

(No Model.)

C. D. ROGERS.

WIRE NAIL.

No. 368,687.

Patented Aug. 23, 1887.

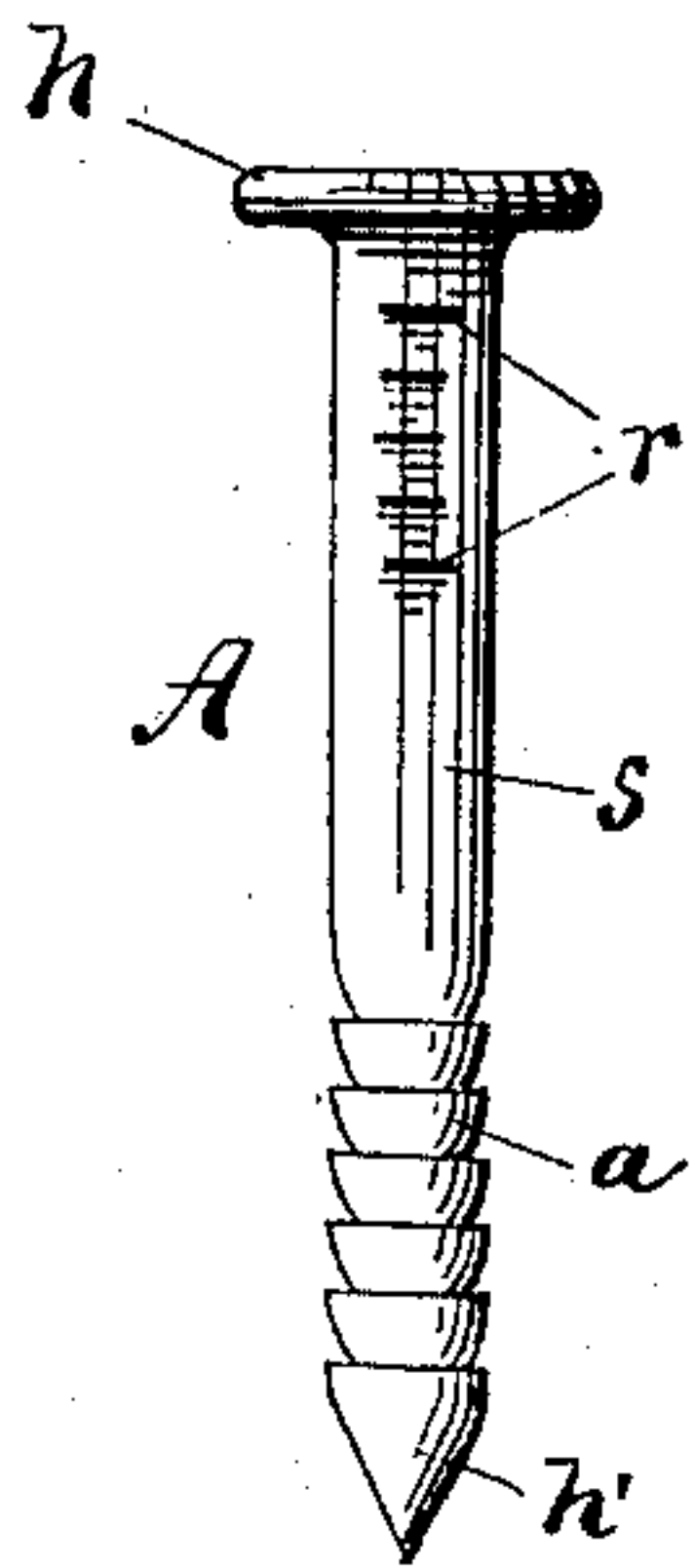


FIG. 1.

