

(No Model.)

2 Sheets—Sheet 1.

J. J. TOWER.
SCREW DRIVER.

No. 539,155.

Patented May 14, 1895.

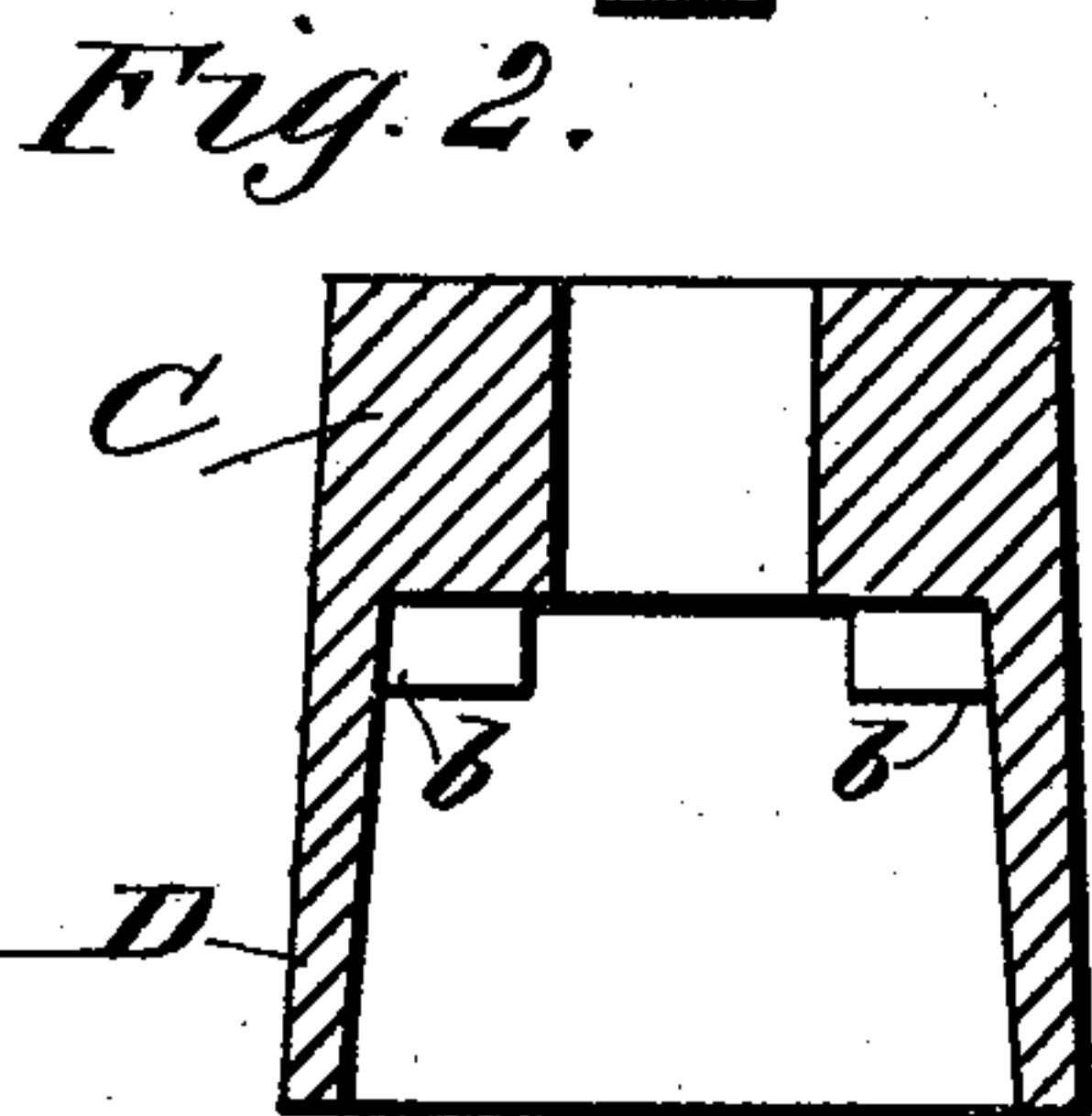
