

(No Model.)

E. WILEY.

MANUFACTURE OF GOLD PENS.

No. 390,933.

Patented Oct. 9, 1888.

Fig: 1.

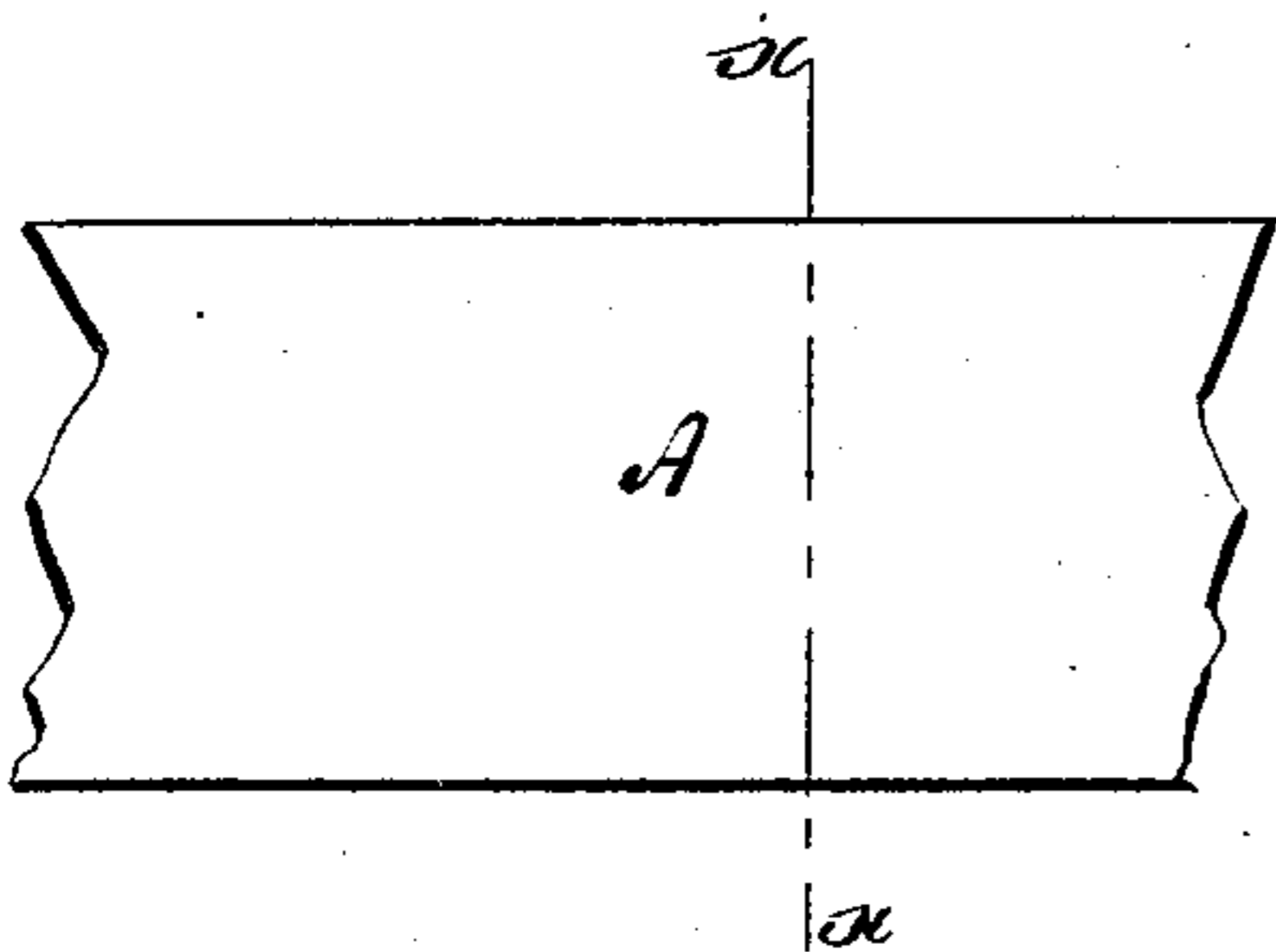


Fig: 2.



