Aug. 27, 1935. C. F. DAUSMANN 2,012,808

PRINTER'S PLATE REGISTERING HOOK

Filed Feb. 20, 1934

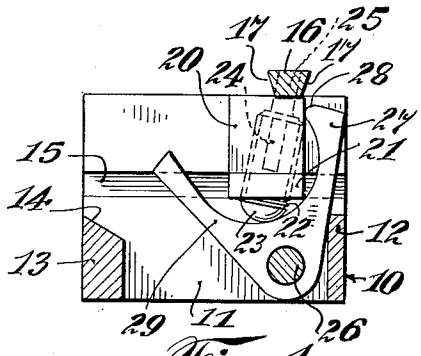

Fig. 1.

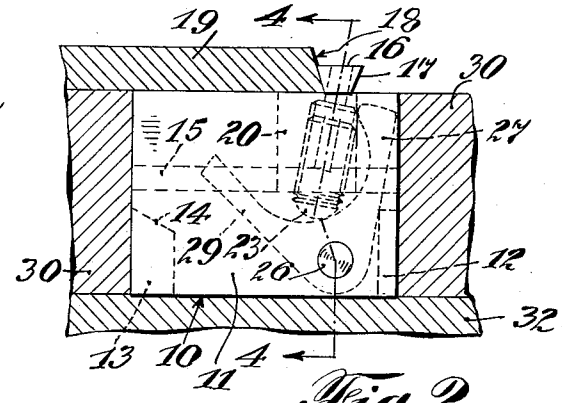

Fig. 2.

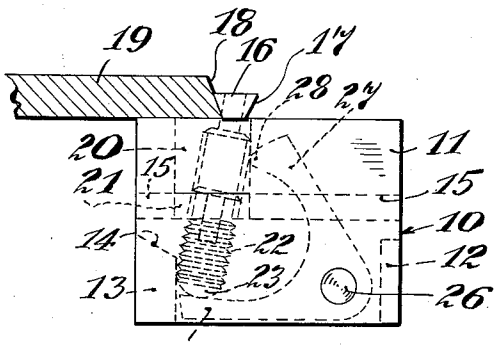

Fig. 3.

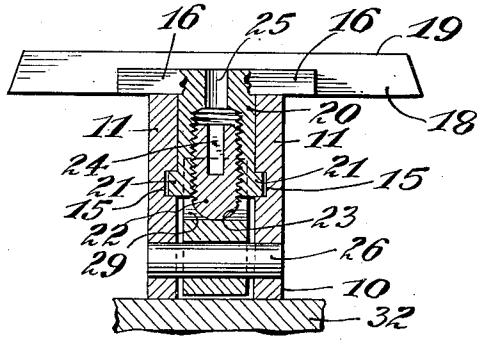

Fig. 4.

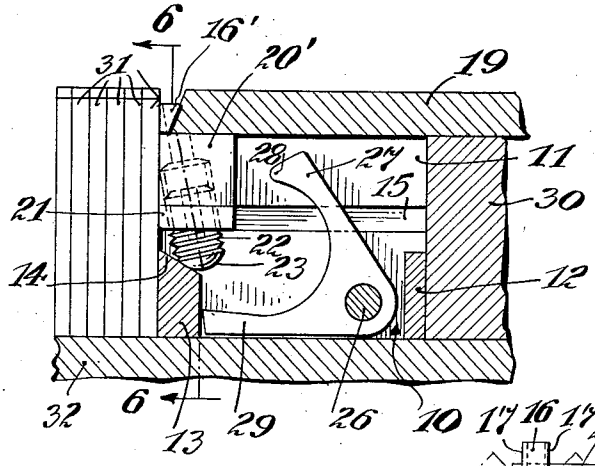

Fig. 5.

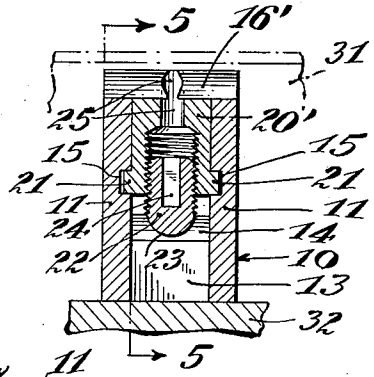

Fig. 6.

