B. F. STURTEVANT.

Pegs or Sole-Fastenings.

No. 159,977. Patented Feb. 16, 1875.

Fig: 3.

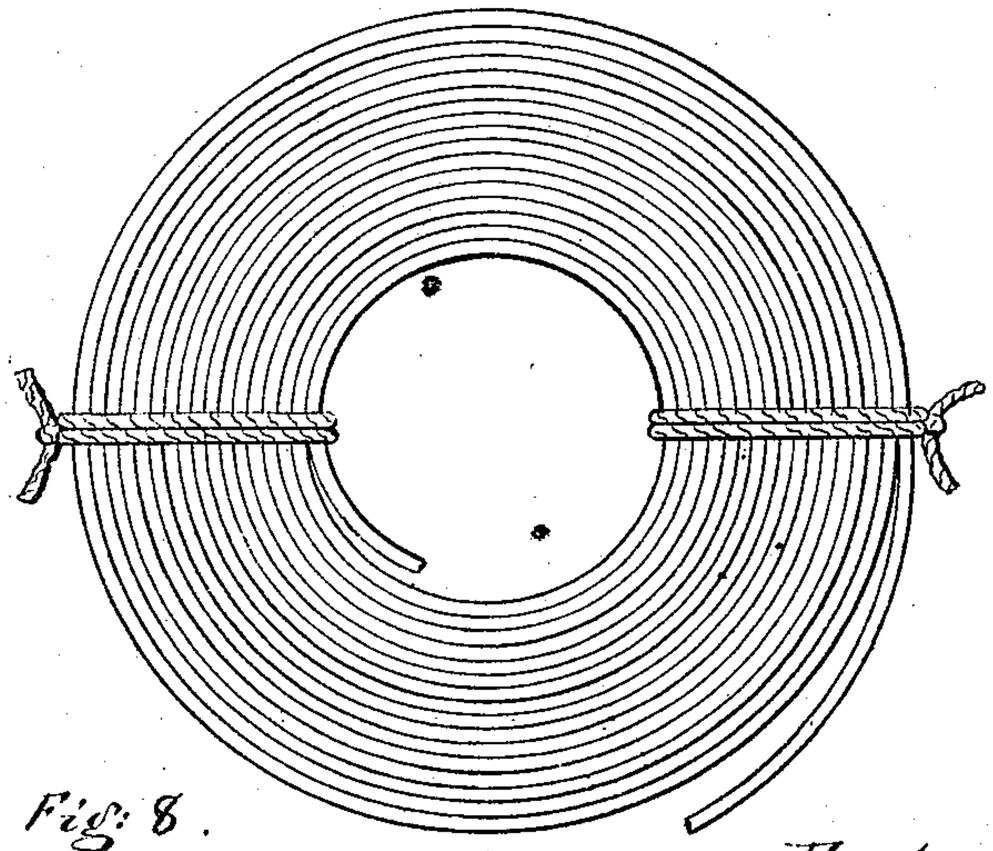


Fig: 2.

Fig: 1.

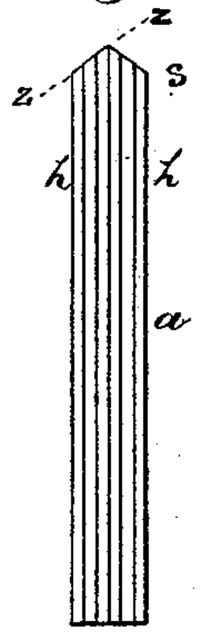


Fig: 5.

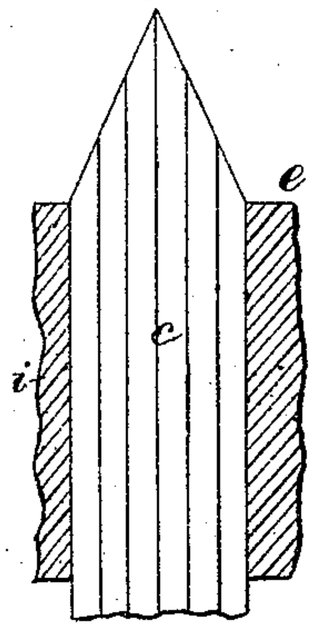


Fig: 8.