Fig: 3.

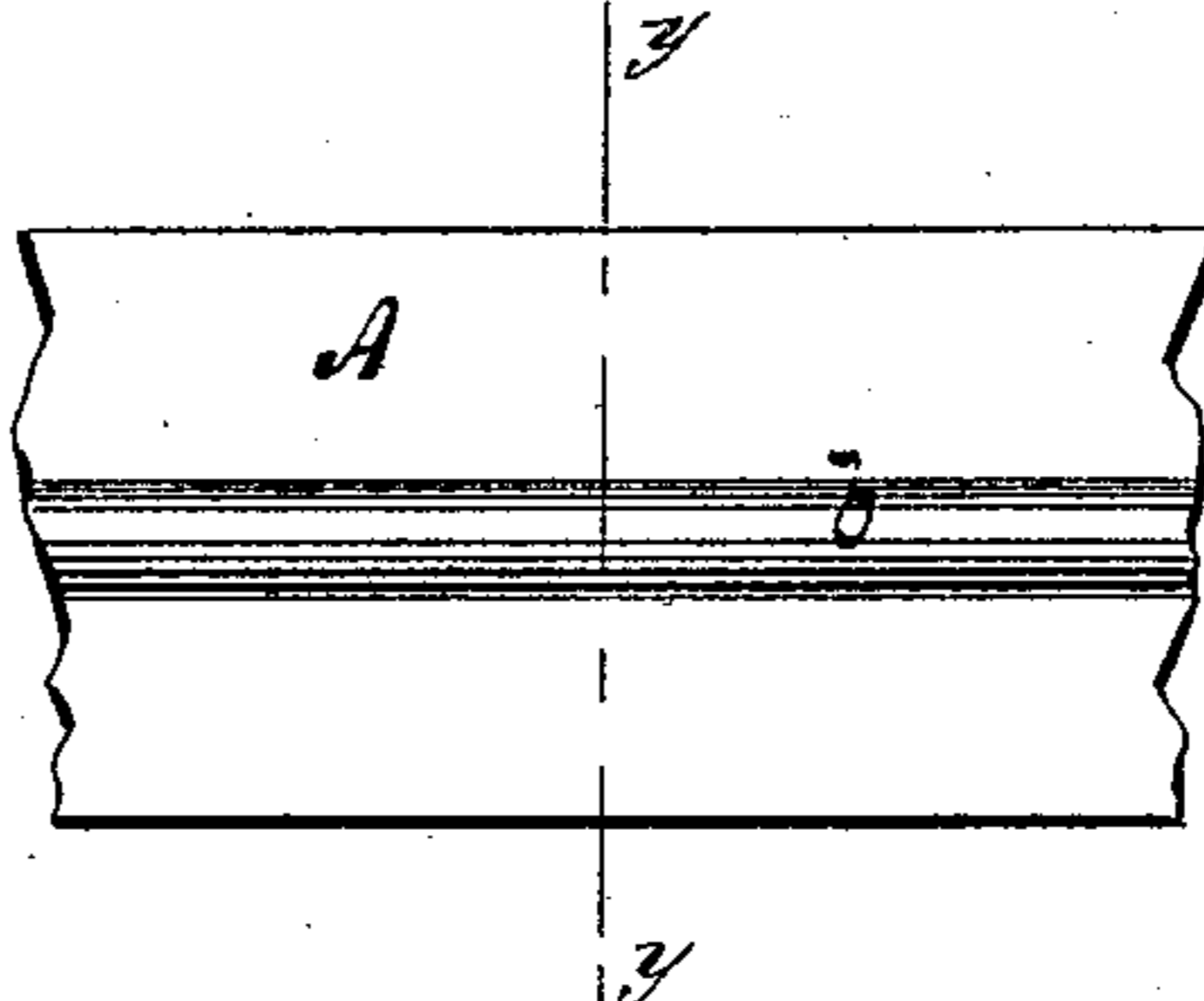


Fig: 4.



