

T. P. FARMER.
Countersink.

No. 167,884.

Patented Sept. 21, 1875.

Fig. 1.

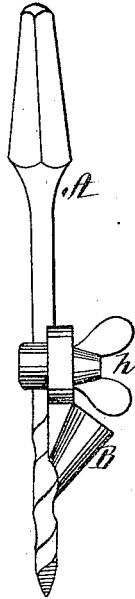


Fig. 2.

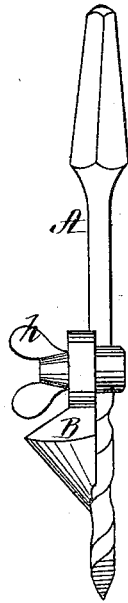


Fig. 3.

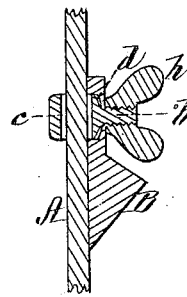


Fig. 4.

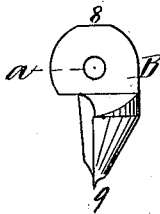


Fig. 5.

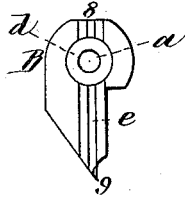
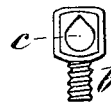


Fig. 6.



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UNITED STATES PATENT OFFICE.

THEODORE P. FARMER, OF BOSTON, ASSIGNOR TO HIMSELF AND EDWARD M. FARNSWORTH, OF REVERE, MASSACHUSETTS.

IMPROVEMENT IN COUNTERSINKS.

Specification forming part of Letters Patent No. 167,884, dated September 21, 1875; application filed May 6, 1875.

To all whom it may concern:

Be it known that I, THEODORE P. FARMER, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Countersinks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an elevation of my improved countersink and screw-gage applied to a bit. Fig. 2 is a rear elevation of the same. Fig. 3 is a longitudinal section through the center of the same. Fig. 4 is a side elevation of the countersink and screw-gage removed from the bit. Fig. 5 is an elevation of the opposite side of the same, (that side which fits against the bit.) Fig. 6 is a plan of the screw, through the head of which the bit passes, and by which and its nut the combined countersink and screw-gage is held in place after adjustment.

An adjustable countersinking-tool as heretofore constructed is objectionable for the reasons that, soon after the bit to which it is attached commences to bore, the end of the screw which holds it in place slips, and allows the countersink to turn around independently of the bit instead of turning in common with it, as required, and, consequently, the countersink is liable to stick in the wood without revolving, besides which, as the hole in each countersink for the passage of the bit is of a diameter corresponding thereto, a given number of bits of various sizes require an equal number of countersinking-tools, (a separate and independent one for each bit,) which is expensive.

To overcome the above-mentioned objections, and to provide only a single countersink of such construction that it may be readily applied to the bits of different diameters, is the purpose of my invention, which consists in a countersink having an opening in its head for the passage of a clamp provided with an opening of a size and form capable of receiving bits of various diameters, the countersink, when adjusted, being clamped securely in place by tightening its nut so as to bite the

bit, whereby all liability of the countersink slipping thereon and turning independently thereof, incident to the old construction, is avoided.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A represents the shank of a bit for boring holes, and B a countersinking-tool attached thereto for the purpose of reaming out a circular enlargement for the reception of the head of a screw. Through the head of this countersink B is formed a circular opening, *a*, for the passage of a screw, *b*, the head of which is provided with an irregular-shaped opening, *c*, of the form seen in Fig. 6, the inner half of the opening being semicircular and the outer half wedge-shaped in cross-section. The shank A of the bit passes through this opening *c* in the head of the screw *b*, the surface of which, contiguous to its thread, is of convex form or rounded off so as to fit into a corresponding concavity, *d*, in the inner side of the head of the countersink, which is also provided with a serrated groove, *e*, extending from its top 8 down to its cutting-point 9, the surface of the serrated groove being brought into contact with and made to tightly embrace the bit in the following manner: Over the end of the screw *b* turns a nut, *h*, by which one side of the head of the screw is drawn into the concavity *d* in the head of the countersink, the screw with the opening in its head and nut serving as a clamp for gripping the bit between the wedge-shaped portion of the opening *c* of the screw *b* and sides of the serrated groove *e* of the countersink, whereby sufficient friction is created between their surfaces to prevent the countersink slipping on the bit while the latter is boring the hole, while the form of the groove *e* is such as to allow the point of the countersink to exactly fit around and conform to the rounded surface of the bit, whereby the material is reamed or cut out all the way from the top of the countersink down to the top of the cylindrical hole bored, no ridge being left around the latter point, as would oc-

cur if the cutter did not snugly fit the surface of the bit. By sliding the countersinking-tool up or down the bit it becomes a screw-gage, by which it may be readily adjusted for any length of screw.

In countersinking holes for screw-heads in metal, instead of using the nut *h* clamped by the finger and thumb, a square or hexagonal nut turned by a wrench may be employed. If desired, the inner wedge-shaped surface of the opening in the head of the screw may be serrated or roughened as an additional precaution to prevent the slipping of the countersink around the bit.

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

The combination of the screw *b*, provided with the opening *c* and nut *h*, with the countersink B, provided with the groove *e* and the opening *a*, constructed and operating as shown and described, and for the purpose set forth.

Witness my hand this 3d day of May, A. D. 1875.

THEODORE P. FARMER.

In presence of—

N. W. STEARNS,
W. J. CAMBRIDGE.