P. DIUK.

SHOE HEEL.

APPLICATION FILED NOV. 24, 1919.

1,339,438. **Patented May 11, 1920.**

Fig. 2

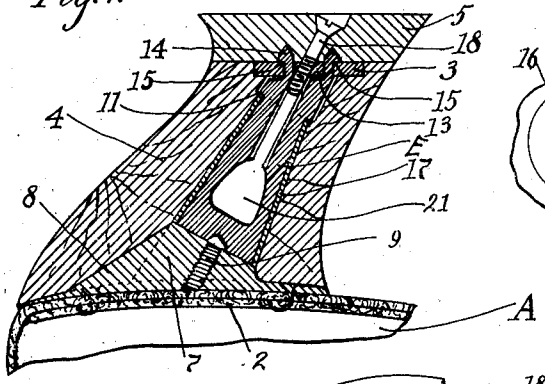


Fig. 6

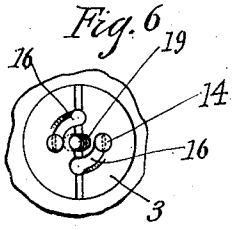


Fig. 5

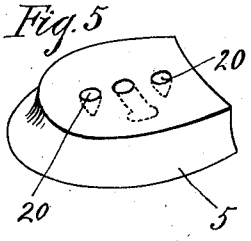


Fig. 1

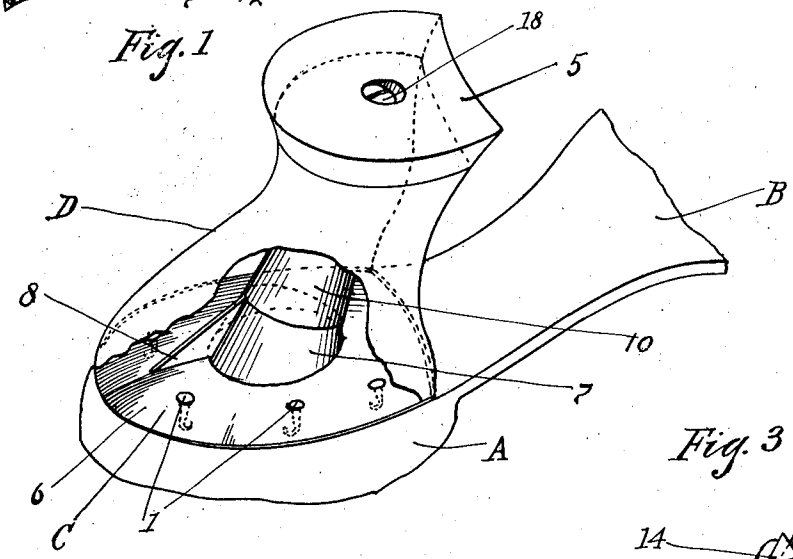


Fig. 4

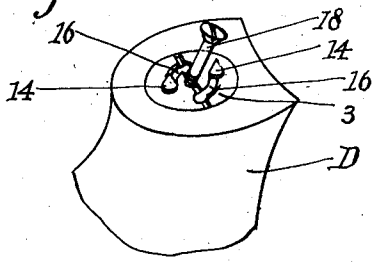
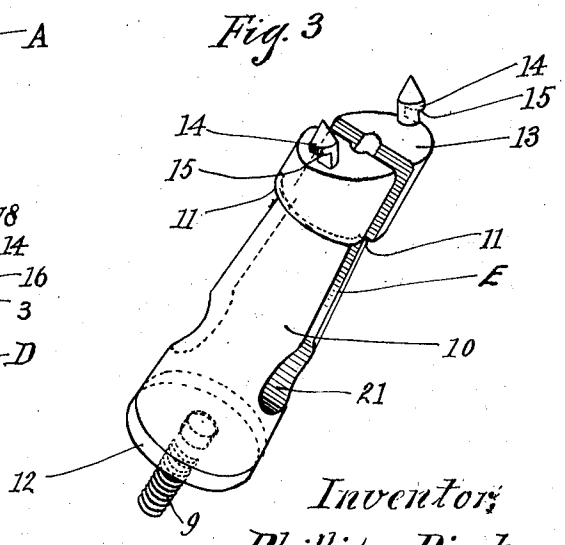


Fig. 3



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UNITED STATES PATENT OFFICE.

