

(No Model.)

C. D. ROGERS.
ROLLED WOOD SCREW.

No. 440,334.

Patented Nov. 11, 1890.

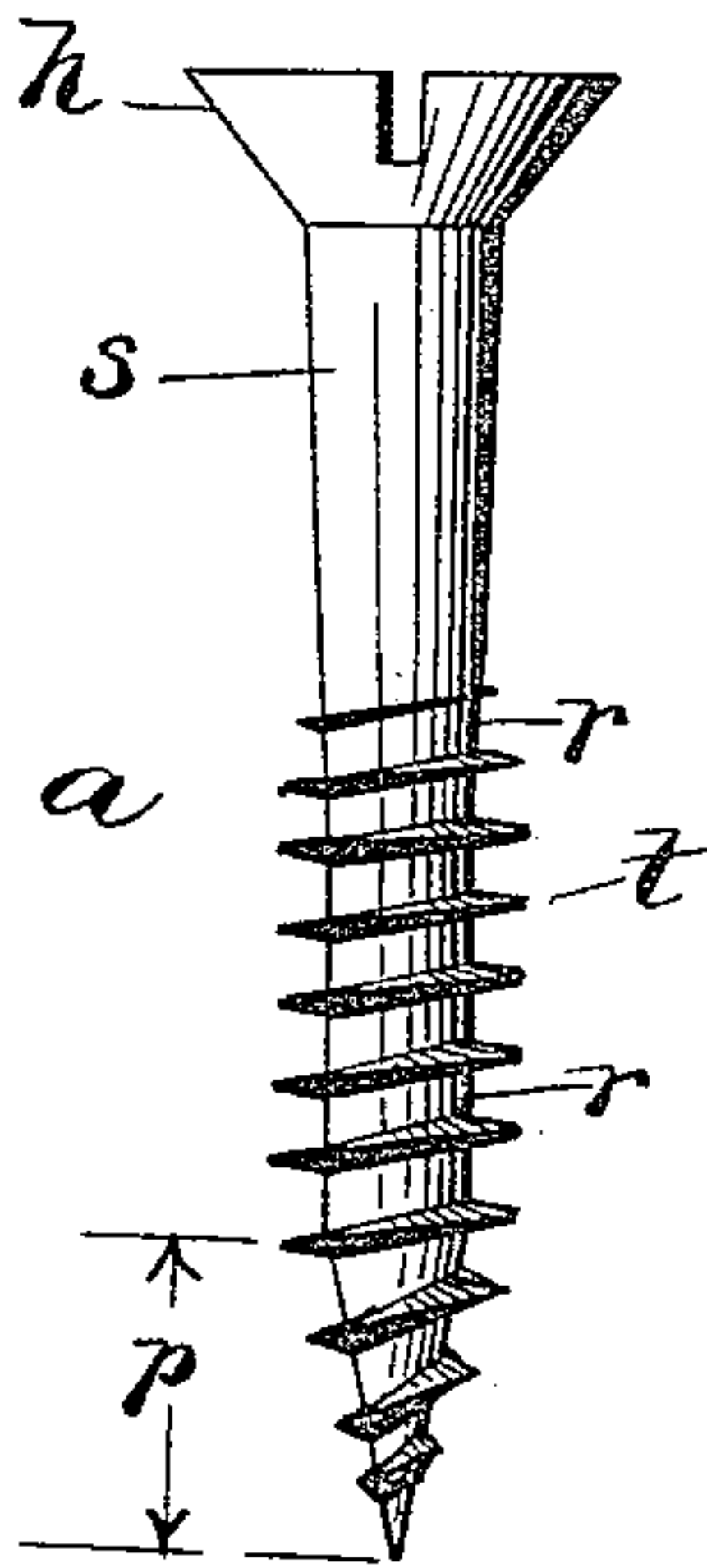


FIG. 1.