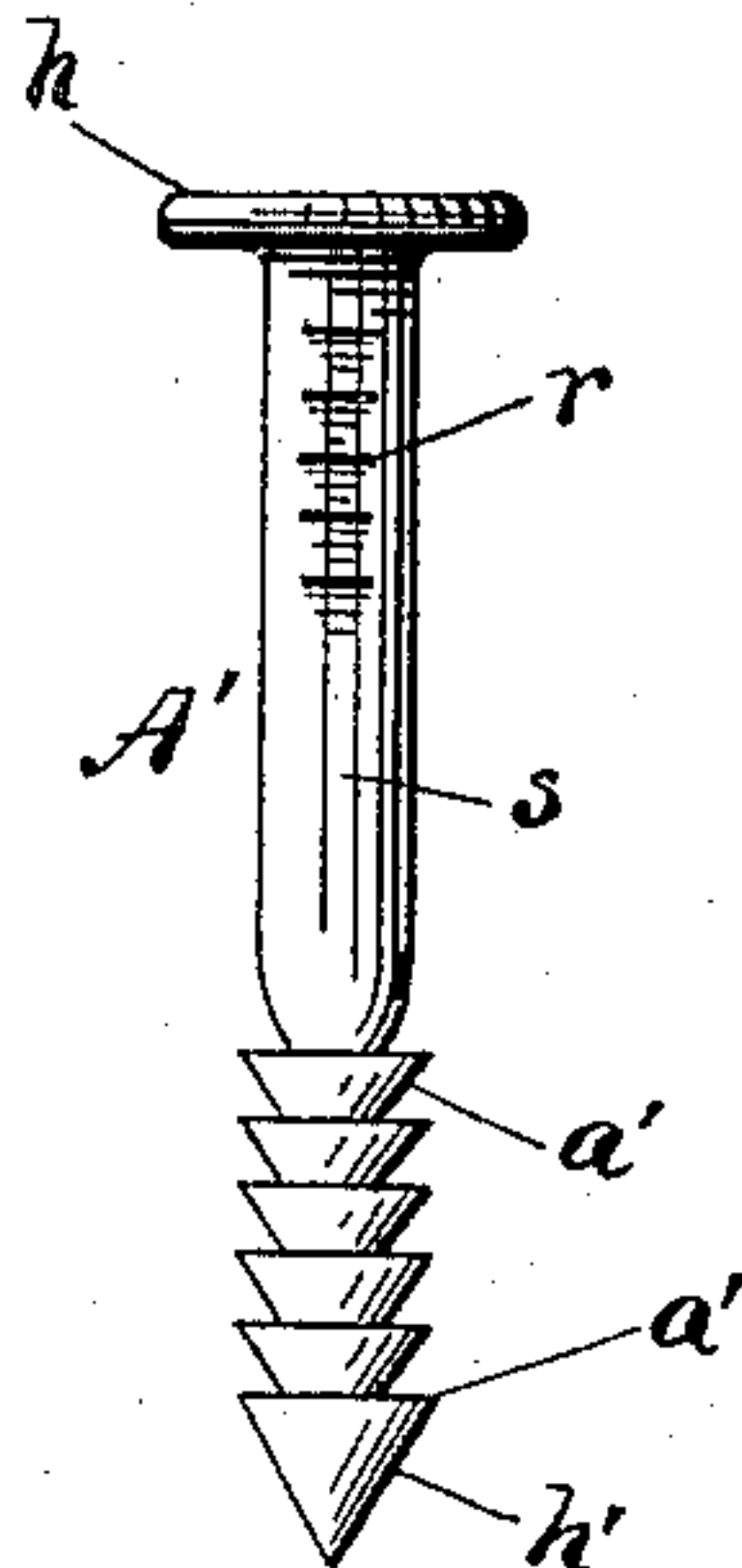


FIG. 2.

