

Aug. 20, 1940.

E. W. WORTHINGTON

2,212,137

ROTARY INKING MECHANISM

Filed March 29, 1939

3 Sheets-Sheet 1

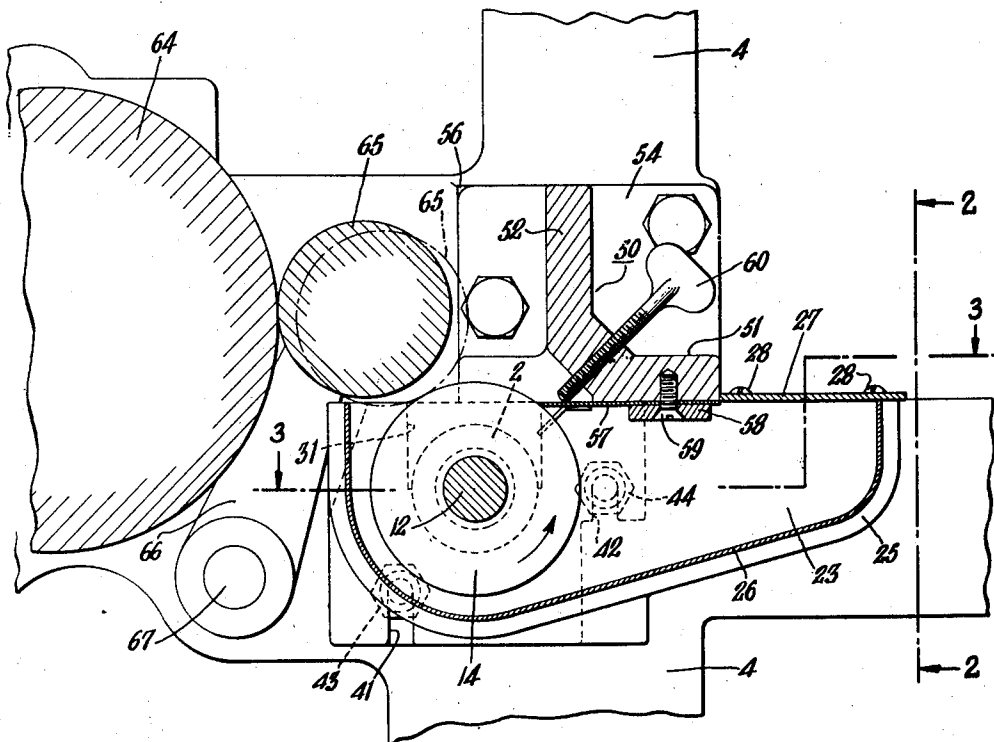


Fig. 1.

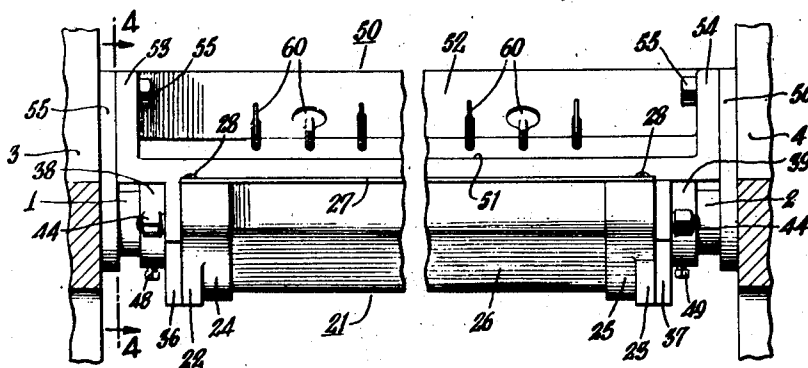


Fig. 2.

