Oct. 23, 1945. J. KUNZ 2,387,332

INKER MECHANISM

Original Filed Aug. 3, 1940 2 Sheets-Sheet 1

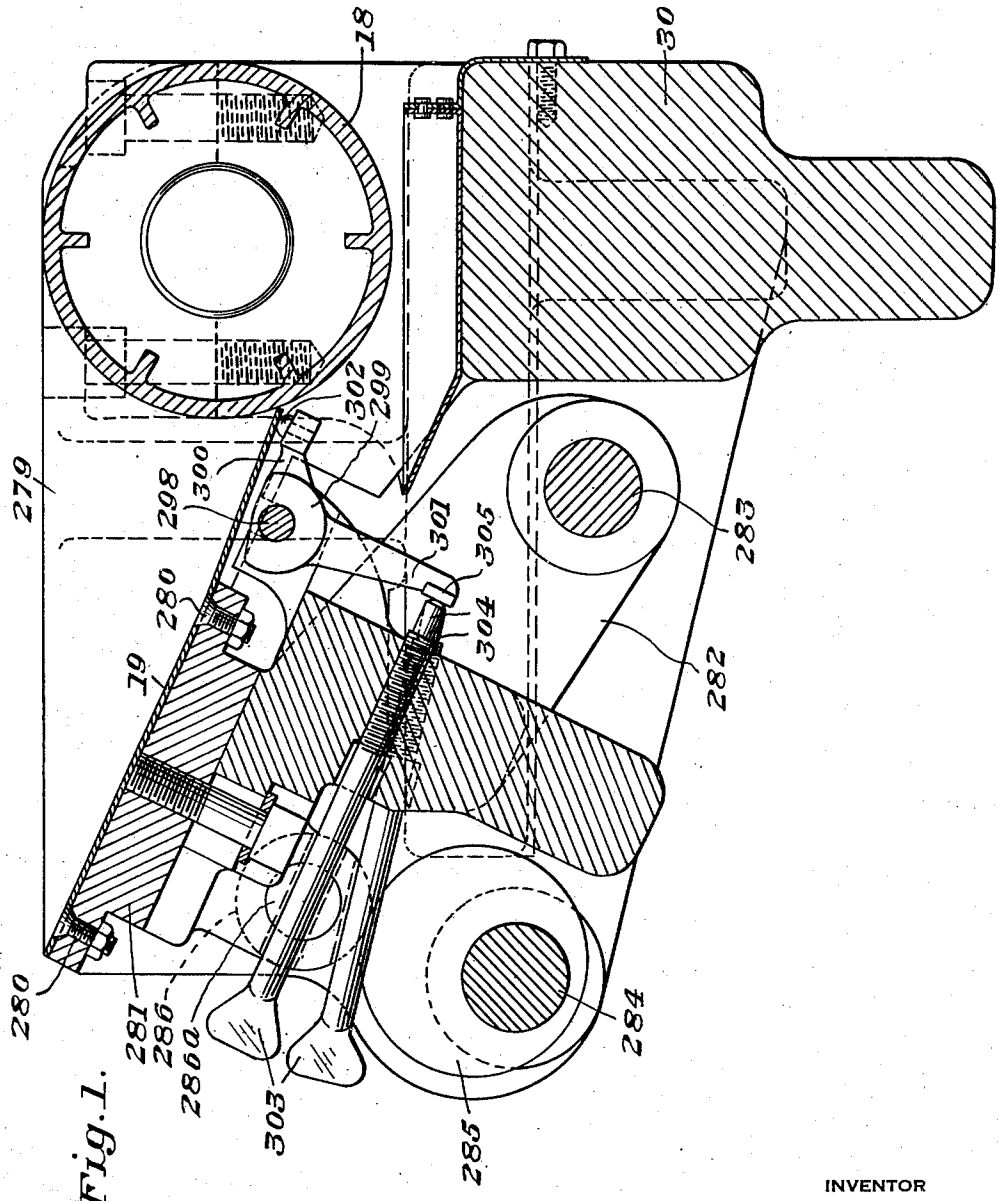


Fig. 1.

