

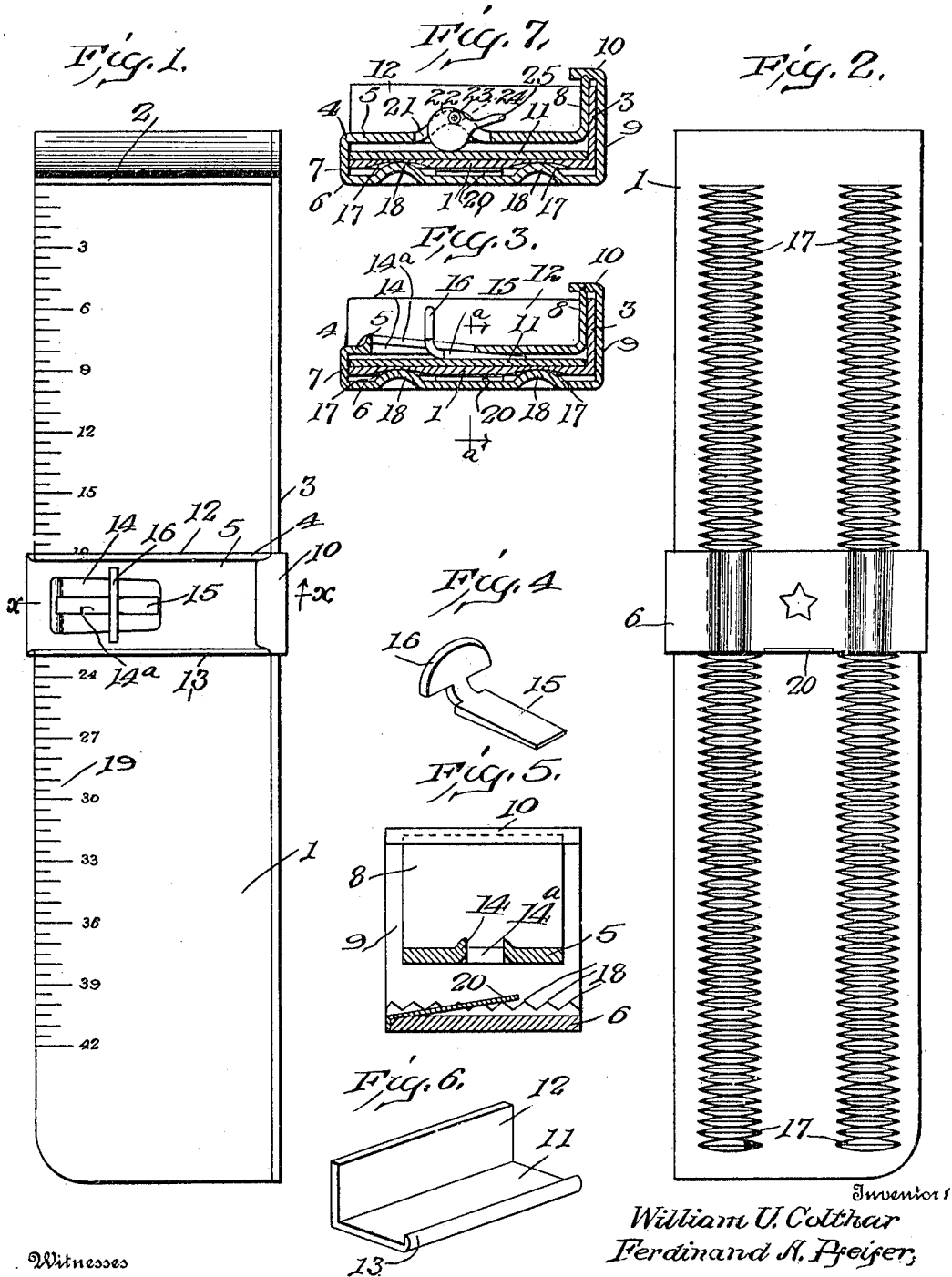
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COMPOSING STICK.

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950,660.

Patented Mar. 1, 1910.



Witnesses

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UNITED STATES PATENT OFFICE.

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ORS, BY MESNE ASSIGNMENTS, TO THE STAR TOOL MANUFACTURING COMPANY,
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COMPOSING-STICK.

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Specification of Letters Patent.

Patented Mar. 1, 1910.

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To all whom it may concern:

Be it known that we, WILLIAM U. COLTHAR and FERDINAND A. PFEIFER, citizens of the United States, residing at Springfield, in the county of Clark and State of Ohio, 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.

This invention relates to composing sticks, and is in the nature of an improvement upon the constructions shown and described in the patents granted to Reuben D. Tittle October 11, 1904 and October 31, 1905 and numbered 772,116 and 803,081, respectively. In each of these patents the means for locking the slide to the stick comprises a set screw or thumb-nut, which, in one instance, is mounted in the slide beneath the stick, and, in the other, is above the stick, but is necessarily arranged close to the working face of the slide. In either case the arrangement is such as to render the operation of the locking means more or less difficult and inconvenient.

