

No. 636,515.

Patented Nov. 7, 1899.

W. H. GATES.
SHOE AND FASTENING DEVICE THEREFOR.

(Application filed Feb. 18, 1898. Renewed Apr. 7, 1899.)

(No Model.)

Fig. 1.

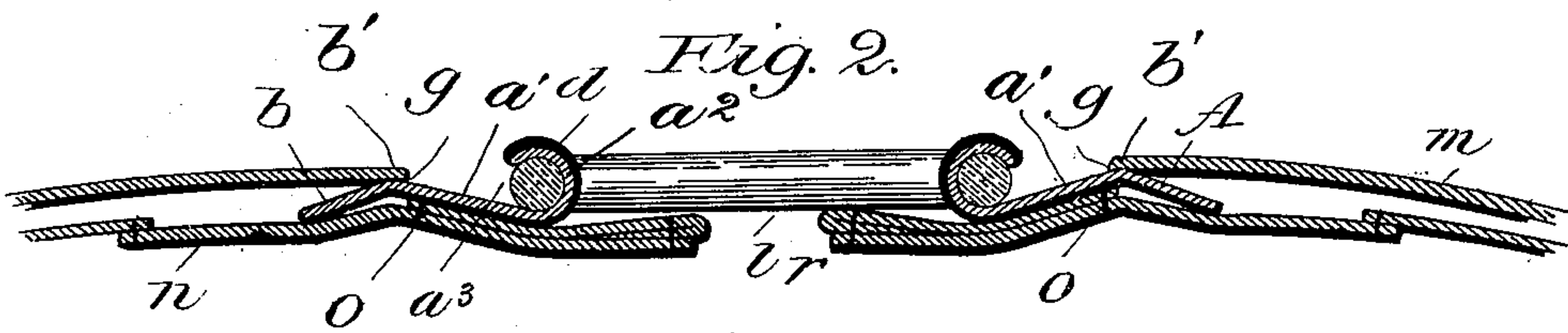
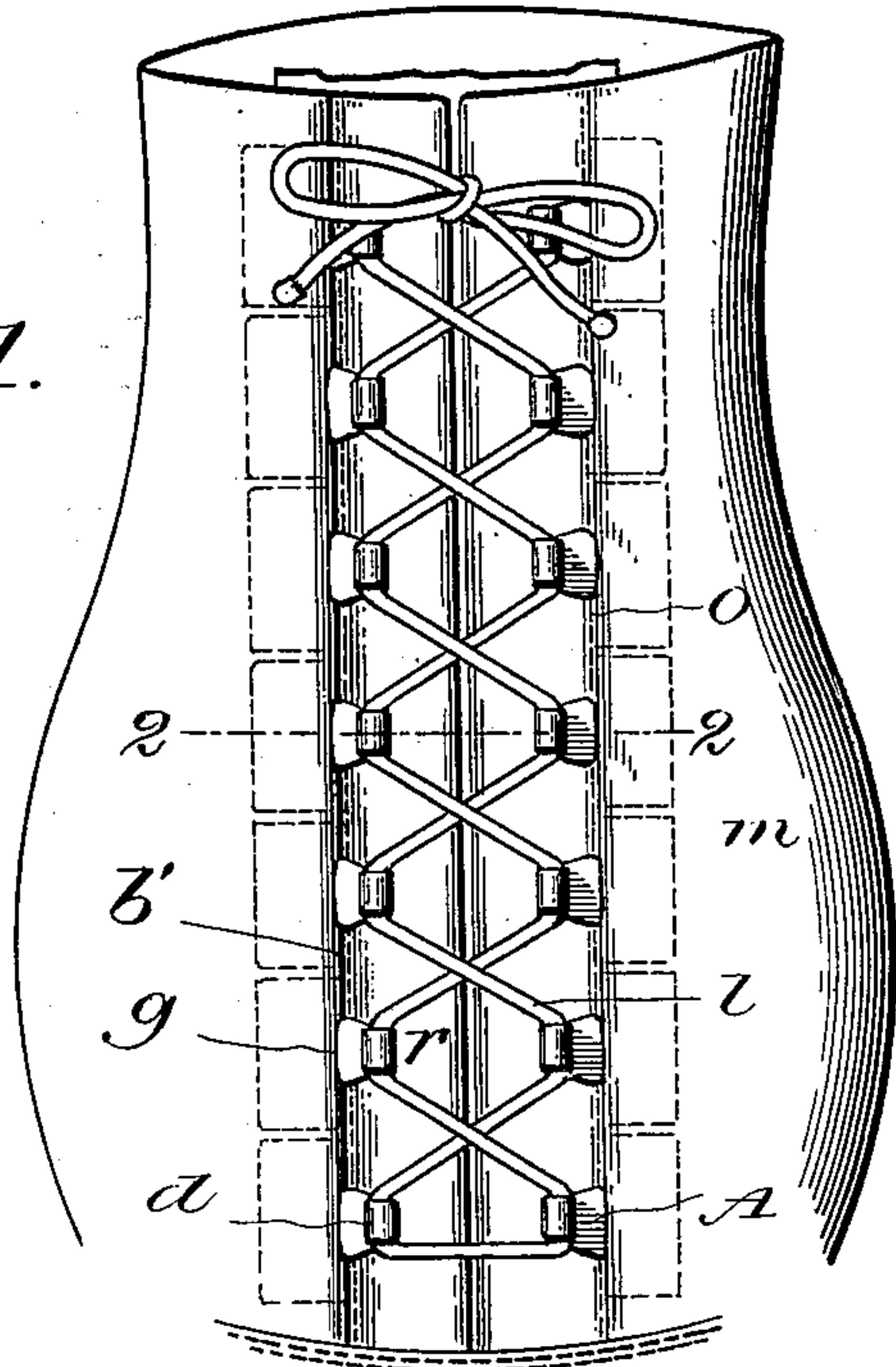


