

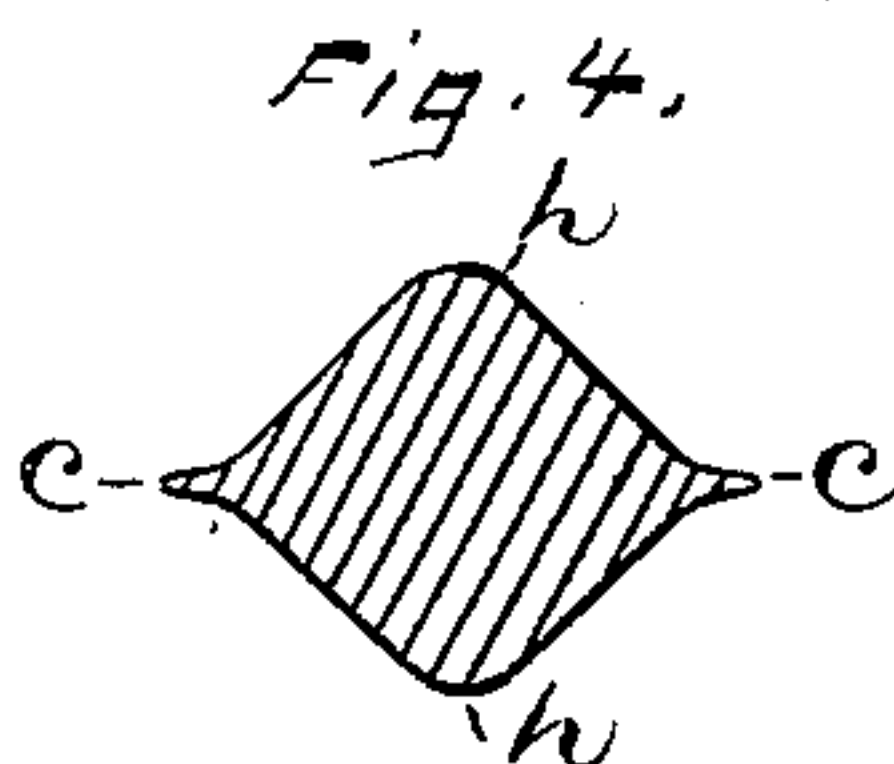
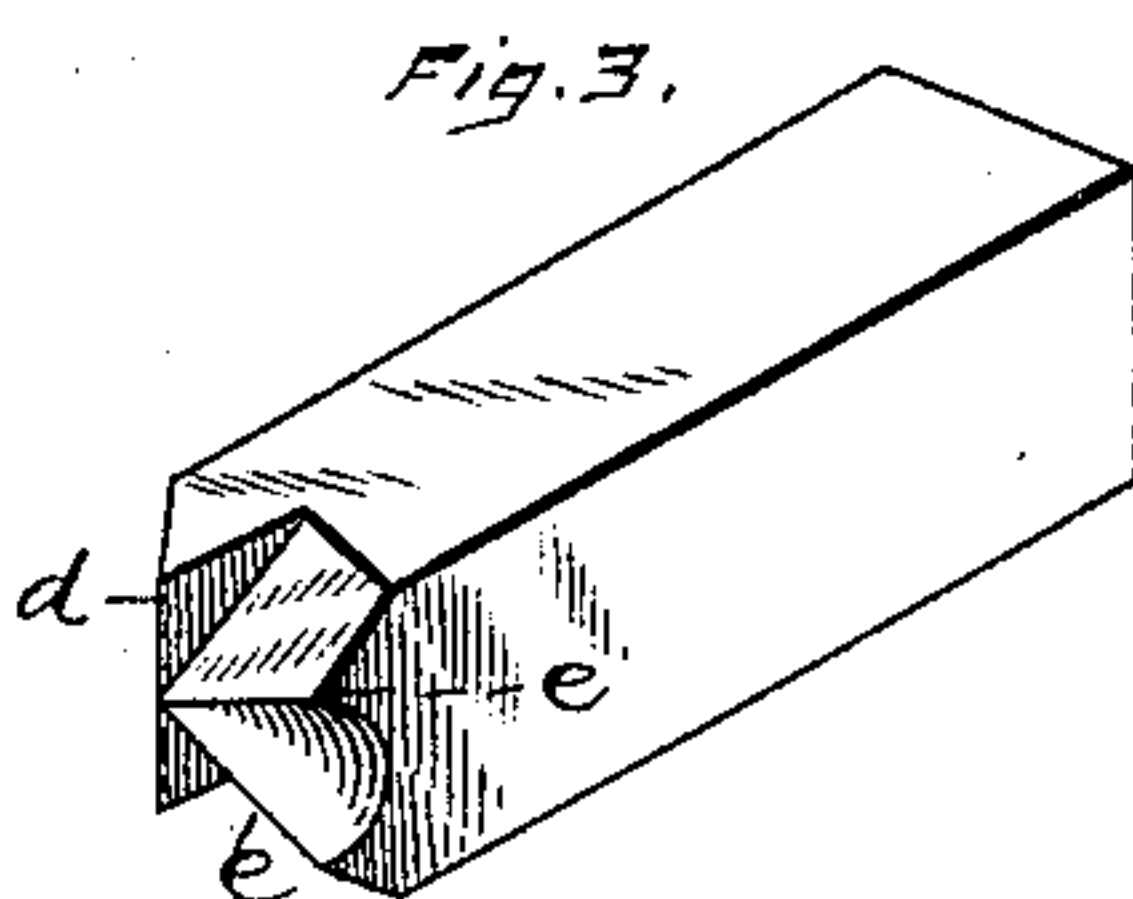