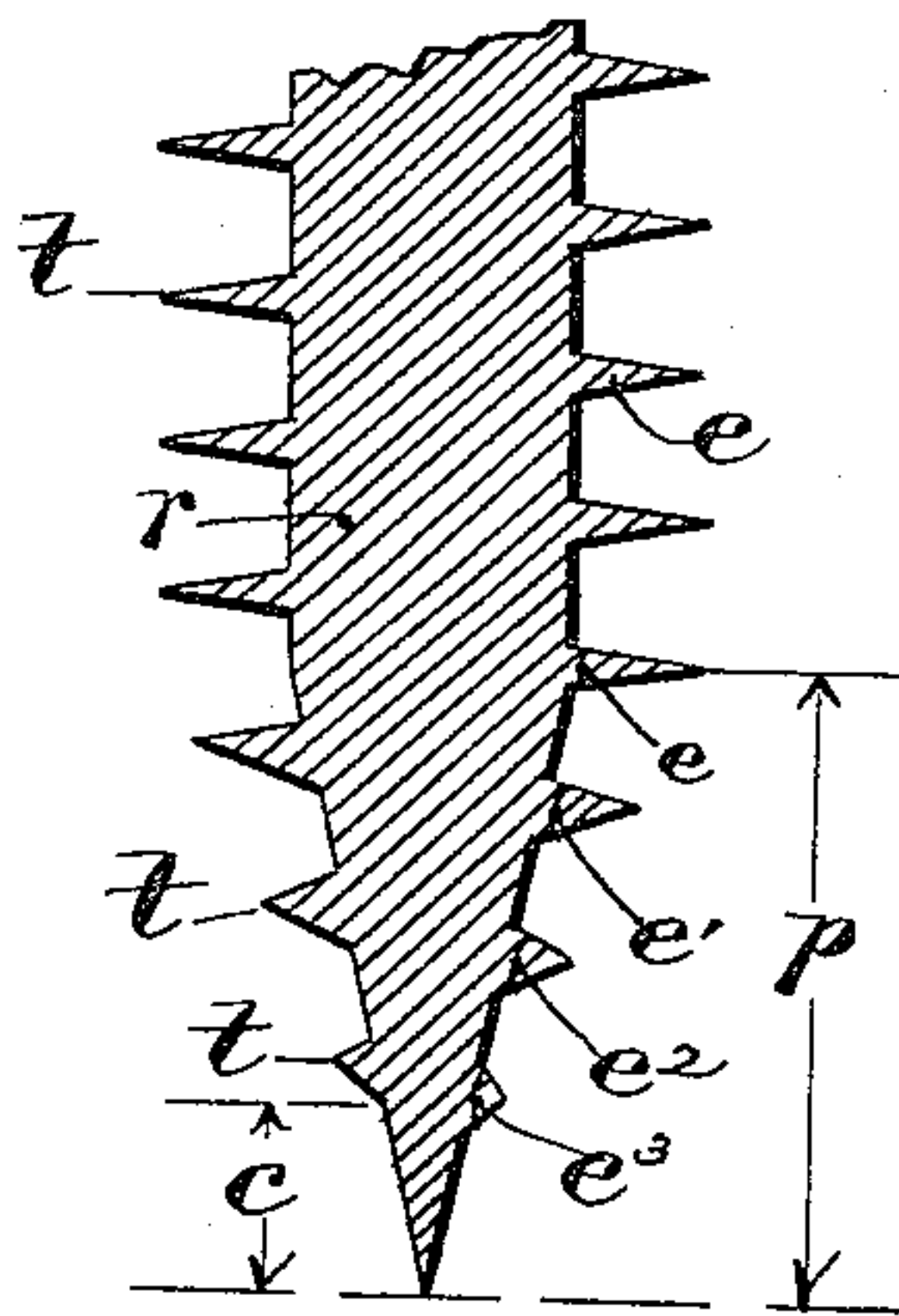


FIG. 2.