INVENTOR
John Kunz
by Stallman and Stanco
his attorneys

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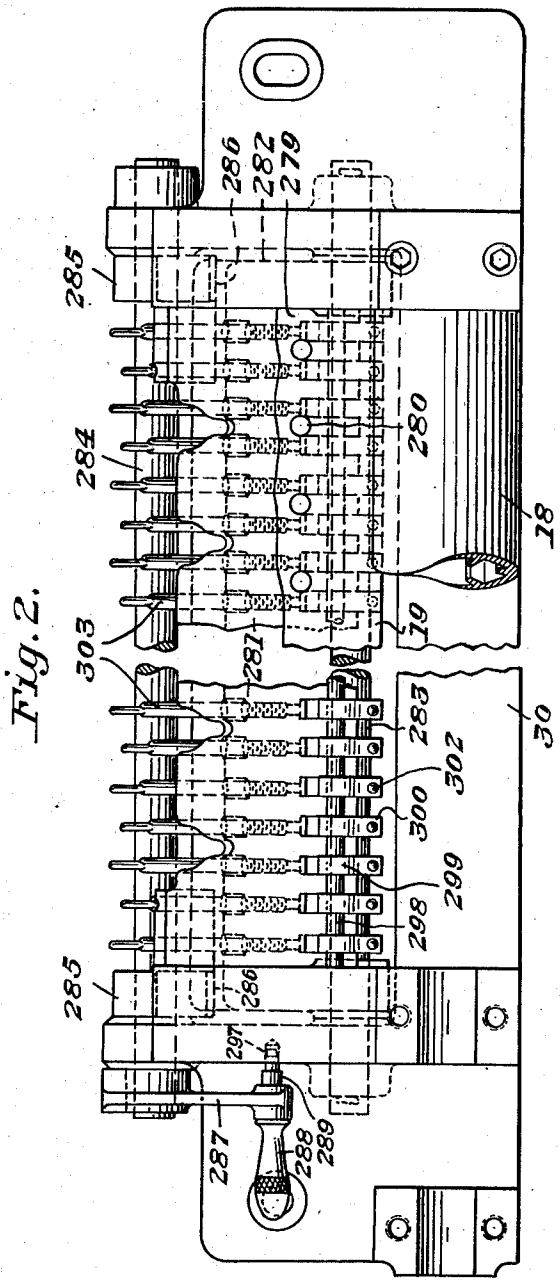


Fig. 2.

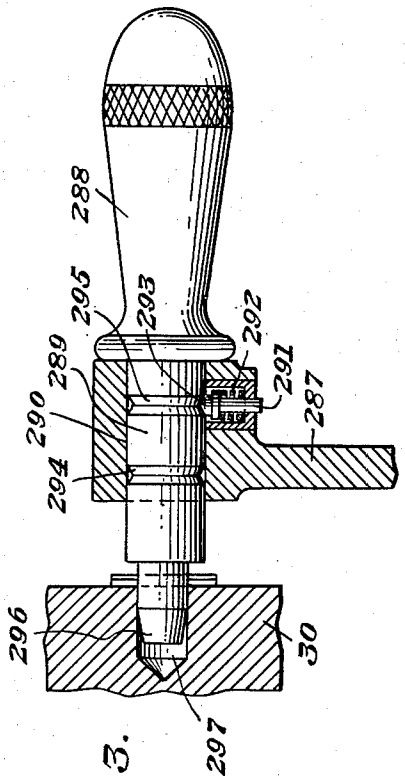


Fig. 3.