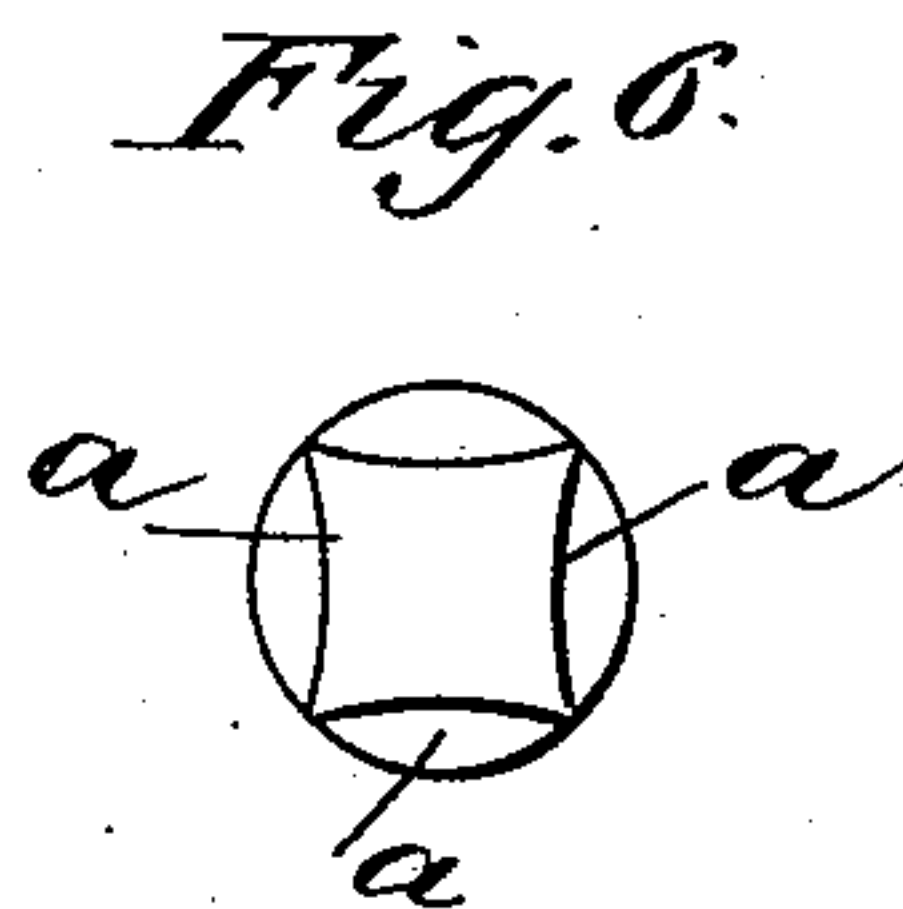
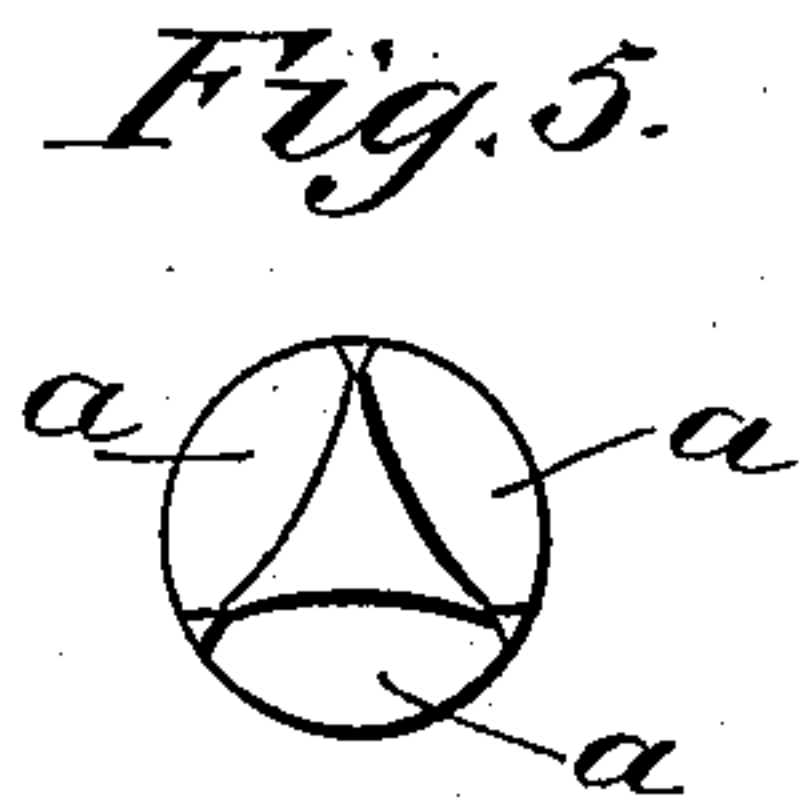