Fig. 3.

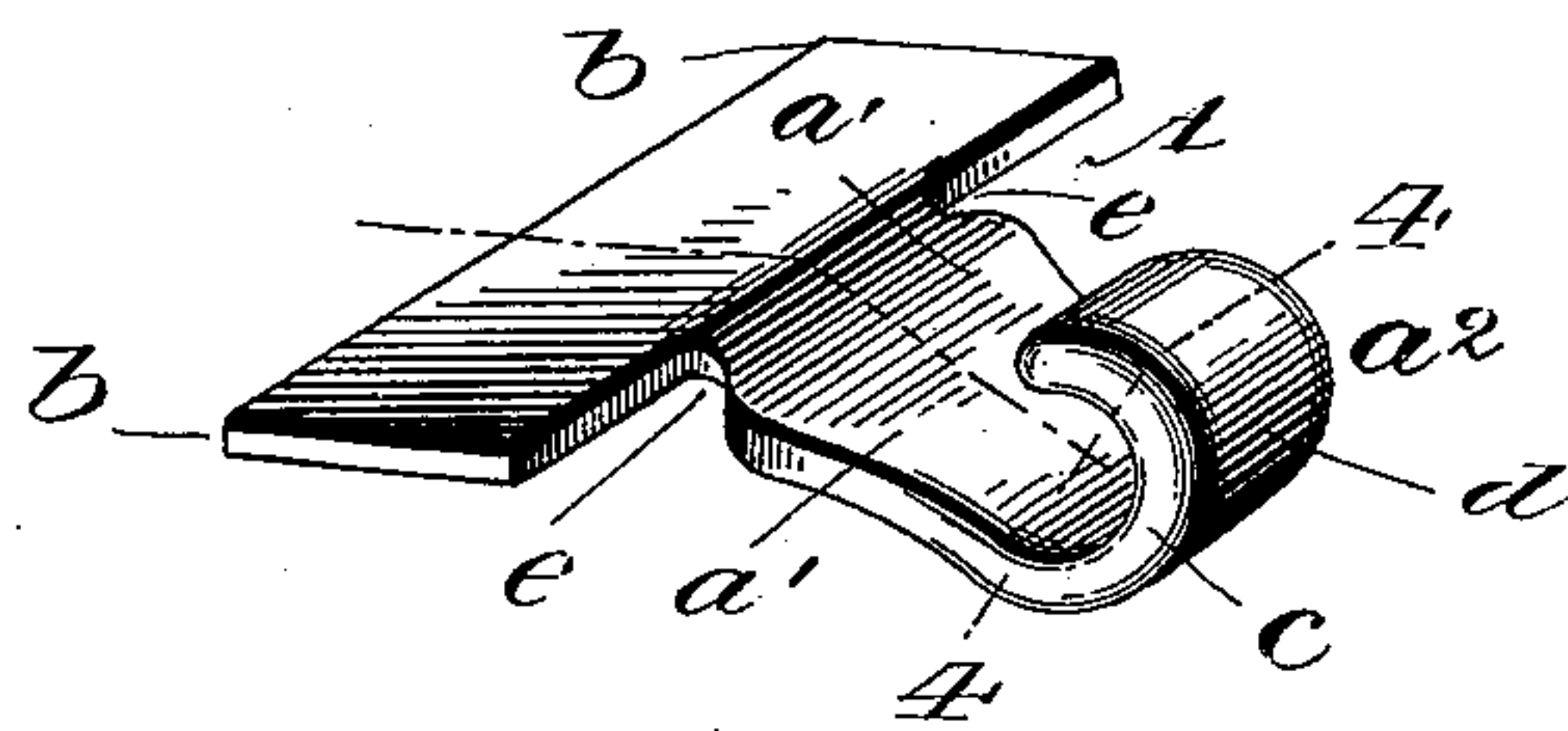
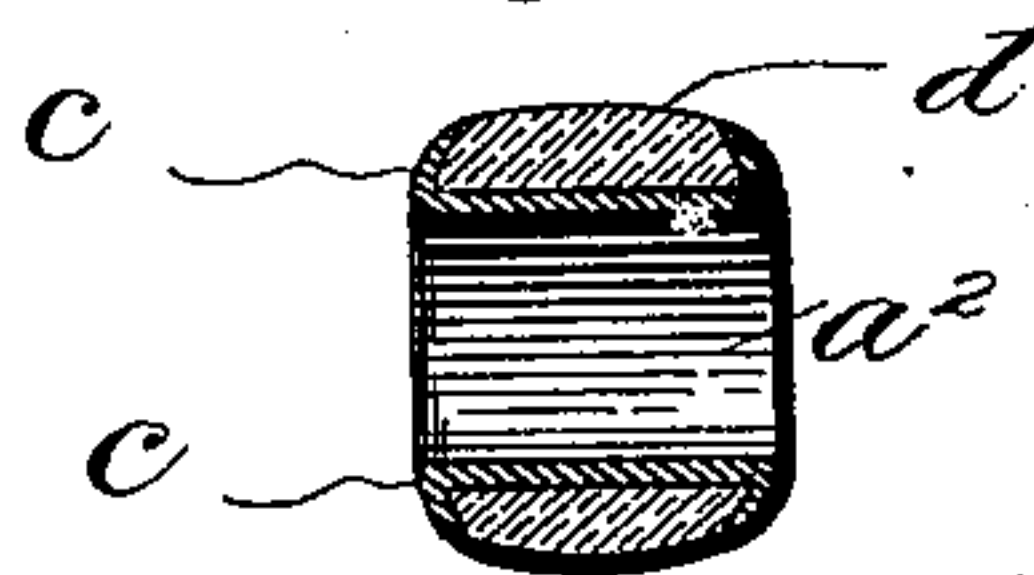