Fig: 5.

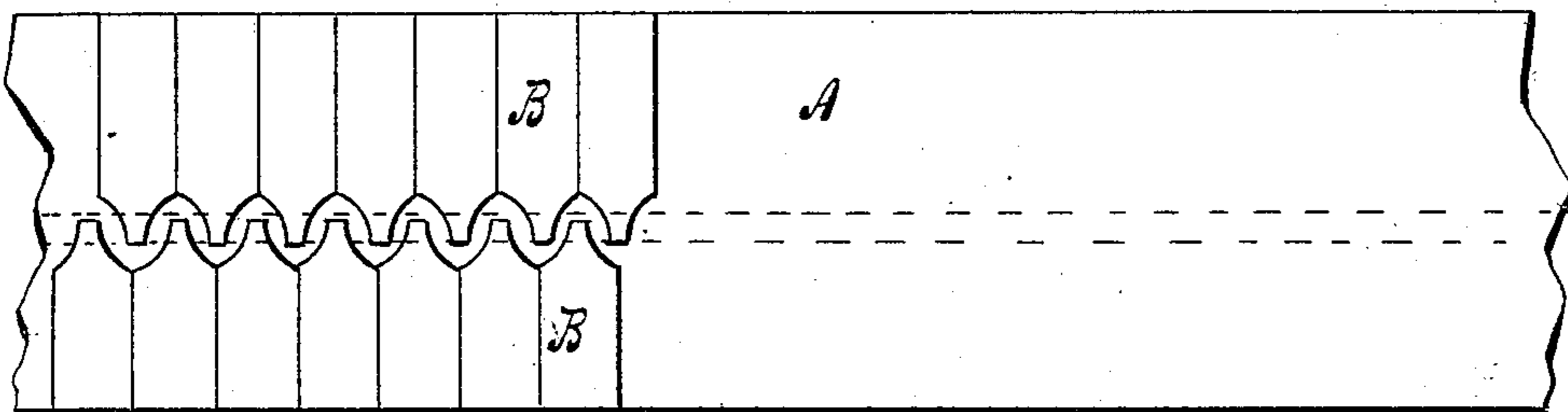


Fig: 6.

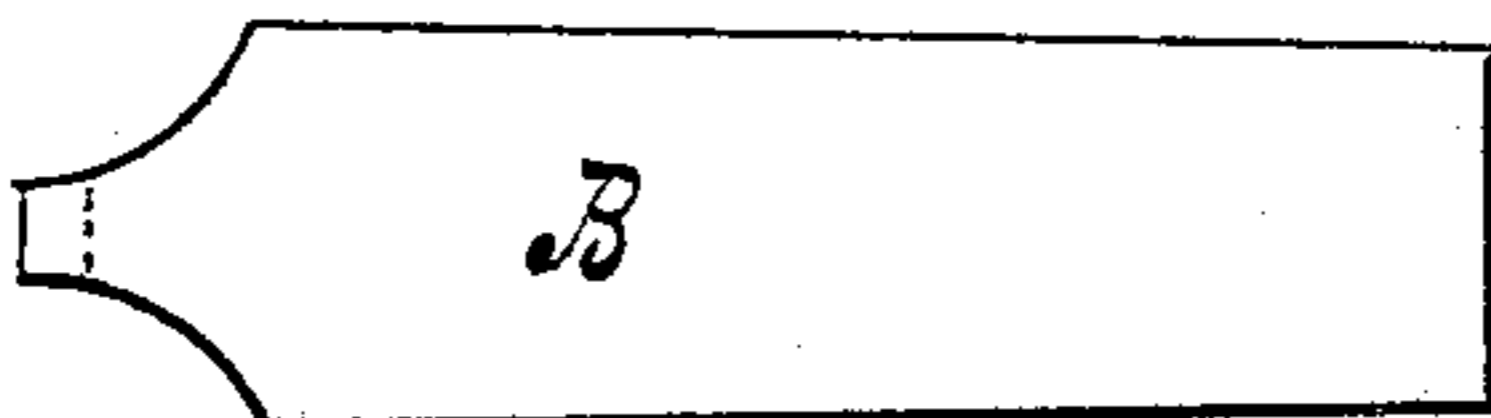


Fig: 7.