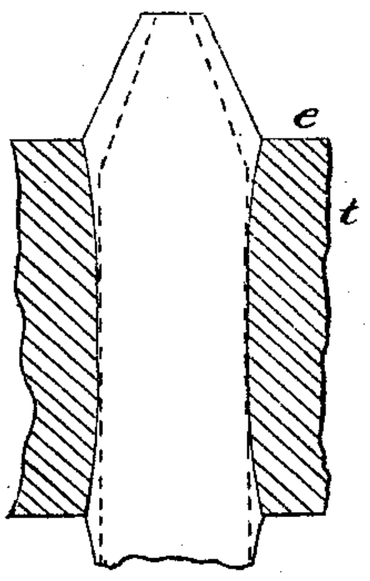


Fig: 6.

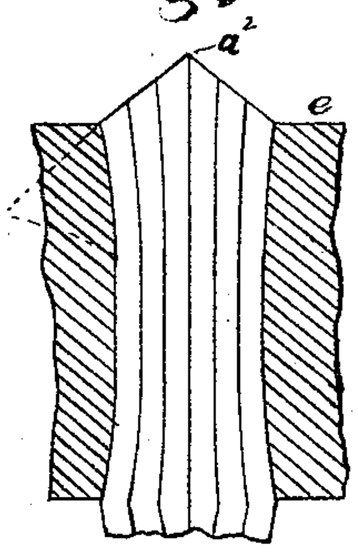


Fig: 7.

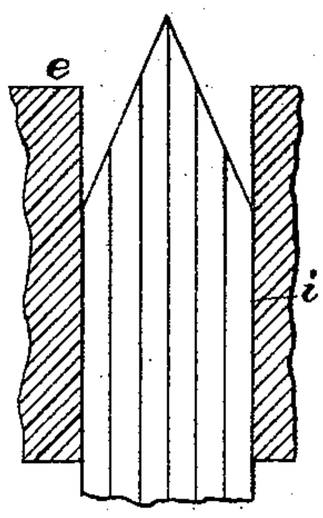
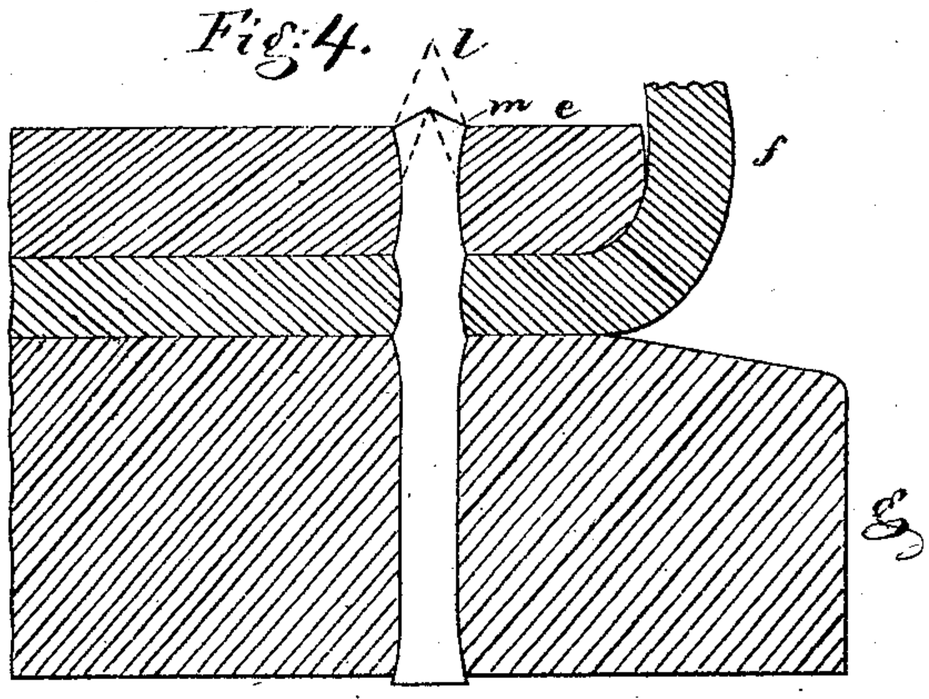


Fig: 4.



Witnesses,
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Inventor.
Benjamin F Sturtevant
per Crosby & Gregory
Attys

UNITED STATES PATENT OFFICE.

BENJAMIN F. STURTEVANT, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN PEGS OR SOLE-FASTENINGS.

Specification forming part of Letters Patent No. **159,977**, dated February 16, 1875; application filed December 17, 1874.

CASE C.

To all whom it may concern:

Be it known that I, BENJAMIN F. STURTEVANT, of Boston, in the county of Suffolk and State of Massachusetts, have invented a Process of Manufacturing Sole-Fastenings for Boots and Shoes, of which the following is a specification:

My invention relates to that class of fastenings for attaching soles to boots or shoes known as "ribbon peg-wood," and cut from the log in long strips.