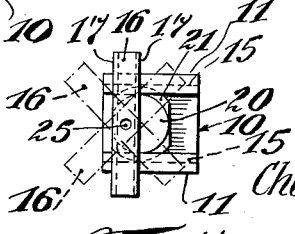

Fig. 7.

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Patented Aug. 27, 1935 2,012,808

UNITED STATES PATENT OFFICE

2,012,808

PRINTER'S PLATE REGISTERING HOOK

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Application February 20, 1934, Serial No. 712,154

8 Claims. (Cl. 101—385)

The present invention relates to printer's plate registering hooks, and has for an object to provide certain improvements in the construction thereof for exerting a sensitive and binding pressure against the edge of a plate and in the plane of the plate.

Another object of the present invention is to provide a hook of this type which may be mounted in a quad or block so that it may be assembled in the usual manner of plate hooks in a printer's frame or chase, but which is provided with a novel lever arrangement and pressure member for advancing the hook in a substantially horizontal direction toward the plate by the feeding or advancement of the pressure member against the lever so that the hook is not subject to the pivoting or swinging action tending to resolve the pressure forces of the hook out of the general plane of the plate.

It is well known that considerable difficulty has heretofore been encountered in the registration of printer's plates, such as electrotypes, half tones and the like, in respect to the type in proximity thereto, and the object of the present invention is to overcome this difficulty and provide hooks for securely holding the plates in proper registration without danger of lifting or canting the plates incident to the various angular resolution of pressure forces imposed on the hook.

More specifically, the invention provides a quad or block for use in a printer's frame in which is slidably and swivelly mounted a hook for engaging a plate, the hook being slidable toward and from the plate with respect to the plane thereof, and to pivotally mount a bell crank lever in the quad or block in position with one arm to engage the hook shank for sliding the same lengthwise of the quad and against the plate and with a pressure member or screw in the hook shank for engaging the other arm of the bell crank lever to swing the latter on its pivotal support in the quad to advance the hook.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawing, wherein like symbols refer to like or corresponding parts throughout the several views,

Figure 1 is a longitudinal section taken through a quad or block showing a plate registering hook mounted therein according to the present invention.

Figure 2 is a fragmentary sectional view taken through a portion of a printer's frame showing quads mounted on the printing bed and a portion of a printer's plate seated on the quads and clamped in position by the hook of this invention.

Figure 3 is a side elevation of a quad with a hook of the present invention mounted therein and engaging a plate, the adjustment being different from that shown in Figure 2.

Figure 4 is a transverse section taken through the quad and hook substantially on the line 4—4 of Figure 2.

Figure 5 is a fragmentary section taken through a portion of the printer's frame showing type and quads therein with a slightly modified form of the hook for use as a narrow margin hook adapter between the plate and type.

Figure 6 is a transverse section taken through the same substantially on the line 6—6 of Figure 5; and

Figure 7 is a plan view showing the swivelling movement of the hook bar or jaw to enable angular adjustment of the jaw.

Referring to the drawing, 10 designates a quad or block adapted to carry a plate registering hook and which comprises a pair of spaced side walls 11 connected together at one end by a web 12 arranged at the inner or lower corner and at one end of the block. The other end of the block has the side walls 11 connected together by a cam piece 13 which conforms to the angular configuration of the inner or lower portion of the block, extends between the walls 11 for a desired height, preferably less than one-half the height of the block, and which has an upper cam surface 14 which is inclined downwardly and inwardly from the adjacent end of the block.

The side walls 11 are provided in their inner opposite sides with a pair of grooves 15 which are disposed horizontally with reference to the position of the quad or block in Figure 1, and which preferably open through the opposite ends of the walls 11 to form a guide or trackway for the hook member. The hook member comprises a cross bar or jaw 16 disposed above the upper surface or edge of the block 10 and which extends across the same, as shown in Figure 4.