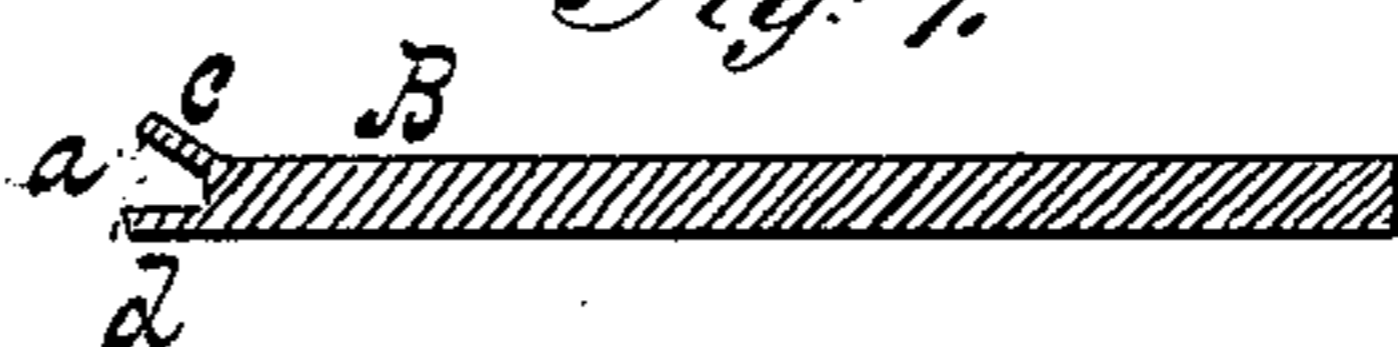


Fig: 8.



Fig: 9.

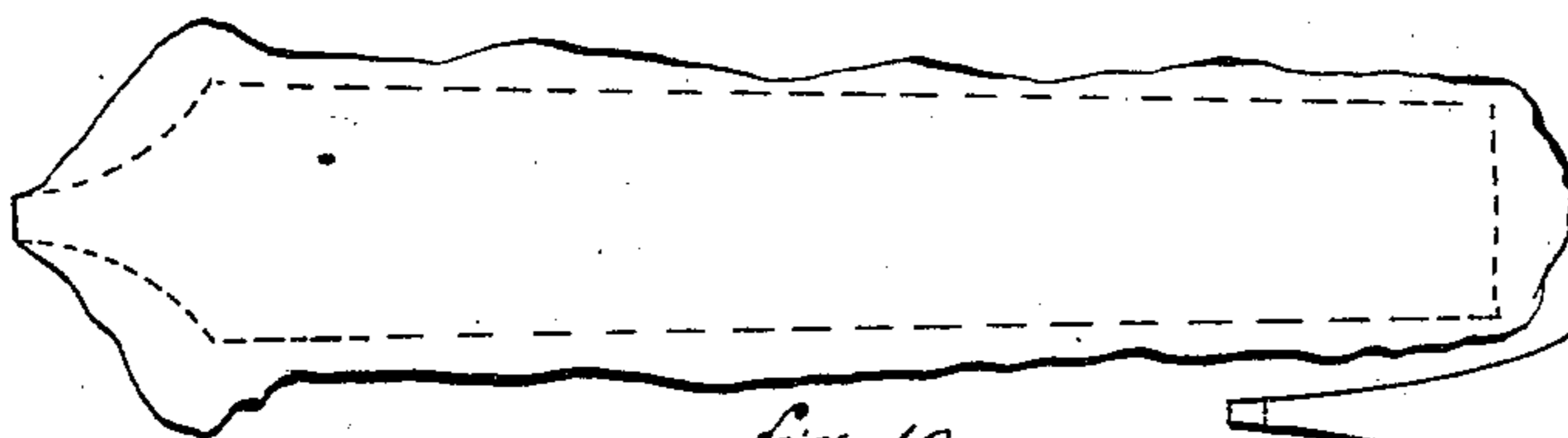


Fig: 7.<sup>a</sup>



Fig: 11.