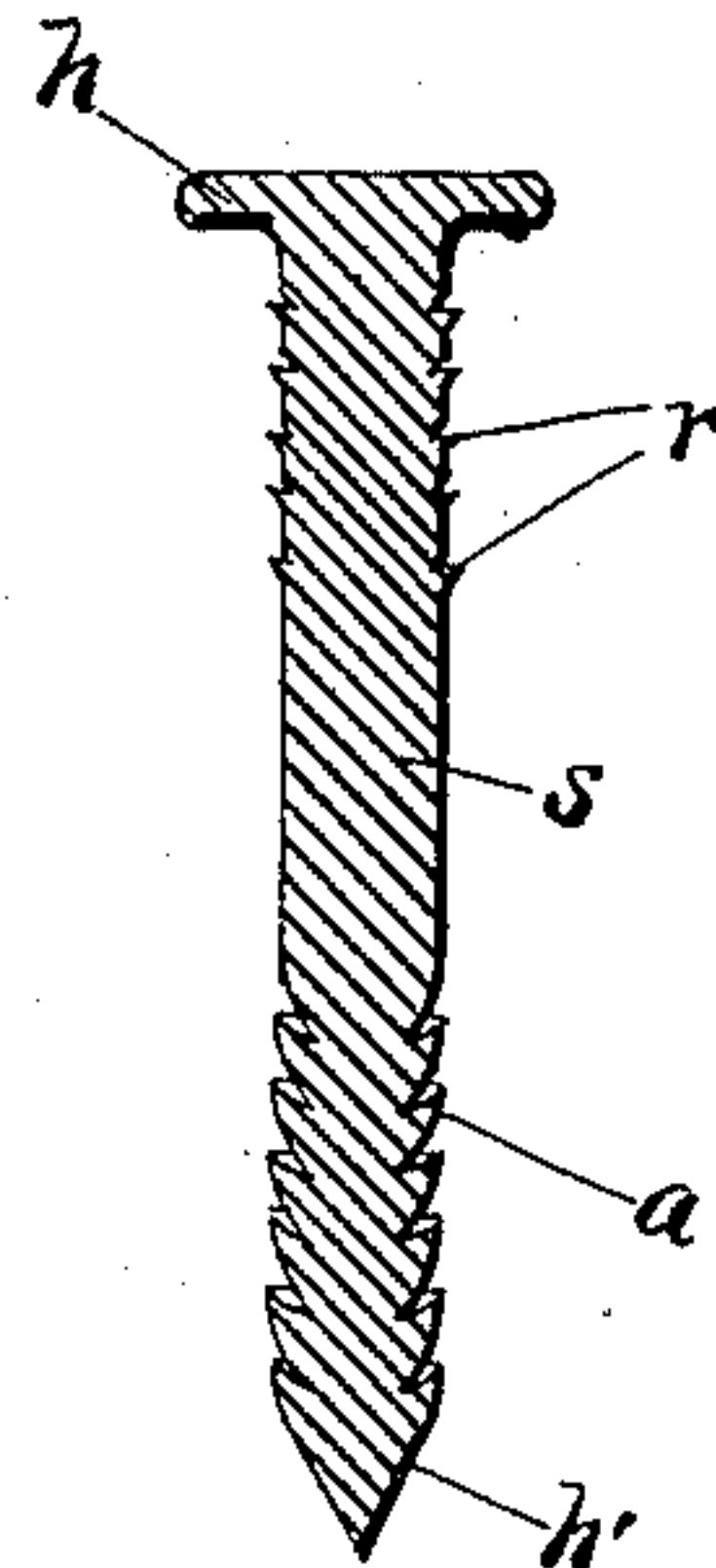


FIG. 3.

