SHOE WITH RETRACTABLE HEEL

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ABSTRACT

A shoe that is operable to be converted between a low heel design and a high heel design. The shoe includes an upper operable to receive a human foot having an integrated sole. The sole includes a heel portion having a cavity therein. A retractable heel is movably mounted to the heel portion and is operable to be disposed within the cavity in its first position and extended outward therefrom in its first position. A slot is journaled through the heel portion extending into the cavity. A rod is operably coupled to the heel having a portion extending outward from the slot for engagement by a user. A brace is operably connected to the rod and assists in maintaining the retractable heel in its extended position. A pair of magnets are present so as to releasably secure the retractable heel within the cavity.
SHOE WITH RETRACTABLE HEEL

BACKGROUND

The fashion industry is a multi-billion dollar a year industry. Items such as clothing and accessories are purchased by millions of consumers every day. One particular fashion item that accounts for billions in sales every year is shoes. There are thousands of different styles of shoes that are utilized by consumers for specific purposes. From tennis shoes to sandals, numerous styles of shoes exist on the market place. One particular style of shoe that is very popular with women is the high-heel shoe. The high-heel shoe is manufactured with numerous styles of uppers such as but not limited to boots and low-rise upper designs. The high-heel shoe is typically worn by women for events such as but not including to formal parties and work.

One problem with the high-heel shoe is that while it is fashionable the high-heel shoe is uncomfortable to wear after several hours. Whether at work or at a formal occasion it is very common to see women carry an alternative pair of shoes such as but not limited to flat sandal type of shoes. This creates a cumbersome burden for the women as they must utilize a purse or a similar item that is sufficient in size in order to accommodate a pair of shoes therein. These types of purses are typically not desirable to carry to specific events making the toting of another pair of shoes inconvenient.

Another issue with high-heel shoes is that many designs are generally fragile in nature. It is very common for a woman to break a heel or a portion thereof on a high-heel shoe. Whether the break occurs from uneven pavement or another cause, once one of the heels has been damaged the pair of shoes becomes unwearable. If the woman does not have a spare pair of shoes with her at the time of damage to the high-heel shoe this can be quite an inconvenience.

A third issue with high-heel shoe designs is that they are difficult to drive a vehicle while wearing. As some heels are high-heel shoe designs are several inches in height this can make interfacing with the gas and brake pedals of a car very difficult. Currently, women wearing high-heel shoes remove at least one of the shoes in order to safely engage the operational pedals of the vehicle.

Accordingly there is a need for a show having a retractable heel design that facilitates the conversion of the shoe from a high-heel style to a flat sole style of shoe.

SUMMARY OF THE INVENTION

It is the object of the present invention to provide a shoe having a plurality of alternative upper portion designs wherein the heel is retractable so as to facilitate conversion from a high-heel design shoe to a flat sole design shoe.

Another object of the present invention is to provide a shoe having a retractable heel wherein the heel is operable coupled to a sliding pin that has a portion extending through the sole providing an engagement interface.

A further object of the present invention is to provide a shoe having a retractable heel that further includes a hingedly secured brace that is operable to provide support to the heel in its extended position.

Yet another object of the present invention is to provide a shoe having a retractable heel wherein the heel has a first position and a second position wherein in said second position the heel is retracted into the sole of the shoe.

An additional object of the present invention is to provide a shoe having a retractable heel that further includes a magnet that is operable to releasably secure the heel in the second position.

Still another object of the present invention is to provide a shoe having a retractable heel that further includes a latch operable to engage a portion of the sliding pin so as to secure the heel in its first position.

Yet a further object of the present invention is to provide a shoe having a retractable heel wherein the sole of the shoe includes a cavity operable to receive the heel in its second position.

Another object of the present invention is to provide a shoe having a retractable heel that includes a sole having a non-slip surface and is lightweight.

To the accomplishment of the above and related objects the present invention may be embodied in the form illustrated in the accompanying drawings. Attention is called to the fact that the drawings are illustrative only. Variations are contemplated as being a part of the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

A more complete understanding of the present invention may be had by reference to the following Detailed Description when taken in conjunction with the accompanying Drawings wherein the drawings provide schematic views of a preferred embodiment of the present invention only and do not serve to limit the scope of the present invention.

