(No Model.)

F. H. SMITH, Dec'd.

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SHOE LACE FASTENER.

No. 502,694. Patented Aug. 8, 1893.

Fig. 1.

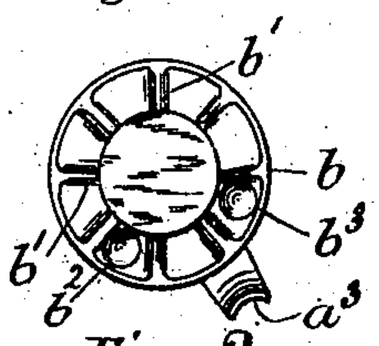


Fig. 2.

Fig. 3.

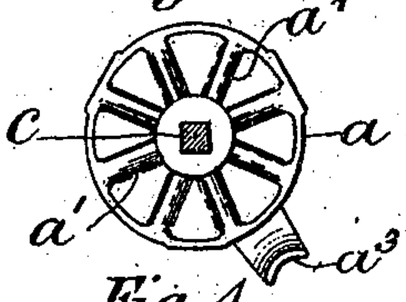


Fig. 4.

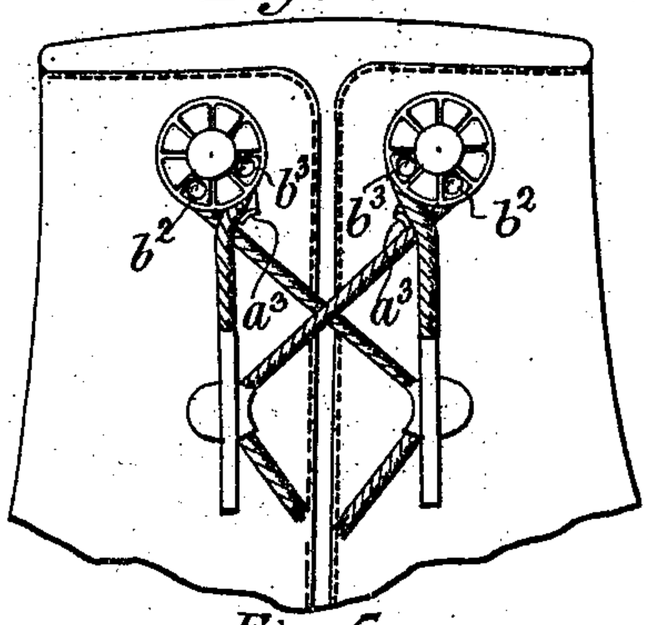
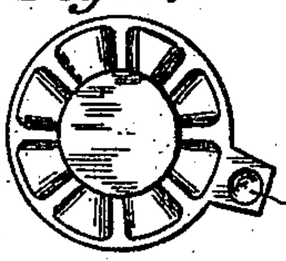


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM D. BALDWIN, OF WASHINGTON, DISTRICT OF COLUMBIA, ADMINISTRATOR OF FREDERICK HENRY SMITH, DECEASED, ASSIGNOR TO ISABELLA SHEPPARD SMITH, OF BROMLEY, ENGLAND.

SHOE-LACE FASTENER.

SPECIFICATION forming part of Letters Patent No. 502,694, dated August 8, 1893.

Application filed February 2, 1893. Serial No. 460,683. (No model.)

To all whom it may concern:

Be it known that FREDERICK HENRY SMITH, deceased, formerly a subject of the Queen of Great Britain, lately residing at St. Wade's, Bromley, in the county of Kent, England, did in his life-time invent certain new and useful Improvements in Lace-Grips and other Cord-Fasteners, of which the following is a specification.

Boots, corsets, dresses, gloves, and other articles of wearing apparel are provided with laces, strings or cords which when drawn tight require to be made fast. Blind cords and cords for various other purposes also need holders or fasteners. In the specification of a British Patent No. 2,065 in the year 1884 a grip or fastener to meet these requirements is described. This grip consists of two coned metal disks stamped with radial projections and riveted together so that the projections on the one come intermediate of and between those on the other. This grip when attached in its place received the lace or cord into a V formed groove between the two disks and the end of the lace being passed around the grip became firmly held. Improvements have been made in this grip which it is now desired to protect.