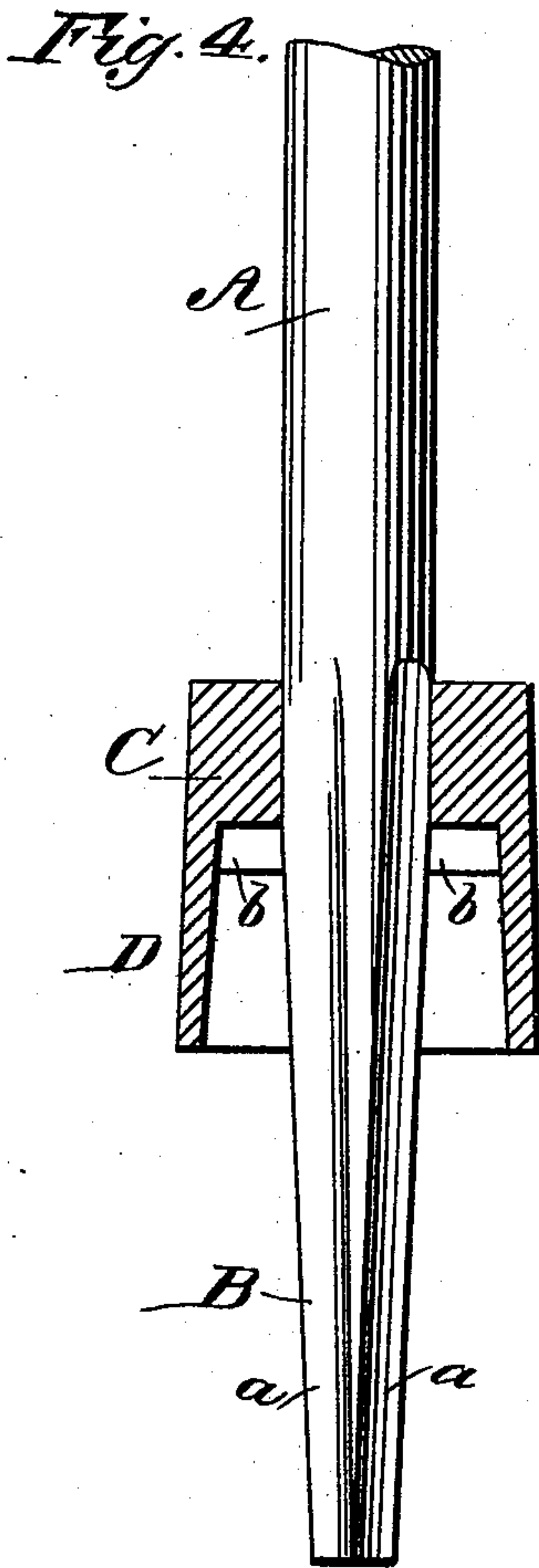
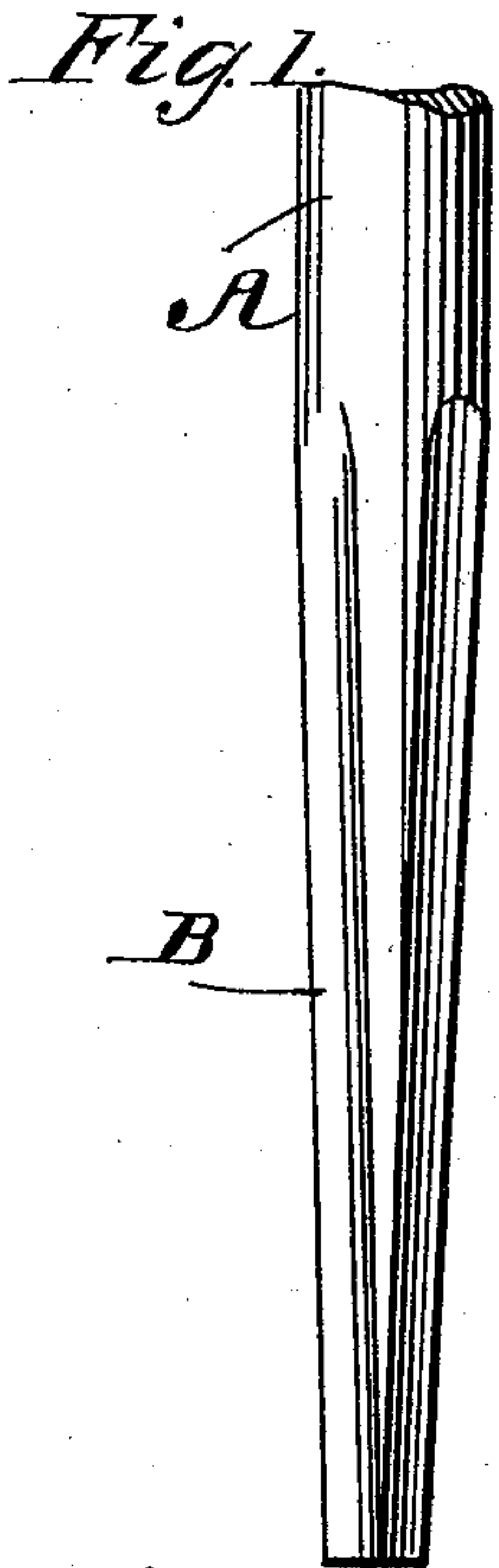