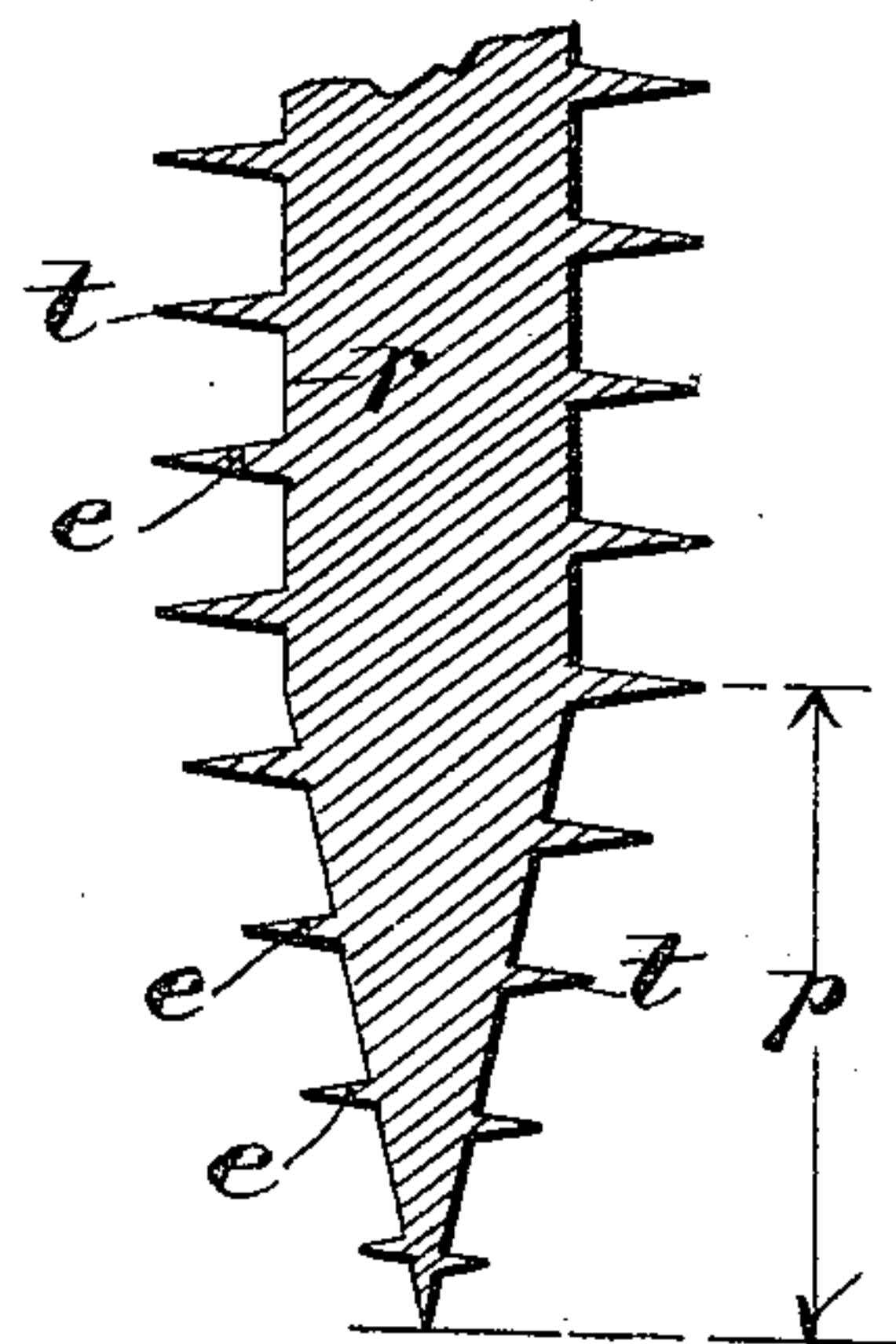


FIG. 3.

WITNESSES.

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CHARLES D. ROGERS, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE
AMERICAN SCREW COMPANY, OF SAME PLACE.

ROLLED WOOD-SCREW.

SPECIFICATION forming part of Letters Patent No. 440,334, dated November 11, 1890.

Application filed August 4, 1890. Serial No. 360,869. (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 Rolled Wood-Screws; 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 of reference marked thereon, which form a part of this specification.

My improvement has relation to rolled wood-screws provided with screw-threaded point portions.