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SHOE-HEEL.

1,339,438. Specification of Letters Patent. Patented May 11, 1920.

Application filed November 24, 1919. Serial No. 340,245.

To all whom it may concern:

Be it known that I, PHILLIP DIUK, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Shoe-Heels, of which the following is a specification.

This invention relates to heels for ladies' shoes and more particularly to high narrow heels generally designated as French heels. Heels of this type are usually of small dimension at the bottom in the region of the top lift, it being therefore very difficult to construct heels of this type that will be durable and at the same time delicate in outline.

An object of the invention is to provide metallic reinforcing means within the heel to receive the greater part of the strains and side thrusts to which the heel is constantly subjected during use.

A further object of the invention is to provide a reinforcing structure that may be available for heels of varying heights, the heel being easily removable from the shoe, and the top lift being controlled against displacement without the use of ordinary nails, the lift also being easily replaced.

A still further object of the invention is to provide a heel of the class described which may be applied to the outside of the sole of the counter without disturbing the inner standard construction of the shoe by means of plates, etc.

To this end the invention consists in the construction, combination and arrangement of parts hereinafter described and claimed.

Referring to the drawings:

Figure 1 is a fragmentary perspective view of a heel embodying the invention and showing it applied to the sole of a shoe.

Fig. 2 is a longitudinal sectional view on line 2—2 of Fig. 1.

Fig. 3 is an enlarged perspective view of the main heel support.

Fig. 4 is a fragmentary perspective view of the upper part of the heel, the lift not being shown.

Fig. 5 is a perspective view of the lift alone, and

Fig. 6 is a top view of a detail.

In the drawings, A designates the counter and B the sole of a shoe. Superposed on the outside of the heel portion of the sole is applicant's improved heel D, the latter comprising a base C, a removable upwardly extending stud E threadedly connected therewith, a retaining washer 3 at the top of the stud, a heel member 4 preferably made of wood removably surrounding said stud and overlying said base and a top lift 5 of any suitable material such as metal, leather, rubber and the like screw threadedly held positioned on the bottom of said heel member.

The base as shown is secured to the shoe by means of nails 1 penetrating the sole B and the inner sole 2, and comprises a dished plate 6, the concave side thereof fitting over the heel portion of the sole and the convex side thereof being formed with a frusto conical boss 7 centrally disposed thereon the axis of the boss extending upwardly and being inclined forwardly toward the toe of the shoe. A rib 8 disposed longitudinally of the sole of the shoe extends from the boss to the plate 6. The face of the boss lies in a plane perpendicular to its axis, and is centrally tapped to receive the threaded shank 9 of the stud E. The stud comprises a tapered cylindrical body portion 10 formed with an annular shoulder 11 near its upper extremity, said shoulder lying in a plane parallel to the face of said boss. The large end of said body portion from which the threaded shank extends is adapted to flatly engage the face of said boss so that the stud may be securely screwed against the face of said boss to form a rigid obliquely extending post.

As shown in Fig. 3 of the drawings, a washer 12 may be inserted over the shank 9 so as to arbitrarily vary the length of the stud when desired. Any number of washers of suitable thickness may thus be used to accommodate varying heights of heels. The stud is formed at its top with a flat face 13, the latter lying in a plane parallel with the faces of the lift 5, the upper portion of the stud being cylindrical and of uniform diameter.

Projecting upwardly from the face 13 and perpendicular thereto and preferably integral therewith are the pins 14, each of the pins having one of its sides undercut so as to form an overhanging shoulder 15, said shoulder being parallel with the face 13 of the stud. The upper portions of the pins are pointed or sharpened as shown. The

undercuts of the respective pins are oppositely disposed, the cuts being adapted to loosely receive the thickness of the circular washer 3.

Referring to Fig. 6 of the drawings the washer 3 is formed with a pair of oppositely disposed concentrical slots 16, the slots being enlarged at their respective ends so as to receive the pins 14. Thus, when the washer 3 is inserted over the pins and rotated about its center the washer will be firmly locked between the shoulder 15 and the upper face of the heel member 4, there being a little play between the washer and the face 13. The outer edge of each of the slots 16 is slightly inclined the thickness of the washer near said enlargement being reduced for that purpose.

