May 3, 1960 D. L. DAGGITT 2,934,983

MOVABLE-TYPE LINE STOP CLINCHING TOOL

Filed Sept. 4, 1957

FIG. 1

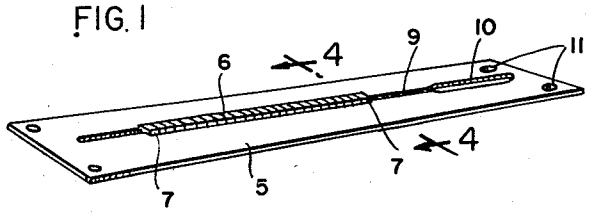


FIG. 2

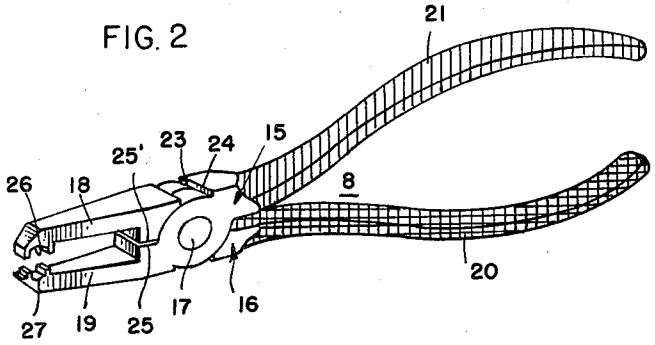


FIG. 3

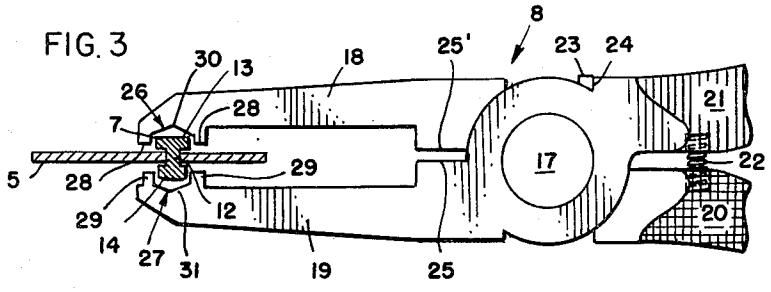
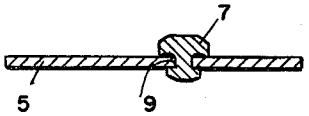


FIG. 4



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MOVABLE-TYPE LINE STOP CLINCHING TOOL

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1 Claim. (Cl. 81—15)

This invention relates to a line-of-type retaining means and a plier-like tool for upsetting blank type or quadrats to clinch them in slotted mounting plates for the purpose of retaining movable type elements in desired printing position in the plates.

For the printing of individual names and addresses on various kinds of business forms there is in common use a type mounting or holding plate longitudinally slotted to receive and retain a line, or lines, of type forming a name and, more often than not, a street address and a city and state. The type elements are preformed, in vertical transverse cross-section, very much like a conventional capital T with a short transverse base part and a longer transverse top part which forms between them a narrow waist at approximately the middle of the type element. Thus, the type elements are hand set, one at a time, into an enlarged portion of the type-plate slot and shifted into the narrow and major portion of the slot to be retained thereby, the plate margins defining the slot engaging the type elements at their narrow waist. Here the type elements are located in juxtaposed relationship to form the name and, generally, a street address and a city and state. The groups of type elements, constituting the several words in a line, are spaced apart by quadrats or quads of various widths and some form of means has to be provided for holding the type elements in their proper juxtaposed relationship on the printing plate to permit the use of the plate for printing.

The main objects of this invention are to provide an improved manner of using a quadrat or quad at each end of a line of type in the plate slot to secure the line of type in proper printing position; to provide an improved form of tool for clamping a type quad to the margins of the type holder plate which form the type slot to clinch it in place so as to retain the line of printing type against shifting in the slot; to provide an improved plier-like tool having specially-formed opposed jaw-like dies for contacting the opposite faces of a type quad and so deforming the quad as to clinch it in fixed position on the plate; to provide a tool of this kind having improved means for restricting the closing movement of the dies and operating handles so as to limit the amount of pressure applied to the quad and not effect such an excess deformation of the quad as would tend to shatter the quad and render it ineffective for retaining its position on the type plate; and to provide an improved tool of this kind which is simple in construction, hence economical to manufacture, and positively facile to operate effectively.