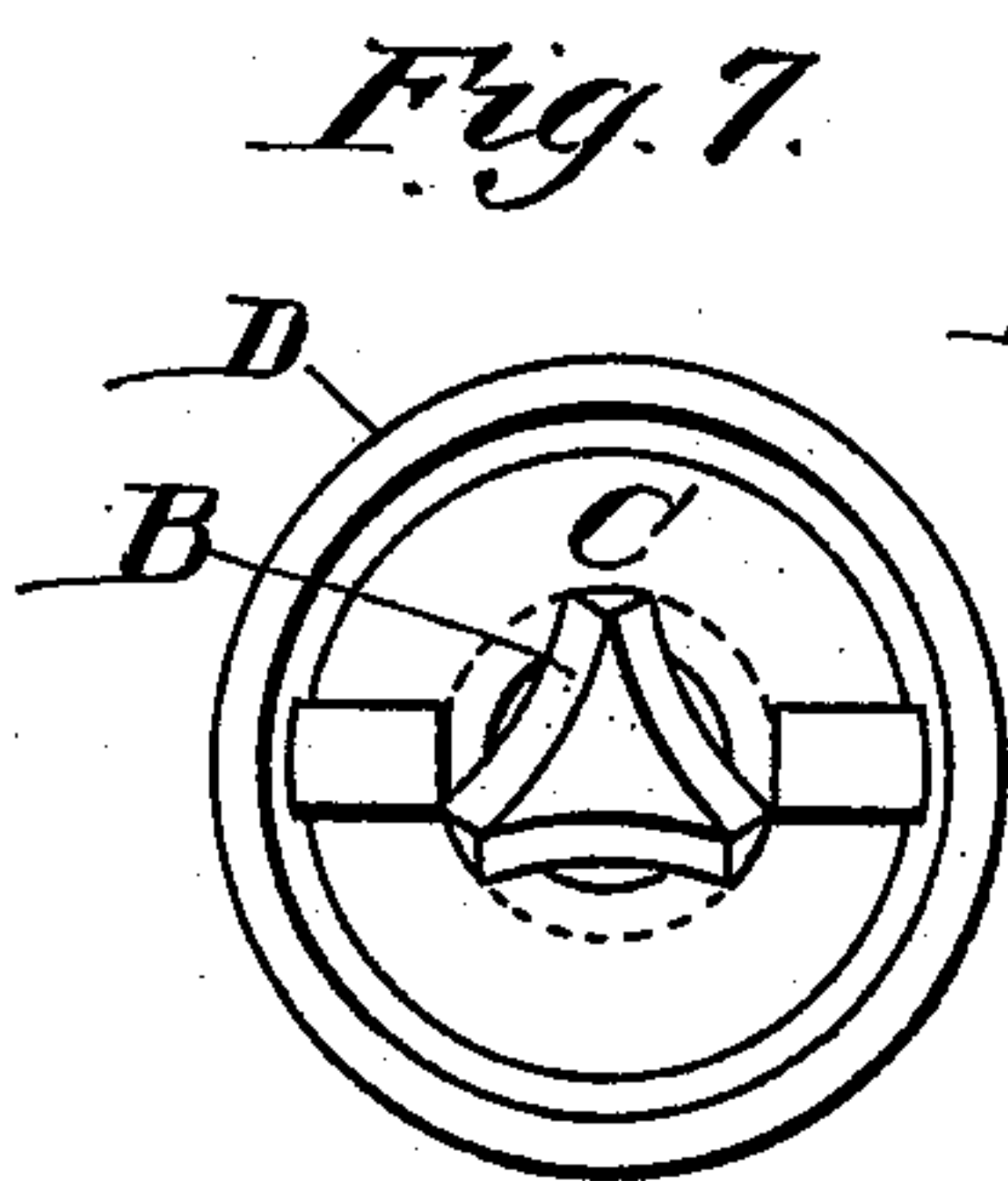
