Aug. 28, 1962 F. M. RONCI 3,050,877

REINFORCED HEEL AND TAP

Filed June 16, 1960

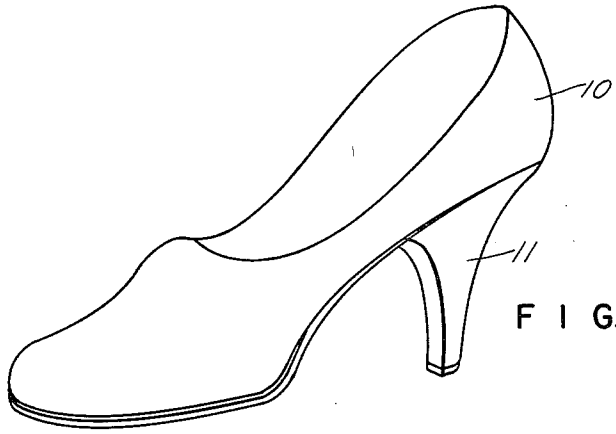



FIG. 1

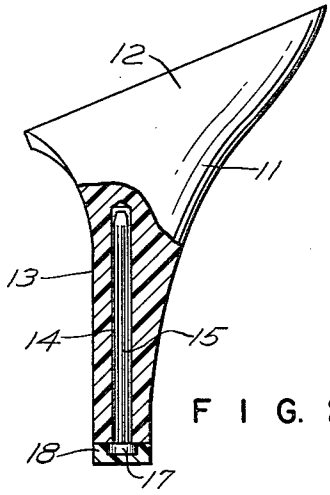



FIG. 2

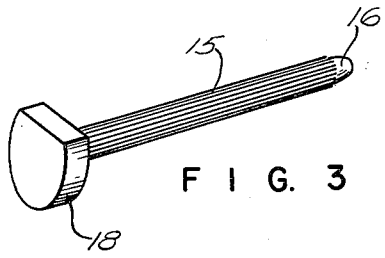



FIG. 3

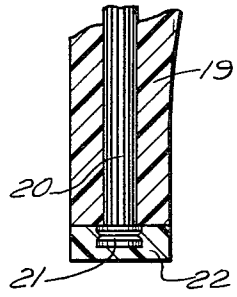



FIG. 4

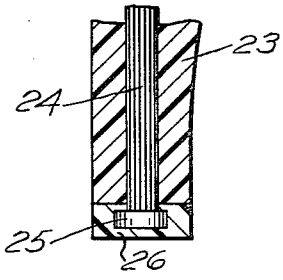



FIG. 5

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3,050,877

Patented Aug. 28, 1962



3,050,877

# REINFORCED HEEL AND TAP

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Filed June 16, 1960, Ser. No. 36,654
4 Claims. (Cl. 36—34)

My present invention relates to the shoe making art and more particularly to a novel construction of a heel and tap.

The present invention constitutes a continuation in part of my copending application entitled Reinforced Heel and Tap, Serial Number 756,329, filed August 21, 1958.

The principal object of the present invention is to provide a reinforcing core and novel tap for a narrow elongated high heel for a woman's shoe.

Another object of the present invention is to provide a tap construction which is rigid, tough and scuff proof.

A further object of the present invention is to provide a combination tap and reinforcing core wherein the tap is long wearing and has great resistance to loosening.

Another object of the present invention is to provide a heel and tap construction which is easy and economical to manufacture and assemble.

With the above and other objects and advantageous features in view, my invention consists of a novel arrangement of parts more fully disclosed in the detailed description following, in conjunction with the accompanying drawings, and more particularly defined in the appended claims.

In the drawings,

FIG. 1 is a perspective view of a woman's shoe having the heel and tap of the present invention.

FIG. 2 is a side elevation partly in section of the heel and tap.

FIG. 3 is a perspective view of the combination tap and reinforcing member.

FIG. 4 is an enlarged vertical section of the bottom end of the heel showing another form of tap construction.

FIG. 5 is a view similar to FIG. 4 showing another form of tap construction.

In certain types of women's shoes a very narrow spike heel has become extremely popular. These heels are normally molded of plastic material and taper from a broad top to a main heel portion which is extremely narrow in diameter. To reinforce these heels, a central vertical opening has been made therein extending through the narrow portion and a metal reinforcing core or dowel has been forced into the opening. This reinforcing core or dowel is roughened, fluted or provided with threads to prevent movement in the opening. More recently a top lift made of metal has been secured to the end of the reinforcing dowel. This has been found objectionable because of the danger of damaging persons, clothing, furniture, rugs and floors.

The present invention is designed to overcome these defects by providing the reinforcing core or dowel with a top lift which is tough, long wearing but sufficiently resilient to prevent scuffing and other damage and designed to enclose the head of the dowel so that it will not be exposed.

