Letters Patent No. 1,396,801, granted November 15, 1921, on application of Winkley, owned by the assignee of this invention, in which the sole terminates under the breast portion of the heel and the heel extends upward to the rand crease so that the only exposed joint to make between the heel and sole is at the breast of the heel. It is not practical, however, as a manufacturing proposition either to edge finish the sole so that it will be the exact width of the heel to be applied and require no refinishing, or to edge finish the sole to fit the attached heel without damaging the surface of the heel. This difficulty has barred the adoption of pre-finished heels and it is the object of this invention to eliminate this difficulty and render available the economies obtainable by finishing heels off the shoe. This I accomplish by building and finishing the heel slightly wider than the shank of the sole, finishing the sole edge, and then applying the heel to present at each side of the shank a breast edge extension outwardly beyond the sole edge. The width of this extension may be normally very slight, as for example $\frac{1}{32}$ of an inch, but enough to make always some extension the slight variations in which, produced by inaccuracies in workmanship, will be unobservable. It is a well-known fact that if a shoulder or extension is intended and always present a little more or less width thereof will be negligible, whereas the same variation from an intended alinement is an obvious defect. The invention will now be more fully explained with the aid of the accompanying drawings and then particularly pointed out in the claims.

Fig. 1 of the drawings shows a shoe prepared to receive a heel in accordance with this invention.

Fig. 2 shows an edge finished heel prepared for application to a shoe in accordance with this invention.

Figs. 3 and 4 are, respectively, plan and perspective views of a shoe bottom made in accordance with this invention and requiring no edge finishing of the sole or heel after the heel has been applied.

In practising this invention, a shoe is lasted and the sole 2 attached in accordance with any usual or suitable custom and the type of connection between the sole and upper may vary according to the type of shoe being made. A welt shoe is assumed to be shown in the drawings. The sole illustrated covers the forepart and the shank of the shoe and from the shank extends a taper tongue 3 to form a joint with the heel. The sole may or may not be cut in or shouldered at the heel breast line as indicated at 4 on one or both sides of the shank. The sole, and the welt edge in a welt shoe, is preferably completely finished, including bottom finishing, whatever edge trimming is necessary, staining and edge setting before the heel is attached.

The heel 5 is built to include a seat end lift having an exposed face formed by pressure or otherwise to fit the heel seat face of the lasted shoe and recessed to receive the tongue 3 of the sole. It should be stated that the particular form of joint illustrated between the sole and heel is not material and may be varied. The heel is formed wider than the sole, e. g., $\frac{1}{16}$ of an inch wider, at the breast end in the plane of the

sole recess so that when attached to the shoe it will present a breast edge extension at 6 projecting outwardly from the shank of the sole. Before its application to the shoe the heel is preferably completely finished, including trimming, staining, and edge polishing, as is customary in the present commercial practice of wax finishing heels on the shoes. In this condition, and fitted as described, the heel is assembled with the sole on the shoe as indicated in Figs. 3 and 4 to present at the side of the shank a projection, constituting a definite break in the edge line of the shoe at the heel breast line. It is impractical under commercial shoe manufacturing conditions to produce exactness in the width of both the shanks of the soles and the breast faces of the heels, and the variation from exactness would be conspicuous as a defect if a continuous or unbroken edge line were attempted, resulting in necessity for trimming and repairing the finish of the sole edge or heel edge or both. By providing for a definite break in the edge line, as described, the slight variations of a small fraction of an inch more or less in the width of the extension 6 is unobservable and therefore unobjectionable. This invention is broad enough to cover a method of making shoes in which an extension of the heel breast at one side only of the shank is presented and the shoe is provided with a continuous edge line at its other side, as some styles now call for. This practice of my method may be carried out by making the tongue recess in the heel slightly wider than the tongue on the sole and carefully positioning the heel laterally on the sole to bring the sole and heel edges into alinement, as for example at the outer side of the shoe, and maintaining such alinement while the heel is permanently attached. Or one side of the sole or heel can be trimmed when necessary to obtain a continuous edge line on that side of the shoe, the fitting of he other side of the shoe being saved by the use of this invention.

The heel may be attached by any suitable means, attachment from the inside of the heel by means of screws 8 being illustrated, as the best results in preserving the wax finish of pre-finished heels have been obtained by inside fastenings which are applied without shock or crushing pressure. The pre-finishing of heels, made commercially practicable by this invention, enables a substantial economy to be effected in two respects. The finished heels can be produced as complete articles of manufacture in factories or departments particularly fitted up with apparatus for this purpose cheaper than they can be shaped and finished on the shoe. Furthermore, by performing the heel finishing operations before the heel is attached, the actual shoe manufacturing process is shortened by as much as the time heretofore required to finish the heel on the shoe. This has the advantage of sooner releasing the last, which is an expensive part of shoe factory equipment, so that it may be used over again in making another shoe.

