Dec. 25, 1928. 1,696,790

A. BONGIOVANNI

SHOE LACE FASTENING DEVICE

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Fig. 1.

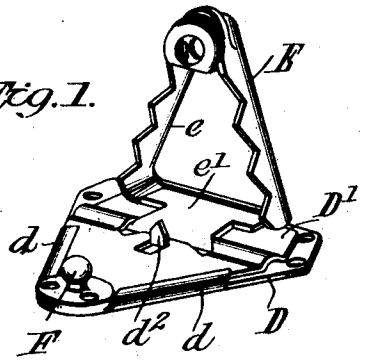
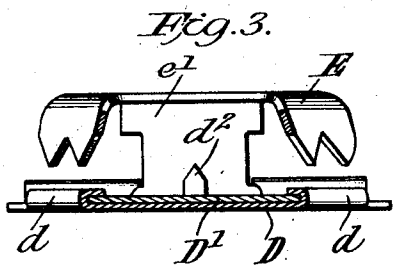


Fig. 3.



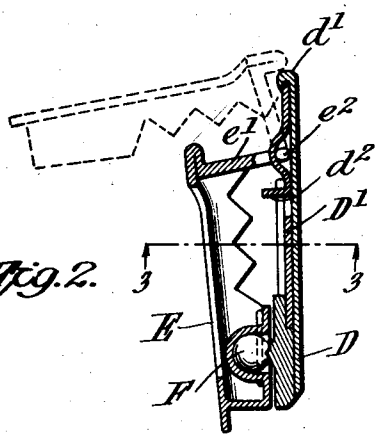


Fig. 2.

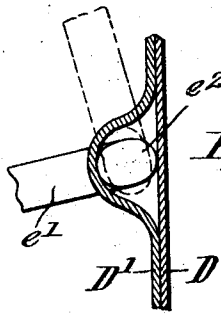


Fig. 4.

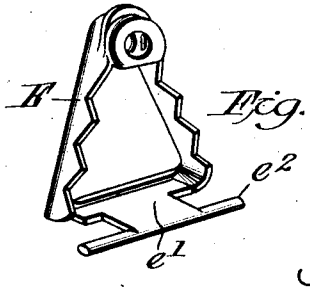


Fig. 5.

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Fig. 6.

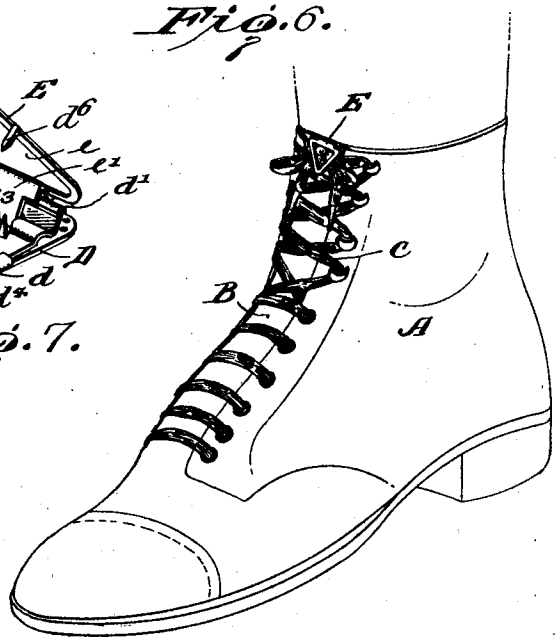


Fig. 7.

Fig. 8.

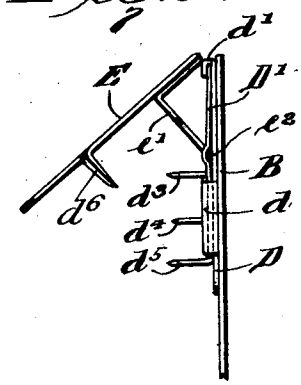


Fig. 9.