FIG. 1 is a side view of the present invention; and
FIG. 2 is a bottom view of the present invention with the heel retracted; and
FIG. 3 is a bottom perspective view of the present invention with the heel in its extended position.

DETAILED DESCRIPTION

Referring now to the drawings submitted herewith, wherein various elements depicted therein are not necessarily drawn to scale and wherein through the views and figures like elements are referenced with identical reference numerals, there is illustrated a shoe 100 constructed according to the principles of the present invention.

Referring in particular to FIG. 1 the shoe 100 further includes an upper portion operable to receive a human foot therein wherein the upper portion 10 includes a first section 15 and a second section 20. Integrealy secured to the upper portion 10 is the sole 25. The upper portion 10 is secured to the sole 25 using suitable durable techniques such as but not limited to stitching and/or chemical adhesion. The upper portion 10 is manufactured from a suitable durable material such...
as but not limited to leather. While an embodiment of the upper portion 10 has been disclosed and illustrated herein, it is contemplated within the scope of the present invention that the upper portion 10 could be formed in numerous different designs and styles and further be manufactured from a variety of different materials.

[0023] The sole 25 is manufactured from a suitable durable material such as but not limited to rubber. The sole 25 includes a front portion 30 and a heel portion 35. The front portion 30 and the heel portion are integrally formed with the bottom 36 of the heel portion 35 being approximately planar in manner with the bottom 31 of the front portion 30. This arrangement is commonly referred to as a flat shoe design. While in the preferred embodiment it is contemplated within the scope of the present invention that the bottom 36 is generally axially aligned with the bottom 31, it is further contemplated within the scope of the present invention that the bottom 36 could be positioned such that it is not axially aligned with the bottom 31.

[0024] Referring in particular to the FIGS. 2 and 3, the heel portion 35 further includes a cavity 40. The cavity 40 is formed with a plurality of walls 42 that define an interior volume 44. The cavity 40 includes a first end 47 and a second end 48. The first end 47 of the cavity 40 is narrower in width than the second end 48. The shape of the cavity 40 facilitates the mateable receiving of the retractable heel 50 in its first position wherein the retractable heel 50 is substantially disposed within the interior volume 44 of the cavity 40. The retractable heel 50 is hingedly mounted to the sole 25 utilizing suitable durable techniques. While in the preferred embodiment the cavity 40 is formed having a first end 47 that is more narrow than the second end 48 in width, it is contemplated within the scope of the present invention that the cavity 40 could be formed in numerous different shapes so as mateable receive the retractable heel 50.

[0025] The sole 25 further includes a slot 60 that is journaled through the side wall 24 of the sole 25 and penetrates through to the interior volume 44 of the cavity 40. The slot 60 further includes a first end 61 and a second end 62 and is generally rectangular in shape. The slot 60 has openly coupled therewith rod 70. The rod 70 is manufactured from a suitable durable material such as but not limited to metal and extends through the slot 60 into the cavity 40 and is slidably coupled using suitable techniques to wall 39. The rod 70 further includes a head 71 that is generally square in shape and is integrally formed with the rod 70. The head 71 extends outward from the side wall 24 of the sole 25 so as to be positioned to be mateable engaged with the latch 80. The rod 70 is slidably mounted within the slot 60 so as to be moveable from the first end 61 to the second end 62.

[0026] The rod 70 is hingedly secure to the brace 90. The brace 90 is manufactured from a suitable durable material such as but not limited to metal and is generally square in shape. The brace 90 is further hingedly attached to the front wall 51 of the heel 50. The brace 90 functions to provide leverage and support for the retractable heel 50 when the retractable heel 50 is in its extended position. As the rod 70 is moved along the slot 60 from the first end 61 to the second end 62, the retractable heel 50 is moved from its retracted position to its extended position wherein in its extended position the retractable heel is generally perpendicular to the sole 25 and extending outward therefrom. The brace 90 significantly improves the stability of the retractable heel 50 upon the retractable heel 50 being moved to its extended position. Those skilled in the art will recognize that the brace 90 could be manufactured in numerous different shapes and further be manufactured from a variety of materials.