In the adaptation shown in the accompanying drawings,

Figure 1 is a perspective view of a conventional form of address-printing-type plate on which the line of type elements are held in printing position by a deformed quad clinched in place at each end of the line by an improved tool constructed in accordance with this invention;

Fig. 2 is a perspective view of the improved form of quad clinching tool;

Fig. 3 is an enlarged, fragmentary side view of the jaws and dies of this improved type of clinching tool; and

Fig. 4 is an enlarged, cross-sectional view of a clinched quad in position in a slotted type plate, as taken on the plane of the line 4—4 of Fig. 1.

The essential concept of this invention involves a type quad clinched in a slotted type holder plate by a specially-shaped plier-like tool whereby the quad is secured in predetermined position on the type plate to retain a line of printing type elements in printing position.

A movable-type retaining-quad and clinching-tool embodying the foregoing concept, for use with a slotted type plate 5 mounting an assortment of printing type elements 6 held in printing position on the plate, comprises one or more quads 7 deformed by a tool 8 to fix the quads 7 in position on the plate 5 relative to the line of type elements 6 so that the type elements are locked in predetermined relation with each other and the plate.

The type plate 5, as shown in Fig. 1, is a conventionally formed strip of material most commonly used on special machines designed for the successive mechanical printing of addresses on envelopes and other kinds of business forms, such as circulars, ledger sheets and invoices. Such a plate 5 is made of metal, compressed fibers or a composition substance and usually is quite flexible. One or more slots 9 are formed longitudinally for the retention of the type members 6 and 7 and one end of the slot 9 is enlarged, as at 10, whereby the members 6 and 7 may be inserted for sliding into the desired position in the main part of the slot 9. When needed, apertures 11 are formed at the corners of the plate 5 to be set over holding pins on a supportnig base (not shown) preparatory to the printing operation.

The type members 6 and 7 are of a soft ductile metal, similar to that used for addressing machine type. In cross section, these members 6 and 7 are substantially like a capital T, as most clearly shown in Fig. 3. Thus, there are a stem part 12 and top and bottom transverse parts 13 and 14 for each type member. The stem part 12, in thickness, is just enough less than the width of the slot 9 to permit easy but snug sliding of the type members in the slot. The top transverse part 13 is slightly longer than the bottom transverse part 14 and the distance between the opposed faces of the transverse parts 13 and 14 is just enough greater than the thickness of the plate 5 to permit easy sliding of the type members in the plate slot 9.

Although not shown here, the printing type elements 6 each bear an embossed letter, numeral, punctuation mark, or the like, common in printing; and the quads 7 are blank and of less than printing height, one of which is inserted between each sequence of elements 6 that constitute a word, a series of numerals, or the like.

A line of printing elements 6, with interspersed spacing quads 7, is hand set on the plate 5 to form a name, and/or the street and number, and the city and state for a desired address. One at a time these type members 6 and 7 are inserted into the slot enlargement 10 and slid into the main part of the slot 9 to the desired printing position. Obviously, some means has to be employed to hold such a line of type in printing position on the plate.

This invention involves the use of quads 7, the marginal portions of the transverse parts of which are deformed (as shown in Fig. 4) to clinch with the opposite faces of the plate 5 and thereby be secured against shifting in the slot 9. Also, a part of this invention is an improved form of plier-like tool 8 whereby the marginal portions of a quad 7 may be suitably deformed for clamping purpose, as shown in Fig. 4.

