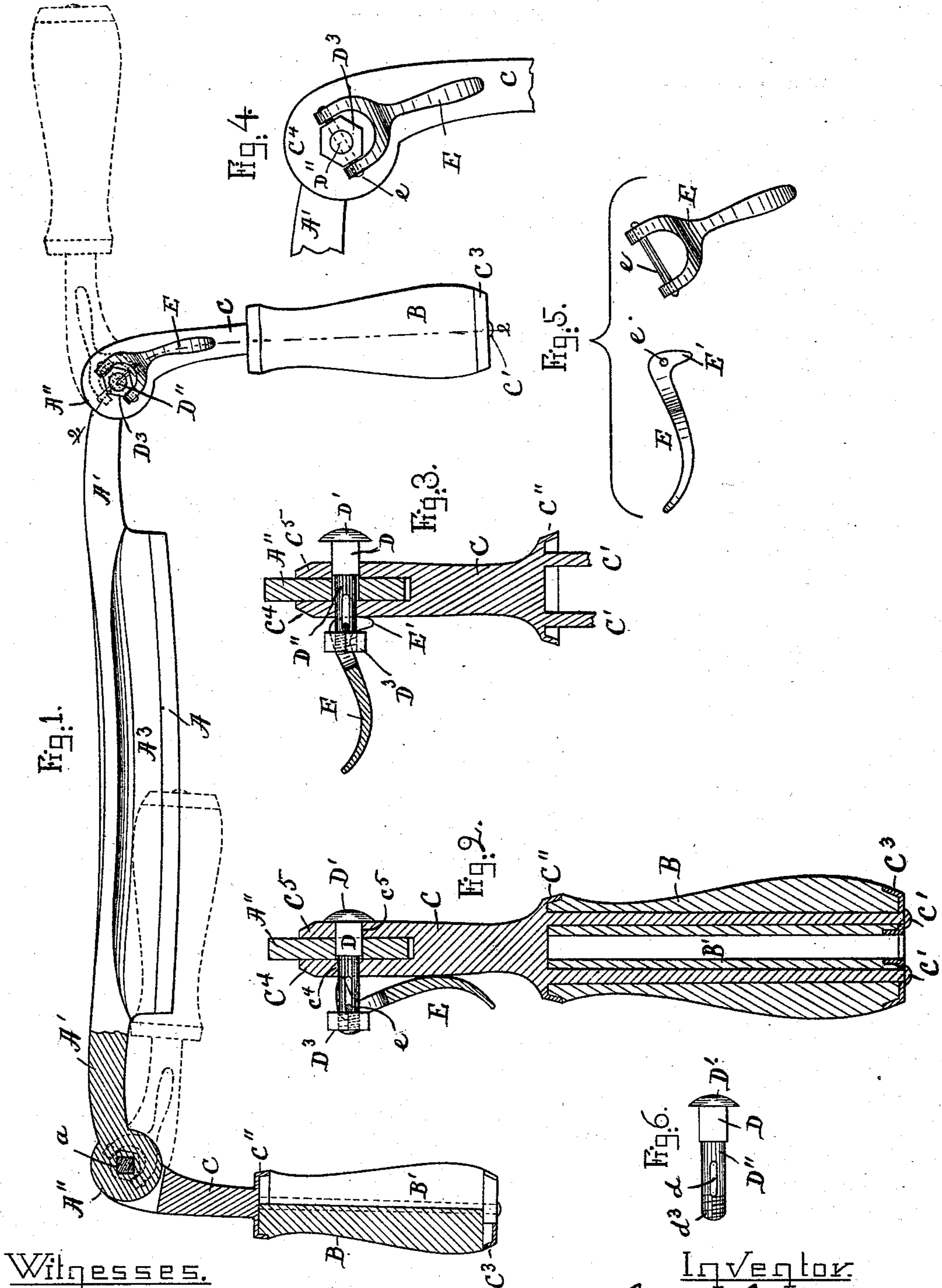


(No Model.)

J. S. CANTELO.  
DRAWING KNIFE.

No. 543,146.

Patented July 23, 1895.



Witnesses.

Lauritz W. Möller  
Kittie M. Hanson.

Inventor

John S. Cantelo.  
by *Alban Fredrick*  
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# UNITED STATES PATENT OFFICE.

JOHN S. CANTELO, OF BOSTON, MASSACHUSETTS.

## DRAWING-KNIFE.

SPECIFICATION forming part of Letters Patent No. 543,146, dated July 23, 1895.