Fig: 10.

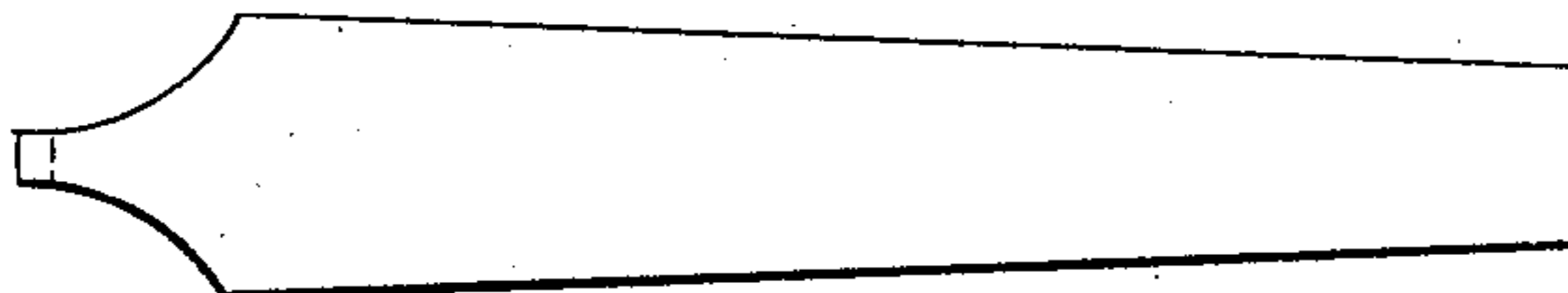
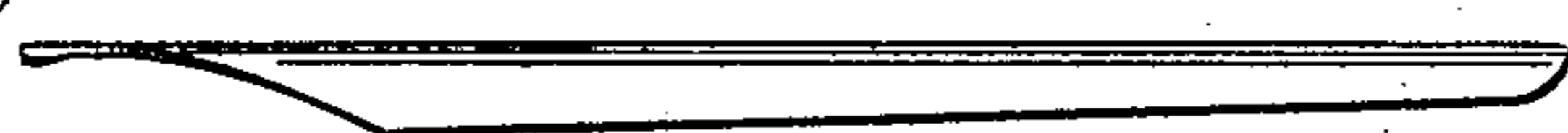


Fig: 12.



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# UNITED STATES PATENT OFFICE.

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## MANUFACTURE OF GOLD PENS.

SPECIFICATION forming part of Letters Patent No. 390,933, dated October 9, 1888.

Application filed March 2, 1888. Serial No. 265,943. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN WILEY, of Brooklyn, county of Kings, State of New York, have invented a certain new and useful Improvement in the Manufacture of Gold Pens, of which I declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

10 This invention relates to improvements in the manufacture of gold pens; and the invention consists in constructing and rolling the blanks from which the pens are made in the particular manner herein described, shown, and claimed.

15 In the accompanying sheet of drawings, Figure 1 is a plan view of the strip from which the blanks are cut; Fig. 2, a cross-section in the plane  $x x$ , Fig. 1; Fig. 3, a plan of the strip having a central rib; Fig. 4, a cross-section in the plane  $y y$ , Fig. 3. Fig. 5 shows the lines on which the strip is cut to produce the blanks. Fig. 6 is a plan view of one of the blanks. Figs. 7, 7<sup>a</sup>, and 8 are longitudinal sections of blanks. Fig. 9 is a plan of a blank which has been submitted to the rolling operations, to be hereinafter described. Figs. 10 and 11 show blanks ready for the finishing operation, and Fig. 12 shows a completed pen.