INVENTOR
John Kunz
by Stallman & Stallman
his attorneys

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UNITED STATES PATENT OFFICE

2,387,332

INKER MECHANISM

John Kunz, Pittsburgh, Pa., assignor to Miller Printing Machinery Co., Pittsburgh, Pa., a corporation of Pennsylvania

Original application August 3, 1940, Serial No. 350,705. Divided and this application October 17, 1941, Serial No. 415,404

2 Claims. (Cl. 101—365)

This invention relates to inker mechanism. It relates more particularly to means for adjusting the fountain blade of an inker and an improved arrangement of the fountain blade keys. It further relates to improved means for bodily moving the fountain blade into and out of operative position. This application is a division of my copending application Serial No. 350,705.

The efficiency of an inker is dependent upon various factors, one of which is the ability to properly control the relationship of the fountain blade to the fountain roll and to do so with a minimum of work and in as short a time as possible. It is common to provide fountain keys for adjusting the edge of the fountain blade relatively to the fountain roll, there being a series of such keys arranged transversely of the inker. Heretofore difficulty has been encountered in operation of the fountain keys either by reason of their relative inaccessibility or because of their closeness together which interferes with rapid operation of a particular key. Also the bodily movement of the fountain blade as a whole relatively to the fountain roll has been accomplished only with considerable difficulty and inconvenience. Attempts have been made to facilitate the operations of adjusting the edge of the fountain blade relatively to the fountain roll and bodily moving the fountain blade to and from operative position, but such attempts have involved the use of complicated and expensive mechanism and have not solved the problem in an economical and efficient manner.

I provide inker mechanism in which the adjustment of the edge of the fountain blade relatively to the fountain roll may be easily and quickly effected and in which the bodily movement of the fountain blade to and from operative position is likewise facilitated. I preferably employ fountain keys which are arranged in a plurality of series in such a way as to make them very easily distinguishable and operable. I also provide improved but extremely simple and effective means for bodily shifting the fountain blade toward and from its operative position relatively to the fountain roll. I provide for shifting the fountain blade by means operable from the side of the inker.

Other details, objects and advantages of the invention will become apparent as the following description of a present preferred embodiment thereof proceeds.

In the accompanying drawings I have shown a present preferred embodiment of the invention, in which:

Figure 1 is a vertical longitudinal cross-sectional view through the ink fountain, fountain roll and fountain blade of an inker;

Figure 2 is a fragmentary top plan view of the structure shown in Figure 1 but to reduced scale; and

Figure 3 is a fragmentary transverse cross-sectional view showing to enlarged scale the handle shown in Figure 2 for raising and lowering the fountain blade.

Referring now more particularly to the drawings, the fountain frame or support is shown at 30. It carries an ink fountain 279 in which is rotatably mounted a fountain roll 18. The fountain roll dips into the ink in the fountain to deliver ink therefrom as well known in the art. Cooperating with the fountain roll 18 is a fountain blade 19 whose edge lies adjacent the fountain roll to control the delivery of ink from the ink fountain by the fountain roll. The general operation and cooperation of the fountain roll and fountain blade may be as well known in the art. Improved means are provided for mounting, adjusting and controlling the fountain blade, which means will now be described.

The fountain blade 19 is fastened by bolts 280 to a support 281 carried by arms 282 pivotally mounted upon a shaft 283 carried by the frame. A shaft 284 is rotatably mounted in the frame, such shaft carrying a pair of eccentric cams 285 respectively engaging rollers 286 journaled on stub shafts 286a on the support 281. An operating lever 287 is fixed to one end of the shaft 284 and carries a handle 288. The handle 288 has a generally cylindrical portion 289 entering a generally cylindrical bore 290 in the end of the operating lever 287 and the operating lever also has a pin 291 pressed by a spring 292 inwardly of the bore 290, the pin having a tapered nose 293. The generally cylindrical portion 289 of the handle 288 has a pair of tapered grooves 294 and 295 into each of which the tapered nose 293 of the pin 291 is adapted to project. Thus the handle 288 is movable axially between the position shown in Figure 3 in which it is resiliently latched by the pin 291 and an outer position in which the pin 291 cooperates with the groove 294. When the handle is in the inner position shown in Figure 3 its nose 296 is adapted to enter a bore 297 in the frame 30. The bore 297 is so positioned in the frame 30 that the nose of the handle will enter it when the eccentric cams 285 are in the position shown in Figure 1. The function of the eccentric cams 285 is to swing the support 281 about the axis of the shaft 283 to

raise and lower the fountain blade 19. The mechanism described affords a very simple and effective means of raising and lowering the fountain blade. The operating handle 288 is positioned at the side of the inker where it is readily accessible and it is not necessary for the operator to reach into the inker to raise or lower the fountain blade.