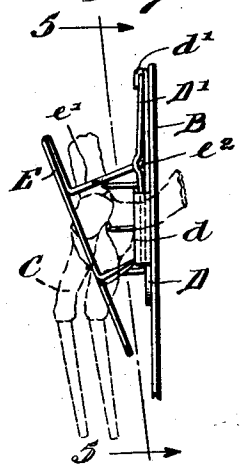


Fig. 10.

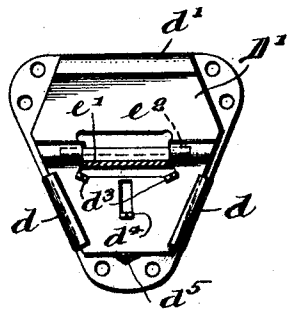


Fig. 11.

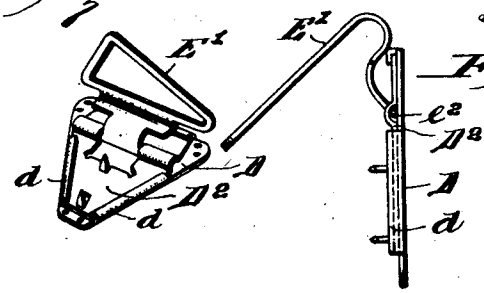


Fig. 12.

INVENTOR.

Antonio Bongiovanni

BY Donnell & Donnell

his ATTORNEYS.

Patented Dec. 25, 1928. 1,696,790

UNITED STATES PATENT OFFICE.

ANTONIO BONGIOVANNI, OF BARNESBORO, PENNSYLVANIA, ASSIGNOR OF ONE-FOURTH TO JESS FRIDMAN, OF BARNESBORO, PENNSYLVANIA; ONE-FOURTH TO SAMUEL IRVING CALLET AND ONE-FOURTH TO TOBIAS J. CALLET, BOTH OF JOHNSTOWN, PENNSYLVANIA.

SHOE-LACE-FASTENING DEVICE.

Application filed April 30, 1928. Serial No. 274,080.

This invention relates to shoe fastenings, and more particularly to means for fastening the tied ends of a lace or cord used for lacing a shoe so that the lace may not work loose or become untied.

The lacings ordinarily employed for drawing and holding together the adjoining edges of the vamp of a shoe are liable to become untied or work loose, so as to permit the edges of the vamp to spread apart and allow the foot to be shoved forward, thus cramping the toes and producing friction and irritation, which results in the formation of corns. Furthermore, when the lacings become untied or work loose, the tongue of the shoe will slip toward one side and expose to view the stocking underlying the tongue, while the tongue will soon become wrinkled, thus causing irritation of the foot and producing discomfort and annoyance to the wearer and also presenting an unsightly appearance.

One object of my invention is to provide a simple, efficient and inexpensive device for fastening shoe lacings in such manner that they may not become untied or work loose.

Other objects are to provide a device of the stated character by which the ends of a lace or cord used for lacing and tying a shoe may be secured together so as to prevent the lace from becoming untied, and which will present a neat and attractive appearance and at the same time will not present any exterior protuberance or projection that may contact with and tear the clothing of the wearer or release the lace.

The invention will first be hereinafter more particularly described with reference to the accompanying drawings, which are to be taken as a part of this specification, and then pointed out in the claims at the end of the description.

In said drawings, Fig. 1 is a perspective view of a shoe lace fastening device embodying my invention; the upper clamping member being shown in raised position;

Fig. 2 is a longitudinal vertical sectional view of said device showing the members in position to clamp a shoe lace therebetween, the clamping member being also represented by dotted lines in raised position;

Fig. 3 is a cross-section taken on the line 3—3 of Fig. 2;

Fig. 4 is a detail sectional view illustrating the spring-hinge connection between the two clamping members;

Fig. 5 is a perspective view of the upper clamping member detached;