This bar 16 is provided at opposite sides with undercut or beveled edges 17 inclined at a suitable angle to conform with and engage the edge portion 18 of a printer's plate 19, as shown in Figure 2. The hook bar 16 is provided with a circular shank 20 proportioned to slidably and swivelly fit between the side walls 11 of the quad and which is provided at its lower end with laterally extending circular flanges 21 for interlocking engagement in the grooves or slots 15, and which are

of sufficient breadth to engage the upper walls of the slots to hold the shank 20 from canting or tilting in the quad. The hook thus constructed is held for longitudinal movement in a straight line in the quad and toward the printer's plate 19.

Within the shank 20 of the hook is threaded an adjusting stud or pressure member 22. As shown in Figure 4 particularly, this screw 22 is exteriorly threaded for engagement in the threaded lower end of the shank 20 and has a preferably rounded nose or lower end 23 for engagement against a lever as will be subsequently explained and also for engagement against the cam surface 14, as shown in Figure 5. The upper portion of the screw 22 has an axial non-circular opening 24 therein for the reception of a suitable tool adapted to be introduced downwardly into the shank 20 through an opening 25 which extends through the intermediate portion of the bar 16 and through the shank 20 itself and registers with the screw opening 24.

For the purpose of advancing the hook in a horizontal line direction and in a common plane parallel to the slots 15, a bell crank lever is provided, the same being pivotally mounted at its angle upon a pin 26 which extends across and between the side walls 11 near the lower ends thereof and toward one end of the block 10 remote from the cam block 13. One arm 27 of the bell crank lever extends upwardly and is provided with an inwardly projecting nose 28 suitably rounded for engagement against the adjacent edge or portion of the shank 20 of the hook so as to transmit pressure to the hook at substantially a single point, the rounded nose 28 being adapted to slide lengthwise of the shank 20 during the advancement or movement of the bell crank lever. The arm 27 is of sufficient length to dispose the pressure nose 28 of the lever near the upper end of the shank and adjacent the bar 16 so as to equalize the pressure to a large extent between the upper and lower ends of the hook and thus transmit the pressure of the bell crank lever against the hook in a plane parallel to that of the plate 19 or the upper surface of the block.

The other arm 29 of the bell crank lever extends toward the opposite end of the block, the inner edges or surfaces of the arms 27 and 29 being formed on a substantially continuous curve of suitable radius to receive thereagainst the lower rounded end 23 of the pressure member 22 so that upon downward turning of the screw or pressure member 22, the rounded end thereof will engage and ride upon the inner rounded surfaces of the arms of the bell crank lever.

The arm 29 may be of substantially the same length as the arm 27 so that at all adjustments of the hook lengthwise in the block the arm 27 will be presented for engagement with the pressure screw 22, the limit of such adjustment being shown in Figure 3, and wherein the arm 29 may escape the cam block 13 when the hook is advanced to substantially the limit of its opposite end adjustment and up to the point for bringing in to action the cam surface 14.

Of course the quad or block 10 may be mounted in various ways in a printer's frame or chase. In Figure 2 the block 10 is assembled with a number of other quads or blocks 30 to support the printer's plate 19, and the hook is so adjusted as to bind against the adjacent edge of the plate 19 and hold it in proper register in the frame. In Figure 2 the printer's plate 19 is shown as overlapping to a large extent the upper surface of the quad 10.

In Figure 3 the plate 19 is shown as overlapping the quad 10 but to a slight extent. In this position it will be noted that the pressure member 22 is advanced downwardly through the shank 20 to a considerable extent and that it rides out on the outer end portion of the arm 29 of the bell crank lever. In this position the pressure arm 27 of the bell crank lever is swung downwardly and toward the opposite end of the quad 10 so as to follow up behind the hook shank and continuously exert a straight line pressure against the hook to cause it to bind in an edgewise direction against the plate 19.

