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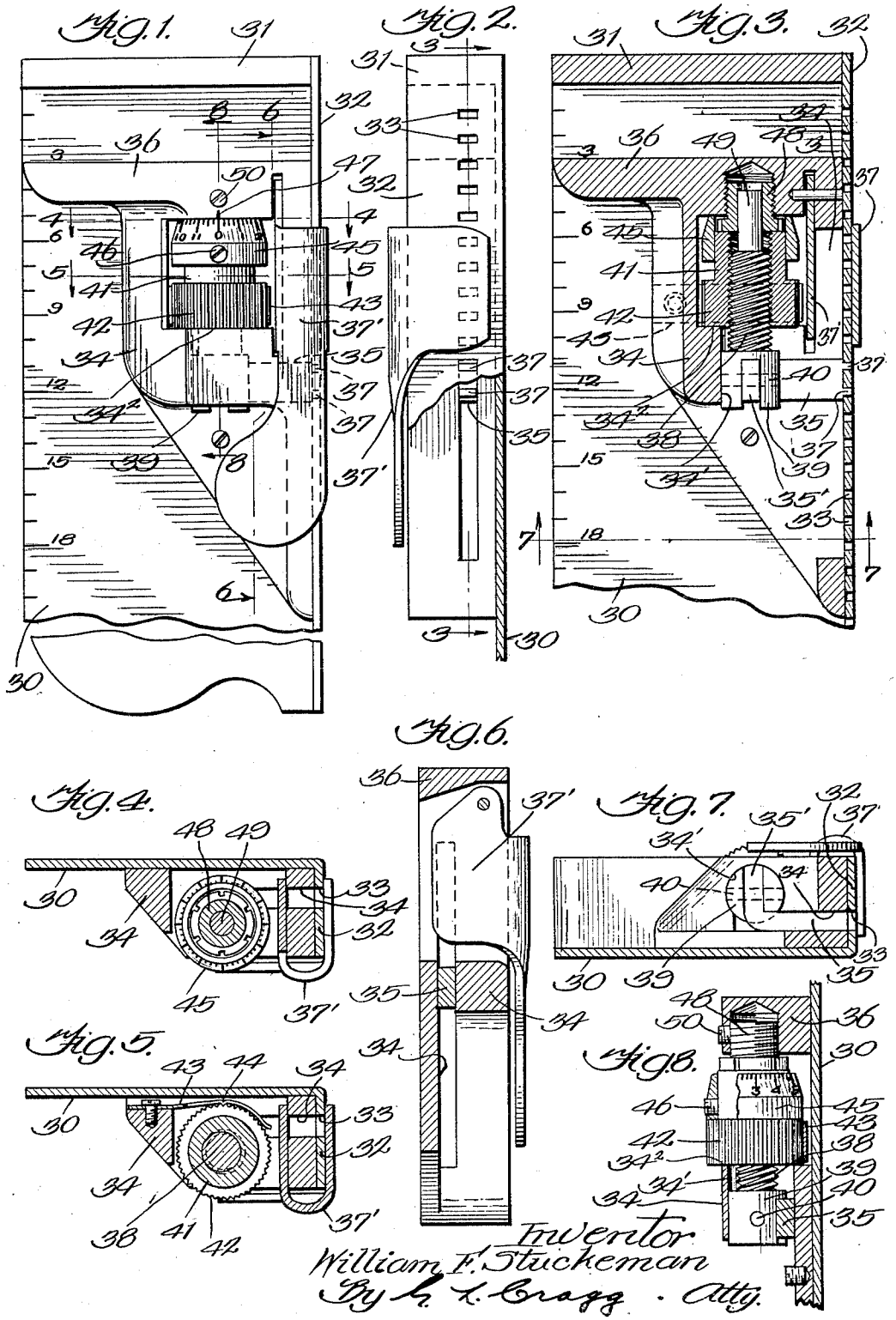

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PRINTER'S COMPOSING STICK

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My invention relates to printers' composing sticks and resides in the provision of means whereby the knee of such a stick may be given a rapid or coarse initial adjustment and a subsequent and finer adjustment.

The initial adjustment is desirably accomplished by means which limits the knee to predetermined positions whose spacing is measured in picas, the stick of my invention being thus capable of being used similarly to composing sticks of the prior art. After being given such an adjustment, the knee may further be moved a portion of a pica, the construction being preferably such that the subsequent adjusting movements are limited to predetermined fractions of a pica. Both adjustments together may thus serve to locate the transverse branch of the knee a number of picas and a selected pica fraction from the cooperating end of the stick.