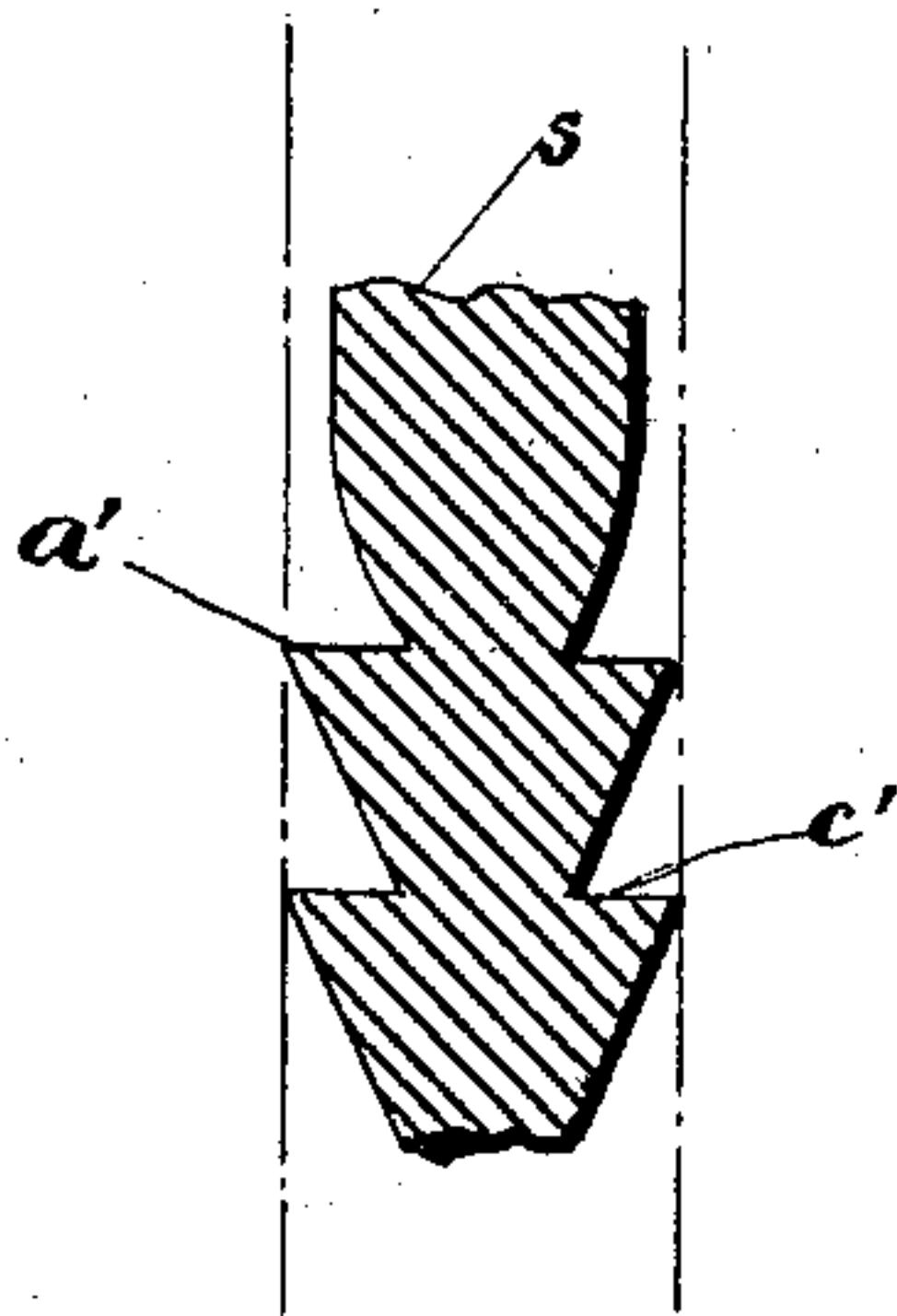


FIG. 4.

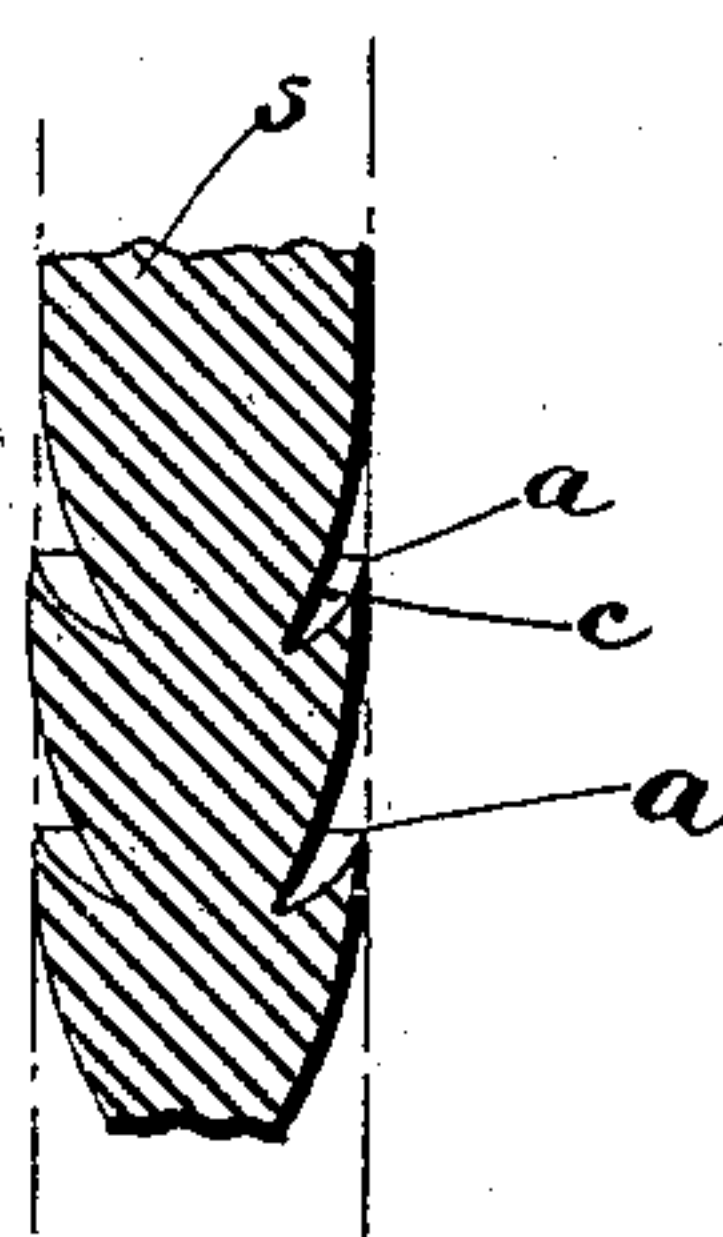


FIG. 5.