As heretofore constructed, one edge of this peg strip or blank has been cut from opposite sides of the strip toward, and so as to form, a thin edge, suitable to serve as points for pegs to be cut from such strip. This edge is cut quite sharp, as consumers of peg strips or ribbons demand that construction, in order that the separate pegs may easily enter and get as much of a start as possible in the awl-holes made in the leather, and this thin sharp point is quite easily broken. This sharp edge for the points has always been made longer than the thickness of the strip or peg, and a peg cut from such strip, to be effective, should be driven entirely through the inner sole, as represented in Fig. 5.

I denominate as the holding-surface of the peg all that portion between the head or driven end and the surface of the peg from which starts the cut to form the point, and to perform good work this holding-surface should come in contact with the entire thickness of the inner sole, as shown in Fig. 7; but this is objectionable, because the points of the pegs extend into, soon destroy, and have a tendency to fasten the last in the shoe; and that the last may be easily removed, operators are apt to drive the points of the pegs only partially through this inner sole, as shown in Fig. 7, and with a peg so driven its holding-surface is not effectual but on a portion of the thickness of the inner sole, and consequently the outer sole easily becomes detached, or the work "grins." This waste of lasts, owing to the action of the long peg-points when properly driven, is very great, and is a serious loss. A strip or blank cut and pointed as above set forth has, while held in a pegging-machine, and just before the peg was cut therefrom, been compressed laterally between jaws shaped to embrace and bear on the flat sides, and partially on the pointed edge of such strip.

My invention consists in a process for forming a peg, peg-strip, or peg-ribbon from a ribbon of peg-wood having its edge which is to form the peg-point produced by first bringing that edge intended to form the point to a blunt median edge by cutting, and then, by the compression of such edge to a greater degree than the body of the strip, forming an acute bevel, the point of which is the point of the previously-cut edge, and which, when moistened, is capable of resuming substantially its original position with relation to the side of the peg, thus serving at one time as a point, and then, when again enlarged to its original position, or nearly so, forming a holding-surface, whereby I am enabled to use a shorter peg strip or blank than has heretofore been used, and yet retain the same amount of holding-surface, thereby saving peg-stock; and I save lasts, as such peg with point so formed need be driven but a very short distance through the inner sole in order to be as effective as the ordinary peg in holding the parts of the boot and shoe together. My peg-point, formed by compression, is hardened more than the body of the peg, and the point enlarges under the action of moisture, and the inclined sides forming the point then assume their position before compression, and the point so enlarged to its former shape forms a holding-surface, and enables a larger amount of wood to be placed in the awl-holes than has been heretofore possible.

In the accompanying drawings, Figure 1 represents a blank from which the improved peg-strip is formed; Fig. 2, the same condensed. Fig. 3 shows a ribbon or coil of peg-wood as manufactured for market. Fig. 4 shows a section of shoe with my improved peg in position, *e* being the insole, *f* the upper, and *g* the outer sole. Fig. 5 represents the ordinary pointed peg when correctly driven. Fig. 6 shows a peg in an inner sole; Fig. 7, a pointed peg of ordinary construction, partially driven, as they often are to save lasts; and Fig. 8, a modified form of strip in its compressed condition in dotted lines, and in its

swollen condition in full lines. Figs. 5 to 8 are sections through the pegs from side to side of the blank or strip, and through the inner sole. All the figures are shown enlarged.

My new strip or blank *a* for peg-wood is cut from the log in any ordinary manner, with sides or edges *h h* of substantially the same thickness as the body of the strip, and when moist it is, by the action of compressors or jaws, subjected to pressure sufficient to cause the strip to pass from the size denoted in dotted lines, Fig. 2, to that represented in full lines, and it will be seen that the point is much condensed, and quite sharp.

The compressors are heated, or the strip may be heated before it reaches the compressors. A peg severed from this strip is to be driven through the inner sole, as represented in Fig. 4. The end of the peg stops against the last, and its point will occupy the position shown by dotted lines *m;* but when swollen the said point will assume substantially the position shown in full lines, and the point, which at first did not entirely fill the awl-hole in the inner sole, will expand and resume the position, or nearly so, that it occupied with relation to the body of the strip before compression, or will swell as much as the hardness of the leather will permit, and will grasp the inner sole and act as a holding-surface, instead of remaining as a useless point.