I form the knee of the stick in two sections, one of these sections and the body portion of the stick having cooperating formations enabling this section to be held in direct engagement with and in different predetermined positions along the body of the stick, the other of said sections being adjustable along the stick with reference to the first, there being means for holding said knee sections together when they have been placed in their selected relative positions. One knee branch section has direct engagement with the body of the stick and one knee branch, preferably the same knee branch, is inclusive of a threaded shaft member, preferably a shaft that is parallel with and extends along said stick body, this shaft being non-rotatable and in fixed relation with the stick body in each selected position of the knee section having the shaft. A nut is screwed upon the shaft and is so assembled with the knee as to normally have a plane of rotation which is fixed with respect to the other knee branch section. This construction enables the finer adjustment of the knee that follows the coarser adjustment thereof that is afforded by the selected position of the threaded shaft with reference to the stick body.

The invention has other characteristics and will be more fully explained in connection with the accompanying drawing in which Fig. 1 is a plan view of a composing stick constructed in accordance with the preferred embodiment of the invention, parts being broken away; Fig. 2 is a side view of a part of the structure shown in Fig. 1; Fig. 3 is a sectional view on line 3—3 of Fig. 2; Fig. 4 is a sectional view on line 4—4 of Fig. 1; Fig. 5 is a sectional view on line 5—5 of Fig. 1; Fig. 6 is a sectional view on line 6—6 of Fig. 1; Fig. 7 is a sectional view on line 7—7 of Fig. 3; and Fig. 8 is a sectional view on line 8—8 of Fig. 1.

The composing stick illustrated has many features in common with composing sticks of the prior art. The body portion of the stick of which a part 30 is illustrated is constructed, as usual, to constitute a type receiving tray having an end wall 31 and a side wall 32. Said side wall has a number of rectangular perforations 33 formed therethrough and distributed along the length of the stick, adjacent perforations being a pica apart at their centers.

The longitudinal branch of the knee is formed in two sections 34, 35 which are relatively movable longitudinally of the stick and which are held in predetermined relation, as will be more fully hereinafter set forth. The transverse knee branch 36 is integrally cast with the knee branch section 34. The knee branch section 35 is formed with teeth 37, adjacent teeth being spaced a pica at their centers, these teeth being received in selected perforations 33 whereby the position of the knee as a whole along the stick may be selected. Any position thus selected for the knee as a whole is maintained by the usual clip 37′ pivoted upon the knee part 34, 36 between the sides of which clip the stick side wall 32 and parts of the sections 34 and 36 are gripped when said clip is depressed to hold the knee portion 35 in fixed relation to the body portion 30.

The knee branch section 35 is inclusive of a threaded member which is preferably a male member in the form of a shaft 38 whose head 39 is cylindrical and is diametrically slotted to receive the up turned end 35′ of the portion carrying the teeth 37, a pin 40