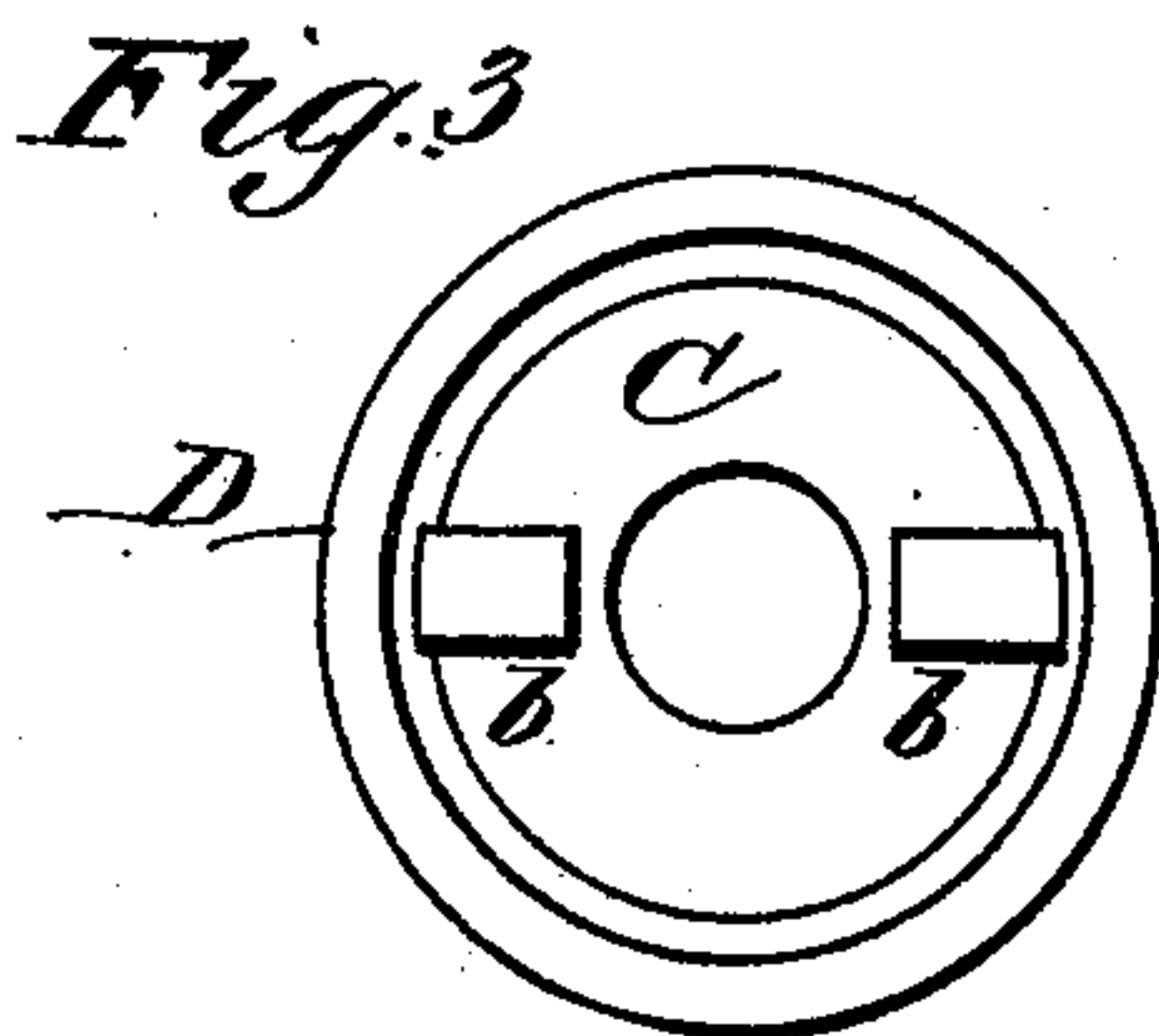
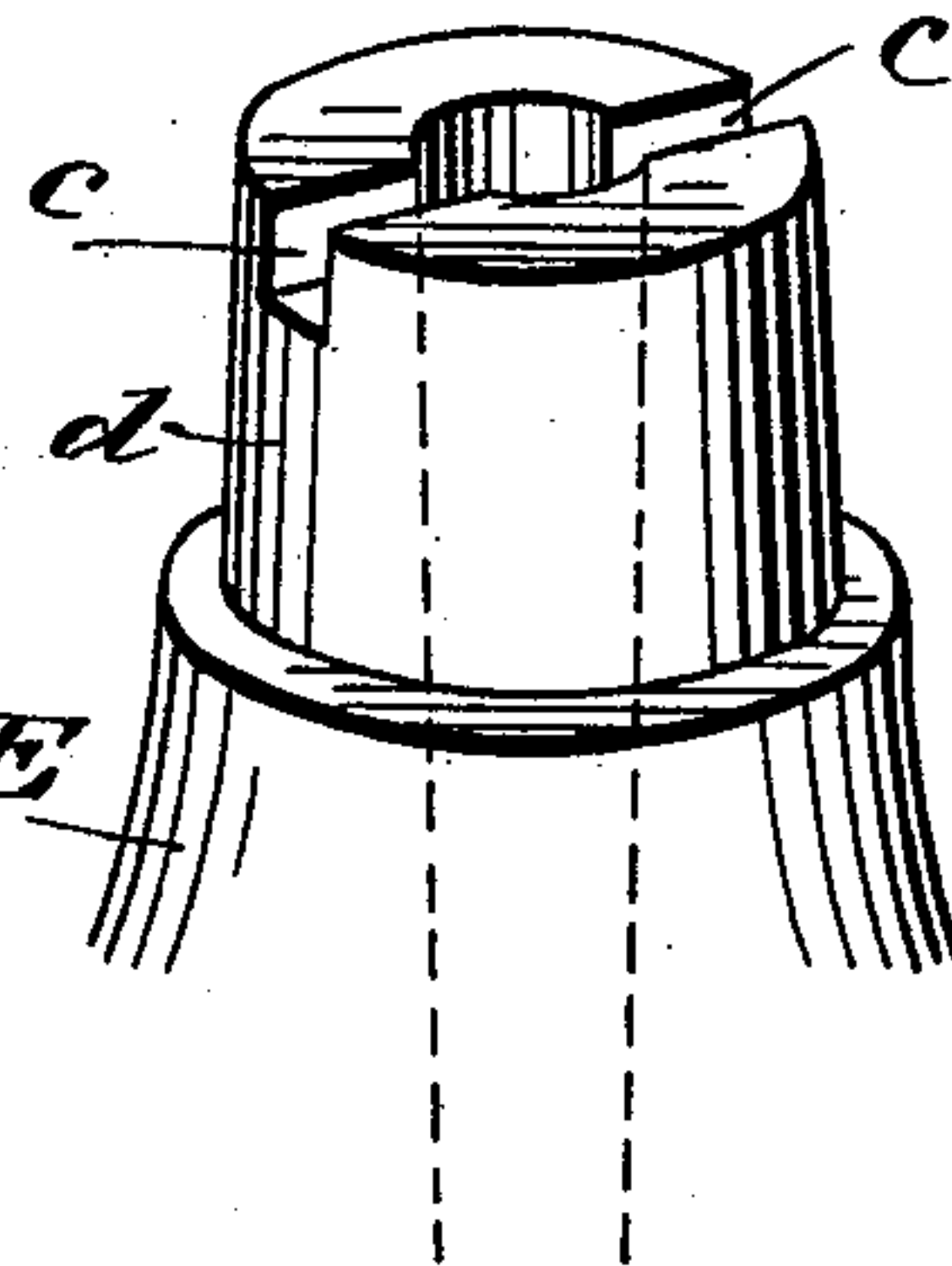