Referring more in detail to the drawings, the shoe **10** is provided with a heel **11** having a broad top heel-seat portion **12** tapering to an elongated narrow portion **13** which forms a narrow tread end. The heel **11** is made of plastic material and is provided with a vertical hole **14** which extends from the tread end of the heel upwardly through the narrow portion and well into the top portion. If desired the hole **14** may be extended completely through the heel. Referring to FIGS. 3 and 4, I now provide an elongated reinforcing shank **15** preferably of tempered steel. The reinforcing shank **15** is provided with a tapered snubbed end **16** at one end and an enlarged head **17** at the other end. The shank **15**, which constitutes a reinforcing core or dowel is approximately the same diameter as the hole **14** or perhaps slightly greater to produce a tight fit. To prevent turning movement of the shank **15** in the hole, the shank **15** is illustrated as provided with surface flutings. Other holding means such as a self-driving screw or knurlings can also be used. The shank **15** can thus be forced into the hole **14** as shown in FIG. 2 until the shoulders on the enlarged head **17** abut the tread end of the heel.



The tap or lift for the bottom of the heel is preferably made of a suitable tough plastic material. It can be made of nylon, polyethylene, urethane or any of the modern moldable materials which combine toughness with some resiliency. In the form illustrated in FIGS. 2 and 3 the tap **18** is molded directly to the enlarged head **17** so that the head **17** is embedded in the tap and will be unexposed after assembly. To further lock the tap to the head during the molding operation, the head **17** may be provided with flutings as shown in FIG. 2. In assembly the tap **18** is molded to the head **17** as shown in FIG. 3 and the shank **15** is then driven into the hole **14** as shown in FIG. 2. The shank **15** thus acts as a reinforcing core and also serves to hold the tap on the heel.

For additional interlocking of the tap and the head, the form shown in FIG. 4 may be used. In this form the heel **19** is provided with a central hole and a reinforcing shank **20** similar to the shank **15**. However, the head **21** is grooved or undercut. When the tap **22** is molded to the head **21** the grooved portion interlocks with the tap to hold it in place.

In the form shown in FIG. 5 the head on the reinforcing shank is completely embedded in the tap material. In this form the heel **23** is provided with the same central hole and the same reinforcing shank **24**. However the shank head **25** is completely embedded in the material of the tap **26**. To avoid too much thickness, the head **25** should be thinner than in the forms shown in FIGS. 2 and 4. In all of the forms shown the interlocking of the head and the tap may be accomplished by alternative means such as providing a square head to prevent turning of the tap or by any other means.

I have thus provided an improved heel having a reinforcing core or dowel in which a tap is molded directly and securely to the dowel head so that no metal is exposed but the dowel serves to hold the tap on the heel. Other advantages of the present invention will be readily apparent to a person skilled in the art.

I claim:

1. A shoe heel lift attachment for insertion into a hole located in a shoe heel comprising a roughened elongated shank of a size adapted to be forced into said hole and to form a grip therein by means of the roughened portion, a head on said shank, and a solid synthetic-resin plastic lift molded to said head, the head being constituted by an interlocking form substantially embedded in said plastic lift, whereby the shank is strongly attached in the heel by said grip and the lift is interlockingly adhered to the head.

2. A reinforced heel having a body portion of relatively weak material provided at its upper end with a relatively large heel-seat surface and at its lower end with a relatively small tread end, the body portion being interiorly provided with a hole extending longitudinally of the body portion from the tread end toward the heel-seat surface, and an elongated reinforcing shank constituted of material much harder than that of the body portion driven into the hole, the reinforcing shank being roughened to grip therein, a head on said shank, and a

solid plastic lift molded to said head, the head being constituted by an interlocking form substantially embedded in said plastic lift, whereby the shank is strongly attached in the heel by said grip and the lift is interlockingly adhered to the head.

3. A heel for a woman's shoe comprising a broad top heel-seat portion tapering to an elongated very narrow bottom portion to form a narrow high heel having a very narrow tread end, said heel having a central vertical hole extending from the tread end through said narrow portion, an elongated rigid reinforcing shank extending into said hole through said narrow portion of said heel, means for frictionally retaining said reinforcing shank in said hole, said reinforcing shank having an enlarged flat head, a tap for the tread end of said heel, said head being grooved and said tap being molded to said head.

4. A plastic heel for a woman's shoe comprising a broad heel-seat top portion tapering to an elongated very narrow bottom portion to form a narrow high heel having a very narrow tread end, said heel having a central



vertical hole extending from the tread end through said narrow portion, an elongated rigid hardened steel reinforcing shank extending into said hole through said narrow portion of said heel, means for frictionally retaining said reinforcing shank in said hole, said means including longitudinal flutings on said shank, said reinforcing shank having an enlarged flat head, a tap for the tread end of said heel, said head being grooved and said tap being molded to said head.

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## Disclaimer

3,050,877.—*Fernando M. Ronci*, Providence, R.I. REINFORCED HEEL AND TAP. Patent dated Aug. 28, 1962. Disclaimer filed Aug. 4, 1972, by the inventor.

Hereby enters this disclaimer to claims 1 and 2 of said patent.

[*Official Gazette January 16, 1973.*]