

(Model.)

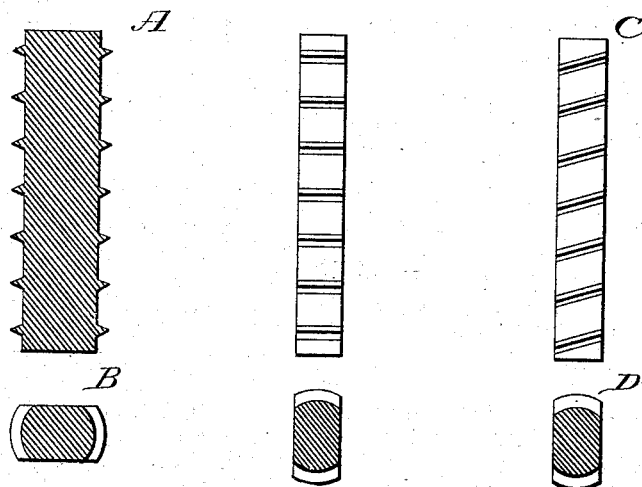
S. W. ROBINSON.

SOLE FASTENING FOR BOOTS OR SHOES.

No. 265,149.

Patented Sept. 26, 1882.

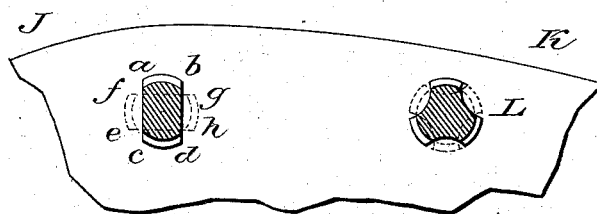
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Witnesses:*

*W. F. Marvin*  
*Floyd Davis*

*Inventor:*

*Stillman W. Robinson*

# UNITED STATES PATENT OFFICE.

STILLMAN W. ROBINSON, OF COLUMBUS, OHIO, ASSIGNOR OF ONE-HALF TO  
O. E. LEWIS, OF SAME PLACE.

## SOLE-FASTENING FOR BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 265,149, dated September 26, 1882.

Application filed February 6, 1882. (Model.)

*To all whom it may concern:*

Be it known that I, STILLMAN W. ROBINSON, a citizen of the United States, residing in the city of Columbus, county of Franklin, and State of Ohio, have invented a new and useful Improvement in Sole-Fastenings for Boots or Shoes, of which the following is a specification.

My invention relates to a sole-fastening consisting of what may, perhaps, be termed a "fluted and ribbed nail," the flutes being lengthwise and the ribs crosswise on the ridges between flutes, which nail, when inserted into the leather, is first driven to the desired depth and then turned on its axis through part of a revolution, according to number of flutes, this partial rotation causing the ribs to advance into the sound and unbroken leather lying in the fluted spaces while driving, thus securing in a simple manner a firm substantial fastening, which is intermediate between nails for convenience and screws for strength.

The essential features of the nail and mode of applying are shown in enlarged views in the accompanying drawings, in which—

Figure 1 shows side and edge views of the nail. Fig. 2 shows cross-sections of nails of various number and forms of flutes. Fig. 3 indicates how to apply the nail in fastening a sole to a shoe.

The nail, as shown in side and edge view in Fig. 1, and in cross-section in Fig. 2, may be made from wire in continuous form by first fluting the wire on two sides, as shown in sections F, G, and H, or on one side, as at E, or on three sides, as at I, or even more sides, if desired; and second, by cutting ribs on the portions of the wire left between the flutes. The ribs may be formed in a lathe either as in cutting screw-threads or as in turning successive ring-grooves, according to whether the ribs are to be inclined to the axis, as shown in C D, Fig. 1, or square with it, as in A B, Fig. 1. The flutes or slabbed sides are cut lengthwise. The ends of the nails should be beveled, to facilitate driving. In application these nails are to be forced to the desired depth into the leather while retained in some one position—such as shown at *a b c d*, Fig. 3—for double-fluted nails, and then they are to be given a quarter-turn into a second position, *e f g h*. Now, in the act of inserting a nail the

leather within the space *a b c d* is cut and torn, and thus damaged and rendered unfit for holding the teeth or circumferential ribs of the nail; but in the segmental spaces *a c e f* and *b d h g* the leather is still solid and unbroken. Hence by a quarter-turn the ribs of the nail are advanced into the sound leather, upon which they take a firm hold, thus making the fastening secure. At L, Fig. 3, the same effect is obtained by a triple-fluted nail, the final partial rotation being the sixth of a turn. Similarly the nail E, Fig. 2, requires a half-turn.

In some cases one form of cross-section may be preferred to others. For instance, G is a good form to take firm hold upon the leather, but in thick soles it may twist either partly or entirely off in the quarter-turn given after insertion. In such case the form H is better, where the corners of the teeth or ends of the ribs are rounded off by making the fluted or slabbed sides convex. The leather will then more readily slip from the side to the edge of the nail as it is given the final partial rotation. Also, the ribs are preferably thin, like the threads of a wood-screw, to reduce the resistance to rotating in the leather. When the ribs are inclined, as at C D, Fig. 1, they will have the effect to advance the nail a small amount, in the manner of a screw, as the nail is given the final partial rotation. This slight advance will aid in puncturing the last film of leather at the pressure-horn beneath, such film having been found, by trial, difficult to cut in the act of driving the nail, the latter being in danger of crippling.

In manufacturing the nails it is immaterial to the objects of this invention whether the nails are prepared in continuous wire or in pieces of a single nail each. Nor is it material whether the flutes and ribs are cut or are pressed by dies into shape, nor whether one operation precedes the other.

What I claim as my invention is—

An improved sole-fastening consisting of a nail fluted longitudinally and provided with circumferential ribs, all substantially as and for the purpose stated.

STILLMAN W. ROBINSON.

In presence of—

W. E. GUERIN,  
O. E. LEWIS.