W. N. SPRAGUE.

Shank Stiffeners.

No. 143,389. Patented September 30, 1873.

Fig: 1.

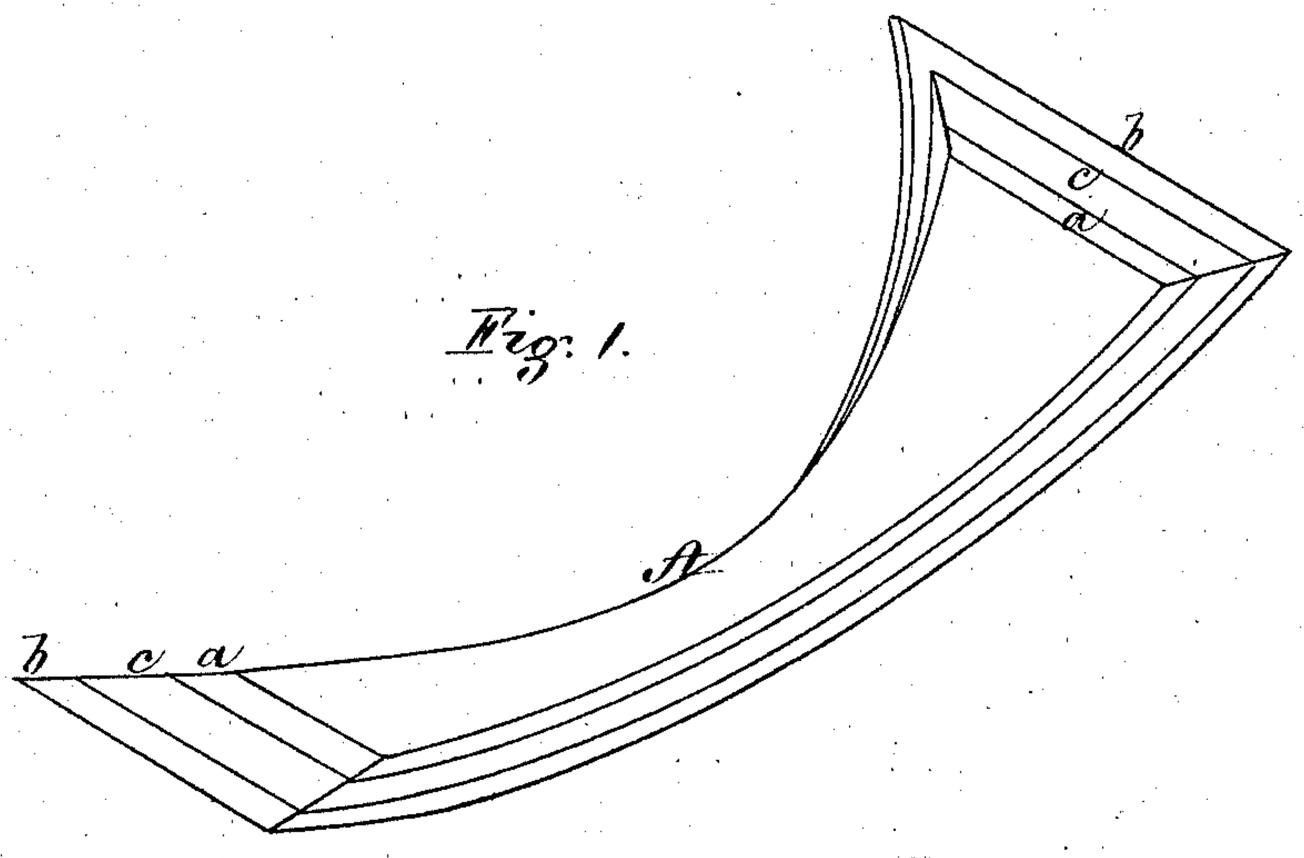


Fig: 2.

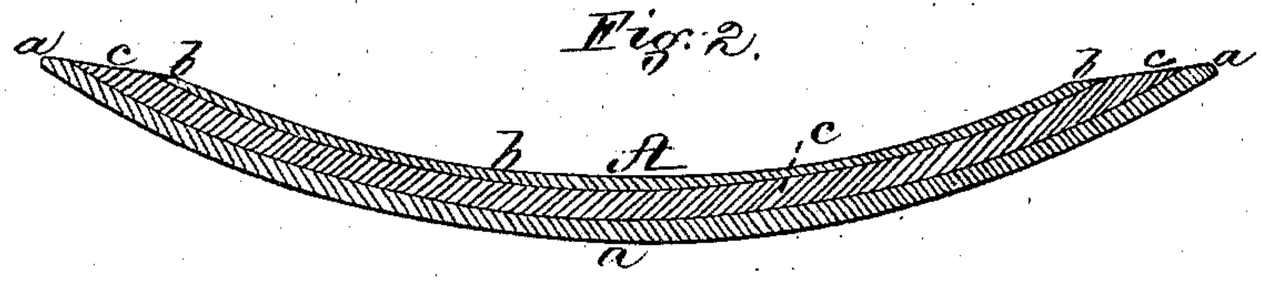


Fig: 3.

