Feb. 21, 1956 J. E. LEE ET AL 2,735,650

PRINTER'S QUOIN

Filed Feb. 25, 1954

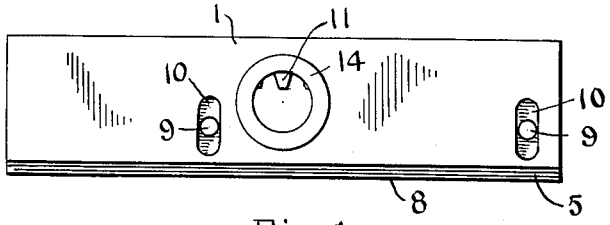


Fig. 1.

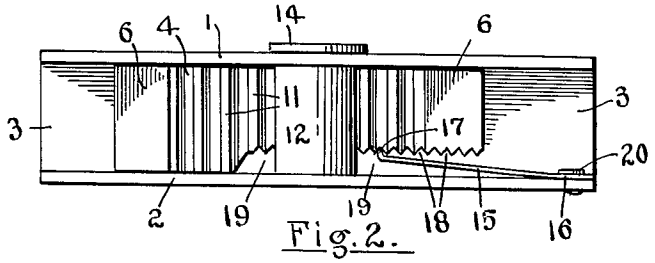


Fig. 2.

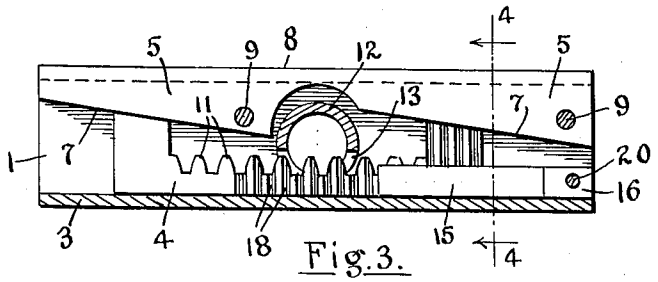


Fig. 3.

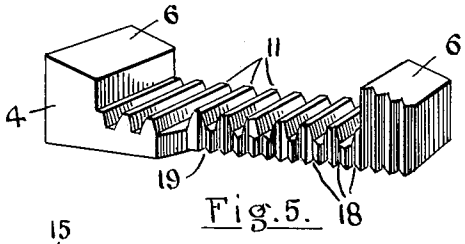


Fig. 5.

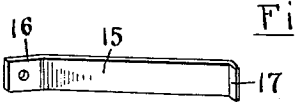


Fig. 6.

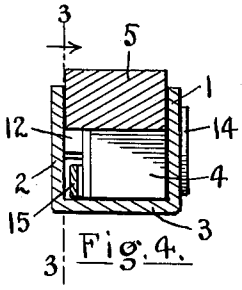


Fig. 4.

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United States Patent Office 2,735,650 Patented Feb. 21, 1956

2,735,650

PRINTER'S QUOIN

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Application February 25, 1954, Serial No. 412,496

1 Claim. (Cl. 254—42)

This invention relates to printer's quoins and more particularly to the specific means for retaining the movable parts of the quoins in their various adjusted positions.

The structure of this invention is an improvement over previous quoins of this nature such, for example, as that shown in our Patent No. 2,501,949, issued March 28, 1950.

In quoins of this nature, it is most desirable to provide means for retaining the quoin in its expanded clamping position in the type set up so that it will not become loosened and drop out of place where it would cause damage to the printing press.

It is also desirable to have the parts easily available for repair and to keep them small and compact in size. This is especially true in the smaller sizes such as three inches long over all, many of which are sold.

This invention provides the foregoing and other features of construction and arrrangement hereafter more fully described, reference being had to the accompanying drawings in which:

Fig. 1 is a plan view of a quoin embodying the invention,

Fig. 2 is a side elevation of the same with one of the wedge bars removed,

Fig. 3 is an inverted sectional plan on the line 3—3 of Fig. 4,

Fig. 4 is a transverse section on the line 4—4 of Fig. 3,

Fig. 5 is a perspective view of one of the wedge bars, and

Fig. 6 is a perspective view of the retaining spring.

Like reference numerals apply to like parts in all of the figures.

The quoin has a casing in the form of an open ended channel having a top 1, a bottom 2 and a back 3. Within the casing are located a longitudinally slidable wedge bar 4 and a transversely slidable wedge bar 5. The bar 4 has inclined wedge faces 6 and the bar 5 has complementary wedge faces 7.