Improved means for adjusting the operative edge of the fountain blade to the fountain roll are also provided. Extending transversely of the inker is a shaft 298 pivotally mounted upon which is a plurality of bell crank levers 299 each having an arm 300 extending generally parallel to the fountain blade 19 adjacent its operative edge (the edge of the fountain blade cooperating with the fountain roll 18) and an arm 301 extending substantially at right angles to the arm 300 generally downwardly away from the fountain blade. Each arm 300 carries at its extremity an abutment member 302 engaging the lower surface of the blade 19 adjacent its operative edge as shown in Figure 1. Threadedly mounted in the support 281 is a plurality of adjusting keys or screws 303, the inner end 304 of each of which engages the lower extremity 305 of one of the arms 301 of a bell crank lever 299. By turning a key 303 it moves forward or backward in its threaded bore in the support 281 and thus positions the corresponding bell crank lever 299 as desired. When the key is screwed forwardly or generally toward the right viewing Figure 1 it turns the bell crank lever in the counter-clockwise direction about the axis of the shaft 298, the abutment member 302 thereof pressing upwardly upon the blade 19 to move its operative edge nearer to the fountain roll 18. When the key is screwed rearwardly it allows the bell crank lever to turn in the clockwise direction about the axis of the shaft 298 so that the operative edge of the blade will recede from the fountain roll. The portion of the blade between its operative edge and the lower bolts 280 viewing Figure 1 is maintained under tension by the mechanism just described so that release of pressure by an abutment member 302 on the blade is accompanied by springing back of the blade generally downwardly away from the fountain roll.

The keys 303 are positioned closely together, as shown in Figure 2, each operating to control a short section of the edge of the fountain blade through its cooperating bell crank lever 299 as above explained. Since a large number of keys are provided the operative edge of the fountain blade may be accurately adjusted throughout its length to the desired relationship with the fountain roll 18.

To facilitate operation of the keys 303 they are arranged with their heads in two rows as shown. Alternate keys have their heads in the upper and lower of such rows, the positions of which are defined by the heads of the keys as shown in Figure 1. This provides greatly increased clearance between the heads of the keys relative to the clearance which would be provided if they were all arranged in one row and greatly facilitates manipulation and operation thereof. The keys of each row roughly define a plane and the plane of each row of keys is non-coplanar with respect to, and in the form shown in the drawings intersects, that of the other row of keys.

While I have shown and described a present preferred embodiment of the invention it is to be distinctly understood that the invention is not limited thereto but may be otherwise variously embodied within the scope of the following claims.

I claim:

1. In an inker having an ink fountain, a fountain roll therein and a fountain blade cooperating with the fountain roll in usual manner, a support carrying the fountain blade, the support being pivoted about an axis near the operative edge of the fountain blade, a rotary cam underlying the support and positioned farther from the axis of the support pivot than the operative edge of the fountain blade, the cam having its peripheral surface in engagement with the support, and means for turning the cam to pivotally move the support to bodily angularly shift the position of the fountain blade relatively to the fountain roll.

2. In an inker having an ink fountain, a fountain roll therein and a fountain blade cooperating with the fountain roll in usual manner, a swingable support carrying the fountain blade to bodily angularly shift the position of the fountain blade relatively to the fountain roll, a cam shaft disposed generally below the support at the portion of the support remote from the operative edge of the fountain blade, cam means on the shaft against which the support rests and means for turning the cam shaft to swing the support.

JOHN KUNZ.