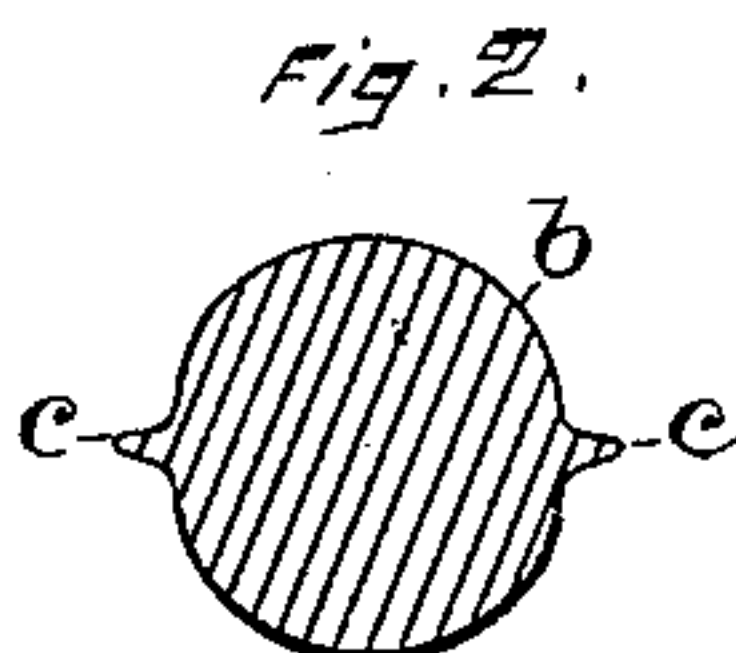
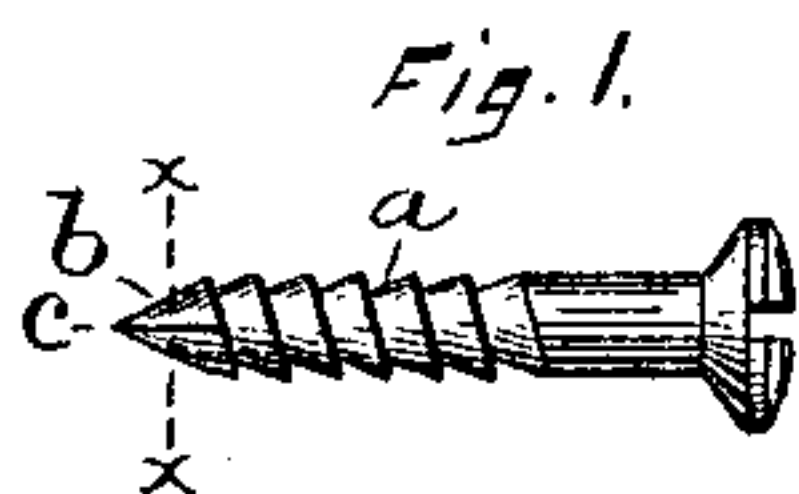
(No Model.)