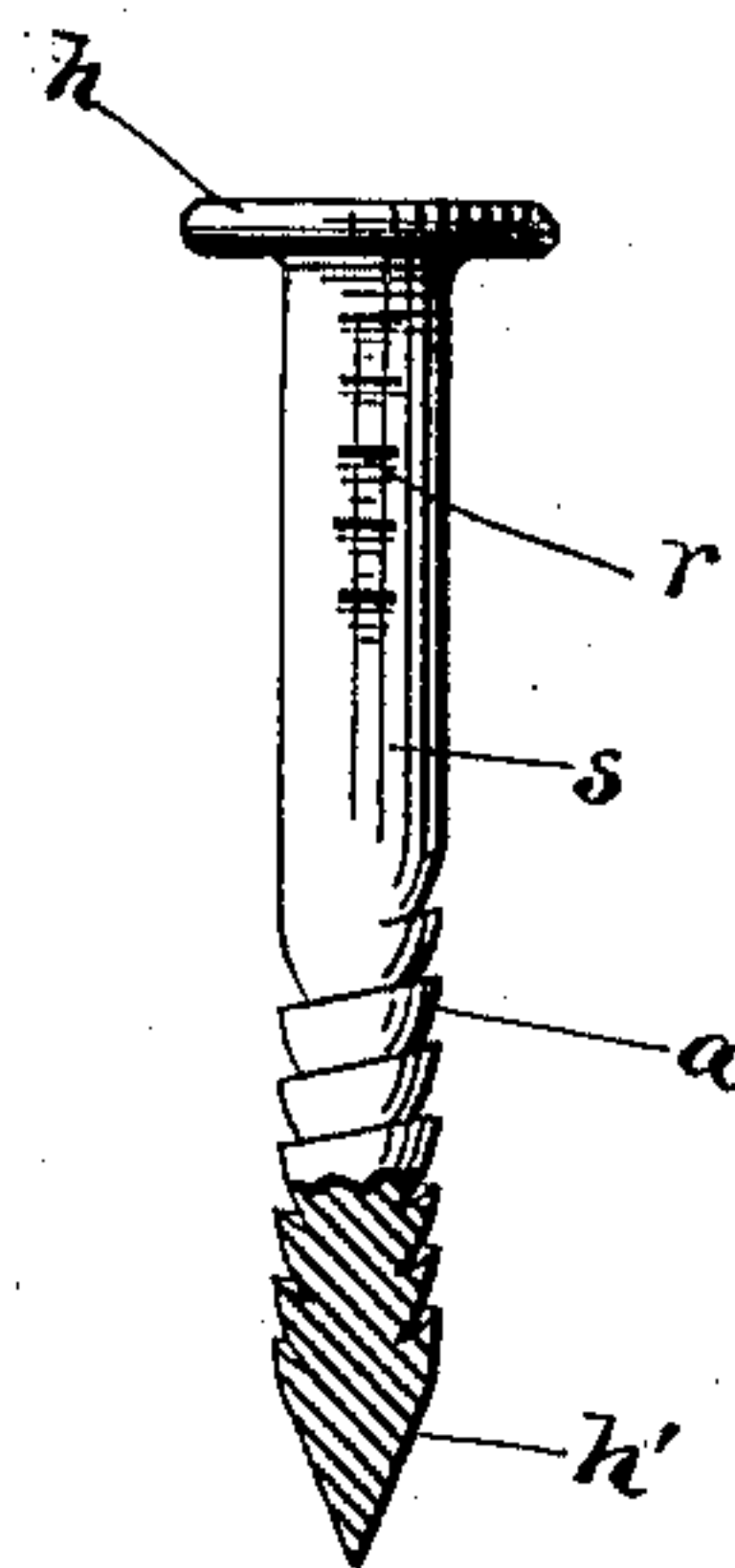


FIG. 6.

WITNESSES.

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UNITED STATES PATENT OFFICE.

CHARLES D. ROGERS, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE
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WIRE NAIL.

SPECIFICATION forming part of Letters Patent No. 368,687, dated August 23, 1887.

Application filed March 8, 1887. Serial No. 230,074. (No model.)