[0027] Integrally formed with the retractable heel 50 is a first magnet 110. The first magnet 120 is manufactured from a conventional ferromagnetic material and is secured within the retractable heel 50 such that the exterior surface 111 of the first magnet 110 is substantially flush with the exterior surface 53 of the wall 54 of the retractable heel 50. The first magnet 110 is operable to couple with the second magnet 120 subsequent the retractable heel 50 being placed in its retracted position. The second magnet 120 is disposed within the cavity 40 proximate first end 47 and is operable to magnetically coupled with the first magnet 110 so as to maintain the retractable heel 50 in its retracted position.

[0028] As previously disclosed herein, a latch 80 is secured to the heel portion 35 of the shoe 100. The latch 80 includes aperture 82 that is formed to have a mateable shape with the head 71. The latch 80 is hingedly secured to the heel portion 35 using suitable durable techniques and is operable to receive and secure the head 71 of the rod 70 subsequent the rod 70 being moved within the slot 60 such that the rod 70 is proximate the second end 62. This places the retractable heel 50 in its extended position and the latch 80 function to secure the rod 70 via its operable coupling with the head 71. Those skilled in the art will recognize that numerous different latch configurations could exist. More specifically but not by way of limitation, it is contemplated within the scope of the present invention that a second latch could be present on the opposing side of the heel portion 35 that could function to additionally secure the retractable heel 50 in its extended position as well as serve as a matching design element.

[0029] In the preceding detailed description, reference has been made to the accompanying drawings that form a part hereof, and in which are shown by way of illustration specific embodiments in which the invention may be practiced. These embodiments, and certain variants thereof, have been described in sufficient detail to enable those skilled in the art to practice the invention. It is to be understood that other suitable embodiments may be utilized and that logical changes may be made without departing from the spirit or scope of the invention. The description may omit certain information known to those skilled in the art. The preceding detailed description is, therefore, not intended to be limited to the specific forms set forth herein, but on the contrary, it is intended to cover such alternatives, modifications, and equivalents, as can be reasonably included within the spirit and scope of the appended claims.

What is claimed is:
1. A shoe operable to convert intermediate a low-rise style and a high-heel style comprising:
as an upper portion;
a sole, said sole having a front portion and a heel portion, said sole being manufactured from suitable durable material, said sole being secured to said upper portion;
a heel portion, said heel portion forming a part of said sole, said heel portion further including a slot, said slot having a first end and a second end, said heel portion further including a cavity, said cavity having an interior volume;
a retractable heel, said retractable heel being hingedly mounted to said heel portion, said retractable heel having a first position and a second position, said retractable heel operable to be placed within said cavity in said first position, said retractable heel being extended outward...
from said heel portion in said second position so as to create a high-heel shoe design for the shoe.

2. The shoe as recited in claim 1, and further including a rod, said rod being operably coupled to said retractable heel, said rod extending through said slot and into said cavity, said rod having a first end and a second end, said first end of said rod extending outward from said heel.

3. The shoe as recited in claim 1, and further including a brace, said brace being operably intermediate said retractable heel and said rod, said brace operable to support said retractable heel in said second position.

4. The shoe as recited in claim 3, and further including a latch, said latch being secured to said heel portion, said latch operable to engage said first end of said rod subsequent said retractable heel being placed in said second position.

5. The shoe as recited in claim 4, and further including a first magnet and a second magnet, said first magnet being mounted to said retractable heel, said second magnet being disposed within said cavity, said first magnet and said second magnet operable to maintain said retractable heel in said first position.

6. The shoe as recited in claim 5, and further including a fastening head, said fastening head being integrally formed with said first end of said rod, said fastening head operable to engage said latch.

7. The shoe as recited in claim 6, wherein said latch further includes an aperture, said aperture of said latch operable to surroundably mount said fastening head.

