

(No Model.)

G. W. ABBOTT & G. S. FORREST.
COUNTERSINK.

No. 327,641.

Patented Oct. 6, 1885.

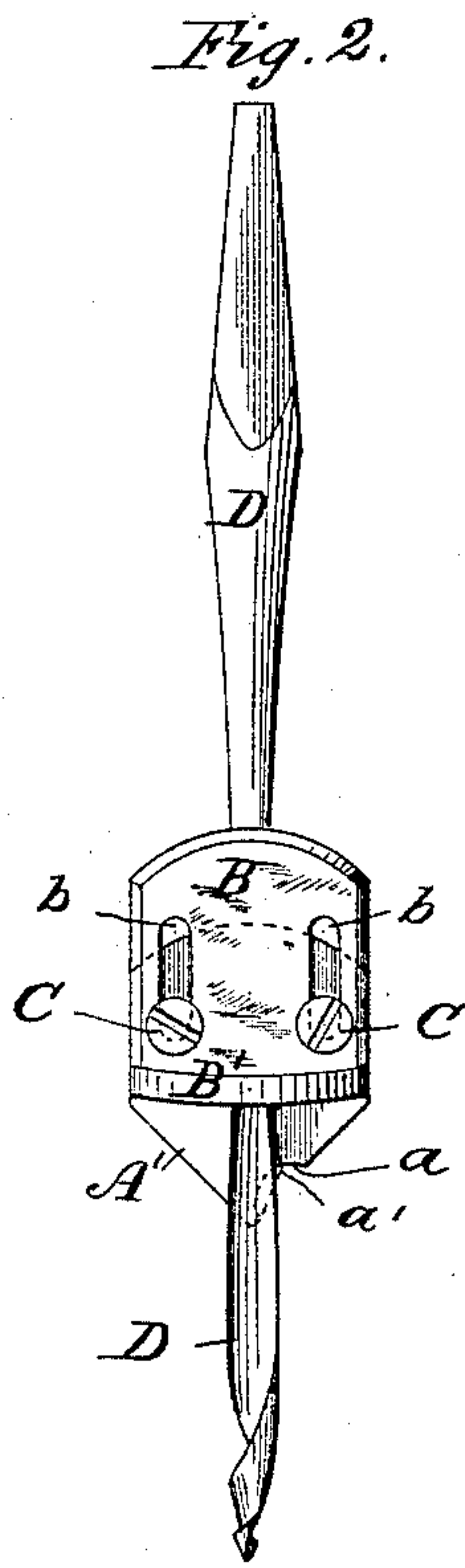
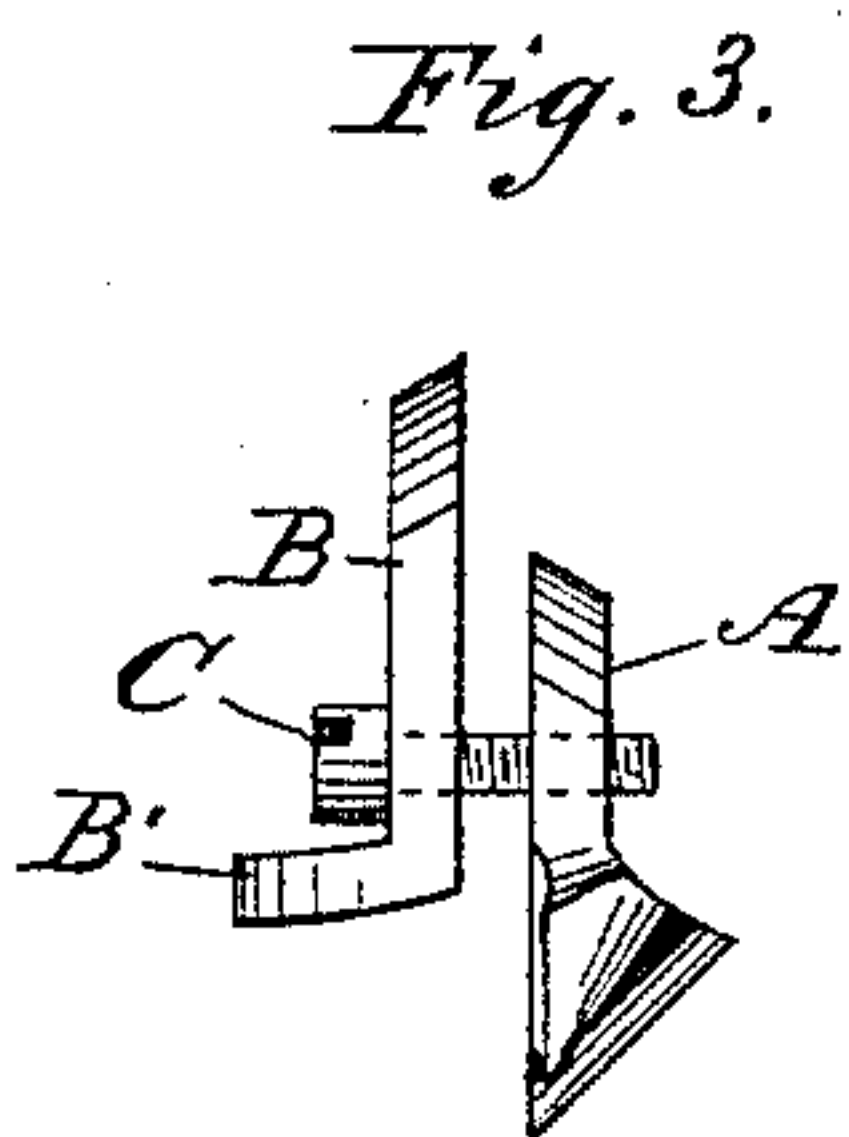
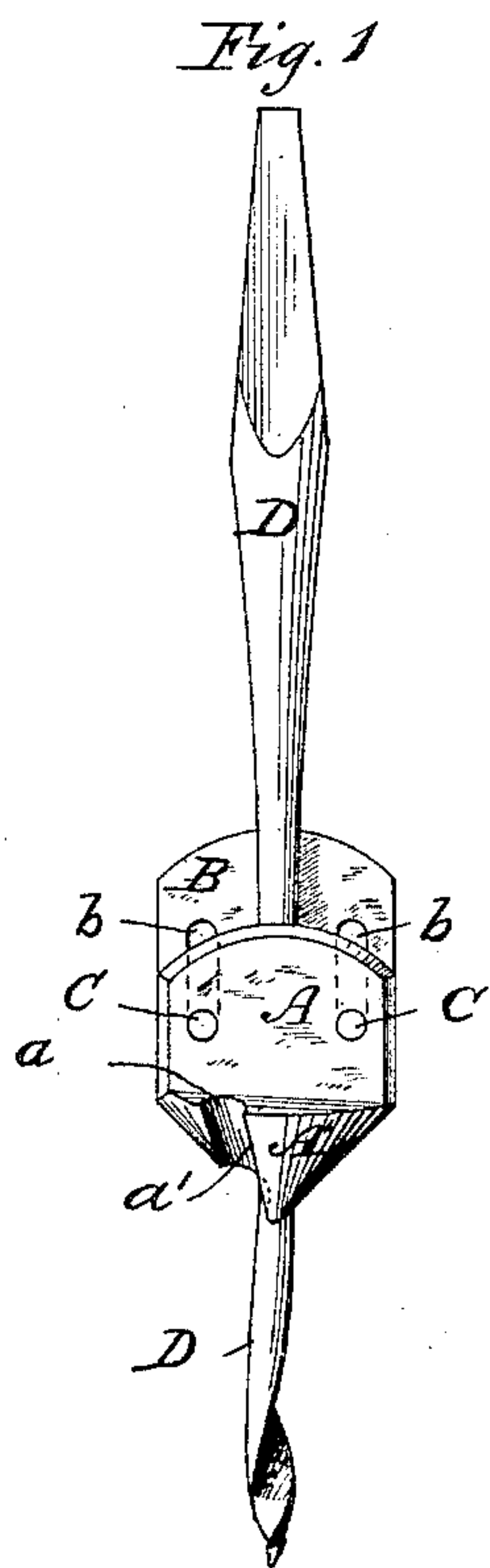


