(Model.)

W. H. GOLDING.

COMPOSING STICK.

No. 294,378. Patented Mar. 4, 1884.

Fig. 1

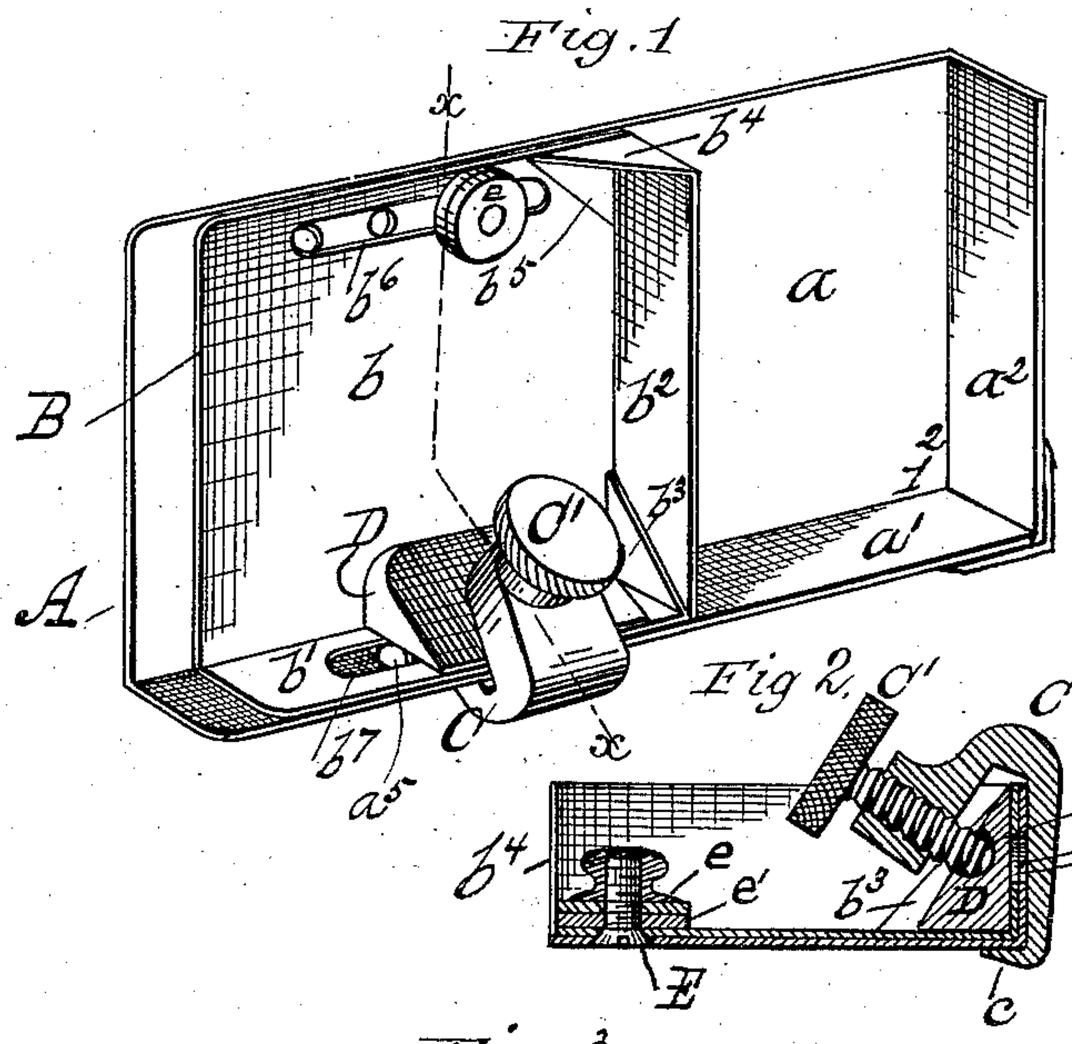


Fig. 2.

Fig. 3.