The grip is now so made that the lace or cord cannot be crossed in the groove and so that the end of the lace or cord is retained without being crossed by the aid of a retaining pip or projection upon one or both of the disks and operating either alone or in conjunction with a hook like arm which bears upon the lace or cord on the outer side and prevents it passing off from the grip. A pip or projection is also provided which prevents the lace or cord being crossed in the groove of the grip. In this way a safe holding is secured; it also avoids the excessive strain on one side of the disks which may result from crossing the lace or cord and jamming the crossed lace or cord into the groove of the grip, which strain is liable to distort the disks by bending the disks away from each other.

In the annexed drawings Figure 1 is a plan of the improved grip. Fig. 2 is a side view of the same. Fig. 3 is a plan of the lower disk of the grip, the upper disk being removed and the connecting rivet being seen in section. Fig. 4 shows a pair of grips as applied to the upper part of a boot. Fig. 5 shows a modification.

a is the lower disk, b is the upper disk, and c is the rivet which firmly connects the two. The lower disk has eight radial ridges a' a' upon its face; it has also prongs a^2 a^2 projecting from its periphery but in place of these prongs any other provision may be made for fixing the grip to the surface where it is required for use. The disk a is also provided (and this is a novel feature) with a hook like arm a^3. The upper disk has eight radial ridges b' b' on its under surface and it has also two pips or projections b^2 b^3 from the under surface. These projections are more prominent than the ridges b' and they form the characteristic novelty of the upper disk. The disks are so formed that they meet in the center where they receive the rivet c and all around the center they are coned or inclined so as to leave between them the V formed groove into which the lace is received. The prongs a^2 a^2 are intended to be inserted through the fabric and then bent under to attach the fastening to the fabric in a usual manner.

The disks a and b are so put together that the radial ridges a' on the disk a come midway between the radial ridges b' on the disk b. The upper surface of the grip is usually made smooth like the top of a button by applying a thin cover plate $b^\times$ which is slightly domed and is sprung into its place; this cover plate is shown in Fig. 2 but is omitted in the other figures.

Fig. 4 illustrates the way in which the lace grip is used; the lace having been drawn sufficiently tight is passed on the outer side of the grip around to the inner side; it passes beneath the projection b^2 which it will be observed does not extend to the center but leaves room for the lace within it nearer to the center of the grip. Then the end is passed between the periphery of the disk b and the end of the hook like arm a^3 and so it is retained. The projection b^3 prevents the lace being crossed and entering a second time into the V formed groove between the disks.

The operation of the pips or projections b^2 b^3 is changed if the grip be transferred from side to side. Thus if the right hand grip in Fig. 4 were removed to the left side, its pip or projection b^3 would operate as b^2 operated previously and vice versa.

Fig. 5 shows a plan of a grip in which the pip b^2 is set somewhat farther out from the center and is carried upon a projecting tongue. It operates in conjunction with a similar pip and tongue upon the lower disk. The end of the cord or lace passes between the upper and the lower pip and is so retained.

What is herein claimed as the invention of the said FREDERICK HENRY SMITH is—

1. A grip consisting of two coned disks with their apices placed end to end, and having central connecting pin and with a groove between them, attaching devices for the grip, and a hooked arm a^3 extending laterally from the outer edge of one of the disks and turned inwardly and extending toward the plane of the other disk.

2. A grip consisting of two coned disks having radial ribs or projections with their apices placed end to end, and having a central connecting pin and having a groove between them, attaching devices carried by the disks, and a pip or projection b^2 on one of the disks, within its outer edge and extending toward the other disk to retain the lace or cord in the groove, substantially as described.

3. A grip consisting of two coned disks with their apices placed end to end, and with a groove between them, securing devices carried by the disks, a hooked arm a^3, on the lower disk projecting from the outer edge thereof and extending toward the upper disk and a projection b^2 on the upper disk extending toward the lower one and acting in conjunction with the arm a^3 to retain the lace or cord in the groove, substantially as described.

4. A grip consisting of two coned disks with their apices placed end to end and with a groove between them, attaching devices carried by the disks, a hook-like arm a^3 on the lower disk and extending laterally therefrom and turned toward the upper disk to retain the lace in the groove, and a projection within the disks to prevent the crossing of the lace or cord in the groove, substantially as described.

5. A grip consisting of the upper and lower disks a and b, a rivet c, connecting them, said lower disk having radial ridges a' on its inner face, and prongs a^2 on its outer face and having also a hooked arm a^3, projecting laterally from its outer edge and turned toward the upper disk and said upper disk having radial ridges b' on its inner face and also projections b^2 and b^3, on its inner face, substantially as described.

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