The object of the present invention is to provide a locking device for securing the slide in its adjusted position upon the body portion of the stick which will be of such a construction and will be so arranged that it can be readily and conveniently operated to so secure the slide; and which will be so arranged as to cause equal pressure to be exerted upon the engaging surfaces of the slide and body portion of the stick at all points of engagement.

With this object in view our invention consists in certain novel features of construction and in certain parts and combinations hereinafter to be described, and then more particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view of a composing stick embodying our invention; Fig. 2 is a bottom plan view of the same; Fig. 3 is a transverse, sectional view thereof, taken on the line *x x* of Fig. 1; Fig. 4 is a detail view of the locking member; Fig. 5 is an enlarged sectional view of the slide, taken on the line *a a* of Fig. 3 and looking in the direction of the arrows; Fig. 6 is a detail view of the clamping plate; and Fig. 7 is a transverse sectional

view similar to Fig. 3, showing a modified form of operating device.

In carrying out our invention in its preferred form, as illustrated in the accompanying drawings, we have shown the body portion of the stick at 1, which is in the usual form of a flat plate provided at one end with a fixed end wall 2 and having the fixed back wall 3 extending along one of its longitudinal edges.

The knee or slide, which is slidably mounted upon the stick, is indicated as a whole by the reference numeral 4. This slide preferably comprises a body portion consisting of top and bottom plates or walls 5 and 6, arranged above and below the body portion of the stick and connected at one end by means of an end plate 7, this plate being of such a width as to space the top and bottom plates apart a distance considerably greater than the thickness of the body portion 1 of the stick. At their opposite ends the top and bottom plates 5 and 6 are provided with vertically arranged portions 8 and 9 which extend upwardly on the opposite sides of the back wall 3 to a point above the upper edge of that wall where they are connected one to the other by means of a plate or member 10. We have, in the present instance, shown the body portion of the slide as formed from a single strip of metal bent into the desired shape and having its ends connected one to the other above the upper edge of the side wall 3 of the stick. Thus, it will be seen that the slide is provided with an L-shaped slot adapted to receive the body portion of the stick and to permit the slide to move freely longitudinally of that stick.

Mounted within the body portion of the slide 4 is a clamping plate 11 located between the top wall 5 and the body portion of the stick 1 and of a length substantially equal to the width of said body portion. This clamping plate is provided on its forward edge, *i. e.*, the edge adjacent to the end wall 2 of the stick, with a working or defining face 12 which is to be maintained parallel with the adjacent face of the end wall 2 and at right angles to the inner face of the back wall 3. The opposite edge of the clamping plate 11 is provided with an upwardly extending projection or flange 13

of a height sufficient to engage the adjacent edge of the top wall 5 in all positions of the clamping plate 11. This flange 13 is spaced from the working face 12 such a distance as to form a channel of a width substantially equal to the width of the top plate 5, thus causing the working face 12 and the flange 13 to engage the opposite edges of the top plate in such a manner as to effectually prevent all lateral movement of the clamping plate relatively to the body portion of the slide.

Suitable means are provided for moving the top plate 5 and the clamping plate 11 away one from the other, thus causing the bottom plate 6 of the slide to engage the lower surface of the body portion 1 of the stick. This means preferably comprises a movable part or member inserted between the clamping plate and a part carried by the top plate of the slide, one or both of the members, *i. e.*, the movable member and the part carried by the top plate, having an inclined or cam surface, whereby the movement of the movable member relatively to the part carried by the top plate will cause the top plate to be moved away from the clamping plate, which is normally in engagement with the upper surface of the body portion of the stick. The preferred manner of accomplishing this result consists in providing the top plate with a groove or guideway 14 having an inclined upper wall and provided with a longitudinal slot 14^a in said inclined wall. An inclined member or wedge 15 is inserted between the top plate and the clamping plate and is provided with a thumb piece 16 which extends through the slot 14^a in such a manner as to enable the wedge to be moved by the operator. This wedge is of such a size and shape as to fit within the inclined guideway 14, and, when the same has been moved toward that end of the guideway having the greatest depth, the wedge or inclined member will lie within the guideway and the slide will be free to move longitudinally of the stick. When the wedge is moved toward the opposite end of the guideway, the inclined surface of the wedge engages the inclined surface of the guideway and thus moves the top plate of the slide away from the guide plate 11, and, consequently, brings the bottom plate of the slide into engagement with the lower surface of the body portion of the stick, thus clamping the slide firmly against the stick. A wedge or other clamping member is preferably arranged substantially midway between the opposite sides of the body portion of the stick, thus causing equal pressure to be exerted upon both sides thereof and causing the slide to be firmly clamped to the stick at both sides thereof, thereby preventing the slide from twisting or turning on the stick. While the frictional contact between the