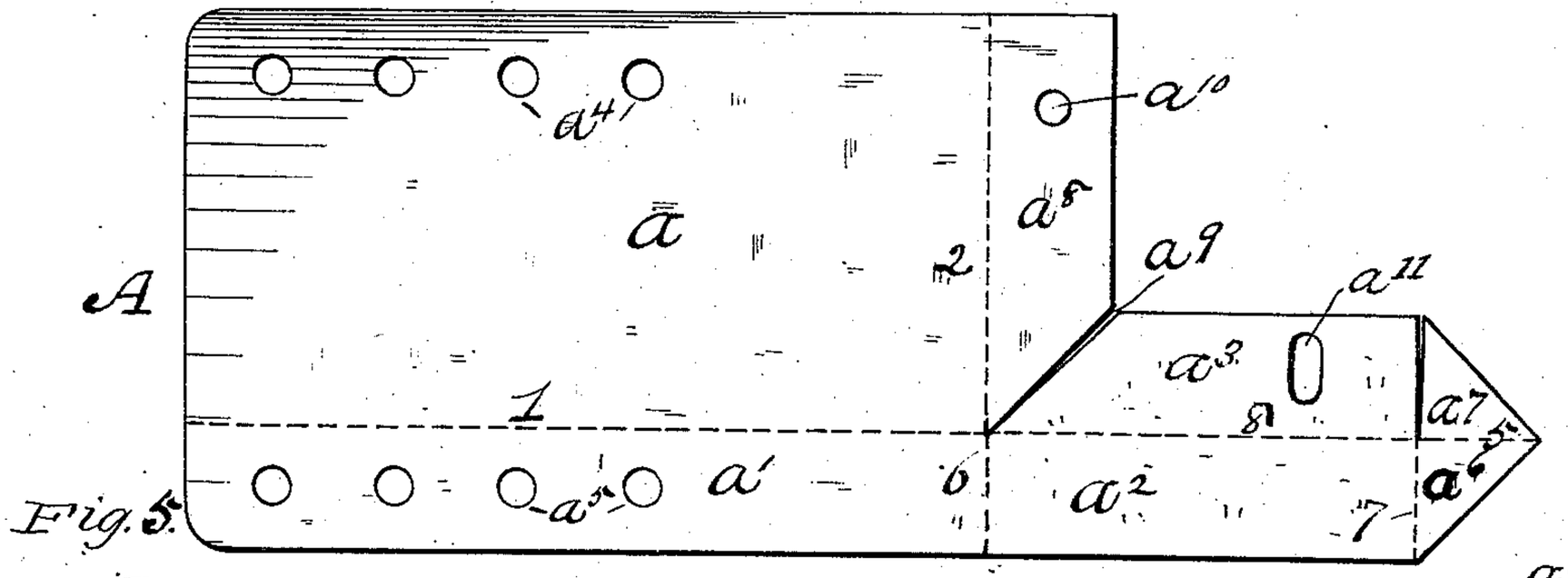
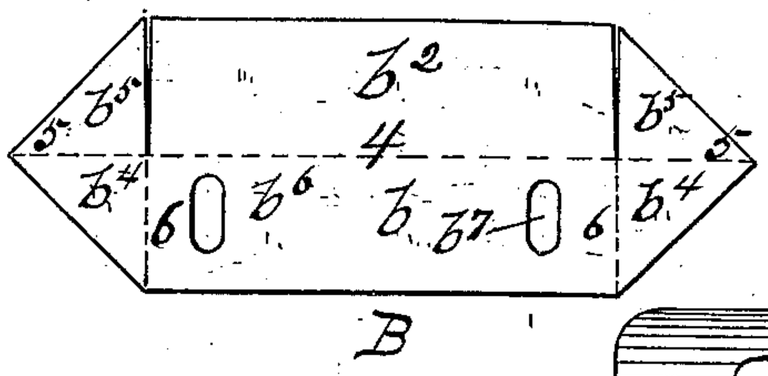
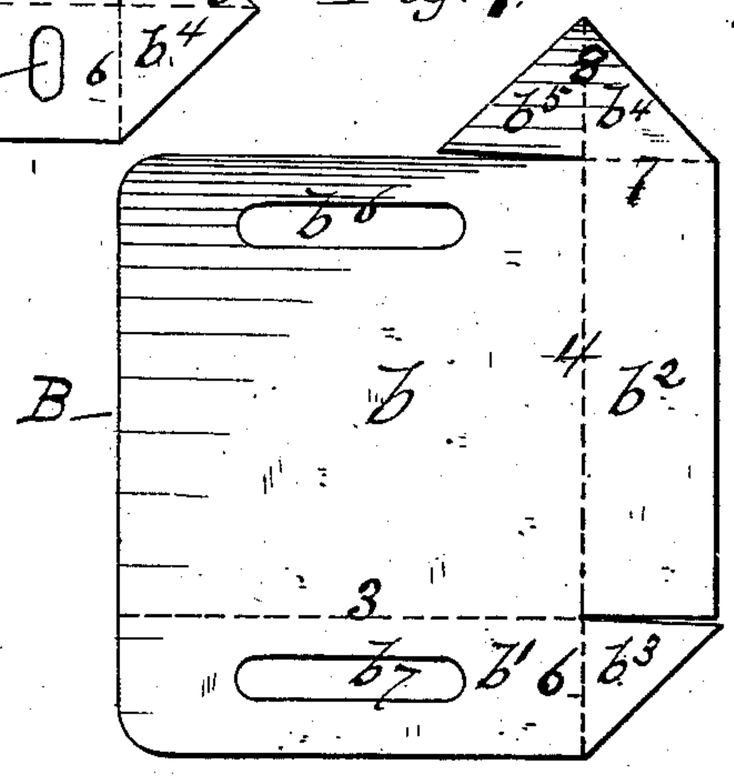


Fig. 5.



