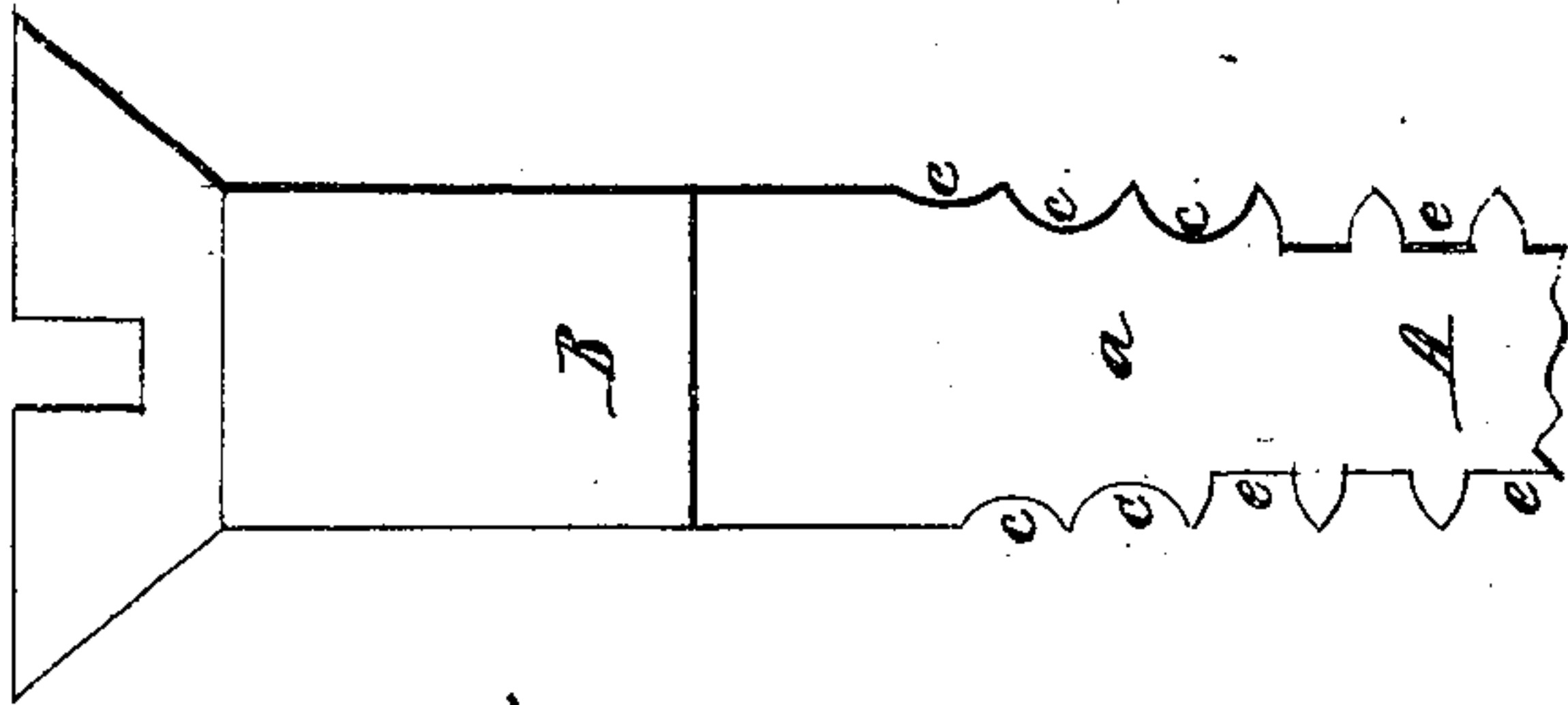


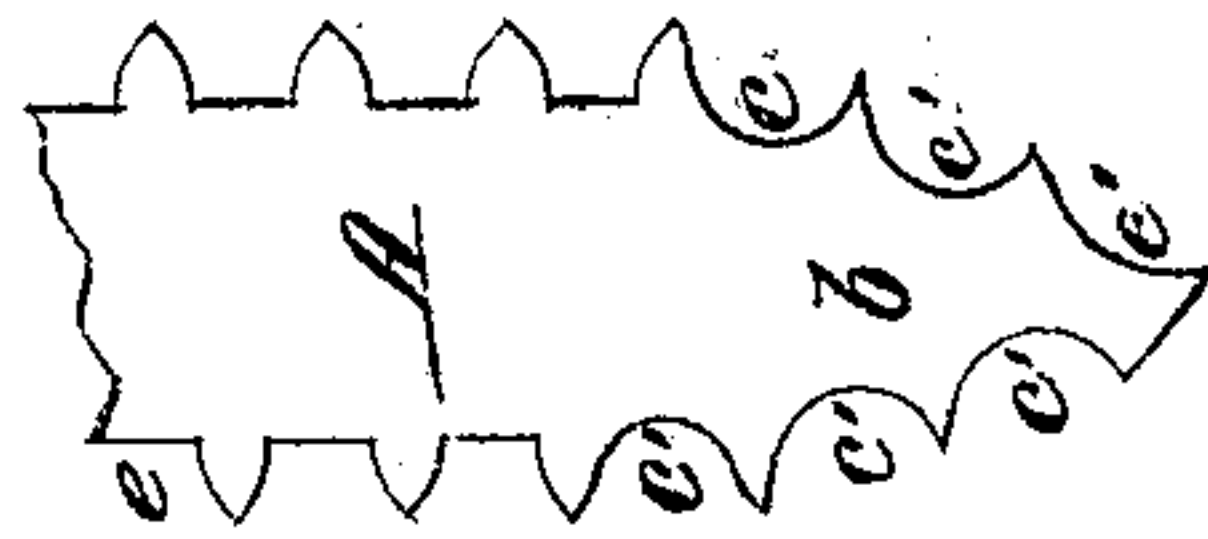
J. A. BIDWELL.  