Fig. 6 is a perspective view of a laced shoe having the ends of the lace tied and clasped by a fastening device embodying my invention, so that the knot cannot become untied or the lace work loose, while the tongue is kept securely in place and prevented from slipping sidewise;

Fig. 7 is a perspective view of a modification of the invention, showing the device detached with the upper clamping member in raised position;

Fig. 8 is a side view of the same;

Fig. 9 is a side view of said modification showing the clamping members in closed position with the tied ends of the lace clamped therebetween; the lace being indicated in dotted lines;

Fig. 10 is a sectional plan view of the lower or base member of the device; the upper member being removed;

Fig. 11 is a perspective view of another modification showing the assembled parts in position for the ends of the lace or shoe string to be placed therebetween; and

Fig. 12 is a side view of the last named modification.

Referring to the drawings, in which the same reference characters are used to denote corresponding parts in different views, A (Fig. 6) denotes an ordinary laced shoe with tongue B and adjacent edges of its vamp drawn together by means of a lace or cord C, the ends of which are shown tied together in the usual manner and clasped between the upper and lower members of a fastening device embodying my invention.

Said device, in the form shown in Figs. 1 to 5, comprises a base-plate or lower member D, and an upper or cover member E, preferably of triangular form; the lower member having perforations therein, as shown, for sewing or otherwise attaching it to the tongue of the shoe at the upper end thereof.

The member E is rockably secured upon the base-member D so as to adapt its front

end to be raised and swung backwardly on its pivotal support into the position represented in Fig. 2, and lowered into position to clasp or clamp the tied ends of the lace between it and the base member, as shown in Figs. 2 and 6. Such movements are made against a yielding frictional resistance and spring effect exerted by an intermediate spring-metal plate D^1 which is secured upon the base-plate D overlying the pintle or pivot-pin on the shank of the swinging member E so as to pivotally secure the assembled parts together. By such pivotal connection, the upper or cover member will be held firmly in either an upwardly and backwardly inclined position, as shown in Figs. 1 and 2, or in a downwardly and forwardly inclined position, as shown in section in Fig. 2, with the cord or lace firmly clamped between it and the base member. The assembled parts being thus secured together cannot be disassembled without disconnecting the spring-metal part, which is held in place by upturned front and rear marginal portions d and d^1 of the base-plate bent over and overlapping the edges of said spring-metal plate, as shown in Figs. 1, 2 and 3. The upper plate E is shown with a triangular portion thereof cut out at e and bent downwardly to provide a depending flange or shank e^1 which carries the pivot-pin or pintle e^2 resting on the base-plate D near its rear end underneath the spring-metal plate D^1. Portions of the latter plate are arched to form grooves or depressions in the underside thereof for receiving said pivot-pin or pintle and prevent it from slipping forward or back when the upper clamping member is moved into open or closed position. The aforesaid pivot-pin or pintle is of oval or egg-shaped form in cross-section and its elongated part rests upon the base-plate D, so that by pressure upon the rear end of the clamping member E, the pivot-pin will be turned with a cam-like action against the overlying spring-metal plate, thereby raising the front end of said clamping member and causing it to swing rearwardly against the frictional resistance resulting from the pressure of said spring-metal plate on the pivot-pin until the latter has turned far enough to cause its narrower uppermost portion to pass a vertical plane or line intersecting said pivot-pin perpendicular to said base-plate when the latter is in a horizontal position, whereupon said clamping member will be quickly moved forward into open position, and on the reverse movement frictional resistance will be exerted in like manner until said uppermost portion of the pivot-pin has moved back past said vertical plane. Other forms of pivot-pins may obviously be used with the same result, for instance, a pin of rectangular from in cross-section.

As a means for fastening the free ends of the clamping members together while permitting the same to be easily separated to release the shoe string or lace, a ball and socket connection of the type used on gloves is advantageously employed, the same consisting of a knob F on the base-plate at the front end thereof adapted to snap into a socket on the member E in engagement with a spring, so that by forcing the round knob into the socket, the two members will be locked in closed position and may be easily released by simply withdrawing said knob.