Fig. 4.

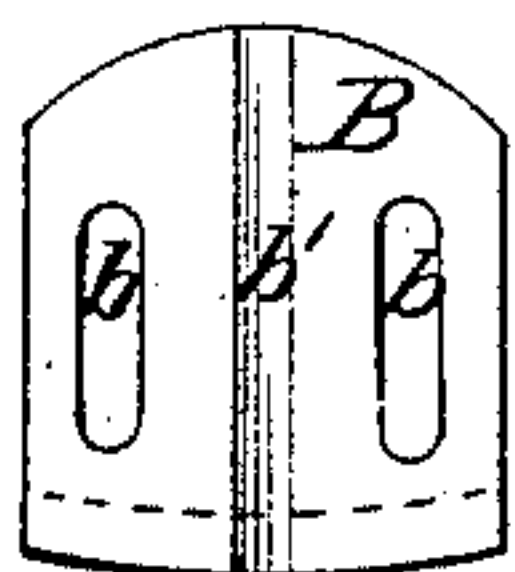


Fig. 5.

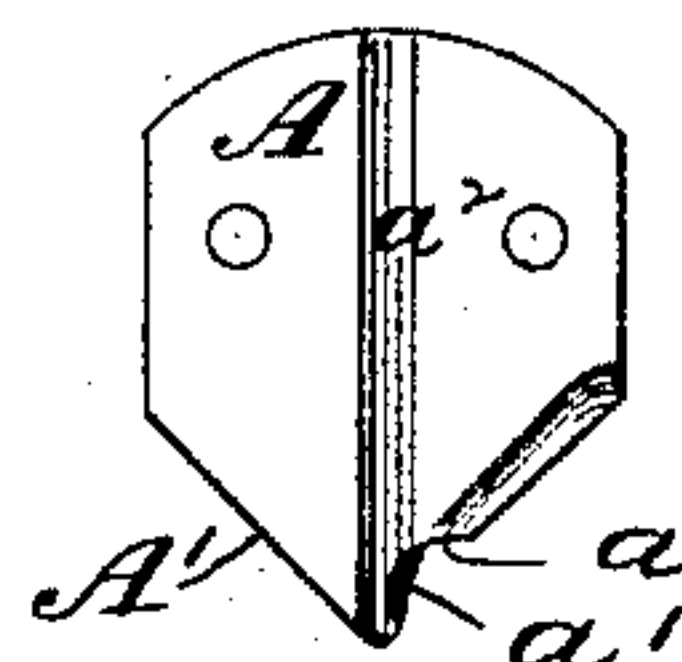
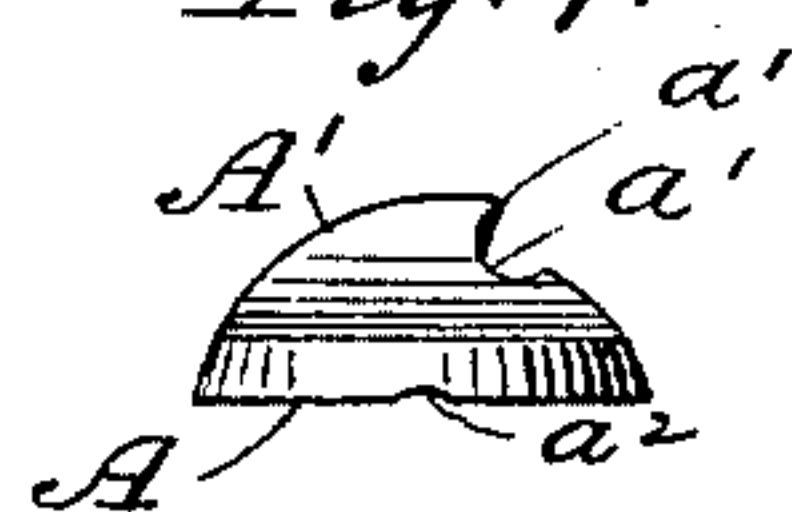


Fig. 6.



Fig. 7.



Witnesses.

W. B. Hill.

A. M. Johnson.

Inventors.

G. W. Abbott

G. S. Forrest

per. J. B. Thurston
Attorney

UNITED STATES PATENT OFFICE.

GEORGE W. ABBOTT AND GEORGE S. FORREST, OF CONCORD, N. H.

COUNTERSINK.

SPECIFICATION forming part of Letters Patent No. 327,641, dated October 6, 1885.

Application filed May 14, 1885. Serial No. 165,483. (No model.)

To all whom it may concern:

Be it known that we, GEORGE W. ABBOTT and GEORGE S. FORREST, citizens of the United States, residing at Concord, in the county of Merrimac and State of New Hampshire, have invented certain new and useful Improvements in Countersinks, of which the following is a specification.