WOOD SCREW.

No. 113,006.

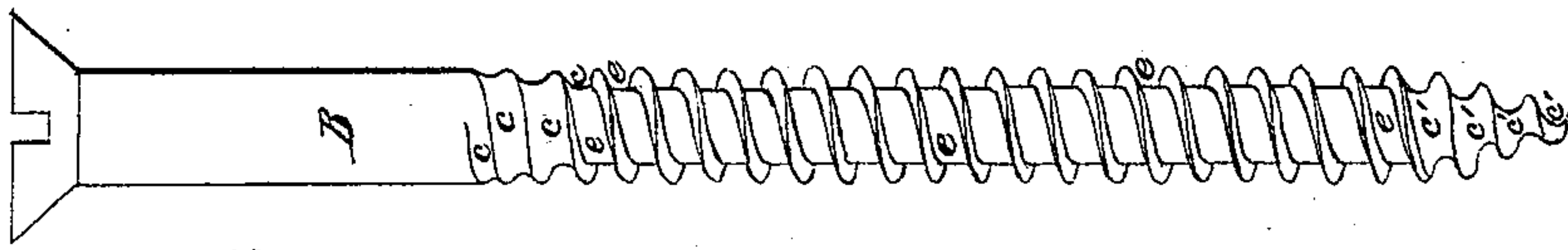
Patented Mar. 28, 1871.