By the described construction and arrangement of parts, the device is adapted to firmly clamp and hold a shoe lace between the upper and lower clamping members without other fastening means, but one or both plates are preferably provided with projections or teeth or sharp points adapted to take into the overlapped end-portions of the shoe lace or string and prevent endwise movement thereof even if the ends should not be tied together. Accordingly, as shown in Fig. 1, the spring-metal plate D^1 has a tooth d^2 struck up therefrom at or near the base of the triangle and the clamping member E has its marginal edges serrated or toothed and turned downwardly so as to overlie the upturned edges of the base-plate; the tooth d^2 being located directly in front of the pivotal connection between the two clamping members.

In the modification shown in Figs. 7 to 10 of the drawings, the spring-metal plate has struck up therefrom a single tooth d^5 at or near the apex of the triangle and a pair of teeth d^3 spaced apart at or near the pivotal connection between the two members D and E, and an intermediate tooth d^4, while the upper member E has formed thereon inwardly curved sharp points or teeth d^6, one on each side, near its front end, adapted to engage the lace-ends between the tooth d^5 and the teeth d^3.

The modification shown in Figs. 11 and 12 is substantially identical in construction and mode of operation with the device shown in Figs. 7 to 10, except that in this instance sharp points or teeth are provided on the intermediate spring-metal plate D^2 only; one tooth being struck up from the latter plate at or near its front end and the other near its pivotal connection with the upper clamping member; the latter member being unprovided with teeth.

Fastening devices embodying this invention may be constructed of any suitable material such, for example, as nickel-plated metal, silver or gold, and may be ornamented so as to present an attractive appearance and produce a pleasing effect.

In operation, the ends of the lace or shoe string, either tied together or arranged in overlapped relation, are placed between the two clamping members of the fas-

tener when in open position as shown in Fig. 1, whereupon the upper member is forced forwardly and downwardly against the yielding resistance exerted by the spring-metal plate upon or against the oval or angular pintle or pivot-pin on the shank of the upper clamping member until the uppermost portion of said pivot-pin has passed the intersecting point of a vertical line passing therethrough, whereupon the spring-metal plate will throw said clamping member downwardly and hold it in closed position with the shoe-lace or cord firmly secured between it and the base-member until sufficient force is applied to release the upper clamping member from its engagement with the lower member and move it backwardly against said spring-pressure until the uppermost portion of the pivot-pin has passed the point of intersection of said vertical line, whereupon the spring-metal plate will hold the upper member in open position.

It will be understood of course that various changes may be made in the details and arrangement of parts without departing from the spirit and scope of this invention, and that the use thereof is not limited to a laced shoe of the particular form shown, or to any particular form of lacing, as the device may be applied to various kinds of laced shoes and also to other articles of wearing apparel in which lacings are used.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A shoe lace fastening device comprising a base member securable to the tongue of a shoe, a clamping member rockably mounted on said base member intermediate the ends of the two members so that the front end of the rockable member may be raised to permit a lace to be placed between it and the base member, said members having teeth on their confronting surfaces to engage and prevent the lace from slipping, and means for yieldingly holding the two members together with the lace clamped therebetween; said means embodying a spring-plate secured to the base-plate and having arched portions or grooves opposing said base-plate within which oval hinge pins carried by the clamping member are clamped against the base-plate, said spring-plate in conjunction with said hinge pins serving to yieldingly resist movement of the rockable member toward an intermediate point and on passing said point to accelerate its movement into either raised or clamping position according to the direction of movement.

2. A shoe fastening device comprising in combination, a base plate securable upon the tongue of a shoe, a resilient plate secured thereon and having an arched portion or groove opposed thereto, and a superposed co-operating clamping member rockably mounted on said base plate intermediate the ends thereof; said clamping member having a depending flange provided with a pivot pin or pintle of oval or angular form in cross-section resting upon said base member, within the groove of said resilient plate so as to pivotally secure the base plate and clamping member together in a manner producing frictional resistance to initial movement of the clamping member in either forward or backward direction to a given point and then accelerating further movement thereof to the desired position and to thereafter hold the clamping member in the latter position while permitting a reverse movement of the clamping member with a yielding frictional resistance.