bottom plate of the slide and the body portion of the stick is in itself sufficient to secure the slide in its adjusted position we prefer, both for the purpose of securing a positive locking means and for the purpose of enabling the slide to be more readily adjusted and locked at the desired point, to provide the stick and the slide with co-operating locking devices. To this end we have provided the lower surface of the stick with two parallel series of locking recesses 17. These are preferably curved longitudinally and have their side walls converging toward the bottom of the recess. The bottom plate 6 of the slide is provided at its opposite ends with locking projections or teeth 18 adapted to coöperate with the locking recesses in the stick. These projections are preferably formed by providing the bottom plate of the slide with two upwardly extending ribs arranged parallel with the two series of locking recesses 17 and providing these ribs with teeth which register with the locking recesses 17 and have their opposite side walls converging outwardly in such a manner that they fit snugly within the recesses 17. These ribs, and, consequently, the teeth formed therein, are also curved longitudinally of the teeth, but the curvature of the teeth has a shorter radius than the curvature of the recesses. The locking recesses 17 in the lower surface of the body portion of the plate are arranged in a certain fixed relation to a scale 19 on the upper surface of said body portion, whereby, when the slide has been moved to its approximate position, the movement of the teeth on the slide into engagement with the recesses in the stick will cause that slide to assume a predetermined position relatively to the scale, the inclined side walls of the recesses and the teeth serving to move the slide into the exact position desired. In order that the teeth of the slide may be instantly released from the locking recesses, we have provided a flat spring 20 which is secured to the bottom plate 6 and extends between the same and the lower surface of the stick and tends to move said bottom plate away from the stick so that, as soon as the fastening means has been released, the teeth of the slide will be automatically moved out of engagement with the recesses in the stick, thus rendering the slide capable of longitudinal movement on said stick.

Thus, it will be seen that we have provided a device of this character in which the body portion of the stick forms a guide plate on which is mounted a slide or movable member and which has a locking part inserted between the part carried by the movable member and the stick, one of said members having an inclined surface, whereby the movement of the locking part relatively to the movable member will clamp the same to

the stick. It will also be apparent that this fastening device is of such a construction and is so arranged relatively to the slide and the working face thereof that it can be readily operated and is so arranged relatively to the stick and to the slide that when in its locking position an equal pressure will be exerted upon each point of contact between the bottom wall of the slide and the stick, thus locking the slide securely in position and preventing all tendency of the same to twist or turn. It will further be apparent that we have provided a device of this character which is extremely simple in its construction and is of a strong durable nature, the operating parts of which are not liable to become disarranged or to be rendered inoperative.

While we have shown the operating device as comprising a sliding inclined member or cam, it may sometimes be desirable to employ a rotary member having an inclined or cam surface, and, in Fig. 7 of the drawings, we have illustrated one form of rotary member for operating the device. In this form of the device the top plate 5 is provided in its upper surface with a slot 21, within which is mounted a rotary disk 22 having an inclined or cam surface lying in part between the top plate 5 and the clamping plate 11. This disk is eccentrically mounted upon a shaft 23 which is mounted in bearings 24 on the opposite sides of the slot 21 and is provided with a handle or operating member 25, by means of which the disk is rotated to move the same into and out of engagement with the clamping plate 11.

We have shown and described our invention as embodying one form of locking device comprising a sliding member and one form comprising a rotary member, each of said members having inclined surfaces, but it will be apparent that both of these forms of device are susceptible to a wide modification and the arrangement and operation of the same may be widely varied without departing from the spirit of the invention, and we, therefore, wish it to be understood that we do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. In a composing stick, a stick proper having locking recesses in lengthwise series, a slide fitting over said stick and having corresponding locking projections on its lower portion and having also a top portion extending across the stick, a part of which

is horizontal and a part inclined, and a slidable wedge fitted between said top portion and the slide and the stick, the wedge being adapted to clamp the parts together when forced under the horizontal part and to unclamp them when adjusted toward the inclined part.

2. In a composing stick, the combination, with a body portion, and a slide mounted thereon, of a clamping plate arranged between said slide and said body portion, an upwardly extending portion carried by one edge of said clamping plate and forming a working face for said slide, a flange carried by the opposite edge of said clamping plate, said upwardly extending member and said flange being adapted to engage the opposite edges of the adjacent portion of said slide, and a locking member extending between said slide and said clamping plate.

3. In a composing stick, the combination, with a body portion having two parallel series of locking recesses in the lower surface thereof, of a slide mounted on said body portion and comprising top and bottom walls extending above and below said body portion, respectively, two series of locking teeth carried by the bottom wall of said slide adapted to coöperate with said recesses, a clamping plate mounted between the upper wall of said slide and said body portion, an inclined locking member extending between the top wall of said slide and said clamping plate and arranged substantially midway between the rows of locking recesses, and a spring mounted between said bottom wall and said body portion and arranged between the two series of locking teeth.

4. In a composing stick, the combination, with a body portion, a slide comprising substantially parallel top and bottom walls extending above and below said body portion, respectively, said top wall having an elongated recess in the inner face thereof forming a guideway, the top wall of said recess having a slot extending longitudinally thereto, and a clamping plate arranged between the top wall of said slide and said body portion, of a wedge-shaped member slidably mounted in said guideway and between said top wall and said body portion, and a thumb piece rigidly secured to said wedge-shaped member and extending through said slot.

In testimony whereof, we affix our signatures in presence of two witnesses.

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