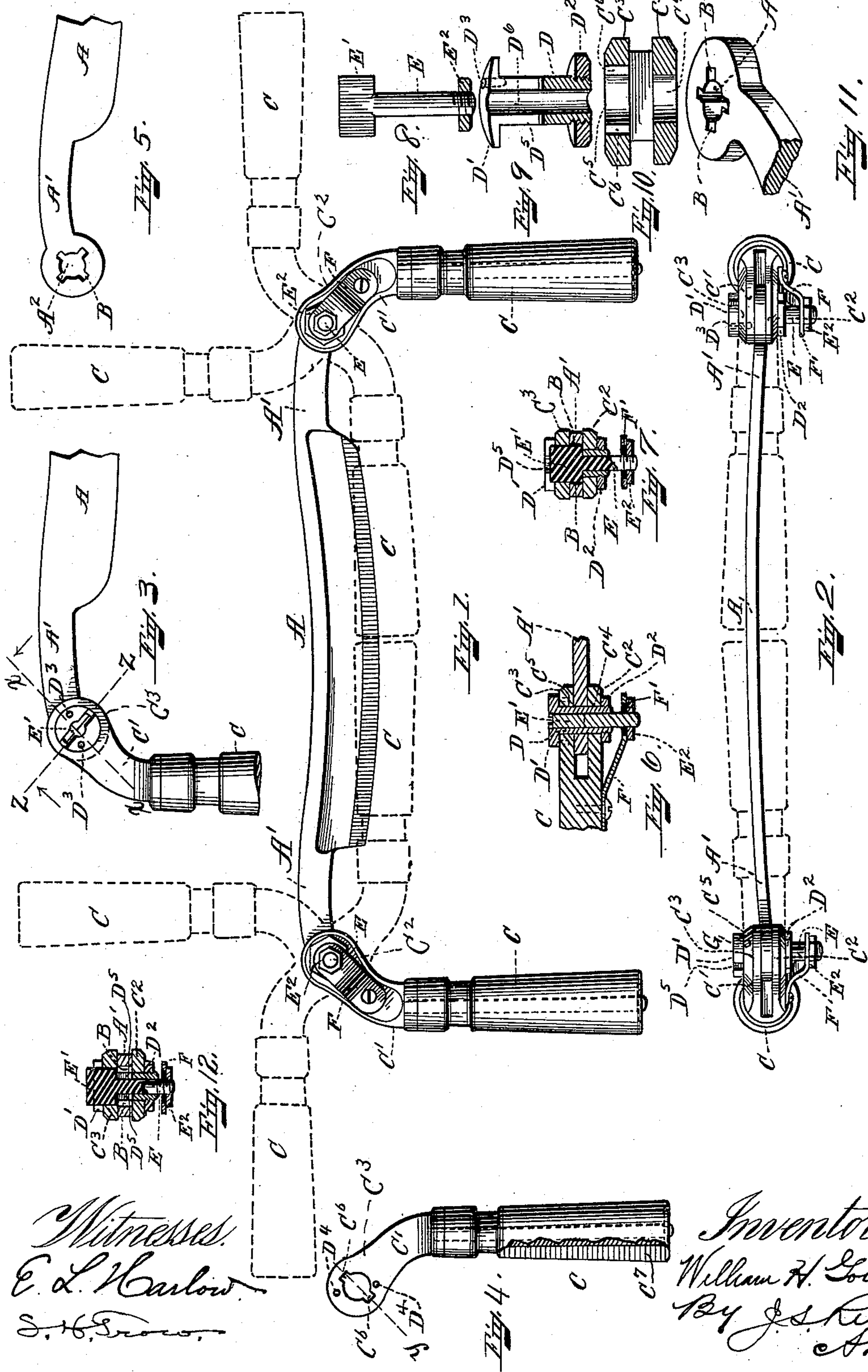


W. H. GOULD.
DRAWING KNIFE.

Patented Dec. 10, 1895.



ANDREW B. GRAHAM, PHOTO-LITHO. WASHINGTON, D.C.

UNITED STATES PATENT OFFICE.

WILLIAM H. GOULD, OF BOSTON, MASSACHUSETTS.

DRAWING-KNIFE.

SPECIFICATION forming part of Letters Patent No. 550,964, dated December 10, 1895.

Application filed May 11, 1895. Serial No. 548,921. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. GOULD, of Boston, (Mattapan,) county of Suffolk, State of Massachusetts, have invented new and useful Improvements in Drawing-Knives; and I hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in that class of drawing-knives on which the handles are adjustable relatively to the blade; and its object is to provide locking mechanism between the blade and handle, so that the handle can be set at any desired angle by pressure of the thumb or one of the fingers of the hand on the locking mechanism to release the same, and by a further movement given to the handle it is brought to the desired position, when the locking mechanism automatically assumes its normal position and locks the handle and blade in the adjusted position without requiring any adjustment of the locking mechanism between the blade and handle, so that in this device the handle is automatically locked in its adjusted position without requiring any attention on the part of the operator, and it simply requires a slight pressure of one of the fingers of the hand to release the locking mechanism and permit the movement of the handle to any desired position.

My invention consists of certain novel features, arrangements, and combinations hereinafter described, and particularly pointed out in the claims.