Such a tool 8 comprises a pair of members 15 and 16, quite like the members of a conventional pair of pliers, secured together in crossed relation by a pivot pin 17 to

form a pair of opposed jaws 18 and 19 and a pair of handles 20 and 21. A spring 22, interposed between the handles 20 and 21, adjacent the pivot pin 17, normally urges the jaws and handles apart to the limit permitted by the abutment of a pin 23 on the member 16 against a shoulder 24 on the member 15, as most clearly shown in Figs. 2 and 3. A counter movement of the jaws toward each other, when the handles 20 and 21 are compressed, is limited by the abutting of the respective shoulders 25 and 25' on the respective members 15 and 16 (see Figs. 2 and 3).

Deforming dies 26 and 27 are opposedly formed on the extremities of the jaws 18 and 19 which, when pressed toward each other over a quad 7, deform the marginal portions of the transverse parts 13 and 14, as shown in Fig. 4. As clearly indicated in Figs. 2 and 3, these dies are substantially C-shaped to provide pairs of prongs 28 and 29 with the respective bases slightly cavitied, as indicated at 30 and 31, respectively, in Fig. 3.

The spacing apart of the respective pairs of prongs 28 and 29, longitudinally of the members 18 and 19, is slightly greater than the length of the respective transverse parts of the quad 7 (see Fig. 3). Thus, the prongs 29 are slightly closer together than the prongs 28 so as to fit the parts of the quad that they respectively engage.

The handles 20 and 21, preferably, are painted different colors, black and red, for example, so that upon picking up the tool 8 for use an operator is alerted to the fact that the dies 26 and 27 are slightly different in size and, hence, the tool is to be positioned so that the larger die 26 will embrace the longer transverse upper part 13 of a quad 7 and the smaller die 27 will embrace the shorter transverse lower part 14 of a quad 7.

The tool 8 is used in the following manner, after a line of printing type elements 6 has been properly set in place in the slot 9 ready for printing: The tool 8 is set over the plate 5, normal to one of the side edges thereof, to position the dies 26 and 27 over the transverse parts 13 and 14, respectively, of a quad 7 at one end of the line of type 6. Upon squeezing or compressing the handles 20 and 21, to the limit permitted by the abutting of the shoulders 25 and 25', the C-shaped dies 26 and 27 are forced down over the transverse parts 13 and 14 of the quad 7. The pressure, thus limited, will be just enough so that these parts will have their marginal portions deformed or swaged, as shown in Fig. 4, to firmly engage or grip the opposite faces of the plate 5 without crushing the quad. This operation is repeated with another quad at the opposite end of the type line and thereupon the line of printing type is secured in printing position for as long as the plate has to be used for printing operations.

The main advantages of this invention reside in the relatively cheap and convenient method and means for

securing a line of movable type elements in the desired printing position on a conventional type holder plate; in the fact that common and readily obtainable type members can thus be used as line stop means instead of the specially formed devices heretofore employed; and in the fact that once applied the improved line stops will hold their applied position on the type plate independently of any other pressure applying means and regardless of how the type plates are handled or stored when not being used in a printing operation.

Other advantages are to be found in the improved swaging means for suitably clamping the line stop quads onto the type plate; and in the ease and convenience of manipulation of the swaging means whereby its operation is rapid and certain and whereby the line stop quads may be secured permanently at exactly the desired locations.

Although but one specific embodiment of this invention is herein shown and described it will be understood that details of the construction shown may be altered or omitted without departing from the spirit of this invention as defined by the following claim.

I claim:

A plier-like tool having a pair of crossed and pivotedly connected handles terminating at one end in opposed jaws for swaging the marginal portions of the opposed upper and lower arms of an interposed generally T-shaped quad to clinch it in position in a slotted type plate, comprising C-shaped dies on the opposed extremities of the plier jaws, the die on the one jaw being slightly shorter longitudinally of the jaw than the die on the other jaw, the dies being adapted, when the jaws are contracted, to embrace the quad and deform the marginal portions of the opposed arms thereof and clinch the quad in substantially fixed position on the plate, a spring interposed between the handles of the tool for normally opening the jaws and handles, and coacting shoulders on the tool for limiting the opening and closing movement of the jaw dies, the handles of the tool being differently colored so as to indicate the differential in the respective dies.

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