I bevel the point-edge of the strip slightly, forming a blunt median edge, but for a distance less than the thickness of the peg-strip, but not to such a degree as would form a point which, if on an ordinary peg-strip, would be practically sufficient to enter an awl-hole and be driven. This inclined face or cut, (represented by line *z z*,) instead of extending from the side to the central line of the peg-strip, may meet the end of the strip at some distance aside from such central line, as in Fig. 8; or the edge of the strip might be slightly rounded or oval.

In all these modifications, however, the blunt median point represented at Fig. 1 is subsequently formed by compressing such blunt edge of the peg-strip to a greater degree than its body, forming an acute bevel, the point of which is the point of the previously-cut edge, and the compressed point so formed can, when inserted in the leather, and will when swollen by moisture, enlarge from that point at the side of the peg where the inclination to form the compressed point commences to the point or corner, Fig. 1, or nearly so, allowing such compressed point between these portions and lines, above described, and lettered *t* in Fig. 6, to expand to the full size, or nearly so, that the peg strip or blank had before compression, and the compressed point is in this way utilized as a holding-surface.

In Fig. 5, *c* represents a peg cut from an ordinary pointed ribbon or strip. Its holding-surface is designated by *i*, and to be fully effective this peg should be driven through the inner sole *e* as far as represented, and so driven the point projects far into the last, injures it, causes great loss of lasts, and confines the last in the shoe, making it hard for the workman to remove it.

In Fig. 7 this same peg is shown in the position in which it is oftentimes left by the workman, the holding-surface *i* being effectual only on a portion of the inner sole.

Fig. 4 shows my peg in position. The dotted lines *m* indicate the position that the point, formed almost entirely by compression, assumes when driven properly into the sole, such point being, it will be noticed, in the position to which it should be driven in order to save the last and provide for its easy removal. The full lines show substantially the position the compressed point will assume when swollen, the same changing from the position of the dotted to that of the full lines, and throwing out a holding-surface the full and original size of the peg-strip, or nearly so, from the point where the dotted lines leave the side of the peg to the corner *p* or *s*, or to the top of the inner sole, as represented, thus making the compressed point act at first as a point and then as a holding-surface.

The line *l* in Fig. 4 shows the distance necessary to drive the common pointed peg.

So far I have only described with particularity that portion of my ribbon peg-strip which is to serve for the points of the peg. This peg ribbon or blank is compressed, as has been stated, between heated jaws, which so act that they first compress that edge of the strip which is to form the peg-points, and as they are forced together against such strip they gradually compress it from the point-forming edge toward that edge of the strip which serves for the heads of the pegs. This head-forming edge abuts against and is sustained in opposition to this end pressure by a ledge or lip, e^3, extending from or forming part of preferably the stationary compressor; and as the jaws or compressors close on this peg-strip they act to gradually compress such strip from the point-forming edge toward its head-forming edge, forcing such edge firmly against the lip or flange of the heated compressor, and expressing substantially all the moisture from the wood of the strip out through that edge or portion of the strip to form peg-heads, setting the grain or fiber of the strip so condensed closer together, the heat of the jaws hardening the material, and keeping it from resuming its former position unless subjected to the action of moisture. When cutting the peg-wood into strips the edges of the strip, owing to the action of the separating-cutters, are more disturbed than the body of the strip, and are, as it were, loosened and left less compact than the body of the strip.

It is essential in the formation of a perfect peg that the head be very hard, and that the wood at the surface of the head be compact and solid, sufficiently so that under the action of a driver it will not "broom" out, split, or

upset at the head. My heated jaws serve to compress and iron down the peg-ribbon, hardening the head as well as the other portions, forming a stiff, rigid peg, not liable to upset at or near the head, as is often the case, but the peg so compressed will drive its full length.

It sometimes happens that the driver for the peg strikes only a part of the head, and then the head is broomed or frayed; but with my peg, having its head compressed, such a blow from the peg-driver will not break or disarrange or upset the grain or wood of the head.

The heated jaws for compressing the peg-strip are fully described in an application for patent filed conjointly with this.

In this case I refer to such machine application in order that any person may fully comprehend and understand my present invention relating to the compressed peg and peg strip or ribbon. The compressors, by their repeated actions on the passing strip, consolidate, compact, and retain the substance of the strip in its compressed state.

I claim—

1. That improvement in the art or process of manufacturing a peg or peg-ribbon consisting in first bringing the part intended to form the point to a blunt median edge by cutting, and then, by compression, forming an acute bevel, including a portion of the body of the blank, and the point of which is the point of the previously-cut edge, substantially as described.

2. A compressed wooden peg-strip, the point of which has the characteristics essentially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BENJ. F. STURTEVANT.

Witnesses:
G. W. GREGORY,
L. H. LATIMER.