In the drawings which illustrate a construction embodying my invention, Figure 1 is a side elevation of the upper side of the drawing-knife with the handles in one position in full lines and in other positions to which they may be adjusted in dotted lines. Fig. 2 is a top plan view of the drawing-knife. Fig. 3 is a detail side view taken at one end of the drawing-knife and showing the side opposite to that shown in Fig. 1. Fig. 4 is a detail side view of one of the handles. Fig. 5 is a detail side view of one end of the blade. Fig. 6 is an inverted cross-sectional view taken on the line $x x$, Fig. 3. Fig. 7 is an inverted cross-sectional view taken on the line $z z$, Fig. 3. Fig. 8 is a detail view of the

locking-key. Fig. 9 is a vertical sectional view through the sleeve which passes through the ends of the blade and handles. Fig. 10 is a vertical sectional view through the ends of the fork-arms of the handle on the line $y y$, Fig. 4. Fig. 11 is a detail perspective view of one end of the blade. Fig. 12 is an inverted cross-sectional view similar to that shown in Fig. 7, but showing the locking-key moved from its locking position with the end of the blade, so that the handle is free to be adjusted to any desired position.

Like letters of reference refer to like parts throughout the several views.

A represents a blade, of the usual construction, having at each end a shank A' , provided with a perforation A^2 , having four locking-recesses B oppositely arranged in pairs.

C represents a handle at each end of the knife, which are of similar construction. The lower part of the handle is formed of wood, having a longitudinal groove C^7 to receive the blade A when folded upon it, as shown in dotted lines, Figs. 1 and 2.

To the wooden part of each handle at the upper end there is secured a metallic piece C^7 , having at its upper end two forked arms C^2 and C^3 , the arm C^2 being the upper one in the operation of the knife and the arm C^3 being the lower one. The arms C^2 and C^3 are respectively provided with openings C^4 and C^5 , and the opening C^5 is provided with two opposite recesses C^6 . (See Figs. 4 and 10.) The opening A^2 in the end of each blade is adapted to align with the openings C^4 and C^5 of the arms C^2 and C^3 of the handle, and through said openings there is arranged a sleeve D, having on its under side a flange D' , which bears on the arm C^3 , and at its upper end a nut D^2 , which screws upon the thread on the upper end of said sleeve and holds the arms C^2 and C^3 and shank A' of the blade securely together, but permitting a movement of the blade A upon said sleeve as a pivot. There project from said flange D' two pins D^3 , which fit into two openings D^4 in the under arm C^3 of the handle, so as to secure the sleeve D and handle firmly together to prevent any movement of one upon the other. The said sleeve D is provided with two opposite slots D^5 , which extend about one-half the length of said sleeve, and the

said sleeve is also provided with a central opening D^6 , which extends through its entire length.

In the opening D^6 of the sleeve D there is arranged a locking-key E, having at one end a longitudinal flange E' , which moves in the slots D^5 , provided in the sleeve D. Secured at one end to the arm C^2 is a spring F, having at its opposite end an opening F' , through which the upper end of the key E passes, and upon said upper end there is mounted a nut E^2 , which bears upon the upper end of the spring F and holds the same in place. In the normal condition of the parts when the handle is locked in one of its positions the spring F, exerting its pressure on the nut E^2 , holds the key E in the position shown in Figs. 1, 2, 6, and 7, so that the flange E' of the locking-key E is held up in the slots D^5 and in the recesses C^6 of the lower arm C^3 and two opposite recesses B, provided in the perforation A^2 of the blade A, so that the key in this position, by means of the longitudinal flange E, which passes up into the two opposite recesses B of the perforation A^2 , locks said blade to the arms of the handle, and by this key there is prevented any movement of the handle or blade upon one another and a firm locking of one to the other is provided.

When it is desired to move the handle to another position, the thumb or one of the fingers of the hand is used to press down the spring F by bearing on the nut E^2 , so that the locking-key E is moved from its connection with the two opposite recesses B of the perforation A^2 of the blade A, (see Fig. 12,) and consequently said handle or blade can be moved around freely as long as the spring and key are held down (see Fig. 12) from their normal positions, and when the handle has reached the position desired by removing the pressure the spring F immediately exerts its tension and pulls the key E and flange E' into locking position with two opposite recesses B of the blade A, which are then in alignment with the opposite recesses C^6 of the arm C^3 of the handle and lock said blade and handle together. This operation is repeated

whenever it is desired to change the position of one or both of the handles, as each handle is adjusted independent of the other.

I do not limit myself to the arrangement and construction shown, as the same may be varied without departing from the spirit of my invention.

Having thus ascertained the nature of my invention and set forth a construction embodying the same, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a drawing knife, a blade, having an opening at each end, a handle at each end provided with two arms having openings registering with the openings in the blade, recesses in each of the said openings, a sleeve arranged in said openings and provided with opposite slots and having pins which fit into openings in one of said handles, a locking key located and operating in said sleeve and slots and adapted to enter said recesses of the blade and handle when the recesses of both are in alignment, and means connected to and acting on said locking key for automatically moving and holding said key in the aligned recesses and thereby locking said blade and handle.

2. In a drawing knife a blade having an opening at each end, a handle at each end provided with two arms having openings registering with the openings in the blade, recesses in each of said openings, a separate sleeve arranged in said openings and provided with opposite slots and having pins which fit into openings in one of the said handles, a locking lug extending transversely therethrough and into registering recesses in the handle and corresponding recesses in the blade and adapted to register with both when the handle is in the desired position, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 9th day of May, A. D. 1895.

WILLIAM H. GOULD.

Witnesses:

L. H. TROW,
E. L. HARLOW.