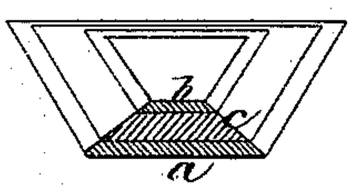
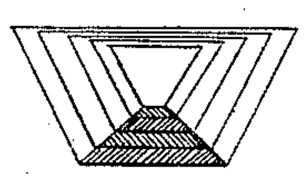


Fig: 4.



Witnesses,
C. E. Hanson.
W. J. Cambridge

Inventor,
Watson N. Sprague,
Per his Attorneys.
Testchemacher & Stearns.

UNITED STATES PATENT OFFICE.

WATSON N. SPRAGUE, OF KEENE, NEW HAMPSHIRE, ASSIGNOR TO HIMSELF AND GEORGE GOODYEAR, OF ELIZABETH, NEW JERSEY.

IMPROVEMENT IN SHANK-STIFFENERS.

Specification forming part of Letters Patent No. **143,389**, dated September 30, 1873; application filed June 27, 1873.

To all whom it may concern:

Be it known that I, WATSON N. SPRAGUE, of Keene, in the county of Cheshire and State of New Hampshire, have invented certain Improvements in Shanks for Boots and Shoes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a perspective view, representing a shank of my improved construction in an inverted position. Fig. 2 is a longitudinal section through the center of the same. Fig. 3 is a transverse section on the line *x x* of Fig. 2. Fig. 4 is a similar section, through one of my improved shanks, of a slightly different construction.

Shanks for boots or shoes have been formed of wood in a single piece; but, in order to fill up the space between the inner and outer soles, they have been made so thick as not to possess the degree of elasticity required. To remedy this deficiency, a shank has been made of two or more strips or thicknesses of wood united together at one end; but this construction was objectionable on account of the frequent liability of the ends of the wooden strips to become split, and also of their being broken at or near their centers. To obviate the above-mentioned difficulties is the object of my invention, which consists in a shank composed of one or more strips or layers of wood, and one or more strips or thicknesses of leather, leather board, or straw board, the several thicknesses being either glued, nailed, screwed, or otherwise properly united together, the leather, leather board, or straw board preserving the ends of the wood from injury without impairing its elasticity. If the shank be made of leather or paper board, it is strengthened and its elasticity enhanced by the use, in juxtaposition with it, of wood; at the same time, wood being cheaper, the manufacture of the shank is proportionately cheapened. On the other hand, if the shank be made of wood, the leather or paper board, which is combined with it, as hereinbefore set forth, has a tendency to prevent the toe end from splitting while in the process of manufacture, and also while being applied to the shoe. My invention thus enables me to make a solid shank of one piece of wood, of any required thickness, without splitting, and of requisite elasticity, inasmuch as the thickness can be made up of leather or paper board.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In Figs. 1, 2, 3 of the said drawings, A represents my improved shank composed of three separate and distinct thicknesses or strips of material. The strip *a*, which comes next the inner sole, is of leather board. The strip *b*, which rests on the outer sole, is of leather; and *c* is a strip of wood interposed or glued, or otherwise secured, between them, the size of the strip *a* being sufficient to lap over and protect the corners of the wood from being split or broken. The corners of each strip of material are beveled or skived off, as shown, in order that they may properly fit and adapt themselves to the outer sole; and the sizes of the several strips or thicknesses decrease from the outer toward the inner sole. The shank-piece is placed with the back of its strip *a* resting on the inner sole, being tacked or otherwise secured thereto only at or near its rear or heel end, the front of the shank being free to yield and play forward on the pressure of the foot being applied.

It is evident that a good shank may be formed by the union of but one strip of wood with but one strip of leather, leather board, or straw board, without departing from the spirit of my invention.

My improved shank possesses sufficient elasticity and durability, and can be produced at a trifling cost, as much stock, which could not otherwise be used to advantage, and has been regarded as waste, can now be utilized thereby.

What I claim as my invention, and desire to secure by Letters Patent as a new article of manufacture, is—

A shank composed of two or more thicknesses of the materials herein specified, for the purpose set forth.

Witness my hand this 17th day of June, A. D. 1873.

WATSON N. SPRAGUE.

In presence of—
G. F. STARKWEATHER,
G. A. LITCHFIELD.