30 Similar letters of reference indicate like parts in the several views.

35 To prepare the blank to receive the iridium which forms the point of the pen, it has long been customary to cut away a small portion of the tip of the blank in such a manner as to produce an L-shaped recess on one side of the tip, in which recess is placed the iridium, and it and the gold are then united by sweating or soldering them together. This recess has usually been cut by a milling-wheel running at right angles to the faces of the blank and at right angles to its length. Since the particles of iridium are of irregular shape they do not always fill the rear portion of the recess flush with the surface of the blank, and when the point comes to be ground down in the finishing part of the process small notches or crevices are frequently left on either side of the point, and this results in many pens being spoiled.

50 To obviate the difficulty of producing a proper union between the gold and the iridium at the places just mentioned after the strip A

has been cut up into blanks, the tips of the blanks B are pressed against the edge of a saw adapted to the purpose, and a notch,  $a$ , is cut in the tip of each blank, one side,  $c$ , of which notch is thrown up at an angle, as shown in the drawings, either at the time the notch is made or afterward, while the other side,  $d$ , remains horizontal, and upon the iridium being placed in this notch and united to the blank by one of the ordinary methods of soldering or sweating the elevated side of the notch becomes softened and falls upon the iridium, so that any space that might otherwise occur at the rear of the particle of iridium, as before explained, is filled or bridged over, and an unbroken surface is presented as well on one side of the blank as on the other. When a large pen is to be made, the ordinary thickness of the blank is sufficient to allow for such a notch as has been described; but when a small pen is to be made and the blank is quite thin a rib,  $b$ , is raised along the middle of the strip A, and as the tips of the blanks are cut from this rib the tip can easily be made thick enough to permit the notch  $a$  to be cut in it, however thin the remainder of the blank may be, and the appearance of the blank in this case will be as represented in Fig. 8.

80 Instead of making the sides of the notch  $a$  of equal length, one of them,  $c$ , may be shorter than the other, as shown in Fig. 7<sup>a</sup>, the shorter side being the one that is designed to lap the joint at the rear of the iridium in the manner above explained. The side  $c$  may, in fact, be quite short and still contain sufficient stock to effect a proper joint with the iridium. After the iridium has been secured to the tip the blank, with the exception of the point, is rolled thinner and assumes a somewhat irregular shape, similar to that represented in Fig. 9. Heretofore blanks have been rolled in the direction of their length; but I roll them in a direction at right angles to their length, and this method of rolling is a decided improvement over the old, since on bending the blanks into the concavo-convex form of a completed pen the material is practically in no danger of cracking along the edges, which it is very apt to do, and often does, in cases where the blanks are rolled lengthwise. Moreover, instead of planishing the nib of the blank in the ordinary manner and as has long been the practice, I

submit it to the action of a machine whose construction and operation are fully described in an application filed on the same date as this, by which machine the nib is rolled crosswise, and thus compressed, being rendered particularly dense either close to the point or at any given distance away from the point, by which operation the nib is stiffened and tempered with far greater facility than and with equally as satisfactory a result as by the laborious and expensive operation of planishing. The blank is then reduced to substantially its final proportions, and the remainder of the process of splitting the nib, bending the blank into the form of the completed pen, and grinding and polishing is performed in the ordinary manner.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In the manufacture of gold pens, forming the joint where the rear part of the iridium meets the blank by providing the blank on the side which becomes the under side of the pen with a projection extending forward over

the end of the iridium and sweating or soldering said projection to the iridium, substantially as and for the purpose described.

2. In the manufacture of gold pens, uniting the iridium to the tip of the blank by forming in the blank the notch *a*, in which is placed the iridium, said notch having the horizontal side *d*, and the side *c* projecting forward and upward over the end of the iridium, and sweating or soldering the sides of the notch to the iridium, substantially in the manner and for the purpose described.

3. In the manufacture of gold pens, reducing the blank to the proper thickness for a pen by rolling it in a direction at right angles to its length, substantially as and for the purpose described.

4. In the manufacture of gold pens, tempering the nib by rolling it crosswise, substantially as described.

EDWIN WILEY.

In presence of—

D. A. CARPENTER,  
GEO. M. FIELD.