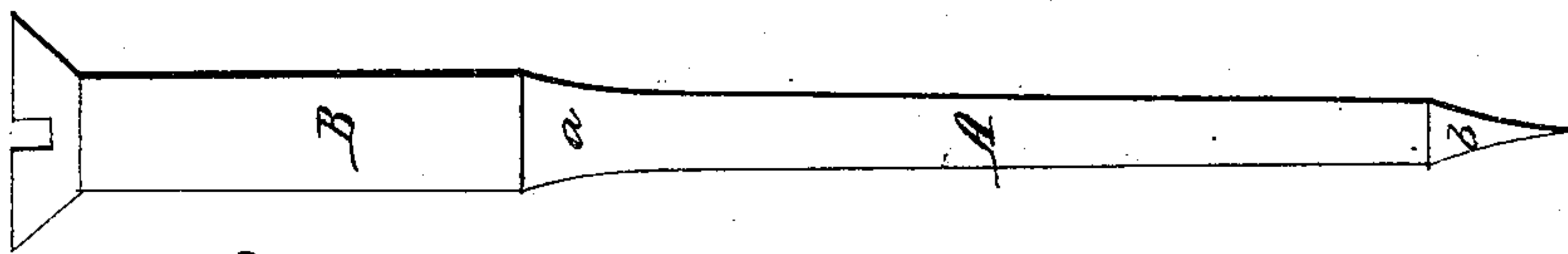
*Fig. 5.*



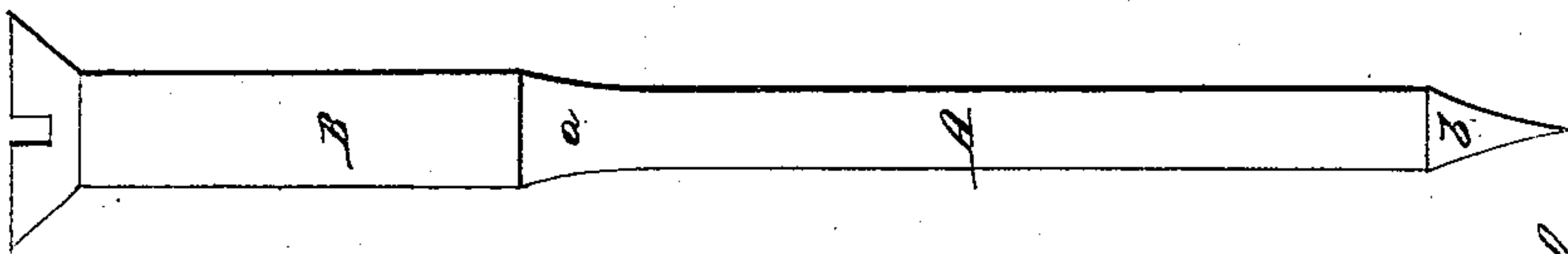
*Fig. 6.*



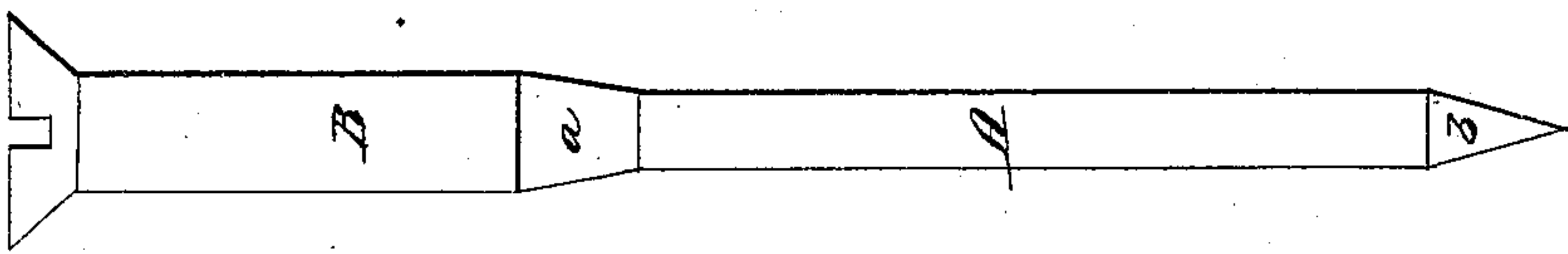
*Fig. 4.*



*Fig. 3.*



*Fig. 2.*



*Fig. 1.*

*Inventor.*

*J. A. Bidwell*

*Witness, Fenwick L. Lawrence*

*Witness.*

*R. J. Campbell*

*Witness*

# United States Patent Office.

JASON A. BIDWELL, OF EAST BOSTON, MASSACHUSETTS.