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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SHOE AND FASTENING DEVICE THEREFOR.

SPECIFICATION forming part of Letters Patent No. 636,515, dated November 7, 1899.

Application filed February 18, 1898. Renewed April 7, 1899. Serial No. 712,157. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. GATES, a citizen of the United States, and a resident of the city of Baltimore, in the State of Maryland, have invented a certain new and useful Improvement in Shoes and Fastening Devices Therefor, of which the following is a specification.

My invention has for its object to produce an improved lacing-border, with a view especially to improve laced boots and shoes; and to this end it consists of a novel and improved form of lacing-hook or shielded fastener, a new and useful lacing border or edge, and also in the combination of these with a boot or shoe.

The lacing-hook or shielded fastener in which certain features of my invention are embodied consists of a self-supporting base arranged to stand practically as a tripod upon its three limbs, two of which limbs are represented by an inclined oblong plate, and the third, which is integral therewith, extends centrally forward and downward as a flat well-defined limb and terminates in a scrolled-up foot or slotted-tube form of a hook. This form of hook affords the important advantage that when the lacing-cord is entered therein no point of hook is then exposed upon which clothing or other textures can be caught, and the tripod-like base itself, as hereinafter shown, presents notable advantages in connection with the lacing-border.

The preparation of the border of the boot or shoe is of the simplest character. At the usual distance back from its beaded edge a row of narrow slots are punched, and a line of stitching joins the upper to the lining immediately in front of the slots. The hooks being then inserted through the slots from between the upper and the lining and the upper being finished in due process, there is formed a practically continuous ridge or terrace-like projection of the lacing-border along the central line of elevation of the fasteners. In the ordinary shoe-lacing stud the hook proper is considerably above the plane of attachment of the stud to the upper, and in consequence it tends to tilt when the lacing-cord is drawn tight and to produce other disturbing effects. With my form of fastener, however, in which

the hook or part which engages with the lacing-cord is depressed and situated practically in the plane of the attachment of the fastener to the upper, the force of the lacing-cord does not tend to tilt the fastener, but draws practically in the plane of its attachment to the shoe. The hook, while having a perfectly open approach, so that the lacing-cord may easily enter, is yet so constructed that when once the cord is in place no other texture or material can be caught thereon. A further consideration in favor of my invention is that these simple shielded hooks are a completed mechanism and require no power-machine to set them and only the simplest form of gravity-machine to feed them rapidly in place.

In the accompanying drawings I have illustrated the best form in which I now contemplate embodying my invention, although I wish it understood that it may be changed in many of its details of construction without departing from the principle of the invention.

In the drawings, Figure 1 is a front view of part of a shoe with my invention applied thereto. Fig. 2 is an enlarged cross-section taken on line 2 2, Fig. 1. Fig. 3 is a perspective view of one of the fasteners detached. Fig. 4 is a sectional view taken on line 4 4, Fig. 3.