H. K. JONES.

DRIVE SCREW.

No. 335,286.

Patented Feb. 2, 1886.



Witnesses,  
John Edwards Jr.  
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# UNITED STATES PATENT OFFICE.

HORACE K. JONES, OF HARTFORD, ASSIGNOR TO THE RUSSELL & ERWIN MANUFACTURING COMPANY, OF NEW BRITAIN, CONNECTICUT.

## DRIVE-SCREW.

SPECIFICATION forming part of Letters Patent No. 335,286, dated February 2, 1886.

Application filed December 10, 1885. Serial No. 185,268. (No model.)

*To all whom it may concern:*

Be it known that I, HORACE K. JONES, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Drive-Screws, of which the following is a specification.

My invention relates to an improvement in that class of screws which are intended to be driven part way into the wood by a hammer, and then screwed home by turning the screw axially with a screw-driver or other suitable tool; and the objects of my improvement are to improve the efficiency of the screw and to lessen the cost of production.

In the accompanying drawings, Figure 1 is a side elevation of my screw. Fig. 2 is a transverse section thereof on line *x x* of Fig. 1, the same being shown on an enlarged scale. Fig. 3 is a perspective view of one of a pair of cutting and swaging tools, such as may be employed in making the "swaged point" of my screw; and Fig. 4 is a transverse section on an enlarged scale, on a line corresponding to *x x* of Fig. 1, of a screw-point of a modified form.

It is a common practice of carpenters in using screws to first drive the screw partly into the wood by means of a hammer, and then screw the same home with a screw-driver. Even the common gimlet-pointed wood-screws are very often used in this manner. When so used, the thread and point of these screws are of such form that they gather a bundle of fibers at or near the point, tearing them from the wood, so as to leave quite a large and ragged hole around the screw, and consequently greatly reducing its holding capacity. I obviate this difficulty by the form of the point and thread of my screw.

The thread *a* is a continuous sunken thread of the form which is known as a "ratchet-thread." The point *b* of my screw is what is known in ordinary wire nails as a "swaged" point. The general form of this point is conoidal—that is to say, it is rounded and tapering. Upon two opposite sides of this point I form a thin web or fin, *c*. Inasmuch as my invention consists of the finished screw, I do not wish to limit myself to any particular means of producing this point. The best means for so doing

now known to me is a pair of combined cutting and swaging tools or dies, one of which is shown in Fig. 3, and which is substantially the same as the cutting and swaging tools heretofore employed for making the swaged point of ordinary wire nails.

In Fig. 3, *d* designates the edge which cuts off the wire, and *e* designates the edges which shave the stock from the sides of the wire, while the rounded space between the edges *e e* swages the point into form simultaneously with the cutting action of the edges *d e e*. In thus cutting and swaging the point a portion of the metal will be forced out from the swaging-recess and lie in the division between the dies or tools, thereby producing the two opposite webs *c c* upon the sides of the tapering and rounded point. By making the swaging-cavity so as to contain in each tool a full half-circle, or a little less than a half-circle, the form of the point in cross-section may be somewhat varied—as, for instance, nearer elliptical than the form shown in Fig. 2—and still leave it of a conoidal or rounded tapering form.

Pyramidal points are made on wire nails by a combined cutting and swaging die, leaving a fin or web at two opposite corners. A well-defined pyramidal point with only four sides will have corners which are sharp enough to make said point act like a borer when formed on the end of a screw, so that the webs are not essential. In a conoidal point or a pyramidal one having so many sides as to make it practically round there are no cutting or reaming corners, and hence the fins or webs are essential to make the screw act as a borer.

In Fig. 4 the point is partially pyramidal, but is modified from a square form in cross-section by having two of its corners rounded, as shown, so that they have no boring action. The other corners have the webs *c c*, whereby a screw-point of this form, when extended from the end of the thread like the point *b*, Fig. 1, will act substantially like said point *b*.

Conoidal points for wood-screws are old, and they are believed to be a very desirable form for dividing the wood to facilitate the entry of the screw when it is driven by a hammer, and they are also of a good form for dividing or parting the wood when the screw is screwed :



home; but when made smooth and plain, as heretofore, the screw has no boring capacity, and so much resistance is offered to their entry into the wood when the screw is being turned  
5 axially that they sometimes cause the screw to strip the thread from the surrounding wood. Patents which show such points on wood-screws generally recommend boring a hole in hard wood previously to inserting the screw.  
10 By my invention I retain the desirable form of ratchet-thread and all the advantages of the conoidal point, and at the same time, by means of the webs *c c*, I render the point capable of acting like a reamer or borer to prepare the  
15 way for the screw in either hard or soft wood, so that its threads have a better hold in the wood. Thereby such a screw of a given form and size driven into a given piece of wood in the manner herein specified will be found to  
20 have a much greater holding power than will

a screw which is of the same size and form without the webs *c c*.

It is evident that the article may, if desired, be used as a nail, merely driving it fully home by a hammer; but my screw is principally in- 25 tended for being screwed home with a screw-driver or other suitable tool for turning it axially.

I claim as my invention—

As a new article of manufacture, a screw 30 having a continuous ratchet-thread and a tapering point extending from the end of the thread and provided on opposite sides with the webs *c c*, substantially as described, and for the purpose specified.

HORACE K. JONES.

Witnesses:

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