B

Fig. 4.



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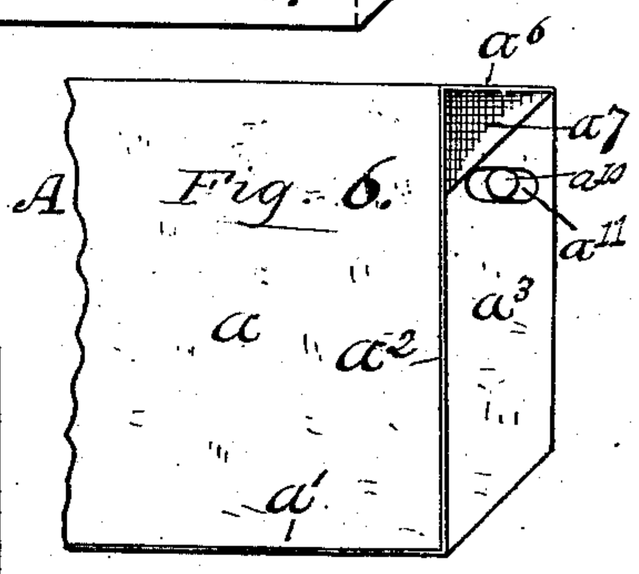

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UNITED STATES PATENT OFFICE.

WILLIAM H. GOLDING, OF CHELSEA, MASSACHUSETTS.

COMPOSING-STICK.

SPECIFICATION forming part of Letters Patent No. 294,378, dated March 4, 1884.

Application filed February 24, 1883. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM H. GOLDING, a citizen of the United States, residing at Chelsea, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Composing-Sticks, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a perspective of a composing-stick provided with a part of my improvements. Fig. 2 is transverse section on the line *x x*, Fig. 1. Fig. 3 is a plan of the blank from which the stick proper is formed; Fig. 4, a plan of the blank from which the knee or sliding gage is made; Fig. 5, a plan of a modified blank for the same purpose; and Fig. 6, a plan of the end portion of the blank, Fig. 3, folded.

Like letters refer to like parts in all the figures.

A represents the body of the stick, B the knee, and C the clamp.

The preferred form of blank from which the body of the stick is made involves a principle of construction wherein re-enforcing and strengthening means are formed integral with the portions forming the bottom and walls of the stick, as illustrated at Fig. 3. In this form of blank the end a^2 is integral with the back a', being a continuation thereof, instead of a continuation of the bottom a, as shown in Fig. 1. Margins a^3 and a^8 are formed on the end and bottom, respectively, and are separated by a diagonal slit, a^9. Re-enforcing flaps a^6 a^7 are formed at the end of the end wall, a^2, and margin a^3, the flap a^7 being separated from the margin a^3. Holes a^4 in the bottom a, a^5 in the back a', and a hole or holes, a^{10}, in the margin a^8, and a slot or slots, a^{11}, in the margin a^3 are formed, for purposes hereinafter described. By folding the back a' in one direction on the line 1, the margin a^3 in the opposite direction on the line 8, the end a^2 on the line 6, the re-enforcing-flap a^6 on the line 7, and the flap a^7 on the line 5, as said lines appear in Fig. 3, the end and back are brought to a right angle to the bottom, and the margin a^3 upon and parallel with the margin a^8, and the re-enforcing and strengthening flaps a^6 a^7 are disposed as clearly shown in Fig. 7, the slot a^{11} and hole a^{10} registering in such manner as to permit of the adjustment of the end to the line 2, Fig. 3, whereby a square, stiff, firm end wall to the stick is produced, by securing the parts together by a rivet inserted through the hole and slot and upset therein; or said hole and slot may be omitted and the parts may be secured together by any other suitable means—for instance, by brazing or soldering or welding the same together.

The sliding gage or knee B is also formed of or from one piece of sheet-steel or other suitable metal, cut to the form of the blank shown in Fig. 4, which blank comprises a bottom, b, back b', and end b^2. In this instance a strengthening-flap, b^3, is formed in continuation of the back b', and another, b^4, in continuation of the end b^2, and a third, b^5, in continuation of the flap b^4, the flaps b^3 and b^5 being separated from the end and bottom, respectively, by slits or cuts. Slots b^6 b^7 are formed in the bottom and back, as shown, so that when completed and placed in the stick the said slots shall register with the holes a^4 and a^5 in the bottom and back thereof. By bending the back b' on the line 3, the end b^2 on the line 4, the flap b^3 on the line 6, the flap b^4 on the line 7, and the flap b^5 on the line 8, as these lines appear in Fig. 4, a stiff re-enforced knee is formed of a single piece of material, the several parts of which appear as shown in Fig. 1.