Fig. 4^a.



WITNESSES:

H. M. Tucker.
J. Kennedy.

INVENTOR

John J. Tower

BY

Henry F. Parker

ATTORNEY

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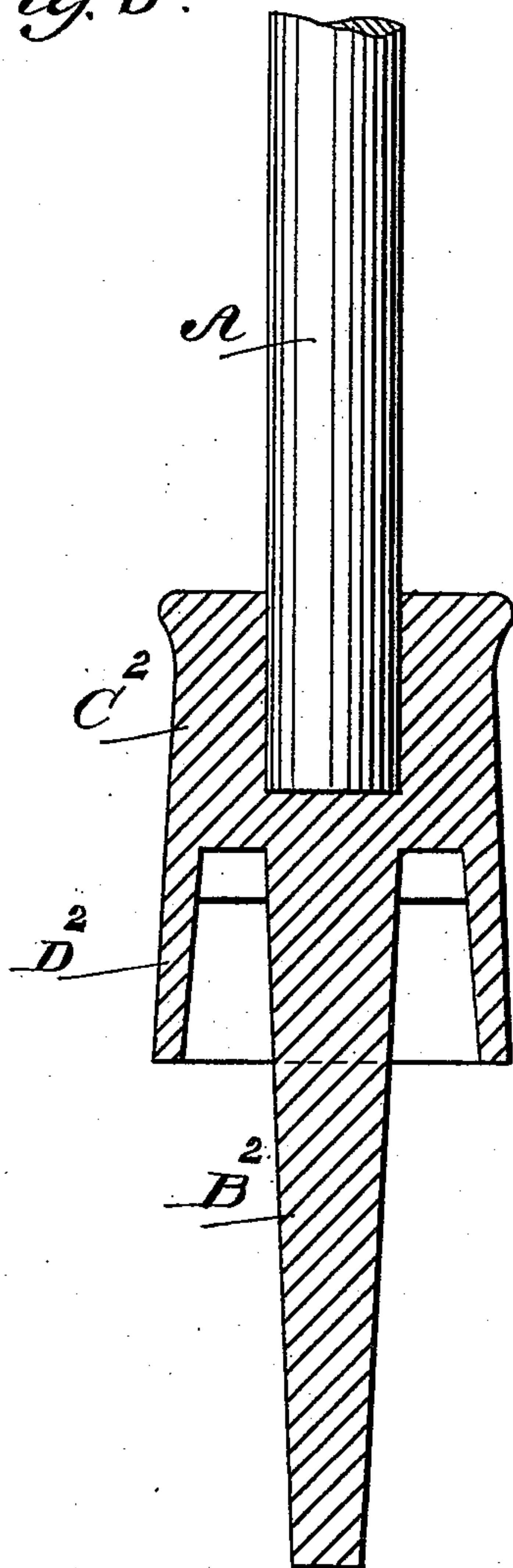
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Fig. 8.



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UNITED STATES PATENT OFFICE.

