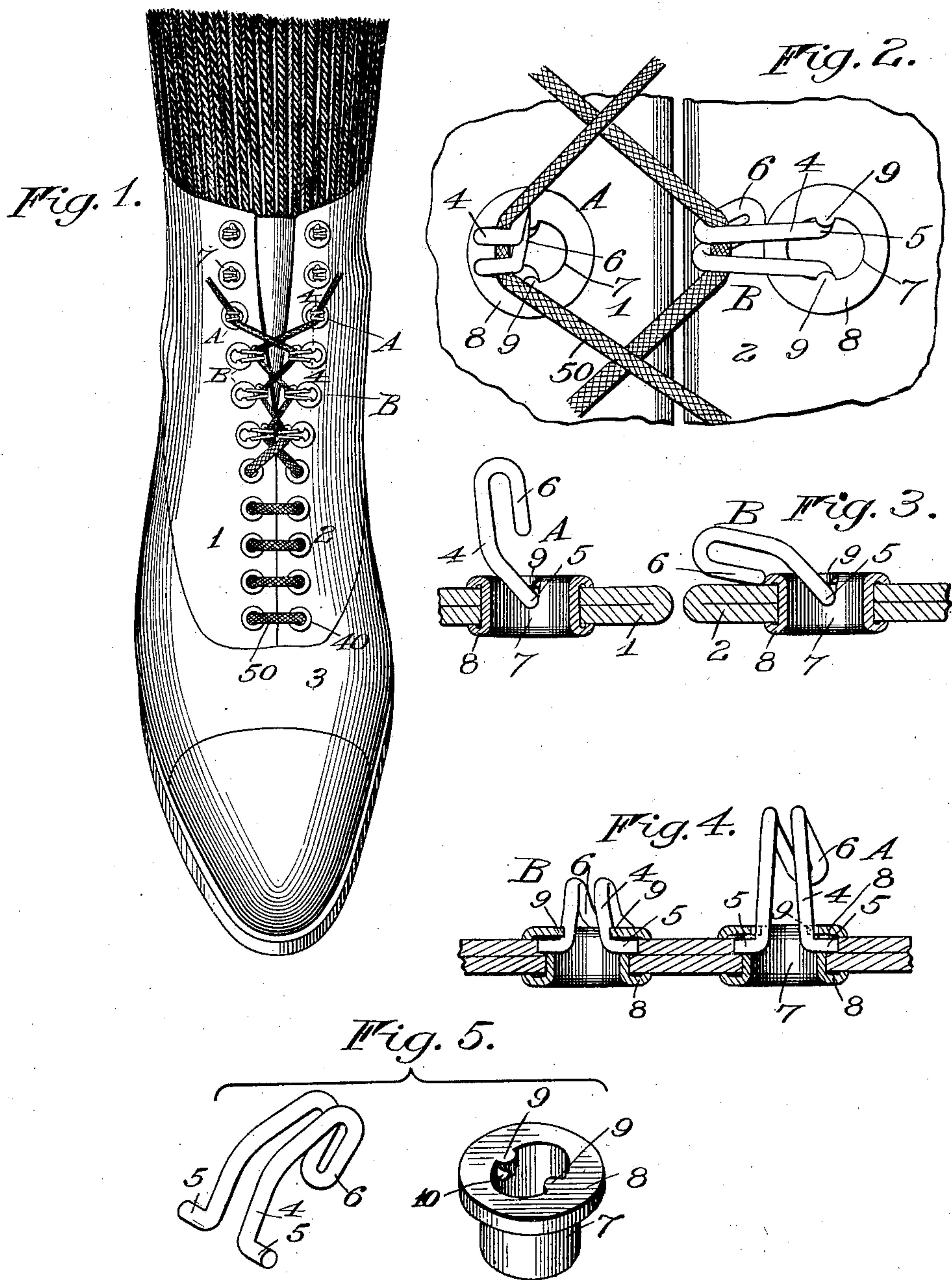


No. 887,942.

PATENTED MAY 19, 1908.

G. T. HOUGHLAND.  
LACE HOOK.

APPLICATION FILED JAN. 2, 1907.



Witnesses  
Halter B. Payne  
Russell B. Shifflett

Inventor  
George T. Houghland  
By Church + Rich  
His Attorneys



# UNITED STATES PATENT OFFICE.

GEORGE T. HOUGHLAND, OF ROCHESTER, NEW YORK.

## LACE-HOOK.

No. 887,942.

Specification of Letters Patent.

Patented May 19, 1908.

Application filed January 2, 1907. Serial No. 350,502.

*To all whom it may concern:*

Be it known that I, GEORGE T. HOUGHLAND, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Lace-Hooks; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention relates to laced fastening devices for articles having oppositely disposed edges or facings which it is desired to draw, or partially draw, together by means of a lace or cord such as articles of apparel including shoes, gloves, corsets, etc., and particularly to the hooks or projections with which the laces engage and it has for its object to produce a neat and attractive device of this nature which will be small and compact and may be simply and, therefore, cheaply manufactured and assembled and which will be so constructed as to prevent foreign objects or materials such as, in particular instances, other garments of the wearer, from engaging thereon.

A further object of my invention is to provide a device so arranged upon the article to which it is attached as to be strong and durable and yet offer convenience for rapid engagement of the lace.

To these and other ends the invention consists in certain improvements and combinations of parts all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings: Figure 1 is a perspective view of a shoe, partly laced, to which my improvements have been applied. Fig. 2 is an enlarged fragmentary front view of two opposed hooks showing the manner of engaging the lace. Fig. 3 is a sectional view on the line 3—3 of Fig. 2, the laces being removed, showing the two positions in which a hook embodying my invention may be positively maintained. Fig. 4 is an enlarged sectional view on the line 4—4 of Fig. 1, the laces being removed, showing the manner in which the hook is mounted in the gromet, and, Fig. 5 is a collective perspective view of the parts in detail.