Having fully explained my invention, I claim as new and desire to secure by Letters Patent of the United States:—

1. That improvement in the manufacture of shoes which consists in building and finishing heels slightly wider than the shank of the soles with which the heels are to be used, finishing the soles of the shoes, and then applying each heel to present at each side of the shank a breast edge extension outwardly beyond the sole edge.

2. That improvement in the manufacture of shoes which consists in edge finishing the sole of a shoe in the shank to an approximately definite width, separately edge finishing a heel to have an approximately definite width at the breast which is slightly greater than the width of the sole, and attaching the heel in position to present a slight extension laterally from the sole edge at the breast.

3. That improvement in the manufacture of shoes which consists in edge finishing the sole of a shoe in the shank to an approximately definite width, forming a taper tongue on the sole from the shank backwardly, making a heel with a seat face adapted to fit the heel end of the lasted shoe and provided with a recess shaped to receive the tongue on the sole, edge finishing the heel to have an approximately definite width at the breast which is slightly greater than the width of the sole, and attaching the heel in position to present a slight extension laterally from the sole edge at the breast.

4. That improvement in the manufacture of shoes which consists in edge finishing the sole of a shoe in the shank to an approximately definite width, shouldering the sole at the breast line, forming a taper tongue on the sole from the shoulder backwardly, making a heel to have an approximately definite width at the breast which is slightly greater than the width of the sole, and applying the heel to the taper tongue with its breast edge against said shoulder and in position to present a slight extension laterally from the sole edge in line with the shoulder on the sole.

5. That improvement in the manufacture of shoes which consists in edge finishing the sole of a shoe in the shank to an approximately definite width, shouldering the sole at each side of the shank at the breast line, forming a taper tongue on the sole from the shoulders backwardly, making a heel to have an approximately definite width at the breast which is slightly greater than the

width of the sole, and applying the heel to the taper tongue with its breast edge against said shoulders and in position to present a slight extension laterally from the sole edge in line with the shoulders on the sole.

6. That improvement in the manufacture of shoes which consists in building and finishing heels slightly wider than the shank of the soles with which the heels are to be used, finishing the soles of the shoes, and then applying each heel to its shoe to present always an extension of the heel outwardly beyond the sole edge at one side of the shoe, the amount of such extension varying more or less with inaccuracies in the measurements of the sole and heel.

7. That improvement in the manufacture of shoes which consists in building and finishing heels slightly wider than the shank of the soles with which the heels are to be used, forming tapered recesses in the seat faces of the heels, forming tapered tongues on the soles slightly narrower than the recesses in the heels, edge finishing the soles of the shoes, then applying and adjusting each heel with relation to the tongue of the sole to present on the inner side of the shoe an extension of the heel breast face across and outwardly beyond the edge face of the sole more or less to include the inaccuracies in width of the heel and sole, and attaching the heel in adjusted position on the shoe.

8. That improvement in the manufacture of shoes which consists in building and finishing a shoe heel to present a seat face adapted to fit the heel seat of a lasted shoe and a tongue extension from the shank of the shoe sole and to present a lateral breast extension from the shank edge of the sole.

9. That improvement in the manufacture of shoes which consists in building and finishing a shoe heel to present a seat face adapted to fit the heel seat of a lasted shoe and a taper tongue extension from the shank of the shoe sole and to present a lateral breast extension from the shank edge of the sole; shaping a sole to provide a shank narrower than said heel at the breast and having a taper tongue to be connected with the heel and a shoulder wall at the outer edge of said tongue to abut against the breast extension of the heel, and assembling said heel with a shoe having the described sole.

10. A shoe bottom comprising an edge finished sole and an edge finished heel, said sole having at the rear end of its shank portion a rearwardly tapering tongue inset to produce a short end face at each edge, and said heel being wider at its breast than the shank of the sole and having a recess at the breast end of its seat surface shaped to receive said tongue.

11. A shoe bottom comprising an edge finished sole and an edge finished heel, said sole having at the rear end of its shank portion a rearwardly tapering tongue inset to produce a short end face at each edge, and said heel being wider at its breast than the shank of the sole and having a recess at the breast end of its seat surface shaped to receive said tongue abutting against and extending laterally beyond said end faces of the sole.

12. A shoe bottom comprising an edge finished sole and an edge finished heel, said sole having at the rear end of its shank portion end faces extending inwardly from each edge and a tongue tapering rearwardly from the said end faces to fit a recess formed for its reception at the breast end of the seat surface of the heel, said heel having a breast edge abutting and extending laterally beyond said edge faces of the sole to present a shoulder where the heel edge line meets the sole edge line.

In testimony whereof I have signed my name to this specification.

JOHN J. HEYS.