B. F. STURTEVANT.

Sole-Fastening.

No. 159,777 Patented Feb. 16, 1875.

Fig. 7.

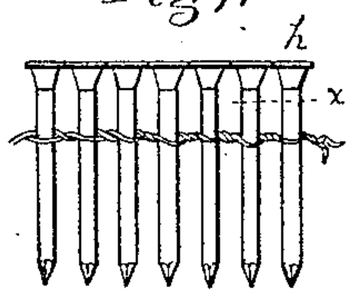

Fig. 1.

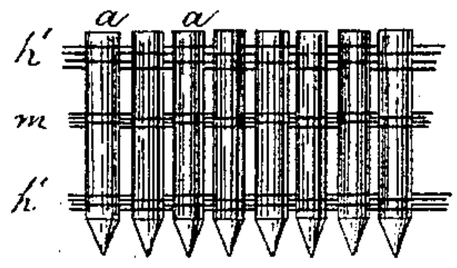

Fig. 8.

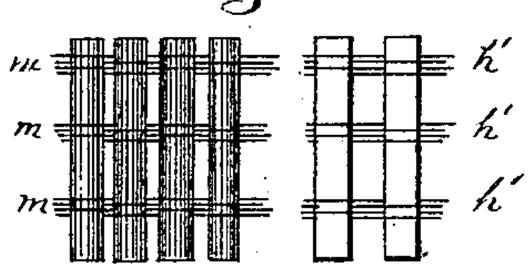

Fig. 2

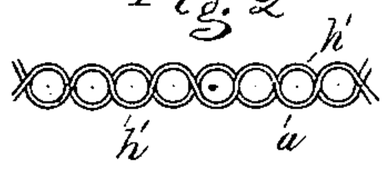

Fig. 3

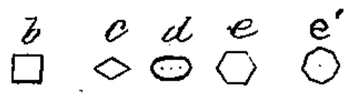

Fig. 4.

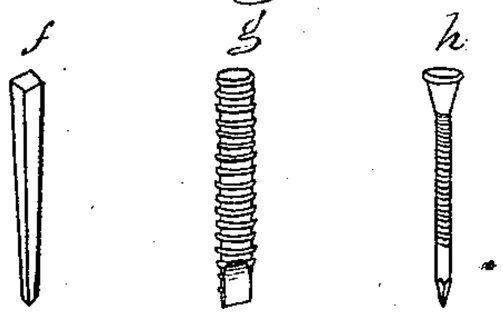

Fig. 5.

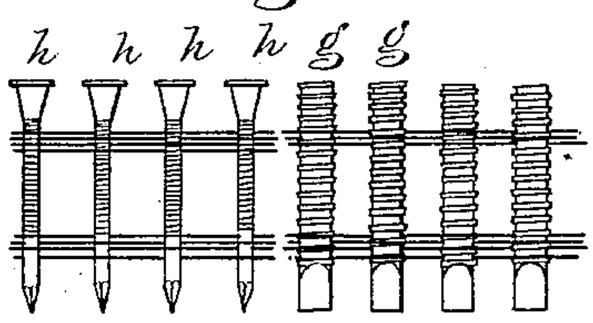

Fig. 6

Witnesses.

L. H. Latimer.

Wm Pratt.

Inventor.

Benjamin F. Sturtevant

PER Crosby & Gregory.

ATTYS.

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

BENJAMIN F. STURTEVANT, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN SOLE-FASTENINGS.

Specification forming part of Letters Patent No. 159,777, dated February 16, 1875; application filed February 8, 1875.

CASE B.

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 Improvements in Sole-Fastenings, of which the following is a specification:

My invention relates to improvements in sole-fastenings for boots and shoes; and consists in a ribbon or chain of fastenings, of wood or metal. The fastenings composing my improved ribbon or chain are united or connected together by strands of fibrous material or fine wire.