Similar reference numerals in the several figures indicate similar parts.

My invention is particularly adapted for

lacing shoes and in the present instance I have shown it applied to a shoe I employ generally a member which is rigidly attached to the shoe upper, a hook with the free end turned inwardly and so formed as to offer convenient engagement for the lace, pivoted thereto in such manner that the strain exerted thereon is in a line at right angles to the pivotal axis and means for positively retaining it in or out of position for engagement.

Referring now to the drawings which illustrate an embodiment of the invention, the numerals 1 and 2 indicate the edges of the upper of a shoe 3, forming the supports hereinafter referred to, the abutting edges of the lower portions of which are provided with a proper number of the ordinary open or any preferred form of eyelet 40 through which passes the lace 50 by means of which they are drawn together as is usual, the opening in the shoe being capable of sufficient expansion for the insertion of the foot without entirely withdrawing the lace from these lower fastenings. Arranged in continued line above these, are the lace hooks which I prefer to form of bent wire, as shown, and which embody in the present instance a bifurcated shank 4 of doubled or looped wire, the lower or free ends of which are bent laterally in opposite directions to form pivotal projections or trunnions 5, while the loop at the other is bent under in a parallel plane and then laterally in the same plane, to extend at an angle to the general direction of the shank and form an offset hook 6. The hooks are mounted in gromets 7 (which are in effect eyelets and may be used in that way if for any reason the hook becomes broken) formed of short tubular material extending through perforations punched in the upper support and secured by expanded shoulders 8 on either side.

Interiorly of the tubular portions of the gromets are struck diametrically opposed spurs 9 preferably extending inwardly in substantial continuation of the upper shoulders 8, and leaving apertures 10 in the sides, the gromets being preferably made elliptical in cross section with the apertures on the shorter diameter so that the shank of the hook may be inserted along the greater diameter and then rotated a quarter turn until the trunnions 5 engage within the apertures where they are held by the elasticity of the separated portions of the shank, forming pivotal centers upon which the hook is



rocked. The spurs are beveled on their lower edges, as shown in Fig. 3, and act as centering devices to retain the hook positively in the lower or raised positions (same figure), the shank portions thereof being sprung inwardly in passing thereover.

The hook is normally in the position indicated by A in the several figures, that is, with the shank standing perpendicularly to the face of the upper or support and in rear of the centering devices so that as the lace is drawn over from the next lower hook on the opposite side of the shoe against the shank and then outwardly a little, it readily engages beneath the portion 6 which, as before described, is offset to bring its point slightly above the shank and hence more easily accessible. As the lace is reversed and drawn in the opposite direction again, the hook swings downwardly past the spurs 9 and assumes the position indicated by B in the figures, flat against the face of the support with the lace held securely in the bight thereof. The gromet is fastened in such manner that the axis of movement of the hook will be parallel to the edges which it is desired to bring together so that the engagement of the lace with the bight of the hook will be at a point equidistant from the two points of pivotal engagement of the latter with the gromet and the strain will be imposed equally upon each projection thereof whereby a twisting or wrenching of the parts is obviated. It thus virtually forms an eye, the lace being completely inclosed on all sides, as its tension, as well as the spurs, holds the point of the hook against the surface of the shoe or other article so that even should the knot at the top of the shoe to which the hooks had been applied come untied, the ends of the lace would be prevented from becoming disengaged laterally or tangled and trailing upon the ground, to the inconvenience and discomfort of the wearer.

While I have shown the present embodiment of my invention in combination with a shoe, it will be understood that it is nevertheless adapted to a variety of other articles wherein laces are used for substantially the same purposes with equal advantage.

I claim as my invention.

1. The combination with a support and a lace hook having a shank portion pivoted in relation thereto and a looped portion movable into raised and lowered positions relatively to the support, of means engaging the

shank of the hook for retaining the loop in each position.

2. The combination with a support, and a gromet secured therein of a lace hook having a shank portion pivoted to the gromet and a looped portion movable into raised and lowered positions relatively to the support and a projection on the gromet engaging the shank of the hook to retain the loop in each position.

3. The combination with a support and a gromet secured therein having a central opening and an inwardly-extending projection arranged in said opening, of a lace hook pivoted within the gromet and adapted to yield inwardly when in contact with the projection thereon as the hook is moved on its pivot.

4. The combination with a support, and a gromet secured therein having a central opening and inwardly-extending spurs or projections arranged in said opening of a lace hook pivoted within the gromet and comprising a bifurcated shank adapted to yield inwardly when in contact with the projection on the gromet as the hook is moved on its pivot.

5. The combination with a support and a gromet secured therein having a central opening and an inwardly-extending projection arranged in said opening, said gromet being also provided with apertures communicating with the central opening, of a lace hook formed of a single piece of doubled wire having its free ends bent laterally to form trunnions journaled in the apertures in the gromet, said hook being adapted to yield inwardly when in contact with the projection as it is moved on its pivot.

6. The combination with a support and a gromet secured therein having a central opening the different diameters of which differ in length, said gromet being provided upon its shortest diameter with opposed apertures and an inwardly extending projection arranged in the opening, of a hook formed of a continuous piece of doubled wire having its ends bent laterally in opposite directions to form trunnions journaled in the apertures in the gromet and adapted to yield inwardly when in contact with the projection as the hook is moved on its pivot.

GEORGE T. HOUGHLAND.

Witnesses:

RUSSELL B. GRIFFITH,  
F. E. FRANCK.