As indicated in Fig. 2 of the drawings, the washer is considerably larger in diameter than the face 13 so as to effect an overhanging surface the washer being fitted into the top face of the heel member 4 so as to bring its upper face flush therewith. The heel member 4 is interiorly bored to fit over the tapered body portion 10 of the stud, the bore being lined by a metallic tube or ferrule 17, the top of the ferrule abutting against the shoulder 11 of the stud. The heel member 4 is formed to fit closely over the boss 7 and its rib 8 and over the convex surface of the plate 6 so that it may be easily removed therefrom.

Referring to Fig. 3, the stud is centrally longitudinally split throughout the major portion of its length thereby forming spring arms, each of the latter carrying one of the pins 14. Thus, the arms may be sprung toward each other and inserted into the large end of the ferrule 17 and slipped through the latter until the shoulder 11 springs over the upper edge of the ferrule, thereby firmly locking the heel in position. The washer 3 is now inserted over the pins 14 and turned whereby the heel is forced against the base C and thereby held positioned, the pins 14 projecting above the surface of the washer. The top lift 5 (Fig. 5) is centrally bored at an angle to accommodate a screw 18, the latter fitting the thread 19 in the washer 3. The openings 20 in the lift are arranged so as to fit over the pins 14 to hold the lift against rotation on the heel. In practice when the lift is of fibrous material it may be driven over the pins without preliminarily drilling any holes.

As shown in the drawings the split or bifurcation in the stud is somewhat enlarged to form an opening 21 so as to render the arms thinner at their respective bases. In practice the wooden heels may be made of any suitable configuration exteriorly but fitting interiorly over the base and stud as shown. If, however, a higher heel is to be employed the additional length will be added at the base end of the heel so that the washer 12 may be employed for the purpose of extending the length of the stud. In this manner many shapes and sizes of heels may be made to fit the stud and base, the washer and threaded shank constituting extension means for that purpose.

I claim:

1. In a shoe heel, the combination with the sole, of a metallic skeleton structure adapted to fit over and be secured to the outside of the heel portion of the sole, said structure including two oppositely disposed outwardly extending spring arms, a hollow heel member fitting over said skeleton structure and engaging under stress said spring arms, and coöperating shoulders on said heel member and said spring arms respectively whereby said heel member and said spring arms are held interlocked.

2. In a shoe heel, the combination with the sole, of a metallic skeleton structure adapted to fit over and be secured to the outside of the heel portion of the sole, said structure comprising a base plate and a pair of comparatively long parallel spring arms extending obliquely from one face thereof each of said arms being undercut at its free end, a hollow heel member overlying said base and surrounding said spring arms and engaging the latter under stress, and a wedge shaped retaining member overlying the bottom of said heel member and wedged in said undercuts to press said heel member against said base plate and to lock said spring arms against lateral movement.

3. In a shoe heel, the combination with the sole, of a reinforcing skeleton structure fitting over the outside of the heel portion of the sole and adapted to be nailed thereto, said structure comprising a base plate, a comparatively high post extending obliquely therefrom and having a pair of spaced undercut vertical pins at its outer extremity, a hollow heel member fitting over said structure said pins projecting from the hollow beyond the bottom thereof, a flat circular wedge member overlying the bottom of said heel member, a top lift member fitting over said projecting pins and screw threaded means for securing said top lift to said wedge member.

4. In combination with the heel portion of the sole of a shoe, a skeleton structure fitting over the outside convex surface of said heel portion and being adapted to be directly secured thereto, said structure consisting of a dished base plate and an upwardly extending comparatively high post having screw threaded connection with said plate, whereby the length of the post relative to the plate may be varied, a heel member fitting over said post the latter projecting beyond the bottom of said heel, wedge

devices extending from the top of said post to said heel member to hold the latter positioned in said structure, and a top lift for the heel member screw threadedly secured to said wedge device.

5. A heel, comprising a hollow heel member, a skeleton reinforcing element a part thereof piercing longitudinally said heel member and consisting in part of a comparatively thin base the outline thereof conforming to the contour of the top of said heel member whereby said element is secured directly to the outside of the shoe, means for locking said heel member to said element, a pair of steady pins at the outer end of said piercing part adjacent the bottom of said heel member, a top lift engaging said pins and screw threaded means for fastening said top lift to said element.

In testimony whereof I affix my signature.

MR. PHILLIP DIUK.