Our invention relates to improvements in that class of countersinks which are adapted to be adjustably attached to bits and drills.

Our improvements consist of the combination of a suitable countersink, a gage capable of adjustment relative to said countersink, and a bit or drill to which said parts are clamped and rendered adjustable by any ordinary machine-screws.

The object of our invention being to provide an adjustable countersink applicable to bits or drills of such construction that a hole may be bored of ample depth for a given length of screw and countersunk for the reception of its head at one and the same time, and, furthermore, to provide an adjustable countersink of such construction as to be capable of being set so as to cut any given depth required for various sizes of screw-heads.

In the accompanying drawings, forming part of this specification, Figure 1 is an elevation of an ordinary bit having our improved countersink and gage attached ready for use and showing the said countersink in front view. Fig. 2 is a like view of a bit provided with our improved attachment and showing the adjustable gage in front view. Fig. 3 is a detached view of our improved countersink and gage having the clamping-screws in position. Fig. 4 is an elevation in detail of the adjustable gage, showing the groove by which it is held in its proper position upon a bit or drill. Fig. 5 is a like view of the adjustable countersink, showing its groove by which it is held in its proper position upon a bit or drill. Fig. 6 represents a plan view of Fig. 4, and Fig. 7 a plan view of Fig. 5.

Like letters of reference indicate corresponding parts in all the views.

The part forming the countersink is preferably made of steel, and may be conveniently drop-forged. This consists of the flat part A, having an enlargement, A', at its bottom, which

is curvilinear or nearly semicircular from edge to edge on its top, and tapering toward its bottom in the form of a semi-cone. This semiconic surface, in order that it may cut, may be serrated or grooved, as is common in the manufacture of this class of tool, or it may be provided with a single groove, *a*, as seen in the drawings; and the edge *a'* forms a cutter.

The adjustable gage consists of a flat piece of metal—iron or steel—provided at its lower end with a flange, B', projecting at a right angle, and formed nearly semicircular from edge to edge, and slightly convexed on its lower surface, as seen in the drawings.

The advantage of this convexed surface over a flat one is that the said surface when so formed will not scrape or tear the surface of the article being bored, even though the bit may be entered on a slant. Fastening-screws C pass through elongated openings *b*, formed in the gage B, and are threaded to the countersink, as shown.

Both the countersink and the gage are provided, respectively, with a groove, *a'* and *b'*, for the purpose of preventing said parts from slipping out of place laterally—*i. e.*, the bit or drill D being allowed to rest within said grooves while the two parts are being drawn toward each other and clamped thereon. When it is desired to adjust the devices relative to the length of a given screw, it is simply necessary to loosen one of the screws C; but when it is desired to adjust the gage relative to the countersink both the screws will require loosening, and by reason of the slots *b* the gage may be set to countersink for any ordinary screws, from the smallest to the largest.

In place of using two fastening-screws, C, either part, A B, may be hinged to the other, so as to be adjustable vertically, and the necessary clamping be accomplished by a screw or other suitable means upon one side only, the manner of clamping the parts together being really an unessential feature in this invention, as the cheapest method will be the one adopted in the manufacture of this device. By setting the gage below the countersink this device may be used to gage the required depth of hole for various round-headed screws without forming a countersink.

We are aware of Patent No. 170,653, bearing

date November 30, 1875, which is for a countersink attachment for bits, and which also shows an appliance for gaging the depth to be cut.

This invention, however, consists of a countersink made in two parts, said parts being placed on opposite sides of the bit and secured by screws, and the stop or gage comprises a separate device, which is adapted to be secured to one of the parts of the countersink by the screws which secure said parts to the bit. We desire therefore to disclaim the countersink in two parts, and also the stop or gage, as a separate or independent attachment thereto; but

What we do claim, and desire to secure by Letters Patent, is—

The combination, substantially as set forth, with the part A, having a semi-conic enlargement, A', provided with groove *a* and cutting-edge *a'*, which comprises the countersink, of the adjustable part B, provided at its lower end with flange B', convexed on its bottom, which comprises the gage, and the screws C, whereby said parts are secured to a bit, all constructed and operating in the manner specified.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE W. ABBOTT.

GEORGE S. FORREST.

Witnesses:

J. B. THURSTON,

NATHANIEL E. MARTIN.