The fastener A, which is preferably made from sheet metal, consists of an integral tripod-like article which comprises three essential parts—the oblong plates *b*, the advance limb part or member *a'*, and the slotted tube *a²*. The oblong plate *b* stands inclined upward and forward from its rear edge or side, upon which it rests as representing the two rear limbs of the tripod, and its upper edge constitutes the line of elevation *b'* of the terrace or ridge of the lacing-border. The advance limb or part *a'* is bent forward and downward to stand at the desired angle with the plate *b*, which is the open angle of the tripod. The slotted tube *a²* is the scrolled-up foot of the exposed limb *a'* of the tripod, and the slot *a³* therein is preferably of a size a little less than the diameter of the lacing-cord under ordinary circumstances, so that the cord has to be slightly flattened as it is crowded thereinto, and when it has once entered the shield-

ed hook and resumed its normal shape it will fill practically the entire space inclosed by the hook and will close the opening a^3 , so that it will be difficult or impossible for the cord to accidentally escape from the hook or for the hook to catch upon anything, such as the clothing of the wearer. The free edge of the hook proper is relatively long and substantially straight from end to end and approaches so close to the face of the part a' as to slightly impede the free passage of the cord into and out of the shielded hook. The opening a^3 into the slotted tube is relatively long and is straight from end to end. I provide the lateral extremes or ends proper of the slotted tube or shielded hook with outwardly-curved flanges c to insure smooth rounded bearings for the lacing-cord and also by strengthening the hook itself to enable the use of quite thin and inexpensive material in the manufacture, which is still further economized by forming them of soft sheet-steel and then tempering them, like steel pens, in half-million lots at a time. I preferably cover the fastener A with japan; but in order to still further utilize the outwardly-turned flanges c of the cylindrical ends of the slotted tube a^2 and to secure a smoother and more durable finish around the latter I prefer to fill out said flanges with celluloid or other plastic material d , so that the lacing-cord l will not be cut or seriously worn thereby as it is brought into and out of engagement with the hooks.

The plates b of the fastener being relatively long distributes the lacing force evenly to the whole border, which is thereby free from local stretching, and the usual reinforcement of the border is dispensed with. The exposed limb or part a' may be slightly swelled or rounded out laterally, which will present an ornamental appearance on the shoe and constitute also the slight shoulders e , which being drawn to place through the slot g somewhat tightly will not slip back by accident.

In forming a lacing-border, as for a shoe, as represented in Figs. 1 and 2, I bead the upper at front and top, seam up the back, punch the slots, and then, after making the lining to correspond, attach simply the two backs together. I then run the line of stitching o through the upper and lining just in front of each row of slots and turning the upper inside out hook the slotted tubes only into the slots g . Righting the upper, I stitch the beaded edges, attach the vamp, and then with a loop of linen thread, or preferably of fine wire mounted like a button-hook loop, I bring each hook into its true position, with the stay-shoulders e of the part or limb a' through the slots g and the plates b up against the seam o , and thereby form the terrace of the border, which is continuous, since the plates b of the fasteners approach each other closely, leaving only sufficient space between them to prevent them from interfering with one another, and when such lacing-borders are brought to-

gether edge to edge there is formed a depression or recess or channel r between the opposite seams o , in which depression are situated the hooks or exposed parts of the fasteners, which are thereby in a large measure shielded and protected.

