

(No Model.)

H. A. HARVEY.

WOOD SCREW.

No. 362,833.

Patented May 10, 1887.

Fig. 1.

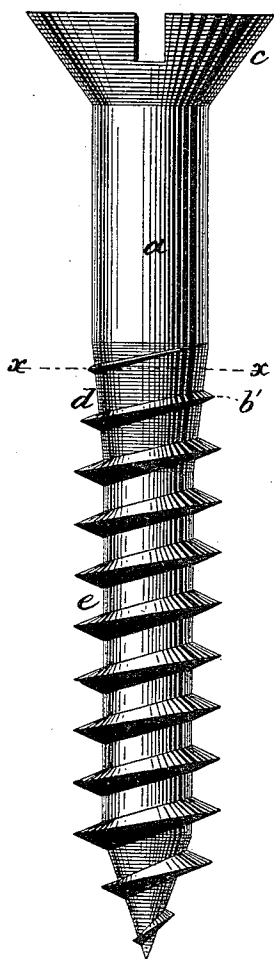


Fig. 2.

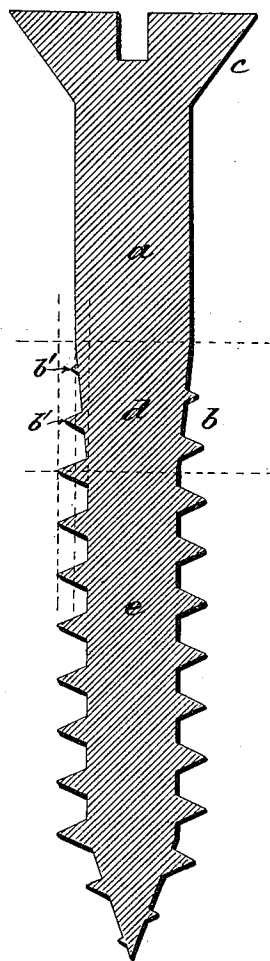
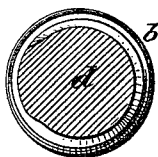


Fig. 3.



Witnesses.

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WOOD-SCREW.

SPECIFICATION forming part of Letters Patent No. 362,833, dated May 10, 1887.

Application filed May 6, 1884. Serial No. 130,491. (No model.)

To all whom it may concern:

Be it known that I, HAYWARD A. HARVEY, of Orange, New Jersey, have invented a certain Improvement in Wood-Screws having Rolled Threads, of which the following is a specification.

In the ordinary methods of rolling threads upon screw-blanks heretofore practiced it is found that the shank of the screw-blank is likely to be bent by the action of the dies in forming the heel of the thread—that is, in forming the convolution of the thread which commences nearest the head of the blank. This occurs because at that point the blank is liable to be subjected to a greater pressure on one side than upon the other.

It is the object of the present invention to overcome this difficulty, and this object is accomplished by gradually diminishing the depth of the spiral groove formed upon the body of the blank as it approaches the head of the blank. This gradual diminution of the depth of the spiral groove gives to the part of the core adjoining the unthreaded portion of the body of the blank a conical form, and it also has the effect of gradually lessening the extent to which the diameter of the thread is increased by the act of rolling the threads upon the blank. In this way the part of the blank adjoining the unthreaded portion is not only subjected to less lateral strain by either of the dies, but is strengthened, so that it is better able to resist any lateral strain, and the result is the preservation of the threaded portion of the body in perfect alignment with the unthreaded portion.

The progressive deepening of the spiral groove from the heel of the thread toward the point of the screw may, if desired, be continued during one or more convolutions of the thread, and will be varied according to the size of the screw and the ultimate depth of the thread. If a very deep thread is to be formed upon the blank, the progressive deepening of the groove will be more gradual than when a shallower thread is to be formed.

The accompanying drawings of a screw containing the invention are as follows:

Figure 1 is an elevation, and Fig. 2 is a central longitudinal section. Fig. 3 is a transverse section of the screw, taken through the line X X on Fig. 1.

It will be seen that the unthreaded portion *a* of the shank of the blank is of less diameter than the diameter of the threads, the effect of rolling the threads being to cause a radially outward flow of the metal from the body of the blank. It will also be seen that the heel convolution *b* of the thread—that is, the convolution next the head *c* of the screw—gradually increases in diameter, so that its edge *b'* has a helical curve. It will also be seen that the portion *d* of the core which adjoins the unthreaded portion of the shank gradually diminishes in diameter. This diminution in the diameter of the core and increase in the diameter of the thread continue until the thread has acquired its full depth upon the cylindrical portion *e* of the body.

Screws made in the ordinary way—by having the threads formed by cutting a spiral groove around the shank—have heretofore been made with cores similar to the core of this improved screw, in respect of having the part of the core adjoining the unthreaded portion of the shank conical; but in such screws the convolutions of the thread are of uniform diameter and are of the same diameter as the diameter of the unthreaded part of the blank. The improved screw herein described is distinguishable from such screws by the peculiarity that the convolutions of the thread around the conical part of the core gradually increase in diameter from their point of commencement near the head and acquire a larger diameter than the diameter of the unthreaded portion of the blank.

I claim as my invention—

The improved screw herein described, which consists in a screw having a thread the convolutions of which gradually increase in diameter from their point of commencement adjoining the unthreaded part of the shank, while the part of the core adjoining the unthreaded portion of the shank gradually decreases in diameter until the thread has acquired its full depth.

H. A. HARVEY.

Witnesses:

M. L. ADAMS,
R. C. HOWES.