Figure 1 is a side view of a piece of my improved ribbon of fastenings, and shown as united by strands of fibrous material or of wire. Fig. 2 is an edge view thereof; and the other figures represent modified forms of my improvement, and as hereinafter described.

In the drawing, Fig. 1, *a* designates fastenings made of wood—such wood as is now commonly used for pegs—and the pegs are shown as being round. These fastenings may be of any desired length or size; and, instead of being round, they may be rectangular, (see *b*, Fig. 3,) or diamond shape *c*, or oval *d*, or hexagonal *e*, or octagonal *e'*, or of any desired shape. These fastenings may be of metal, and without heads; (see Fig. 4, at *f*;) or they may be provided with screw-threads or notches, and a suitable clinching-point, (see *g*,) adapted to clinch on an iron-shod last; or the metal fastenings may be of any other well-known shape or kind, and may be provided with heads, if desired. (See *h*.)

Instead of wood or metal fastenings, I may employ fastenings of any other material heretofore used for fastenings, and of any well-known form.

To produce my improved ribbon of fastenings, first make or select sole-fastenings, whether of wood, metal, or other substance, of the class and shape that it is desired to employ in the ribbon to be woven. Then take strands of fibrous material *h'*, or fine wire *m*; mount them in heddle-eyes or loops adapted to be moved, as in looms, so as to cross these strands, which are to be considered as warps, and, as these warps are crossed to form sheds, insert between them the fastenings, one by one, and weave them, as it were, into a ribbon of sole-fastenings, the fastenings being considered as the weft or filling of the ribbon.

In Fig. 1, *h'* are the warps. Two or more are placed together, and, preferably, the fastenings will be held at intervals, with relation to their length, by one or more sets of warps.

In Fig. 1 and other figures, *m* represents sets of wire warps; but it is not necessary to use wire warps with fibrous warps, and the wire warps may be omitted from the fastenings shown in Fig. 1.

Instead of placing a fastening between each crossing of the warps, as at Figs. 1 and 2, the fastenings may be inserted at, say, every second crossing, using alternately a fastening for a crossing, and then a fibrous weft.

In Fig. 6 such a ribbon is shown, *a* representing a fastening, and *k* a fibrous weft; or I may retain the fastenings between the warps in any desired way; and, if desired, I may assist the holding action of the warps on the fastenings by means of any well-known cement or wax.

In Fig. 6 I show the ends of two classes of fastenings, and either end of the ribbon may be considered as projecting to any length. These ribbons may be of any desired length, governed by the length of the warp, and the fastenings of any desired lengths or sizes. These fastenings, if of wood, may have their ends pointed before being woven, as in Fig. 1, or may be unpointed, as at Fig. 8, this latter showing both square and round fastenings of wood or metal, and united with fibrous or wire warps. If woven unpointed, the fastenings may be subsequently pointed by cutters before being placed in a pegging-machine for use; or they may be pointed when in the pegging-machine by means of any of the devices heretofore described by me for patents for pegging-machines, and which contain cutters for pointing pegs. The driver, meeting these fastenings in a pegging or nailing machine, will detach them from the warps; or the fastenings may be cut from the ribbon by the usual cutter.

In Fig. 5 I show two kinds of metallic fast-

enings, woven into ribbons. The warps are shown as not drawn taut; but it is understood that they are to be woven, as are the wooden fastenings, shown in Figs. 1 and 2.

Instead of weaving the pegs or nails into ribbons, as shown in Figs. 1 and 2, they may be woven as shown in Fig. 7, where the warps are twisted together between each crossing, or at any intermediate crossings. This is the preferable mode for weaving fastenings having heads; but fastenings without heads may be so woven. At the right of Fig. 7 the line *x* is designed to designate that the heads may be removed or omitted, and then the said ribbon would present a ribbon of fastenings without heads, and of wood or metal.

Having described my invention, I claim—

A ribbon of sole-fastenings, composed of separate fastenings, united by means of fibrous or metallic strands interwoven, substantially as described.

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,

S. B. KIDDER.