8. A shoe wherein the shoe is operable to be converted intermediate a flat style design and a high heel design comprising:

an upper portion, said upper portion being operable to receive at least part of a human foot;
a sole, said sole having a front portion and a heel portion, said sole being manufactured from suitable durable material, said sole being secured to said upper portion;
a heel portion, said heel portion forming a part of said sole, said heel portion further including a slot, said slot having a first end and a second end, said heel portion further including a cavity, said cavity having a first end and a second end, said cavity being greater in width proximate said first end, said cavity having an interior volume, said slot extending through said heel portion to said cavity;
a retractable heel, said retractable heel having a first end and a second end, said retractable heel being hingedly mounted to said heel portion, said retractable heel having a first position and a second position, said retractable heel operable to be substantially disposed within said cavity in said first position, said retractable heel being extended outward from said heel portion in said second position so as to create a high-heel shoe design for the shoe, said retractable heel having a magnet proximate said second end.

9. The shoe as recited in claim 8, and further including a rod, said rod being slidably mounted within said slot and extending through into said cavity, said rod being operably coupled to said retractable heel, said rod having a first end and a second end, said first end of said rod being proximate said slot.

10. The shoe as recited in claim 9, and further including a fastener head, said fastener head being secured to said first end of said rod.

11. The shoe as recited in claim 10, and further including a brace, said brace being secured to said rod and said retractable heel, said brace being generally rectangular in shape, said brace operable to provide support for said retractable heel subsequent said retractable heel being moved to said second position.

12. The shoe as recited in claim 11, and further including a keeper, said keeper being hingedly attached to said heel portion proximate said second end of said slot, said keeper operable to surroundably mount said fastener head so as to maintain said retractable heel in said second position.

13. The shoe as recited in claim 12, and further including a second magnet, said second magnet being disposed within said cavity, said second magnet and said first magnet being releasably secured when said retractable heel in in said first position.

14. The shoe as recited in claim 13, wherein said keeper further includes an aperture, said aperture being of similar shape as said fastener head so as to facilitate the surroundable mounting of said keeper of said fastener head.

15. A shoe having a convertible heel wherein the shoe is operable to transition intermediate a low heel design and a high heel design comprising:

an upper portion, said upper portion being operable to receive a human foot;
a sole, said sole having a front portion and a heel portion, said sole being manufactured from suitable durable material, said sole being secured to said upper portion;
a heel portion, said heel portion forming a part of said sole, said heel portion having an exterior wall, said heel portion further including a slot, said slot having a first end and a second end, said heel portion further including a cavity, said cavity having a first end and a second end, said cavity being greater in width proximate said first end, said cavity having an interior volume, said slot extending through said heel portion to said cavity;
a support rod, said support rod being slidably mounted within said slot, said support rod having a first end and a second end, said first end being proximate the exterior wall of said heel portion, said second end being slidably mounted within said cavity opposite said slot;
a retractable heel, said retractable heel having a first end and a second end, said retractable heel being tapered in shape having a greater width proximate said first end, said retractable heel being hingedly mounted to said heel portion, said retractable heel having a first position and a second position, said retractable heel operable to be substantially disposed within said cavity in said first position, said retractable heel being extended outward from said heel portion in said second position so as to create a high-heel shoe design for the shoe, said retractable heel having a magnet proximate said second end.

16. The shoe as recited in claim 15, and further including a support brace, said support brace being secured to said support rod and said retractable heel, said support brace being generally rectangular in shape, said support brace operable to provide support for said retractable heel subsequent said retractable heel being moved to said second position.

17. The shoe as recited in claim 16, wherein said support rod further includes a fastener head, said fastener head being secured to said first end of said support rod, said fastener head being generally square in shape.

18. The shoe as recited in claim 17, further including a second magnet, said second magnet being disposed within
19. The shoe as recited in claim 18, and further including a keeper, said keeper being hingedly attached to said heel portion proximate said second end of said slot, said keeper operable to surroundably mount said fastener head of said support rod so as to maintain said retractable heel in said second position.

20. The shoe as recited in claim 19, wherein said keeper further includes an aperture, said aperture operable to receive at least a portion of said fastener head, said aperture being square in shape.