I prefer a lacing l round in cross-section and of small size, as with fasteners of the kind I have invented I find I can use a much finer lacing than is required when the ordinary lacing-hooks are used.

While my invention is primarily intended for use in laced boots and shoes, still it may be applied to gloves or to other articles where a lacing-cord and fasteners which are engaged thereby are employed to unite two parts.

I believe myself to be the first to have invented a lacing-hook or fastener having a part by which it is attached to an article elevated relative to the hook portion proper, which being pocketed in a lacing-border forms in the latter a terrace-like elevation a short distance back from the edge and in consequence a depression or recess in which the hooks or exposed parts of the fasteners are situated when two such borders are brought together edge to edge. I also believe myself to be the first to have invented a lacing-hook which comprises a slotted tube or cylinder the slot or opening into which is of a size to compress the lacing-cord as it is forced thereinto, so that as the cord practically fills the interior of the said tube or cylinder it is held in place therein and also closes the slot or opening thereof, so that the hook cannot catch upon clothing or other articles.

Having described my invention and the best way now known to me of carrying the same into effect, what I claim as new, and desire to secure by Letters Patent, is—

1. A lacing-hook or fastener formed essentially of two parts or members which are inclined relative to each other, whereby when the fastener rests upon the edges of such parts or members its central portion is elevated, and a hook integral with and carried by one of the said parts at its lower edge, substantially as set forth.

2. A lacing-hook comprising an upward and forward inclining plate and a downward and forward inclined limb or part, these together constituting a tripod-like support, and a hook proper carried by the end of the said limb, substantially as and for the purposes hereinbefore set forth.

3. A fastener for shoes and the like comprising a relatively long base b , and a hook proper carried by a centrally-arranged downward and forward inclined flange or limb of the said base, substantially as and for the purposes hereinbefore set forth.

4. A fastener for shoes and the like, comprising a means for attaching the same, a hook proper in the form of a slotted tube or cylinder having at its cylindrical ends the outwardly-curved flanges c , and a covering

for the cylinder, the said flanges assisting in holding such covering in place and also serving to strengthen the hook and to form rounded bearings at the ends thereof, substantially as and for the purposes hereinbefore set forth.

5 5. A lacing-hook or fastener for shoes and the like, comprising a means for attaching it to an article, a limb or part *a'*, and a hook proper of slotted tubular form carried by the
10 said part *a'*, the edge of the hook proper being relatively long and substantially straight from end to end, and approaching close to the face of the part *a'*, whereby the slot or opening into the hook is straight and narrow,
15 and whereby the entrance of the cord into the hook, and its escape therefrom is slightly impeded, substantially as set forth.

6. A lacing-border consisting of two pieces of material secured together near their edge
20 by a seam, there being openings through one piece of material near the seam, and fasteners having their hooks extending through the said openings, and attaching-plates situated between the said pieces of material the said
25 plates being elevated along their outer edge, whereby when in place between said pieces of material they form a ridge or terrace substantially parallel with the edge of the border, substantially as and for the purposes
30 hereinbefore set forth.

7. The combination with the outer material *m*, and the lining *n*, these two being united by a seam *o*, and the outer material being provided with a series of slots or open-
35 ings *g*, of the fasteners comprising the rela-

tively long plates *b* bearing, at their outer edges, against the said seam on its inner side and operating to form a terrace of the border along that line and the hooks proper with their shanks extending through said slots or
40 openings, and the lacing-cord *l*, substantially as and for the purposes hereinbefore set forth.

8. A laced shoe provided on either side of the lacing-openings with a series of lacing-hooks comprising attaching means, and the
45 exposed hooks with which the cord engages, the said attaching means being confined within the material of the upper, and being elevated relative to the hooks proper, whereby when the shoe is laced the hooks are situ-
50 ated in a channel or recess bounded by raised portions of the lacing-borders, formed by the attaching means of the fasteners, substantially as and for the purposes hereinbefore set
55 forth.

9. A lacing-hook comprising an upward and forward inclined plate, *b*, a downward and forward inclined limb or part *a'*, these together constituting a tripod-like support, and the
60 part *a'* being expanded immediately forward of its junction with the plate *b* to constitute the shoulders *e*, and a hook proper carried by the end of the said part *a'*, substantially as set forth.

In testimony whereof I have hereunto set
65 my hand this 15th day of February, 1898.

WM. H. GATES.

Witnesses:

GEO. E. TAYLOR,
EDGAR F. DOBSON.