3. A shoe lace fastening device comprising upper and lower clamping members with a spring-plate member formed with a transverse arched portion or groove opposed to the base-member and thereunder receiving oval hinge pins carried by the upper member for hinging the two members together intermediate their ends so as to permit the front end of the upper member to be raised into position to receive the ends of the lace or lowered into position to secure said ends between the two members, said spring-plate member serving to yieldingly resist movement of said upper member into either of said positions; and to hold said upper member with a yielding resistance to reverse movement in whichever position it is placed.

4. A shoe lace fastening device comprising upper and lower clamping members of triangular form with a spring-plate member formed with a transverse arched portion or groove opposed to the lower member and thereunder receiving oval hinge pins carried by the upper member for hinging the two members together intermediate their ends and with their apices pointing toward the toe of the shoe, adapting the front end of the upper member to be raised into position to receive the ends of the lace or lowered into position to secure said ends between the two members, said spring-plate member in conjunction with said hinge pins serving to yieldingly resist movement of said upper member into either of said positions; and to hold said upper member with a yielding resistance to reverse movement in whichever position it is placed.

5. A shoe lace fastening device comprising a base-plate securable to the tongue of a shoe and having marginal flange portions turned upwardly thereover, a spring-plate clamped on said base-plate under the marginal flanges of the latter and formed with a transverse arched portion or groove opposed to said base-plate, and a clamping

member having a transverse down-turned portion carrying oppositely extended hinge pins of oval form in cross section clamped between the base and spring plates within the arched portion of the latter, thereby providing a resistive hinge connection between the clamping-member and base-plate.

6. A shoe fastening device comprising a base-plate securable to the tongue of a shoe and having opposite marginal flange portions turned upwardly thereover, a spring-plate secured on said base-plate under the marginal flanges of the latter and formed with a transverse groove or arched portion opposed to said base-plate, and a clamping-member having a depending transverse flange portion carrying oppositely extended hinge-pins of oval form in cross section clamped between the base and spring plates within the groove of the latter, thereby providing a hinge connection between said clamping-member and base-plate tending to resist swinging movement of the one relatively to the other; either or both the clamping-member or spring-plate being formed with teeth to engage the ends of the shoe lace to prevent loosening or slipping thereof.

7. A shoe lace fastening device comprising a base-plate securable to the tongue of a shoe and having marginal flange portions turned upwardly thereover; a spring-plate clamped on said base-plate under the marginal flanges of the latter and formed with a transverse arched portion or groove opposed to said base-plate; a clamping-member having a transverse down-turned portion carrying oppositely extended hinge-pins of oval form in cross-section clamped between the base and spring plates within the arched portion of the latter, thereby providing a resistive hinge connection between the clamping-member and base-plate; and means for separably fastening said clamping-member in clamping position to said base-plate.

8. A shoe fastening device comprising a base-plate securable to the tongue of a shoe and having opposite marginal flange portions turned upwardly thereover; a spring-plate secured on said base-plate under the marginal flanges of the latter and formed with a transverse groove or arched portion opposed to said base-plate; a clamping-member having a depending transverse flange-portion carrying oppositely extended hinge-pins of oval form in cross section clamped between the base and spring plates within the groove of the latter, thereby providing a hinge connection between said clamping-member and base-plate tending to resist swinging movement of the one relatively to the other; and means for separably fastening said clamping-member in clamping position to said base-plate; either or both the clamping-member or spring-plate being formed with teeth to engage the ends of the shoe lace to prevent loosening or slipping thereof.

In testimony whereof I affix my signature.

ANTONIO BONGIOVANNI.