To all whom it may concern:

Be it known that I, CHARLES D. ROGERS, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Wire Nails; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to certain improvements in wire nails; and it consists, essentially, of a headed and pointed nail having a series of upwardly-curved cup-shaped barbs or corrugations rolled or impressed into the shank or stem thereof, whose maximum diameter is substantially equal to that of the wire.

The object of the improvement herewith is to produce a wire nail having superior holding qualities, and at the same time one that will separate the fibers of the wood in which it may be driven as little as possible.

In the annexed sheet of drawings, which I have prepared to illustrate my improvements, Figure 1 represents a perspective view of the wire nail complete. Fig. 2 is a similar perspective view of the nail, showing the enlarged corrugations preparatory to having their diameters reduced to the nominal size of the wire by further rolling. Fig. 3 is a vertical central sectional view of the finished nail, showing the curved and cup-shaped barbs. Fig. 4 is an enlarged vertical sectional view of a portion of the barbed shank, corresponding to Fig. 2. Fig. 5 is a similar view, after the said corrugations are reduced to a diameter substantially equal to that of the wire, thereby forming upwardly-curved and cup-shaped barbs; and Fig. 6 is a longitudinal view of a drive-screw having my improvement.

The following description refers more particularly to the novel features of the invention.

A designates the improved wire nail as a whole, made from steel wire or other suitable metal, and having a series of concentrically-rolled cup-shaped barbs, *a*, formed on its shank,

the outer diameter of the barbs being substantially equal to that of the wire or shank *s*.

h, as drawn, designates the flattened head, which may be of any usual form, and immediately adjacent thereto is formed on the shank *s* a series of indentations, *r*, upon opposite sides thereof.

a', Figs. 2 and 4, represents the points of the corrugations, which are considerably enlarged by the outward flow of metal during the rolling process. The said barbs are further acted upon by shaping-dies for the purpose of reducing their diameter, as at *a*, Fig. 5, thereby also forming the series of cup-shaped cavities *c*, whose diameter, as hereinbefore stated, is the same, or nearly the same, as the normal size of the wire or unbarbed portion of the shank *s*. (See dotted lines, Fig. 5.)

h' indicates the sharpened point of the nail, which also is shaped during the barb-forming process.

It is found that by first rolling or reducing to a smaller diameter the stock or portion of the nail-shank to be barbed that the metal loses in a great measure its ductility. To such an extent is the wire affected that the durability of the barb-forming dies is greatly reduced. The nails also are inferior, owing to the change of the atoms composing the barbs, the latter being very brittle and easily rendered unserviceable.

In the nail herewith the wire is first passed through the barb-forming dies, thereby producing the enlarged barbs *a'*, the continued movement of the dies then reducing the diameter of the barbs, as above stated, by bending them in an upward direction and producing the cup-shaped corrugations *a*.

The method of making a nail having a series of curved cup-shaped barbs, *a*, formed on its shank, forms the subject of another application for United States Letters Patent, filed by me upon even date herewith, Serial No. 230,075.

It is obvious that a drive-screw may be thus provided with an upwardly-bent helical barb, as shown in Fig. 6, without departing from the spirit of the invention.

Having thus described my invention, I claim—

1. As an improved article of manufacture, 100

5 a wire nail having a series of barb-like upwardly and inwardly curved or bent corrugations, *a*, formed in its shank, whose outer diameter practically equals that of the normal size of the wire, substantially as hereinbefore described.

10 2. The wire nail hereinbefore described, having a head, a shank terminating in a sharpened point, and a series of corrugations formed in the shank extending rearwardly from the point, each of said corrugations having the point or outer edge bent upwardly and inwardly, and forming a cup-shaped cavity, *c*, substantially as shown and set forth.

15 3. The wire nail A, hereinbefore described, having a head, a shank or stem portion, a sharpened point, indentations *r*, formed in the shank adjacent to the head, and a series of up-

wardly-curved corrugations, *a*, extending rearwardly from said point, whose outer or maximum diameter is the same, or nearly the same, as that of the normal size of the wire composing the nail, substantially as shown, and for the purpose specified.

4. A drive-screw having a helical groove or 25 grooves formed in its shank, whose outer edge is bent upwardly, and forming a cup-shaped cavity, *c*, along its upper surface, substantially as shown and hereinbefore described.

In testimony whereof I affix my signature in 30 presence of two witnesses.

CHARLES D. ROGERS.

Witnesses:

CHARLES HANNIGAN,
WM. R. DUTEMPLE.