It has been the practice heretofore in the manufacture of gimlet-pointed wood-screws, particularly screws made by the rolling process, to provide the point portion of such screws with threads having the inclination or angle of the sides thereof substantially the same as that of the threads formed on the cylindrical portion. The depth of the threads gradually decrease from the full depth at the base of the point to the end or tip of the screw. An objection to the manufacture of such former screws is that it is extremely difficult for the dies to take up and compress the small amount of metal required to raise the thread on the entering end of the screw, the thread thus produced frequently being more or less disintegrated. Another objection is that in forcing the screws into wood, particularly if the wood is close-grained, the point-thread will crumble away or bend more or less, thereby seriously impeding the progress of the screw.

The object I have in view is to give to the point-threads of rolled screws a greater strength and utility, and at the same time overcome the objections or disadvantages before referred to in rolled wood-screws heretofore made. To that end I provide the point portion of wood-screws with threads having a constantly-decreasing height from the base of the point portion toward the end, the sides of the said threads having a correspondingly-varying angle or inclination—that is to say, the included angle between the sides of the

thread at the base of the point portion of the screw is an acute angle, which angle increases therefrom to the termination of the thread.

By reason of my improvement the screw may be more easily entered and driven into the wood.

In the appended sheet of drawings, Figure 1 represents a side elevation of a rolled wood-screw provided with my improvement. Fig. 2 is an enlarged sectional view taken through the longitudinal center of the lower portion of the screw, and Fig. 3 is a similar sectional view of a rolled wood-screw as commonly made or unprovided with my improvement.

Referring again to the drawings, *a* designates a rolled wood-screw provided with my improvement. The screw has a head *h* adapted to the blade of a screw-driver. The unthreaded shank portion *s* of the same may be cylindrical, although I prefer to make it tapering, substantially as drawn, wherein the diameter of the screw at its neck or junction with the head is represented as being of nearly the same diameter as the threaded portion *t*. The point portion *p* of the screw is cone-shaped.

By referring to Fig. 2 it will be seen that the angle *e*, included between the beveled sides of the threads *t*, formed on the cylindrical part of the screw, is a constant acute angle, but the angle between the sides of the threads formed on the point portion *p* gradually increases, as indicated by *e'*, *e''*, *e'''*, the latter, preferably, not extending to the extreme end or point, thereby forming an unthreaded portion *c*, adapted to serve as a guide or centering device in inserting the screw. It will be seen that the threads on the point portion *p* are very strong and not liable to break off nor bend in use, yet at the same time offering but little resistance to the work of driving the screw into wood. As the point becomes embedded into the wood, the thin sharp threads *t*, formed on the body of the screw, readily follow the lead of the point-threads. These varying point-threads are also more easily raised from the blank than thinner and higher threads having the same angle as the threads on the body of the screw.

In Fig. 3 the angle of the sides of the threads is substantially uniform or constant both on

the point portion and the shank portion. In this form of screw the point portion is frequently roughened by the crumbling away or bending of the thread during the act of forcing it into wood, thereby rendering it difficult to enter the wood and force it home. Another disadvantage is that the percentage of imperfect or unsalable screws is increased when thus made, because the dies often fail to gather up the requisite amount of metal to form the threads. In fact, as the thread approaches the extreme end the amount of metal required for its formation is so small that the dies have but little more than fine particles of metal to be transformed into the threads.

In the production of rolled wood-screws the threads may be formed by passing the screw-blanks between a pair of dies mounted and arranged to travel to and fro past each other, each die having its working-face provided with a series of inclined parallel ribs and

grooves, the form of the latter at the rear end of the die being a counterpart of the thread to be produced.

I claim—

1. A rolled wood-screw having its point portion provided with a raised thread having the angle of its sides constantly increasing from its intersection with the main thread to its termination at or near the end of the screw.

2. A rolled wood-screw having its point portion provided with a raised thread the angle of the sides of which is constantly varying and having an unthreaded entering portion c, substantially as hereinbefore described and set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

CHARLES D. ROGERS.

Witnesses:

CHARLES HANNIGAN,
GEO. H. REMINGTON.