JOHN J. TOWER, OF BROOKLYN, NEW YORK.

SCREW-DRIVER.

SPECIFICATION forming part of Letters Patent No. 539,155, dated May 14, 1895.

Application filed November 22, 1894. Serial No. 529,579. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. TOWER, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Screw-Drivers, of which the following is a specification.

My invention relates to screw drivers having a bolster attached to the blade adapted to hold rotatively to the handle, and form an abutment that will withstand blows.

It has been usual to form the bolster and tang in one piece to which the blade is afterward attached, and to use a separate ferrule, as in Letters Patent No. 214,785.

It is the object of my invention to reduce the number of parts and cheapen the cost of manufacture as far as possible.

My invention consists in forming the ferrule integrally with the bolster, and in providing in certain novel combination therewith, radial tongues for the reception and holding of the handle as hereinafter described and claimed.

Referring to the accompanying drawings, Figure 1 is a side view of the blade; Fig. 2, a sectional view of the bolster and ferrule combined; Fig. 3, an inverted plan view of Fig. 2; Fig. 4, a side view, partly in section, of the blade and the combined bolster and ferrule shrunk thereon; and Fig. 4^a, a perspective view of the handle adapted for the reception of the parts in Fig. 4. Fig. 5 is an end view of the blade tang; Fig. 6, a modification thereof; and Fig. 7, an inverted plan view of Fig. 4, showing the effect of inserting the tang constructed as in Fig. 5 into the bolster shown in Fig. 3. Fig. 8 is a sectional view showing the feature of making the ferrule integral with the bolster as applied to a bolster also having the tang integral therewith.

In Figs. 1 to 7 inclusive, A represents the blade extended to form the tang B, in one piece.

The bolster C, is heated until properly expanded, and the blade while cool is driven quickly home to the proper point of insertion, by hand or machine; the bolster immediately

shrinking firmly and permanently upon the blade.

The ferrule D is made integral with the bolster, and may be formed by drop forging or casting.

The tongues *b, b*, are adapted to fit the mortises, *c, c*, of the handle, Fig. 4^a, formed in the wood, and the shouldered part *d*, of reduced diameter receives the tapering ferrule flange D, Fig. 4, which, when the tool is driven on to the handle, binds the wood between the said flange and the oppositely tapered tang B.

The tang may be of round taper, or it may be provided with concave faces *a, a*, as represented in Figs. 1, 4 and 5, on three or more sides as in Figs. 5 and 6.

The tang B, when provided with concaved faces *a, a*, presents sharp edges at the junctions of the faces, which make V-shaped cuts into the wood, giving a firm hold. The faces *a*, may also be extended up along the blade A beyond the point of insertion into the bolster C, as indicated in Fig. 4, and this feature will add to the security against rotative displacement of the bolster, the circular aperture seen in Fig. 3, being changed to the shape seen in Fig. 7, by the act of driving the blade into the bolster.

Fig. 8, shows a bolster C², having a tang B² integral therewith, but separate from the blade A, as in the aforesaid patent, but with the application thereto of my improved feature of forming the ferrule D², integral with the said bolster C² and with radial tongues.

I am aware that longitudinal fins within a ferrule are shown in United States Patent No. 221,986, but my invention is distinguished therefrom in that by placing the tongues *b*, radially at the inner extremity of the socket formed by the integral ferrule and bolster, there will be no reduction in the stock of the wood below the mortises *c* in the handle and the said mortises are cut in the end of the grain leaving the full diametric thickness of the wood which is very necessary in order to resist the torsional strain to which a screw driver is principally subjected. When the fins are placed longitudinally as in said pat-

ent, the part *d*, of the handle has to be incised lengthwise of the grain so as to nearly split the neck in two, which almost inevitably results in breakage under torsional strain.

5 I claim as my invention—

In combination, a screw-driver blade and a bolster thereon provided with an integral ferrule, and tongues within the ferrule extending radially from the tang to the ferrule

adapted for engagement with the wood of the handle.

Signed at New York city, in the county of New York and State of New York, this 20th day of November, A. D. 1894.

JOHN J. TOWER.

Witnesses:

H. F. PARKER,

K. M. TUCKER.