If desired, the bottom b of the knee need not be as long as shown in Fig. 4, but as in Fig. 5, which illustrates it of such length as to be capable of use also as an end wall to the stick, in place of that shown in Figs. 3 and 6, in which case an additional hole or holes, a^{10}, would be made in the margin a^8, as above indicated as permissible, to register with the slots b^6 and b^7. The lines of bending, as shown in Fig. 5, are 4, 5, and 6.

C represents a clamp, the hook c of which is adapted to catch under the bottom of the stick, or it may be in a longitudinal slot in the back a'. The thumb-screw C′, seated in the upper end of the clamp, bears against a self-adjusting corner-block, D, in which is formed a slight depression, d, to receive the end of the screw. The block D has two adjacent sides arranged at a right angle to each other, which are by the clamp set firmly against the bottom and back of the knee, and while holding it at desired positions rigidly in the stick, it

tends to maintain the backs and bottoms at right angles to each other, thus securing in sheet-metal sticks the essential squareness and firmness which are secured usually by making the sticks of cast metal, in whole or in part. If the thumb-screw C′ were connected to the corner-block D in any manner other than pivotally, the inclination of said screw would determine the relative position to the back and bottom of the stick which the block would assume when pressed against them; but when the bearing is pivotal, as shown, the block enters as a wedge to bring to a true position (for instance, when the back and bottom have been sprung toward each other, so as to form less than a right angle) the sides against which it is forced by the screw. Again, being pivotally connected with the screw, the angle being square at the back and bottom of the stick, the block is by these brought into proper position. In view of the above, the block is designated as "self-adjusting."

E represents a set-screw, the head of which is seated in the holes a^4, which are countersunk in order that the head may lie flush with the outer or bottom surface of the stick, whereby impressions may be taken from types in the stick. A thumb-nut, e, and washer e' are provided, whereby the outer end of the gage or knee may be firmly secured against springing. The knee is further strengthened in this respect by the flaps b^4 b^5. A knee as thus constructed of sheet metal possesses all necessary rigidity secured usually by making it of heavy, solid, thicker cast or wrought metal.

It is apparent that a second screw and nut, E e, may be used in the place of the clamping device C C′ D, and that the gage or knee herein shown and described can, without material change, be used in connection with ordinary and other than the herein shown and described stick, and that the said stick may be used with any other suitable knee; and so, also, with regard to the self-adjusting corner-block, in that it may be used with other knees and sticks; and by the re-enforcing means I secure such rigidity in the knee that the set-screw E and its accompanying details of construction may, if desired, be omitted; and I therefore do not limit myself to the exact construction or complete combination and arrangement of the parts, as shown, but should deem the employment of the modified constructions and of the separate complete elements as comprehended by my invention. Furthermore, it is evident that in the matter of re-enforcing flaps one or more of the same may be omitted in case a heavy or thick sheet metal is used in the knee or stick. For instance, as an example, the flap b^5 may be dispensed with in such case. If desired, the margin a^8 may be removed and margin a^3 secured to the under surface of the bottom a, and re-enforcing flap a^6 against the end a^2, and the flap a^7 to the under surface of margin a^3, whereby no margins will project beyond the bottom and outside of the end wall.

Having described my invention, what I claim is—

1. A gage or knee for a composing-stick, formed of a single piece of sheet metal and having integral re-enforcing flaps at its ends, constructed as and for the purpose of triangular braces to the wall of the knee, substantially as specified.

2. A gage or knee for a composing-stick, formed of a single piece of sheet metal and having a triangular bracing re-enforcing flap at its outer end, substantially as specified.

3. A gage or knee formed of a single piece of sheet metal, and having a re-enforcing flap integral with its back and secured to its end, and a re-enforcing flap integral with its end and secured to its bottom, substantially as specified.

4. The combination of a stick, a knee, and a self-adjusting corner-block with suitable clamping mechanism, sustantially as specified.

5. The combination of a knee provided with slots in its bottom, a stick provided with holes in the bottom thereof, registering with said slots, and suitable clamping mechanism terminating flush with the outer surface of the bottom, substantially as specified.

6. A blank for a sheet-metal composing-stick, comprising a bottom, a back, and an end-forming portion, the latter portion having an integral triangular re-enforcing flap, substantially as specified.

7. The blank for a composing-stick, consisting of the back portion, a', and margin a^8, integral with the bottom portion, a, an end-forming portion, a^2, integral with the back-forming portion, and provided with an integral re-enforcing flap, a^6, and with a margin, a^3, and flap a^7, separated from each other and from the margin a^8, substantially as shown and described.

8. The blank for a knee, consisting of the bottom b, back b', end b^2, and re-enforcing flaps b^3 b^4 b^5, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. GOLDING.

Witnesses:
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