passing through said head serving to prevent rotation of the shaft on its axis and making the shaft and the portion carrying the teeth 37 a rigid unitary structure. The knee branch section 34 is formed with a cylindrically curved recess 34′, Figs. 3, 7 and 8, in which the shaft head 39 is snugly received and along which said shaft head, together with the balance of the shaft may be caused to slide. A threaded member complemental to the threaded member 38 is carried by the knee branch 36 and the knee branch section 34. As the male threaded member 38 is preferably carried by and forms a part of knee branch section 35 the threaded member 41 is a female member in the form of a nut. This nut is formed with a knurled enlargement 42 which may be engaged by the hand to turn the nut. This nut is confined to a plane of rotation which is fixed with respect to the knee branch section 34 so that when it is turned movement of this knee branch section 34, together with the knee branch 36, is forced, this result being effected in accomplishing the finer adjustment of the type engaging knee branch 36 along the body of the stick. A leaf spring 43 is anchored at one end to the knee branch 34 and underlies the knurled end 42 of the nut 41. This leaf spring presses upon the end nut 42 to hold it in the positions to which it is turned. Such spring is preferably formed with a sharp ridge 44 which may be received between the ridges that form the knurling of the nut portion 42 to positively hold the nut from turning. There are preferably four intermeshing threads upon the shaft and a corresponding number upon the nut, obviously each thread having six turns to the inch. The knurling upon the nut portion 42 is desirably provided by forty-eight teeth. It requires one complete turn of the nut to move the knee branch 36 one pica along the stick body. By turning the nut one tooth space the knee branch 36 is moved 1/48th of a pica along the stick body. I provide an indexing means for indicating the extent to which the nut is turned and also to indicate the corresponding movement of the knee branch 36 along the stick body. This indexing means is preferably in the form of a collar 45 which is slipped upon the smaller end of the nut 41 and is held in fixed engagement therewith by means of a set screw 46. An index mark 47 upon the knee branch cooperates with the forty-eight marks upon the collar 45 to indicate the extent of movements of the nut 41 and the knee branch 36. There are twelve longer indexing marks upon the collar 45 that are spaced apart equal distances, the spaces between each two adjacent long marks being again divided into four equal minor spaces. There are thus twelve major divisions upon the indexing collar 45 and forty-eight minor divisions. When the collar is turned by the nut a major division the knee branch 36 will have been moved 1/12th of a pica. Each time the collar is turned a minor division the knee branch 36 is moved 1/48th of a pica. Thus the minor divisions upon the indexing collar are equal in number to and correspond with the knurling teeth upon the end portion 42. A flanged abutment forming bushing 48 is screwed into the knee branch 36. The shaft 38 is formed with a reduced unthreaded or smooth end 49, opposite the end 39, that is snugly and slidingly received in the bore of the bushing, whereby the shaft is maintained in parallelism with the stick side 32. In the process of assembly said bushing is turned until the outer end face of the larger portion 42 of the nut is in snug sliding engagement with the nut positioning shoulder 34^2 upon the knee branch section 34 whereby the nut is confined to a plane of rotation that is fixed with respect to this knee branch section and to the knee branch 36. After the bushing has been thus adjusted it is secured in place by means of a set screw 50. The end face of the indexing collar 45 that is next to the knee branch 36 preferably does not have close sliding engagement with this knee branch, reliance preferably being placed altogether upon the bushing to hold the nut end 42 in engagement with the shoulder 34^2 to confine the nut to its plane of rotation.

It is to be observed that the clip 37′ has a part interposed between the outer portion of the knee branch section 34 and the shaft 38 whereby pressure is applied close to the knee branch 36 that serves to hold this knee branch normal to the stick side or wall 32.

Changes may be made without departing from the invention.

Having thus described my invention, I claim:

1. A printer's composing stick including the type receiving body portion thereof; a knee having a branch extending transversely of the stick and a branch extending along the stick, the branch that extends along the stick being formed in two sections, one of these sections and said stick body portion having cooperating formations enabling this section to be held in different fixed positions along the stick, the other of said sections being adjustable along the stick, with reference to the first; intermeshing threaded members one in fixed connection with one of the aforesaid knee branch sections and the other assembled with the other knee branch section and rotatably mounted to turn in a substantially fixed plane with respect thereto, said members being arranged to effect movement of the transversely arranged knee branch longitudinally of the stick body upon rotation of the member that is mounted to turn, wherein the member that is in fixed connection with one of the knee branch sections is in the form of a threaded shaft and the other

member is in the form of a nut threaded upon said shaft; an indexing collar assembled with and fixed with respect to said nut and having indices thereon that are complemental to an index that is fixed with respect to the transverse knee branch section; and an abutment assembled with the knee branch section with respect to which the plane of rotation is fixed, this abutment being adjustable longitudinally of the stick and engaged by the nut, said abutment being in sliding guiding engagement with said shaft.

2. A printer's composing stick including the type receiving body portion thereof; a knee having a branch extending transversely of the stick and a branch extending along the stick, the branch that extends along the stick being formed in two sections, one of these sections and said stick body portion having cooperating formations enabling this section to be held in different fixed positions along the stick, the other of said sections being adjustable along the stick with reference to the first; intermeshing threaded members one in fixed connection with one of the aforesaid knee branch sections and the other assembled with the other knee branch section and rotatably mounted to turn in a substantially fixed plane with respect thereto, said members being arranged to effect movement of the transversely arranged knee branch longitudinally of the stick body upon rotation of the member that is mounted to turn, wherein the member that is in fixed connection with one of the knee branch sections is in the form of a threaded shaft that has sliding engagement with the other knee branch section and the other member is in the form of a nut threaded upon said shaft; an indexing collar assembled with and fixed with respect to said nut and having indices thereon that are complemental to an index that is fixed with respect to the transverse knee branch section; and an abutment assembled with the knee branch section with respect to which the plane of rotation is fixed, this abutment being adjustable longitudinally of the stick and engaged by the nut, said abutment being in sliding guiding engagement with said shaft.

In witness whereof, I hereunto subscribe my name.

WILLIAM F. STUCKEMAN.