As a slight modification of the hook, the bar 16' may be of substantially narrow width, as shown in Figures 5 and 6, wherein one side of the bar is of flat or vertical formation adapted to engage against type 31 which is mounted on the printing bed 32 and which is also engaged by the quad 10. The plate 19 in this instance extends from adjacent quads 30 over the quad 10 throughout substantially its entire length and the undercut surface or edge of the hook bar 16' interlocks with the correspondingly inclined edge of the plate 19. In this instance the narrow bar 16' may be mounted at the extreme outer edge of the shank 20', and the latter is reversed as to its pressure member mounting so that the pressure member 22 engages at its rounded lower end 23 against the cam surface 14 for forcing the hook inwardly along the guides or grooves 15. In both instances, the upper edge of the shank 20 lies flush with the upper edge of the quad 10 so as to engage flat against the underside of the printer's plate 19. It will be also noted from Figure 6 that the narrow cross bar 16' may be relatively short so as to terminate in the planes of the outer opposite surfaces of the quad 10.

In Figure 7 is shown a plan view of the quad showing the swivelling movement of the hook bar to enable angular adjustment of the jaw. The quad 10 has spaced walls 11 and grooves 15. The hook bar 16 is provided with a circular shank 20, having flanges 21, for engaging the grooves or slots 15. An opening 25 for the tool, and the bar 16 has angular sides 17. The bar or jaw 16 may be angularly disposed and locked in the desired position.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims.

What is claimed is:—

1. A printer's plate registering hook, comprising a quad having an opening therein, a bell crank lever pivoted in the opening in the quad, a hook for engagement with the edge portion of a plate and having a shank projecting into the opening and interlocking with the quad for sliding movement of the hook in a plane parallel to the plane of the upper surface of the quad, said lever having one arm disposed in the path of said shank, and a pressure device in the hook shank engaging the other arm of the lever for advancing the first arm thereof against the hook shank and binding the hook by a straight line movement in the plane and against the edge of the plate.

2. A printer's plate hook, comprising a quad having an opening therein, a hook mounted for sliding movement lengthwise in the opening of the quad, a lever pivotally mounted in said opening in the quad and having an arm engaging said hook

shank for advancing the same and having a second arm extending at an angle to the first arm, and pressure means disposed in the quad for engaging said arm of the lever for swinging the latter to advance the hook.

3. A printer's plate hook, comprising a quad, a hook movably mounted therein, pressure means carried by the hook, and a rock member disposed in the quad and engageable with the hook and the pressure means for transmitting the pressure into a straight line pressure against the hook.

4. A printer's plate hook, comprising a quad having an opening therein, a plate engaging hook mounted for horizontal sliding movement in the quad, a pressure screw carried by the hook adapted to be advanced downwardly therefrom, and a rockable member pivotally carried by the quad having a portion engaging the hook, and a second portion in the path of said pressure screw for transmitting pressure from the latter to the side of the hook.

5. A printer's plate hook, comprising a quad having an opening therein, a hook slidably mounted for longitudinal movement in the quad to engage the edge of a plate, a bell crank lever pivotally mounted in the opening in the quad with one end engaging the side of the hook and with its other end projecting beneath the shank of the hook, and a pressure screw mounted in the shank of the hook for adjustment therein against said other arm of the lever to swing the latter and exert a straight line pressure against the hook.

6. A printer's plate hook, comprising a quad having an opening therein, a hook having a shank projecting into said opening and provided with guiding and anchoring flanges at its opposite sides, said quad having grooves in its opposite walls receiving said flange to guide the hook in the quad, a pressure screw threaded in the lower portion of said shank and an opening upwardly through the shank and hook bar for receiving a tool for turning the pressure screw, and a bell crank lever pivotally mounted in said opening in the quad and having one arm bearing against one side of said shank and having another arm engaging beneath said pressure screw for movement thereby to urge the first end of the lever against said shank.

7. A printer's plate hook, comprising a quad having an opening therein and provided with grooves in the opposite walls of the opening and disposed in a plane substantially parallel to the upper edge of the quad, said quad having a cam block rockably mounted in one end with a cam surface at its upper end directed toward said hook, a pressure screw mounted in threaded relation in the shank of said hook, and a screw engaging portion carried by said cam block in line with said screw for binding engagement therewith to advance the hook against a plate on the quad.

8. A printer's plate hook comprising a quad, a hook member slidably carried by the quad, a cam lever rockably carried by the quad and adapted upon rocking thereof to move said hook member relative to the quad, and pressure means carried by the quad and engageable with said cam lever to rock said lever.

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