The bar 4 slides longitudinally with its base against the back 3 of the channel and the bar 5 moves transversely with its outer face projecting through the open side of the channel casing. The bar 5 is guided and prevented from longitudinal movement by pins 9 which have a drive fit into holes in the bar 5 and ends which project into and traverse slots 10 in the top and bottom of the casing.

The longitudinally slidable bar 4 is the motivating member and has a length substantially equal to the length of the casing minus the distance of its travel so that it is always wholly within the casing. The bar 4 is slid lengthwise in either direction by a hand operated key (not shown) having a gear shaped end with teeth which mesh with rack teeth 11 in the outer face of the bar between the wedge faces 6 thereon. A tubular guide 12 is located in the casing midway between its ends extends through the top 1 and bottom 2 thereof having a part cut away at 13 opposite the rack teeth 11. The guide has a flange 14 outside the top 1 of the casing and the guide is permanently attached in place by soldering, or otherwise fastening it to the top and bottom of the casing. The hand operated key is thrust into the guide and rotated therein with its teeth in mesh with the rack teeth 11 and the guide holds the key in mesh with the rack and also retains the bar 4 within the casing.

By rotating the key the bar 14 is slid within the casing in either direction and in these movements the wedge faces 6 on the bar 4 and the engaging wedge faces 7 on the bar 5 cause the bar 5 to be extended outward through the open side of the casing for its clamping movement, or permit retraction of the bar 5 within the casing for release movement.

The quoin is used to clamp type, cuts, or other material in a form to be used in a printing press and serves as an expandable clamp for that purpose. When in use, clamped into a form it is important that the quoin be retained in its expanded position and for that purpose a retaining spring 15 has its base 16 attached to the bottom 2 of the casing and a yieldable end having a pointed jaw 17 enters one of a series of grooves 18 provided in an edge of the bar 4.

In order to keep the quoin compact and at the same time to provide space for the retaining spring 15, the bar 4 has a portion of its edge cut away at 19 and the grooves 18 are made in the bottom of the cutaway portion. The spring 15 is held in place on the inner surface of the bottom 2 by a rivet 20 which passes through holes in the base 16 of the spring and in the bottom 2 near an open end of the casing.

It has been found by experience with other quoins, such as that shown in the aforesaid Patent No. 2,501,949, that the retaining spring is the most fragile part of the structure and that which most frequently needs repair or replacement. For that reason the retaining spring shown herein and its method of attachment and location have been devised.

In the first place, the flat leaf spring of substantially the proportions shown is more durable than others. But in cases where the spring does break and needs replacement, the particular means and location of mounting the spring, with relation to other parts of the structure, enables it to be replaced quite easily and cheaply.

To remove the broken spring, the bar 4 may be moved to a mid position as shown in Figs. 2 and 3 and with the rivet 20 located close to an open end of the casing making it accessible for removal so that the parts of the broken spring may be removed. Then the new spring can be inserted with the end having the jaw 17 passing into the cut away portion 19 which extends through the end of the bar, after which the rivet 20 is inserted and fastened in place. In doing this, the outer bar 5 may be moved to its extreme outer position as limited by the pins 9 in the slots 10 which gives more room for working on the rivet.

For better accessibility the bar 5 may be removed as shown in Fig. 2. This is done by driving out the pins 9 which releases the bar 5. Then the rivet 20 and broken parts of the old spring are taken out and the new spring can be easily located in place and a new rivet 20 fastened to attach the spring. After this, the bar 5 is replaced and the pins 9 are driven back into their respective holes therein.

The invention is defined by the appended claim which is to be considered comprehensive of all forms coming within its scope.

We claim:

A printer's quoin comprising, an open ended channel shaped casing, an inner and an outer co-acting wedge bar mounted within said casing, the inner wedge bar having longitudinal sliding movement and the outer wedge bar having transverse sliding movement, means for re-

taining said wedge bars in said casing, manual means for sliding said inner wedge bar to a plurality of positions, and yieldable retaining means for holding said inner wedge bar in its adjusted positions comprising, a leaf spring detent located entirely within the casing, means for attaching said detent to a side of said casing, said attaching means being located close to an open end of the casing and accessible through said open end for removal and replacement, and a recess in a side of the inner wedge bar adjacent that side of the casing to which said detent is attached, said recess extending longitudinally of the wedge bar and through the end thereof nearest said fastening means, said wedge bar

having ratchet teeth at the base of said recess and the free end of said detent extending into said recess and engaging said ratchet teeth, said detent being insertable into said casing and said recess through the open end of the casing.

References Cited in the file of this patent

UNITED STATES PATENTS

567,497	Nichols	Sept. 8, 1896
2,501,949	Lee et al.	Mar. 28, 1950

FOREIGN PATENTS

140,254	Germany	Apr. 16, 1903