Application filed November 11, 1893. Serial No. 490,667. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN S. CANTELO, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Drawing-Knives, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements on that kind of drawing-knives on which the handles are adjustable relative to the blade, and this my invention is an improvement on the patent granted to me December 18, 1883, No. 290,396, for a drawing-knife, and it is carried out as follows, reference being had to the accompanying drawings, wherein—

Figure 1 represents a side elevation of the invention, showing one end of the blade and its pivoted handle in section. Fig. 2 represents an enlarged section on the line 2 2, showing the handle in a locked position relative to the blade. Fig. 3 represents a similar section, showing the handle in an unlocked position. Fig. 4 represents a detail side view of the handle-locking device. Fig. 5 represents in side and top views the locking-lever, by means of which the locking-bolt is operated; and Fig. 6 represents a detail side view of the pivot and locking-bolt, by means of which the blade is pivoted and locked to the handles.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

A represents the blade having shanks A' A', terminating at their ends as flattened circular hubs A'' A'', each one of which has a square or polygonal perforation *a*, as shown in the left-hand portion of Fig. 1 and in Figs. 2 and 3, for a purpose as will hereinafter be more fully shown and described.

B B represent the wooden handles, each one having a longitudinal groove B', adapted to receive the blade A, when folded upon it, in the same manner as shown and described in my former patent above mentioned.

Each handle B has secured to it a metallic hinge-piece C, provided with parallel shanks C' C' going through longitudinal perforations in the said handle and through perforated capped top and bottom ferrules C'' C'', the former being preferably made in one piece with the hinge-piece C, as shown in Figs. 2

and 3. The lower ends of the bifurcated shanks C' C' are riveted to the bottom ferrule C'', as shown and described in my afore-said patent. Each metal hinge-piece C terminates as a forked hub C<sup>4</sup> C<sup>5</sup>, and it receives the hub A'' of the blade, as shown. Through the forked hub portion C<sup>5</sup> is made a square or polygonal perforation *c*<sup>5</sup>, corresponding in size and shape to the square or polygonal perforation *a* in the handle-hub A'', and through the forked hub portion C<sup>4</sup> is made a circular perforation *c*<sup>4</sup>. The blade is pivoted in each end to the forked hinge-pieces by means of a pivot and lock bolt having a square or polygonal lower portion D, adapted to fit into the square or polygonal perforations *c*<sup>5</sup> and *a* in the respective parts C<sup>5</sup> and A''. Said lock-bolt has at one end of its square or polygonal part D a head D', and in its opposite end a cylindrical shank D'', adapted to fit into the cylindrical perforation *c*<sup>4</sup> in the forked hub portion C<sup>4</sup>, as shown.

From the above it will readily be seen that the blade is locked firmly in position to the handle when the locking-bolt is in the position shown in Fig. 2, and if said bolt should be pushed outward to the position shown in Fig. 3 the handle may be swung freely relative to the blade in adjusting the position of the handle to said blade.

In practice I prefer to use in connection with said pivot and lock bolt a suitable mechanism for adjusting said bolt and holding it in its locked position, and for this purpose I have shown in the drawings a forked lever E, having a fulcrum-pin *e*, passing through a preferably-slotted perforation *d* in the cylindrical portion D'' of the pivot and lock bolt and having a cam projection E', adapted to raise the said pivot and locking pin and to hold it in a locked position when said lever E is swung down against the hinge-piece C, as shown in Fig. 2, and to permit said pin to be pushed downward to the position shown in Fig. 3 when it is desirable to adjust the position of the handle relative to the blade.

In practice I prefer to make the end *d*<sup>3</sup> of the bolt D'' screw-threaded, as shown in Fig. 6, and to provide it with an adjusting nut or collar D<sup>3</sup>, by means of which the position of the pin *e* may be adjusted on the pivot-bolt, so as to take up any wear that may occur on

the lever E or its connections. In this manner I dispense entirely with notches or projections on the blade ends A'' A'', which in my present case are made circular, and use  
5 the pivot-bolts as effective means for locking the blade to the handles in any desired positions.

In Fig. 1, A<sup>3</sup> represents the longitudinal concavity of the blade A. Usually such concavity is of equal width throughout its length,  
10 which is objectionable, as it weakens the blade at the junction of its ends and shanks, and for this reason I reduce the width of said concavity A<sup>3</sup> at or near the ends of the blade A,  
15 as shown in Fig. 1, by which the blade is materially strengthened.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim—

20 1. A drawing knife having in each of its ends a square or equivalent perforation combined with a handle having a forked hinge piece one lip of which has a perforation like that in the blade end and the other lip hav-

ing a circular perforation, and a longitudi- 25  
nally adjustable pivot and locking bolt having a square or equivalent locking portion and a cylindrical pivot portion substantially as and for the purpose set forth.

2. A drawing knife having in each of its 30  
ends a square or equivalent perforation combined with a handle having a forked hinge piece one lip of which has a perforation like that in the handle end and the other lip having a circular perforation a longitudinally ad- 35  
justable pivot and locking bolt having a square or equivalent locking portion and means for longitudinally adjusting the position of said locking and pivot bolt substantially as and for the purpose set forth. 40

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 9th day of November, A. D. 1893.

JOHN S. CANTELO.

Witnesses:

ALBAN ANDRÉN,  
KITTEE M. HANSON.