Letters Patent No. 113,006, dated March 28, 1871.

## IMPROVEMENT IN WOOD SCREWS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, JASON A. BIDWELL, of East Boston, in the county of Suffolk and State of Massachusetts, have invented a new and improved Wood Screw; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 shows the old form of screw as it would appear if stripped of its thread.

Figures 2 and 3 are similar views of the new forms of screws.

Figures 4, 5, 6 show the improved form of threads.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain novel improvements on the construction of wood screws of that class having tapering screw-points.

My object is to produce a screw which will enter more readily into wood and afford as firm a hold at the point, in proportion to its diameter, as at any other part.

The nature of my invention consists in producing a long tapering point upon the end of a screw by terminating the flat bottom groove which produces the helical thread upon the body or core in a spiral groove which is curved transversely.

It also consists in terminating the helical thread at the shank of the screw in a spiral thread having a groove with a transversely-curved bottom, corresponding to the thread upon the point of the screw, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings—

A represents the core or body of the screw, which may be made cylindrical, as shown in fig. 2, or it may be made slightly tapering, as shown in fig. 3.

B represents the shank of the screw, which may be made of the usual cylindrical form, terminated at one end with a head of the usual form.

In the old form of tapering pointed screws, shown in fig. 1, the part lettered *a*, which is at the junction of the core with the shank, is the frustum of a cone, with straight sides, and presents a very abrupt shoulder.

The point *b* also presents the same abruptness.

In the improved screw, represented by figs. 2, 3, 4, 5, it will be seen that the shoulder at *a*, as well as the point *b*, are produced by gradual curves.

In cutting the thread upon my improved screw I commence with a rounded point-cutting tool, which will produce a groove, *e*, that is transversely curved, as shown in fig. 5. This groove enters deeper and deeper

into the body of the screw as it progresses, and finally terminates in a groove, *e*, having a flat base, which may produce a thread of the usual well-known form; or, if desirable, the cutting-tool for making the flat bottom groove *e* may be shaped so as to leave a thread having its sides convex. The curved base groove produces a thread having concave sides, as shown in figs. 4 and 5.

By this mode of running the thread at the shank or commencement of cutting it will be seen that there will be a spiral thread formed presenting a positive thread or ridge from its commencement on the circumference of the shank B to its terminus in the flat bottom thread *e*.

The same principle is carried out in producing the point or entering end of the screw, and the same rounded-lip cutting-tool may be used in this last operation.

The flat base groove *e* terminates just at the point where the entering end of the screw begins to receive its taper, in a groove, *e'*, which has a rounded base, and which approaches the axis of the screw so as to terminate the screw in a spiral gimlet-point.

By making the rounded base groove I have a thread which has great strength, and which will take a very firm hold in wood at the commencement of entering a screw. The core of the thread at the entering point is so rapidly reduced that a spiral point is left which extends beyond the terminus of said core.

While I prefer to have both ends of the flat base helical groove *e* terminated by the spiral-curved base grooves, as I have above described, I do not confine myself to having the curved base grooves at both ends of the core, as a very good screw, possessing advantages over the old forms of wood screws, may be made by producing the point of the screw only in the manner described.

Having described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the spiral concave score *e'*, forming the point of the screw, with the flat bottom thread *e*, forming the body of the screw, substantially as described.

2. The combination of the spiral concave score *e*, at the shank of the screw, with the flat bottom thread *e*, substantially as described.

3. The combination of the spiral concave scores *e* *e'* with the intermediate flat bottom score *e*, substantially as described.

JASON A. BIDWELL.

Witnesses:

WM. H. PULLEN,  
STEPHEN A. COOKE, Jr.