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3 Sheets-Sheet 2

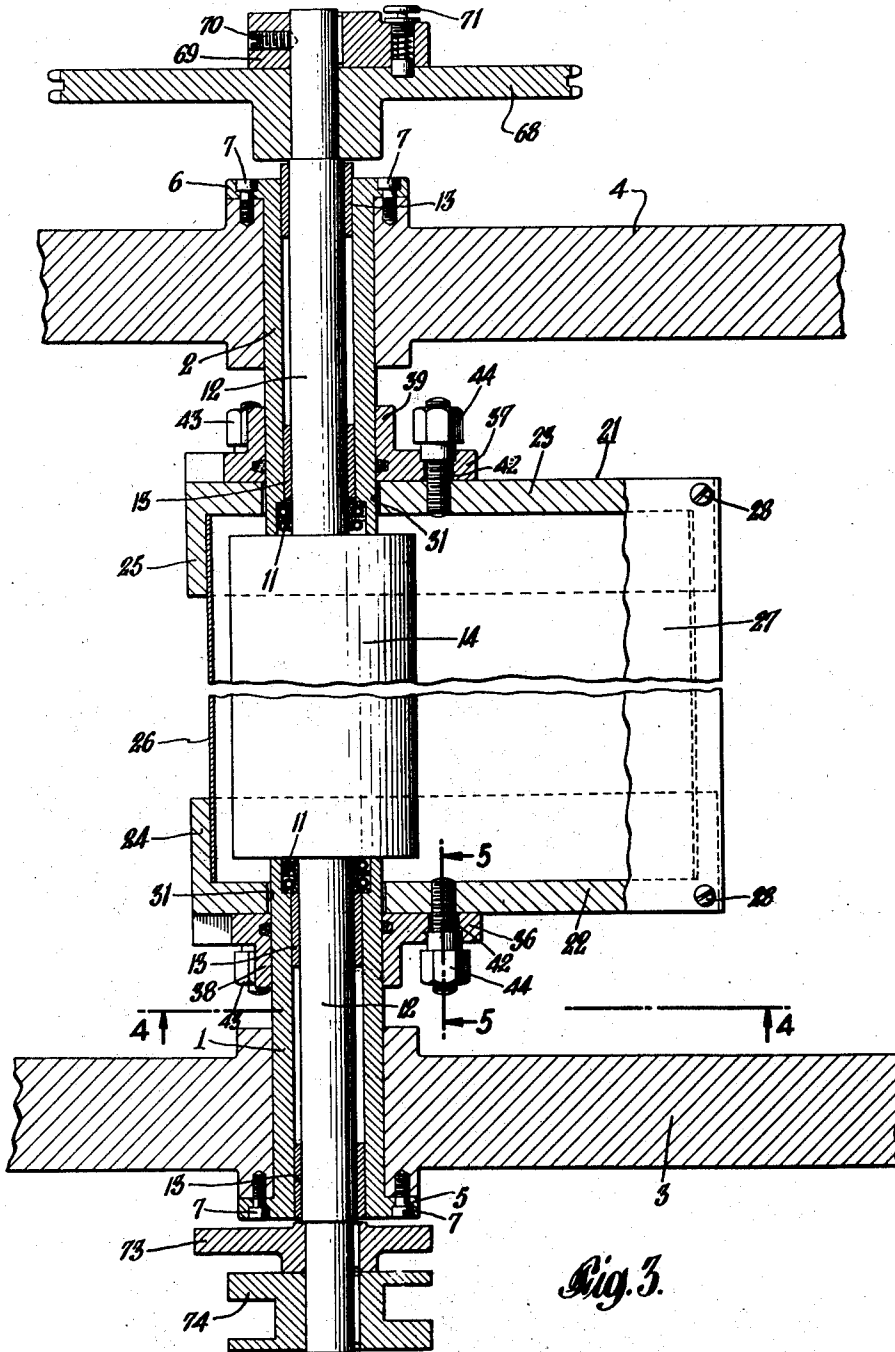


Fig. 3.

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3 Sheets-Sheet 3

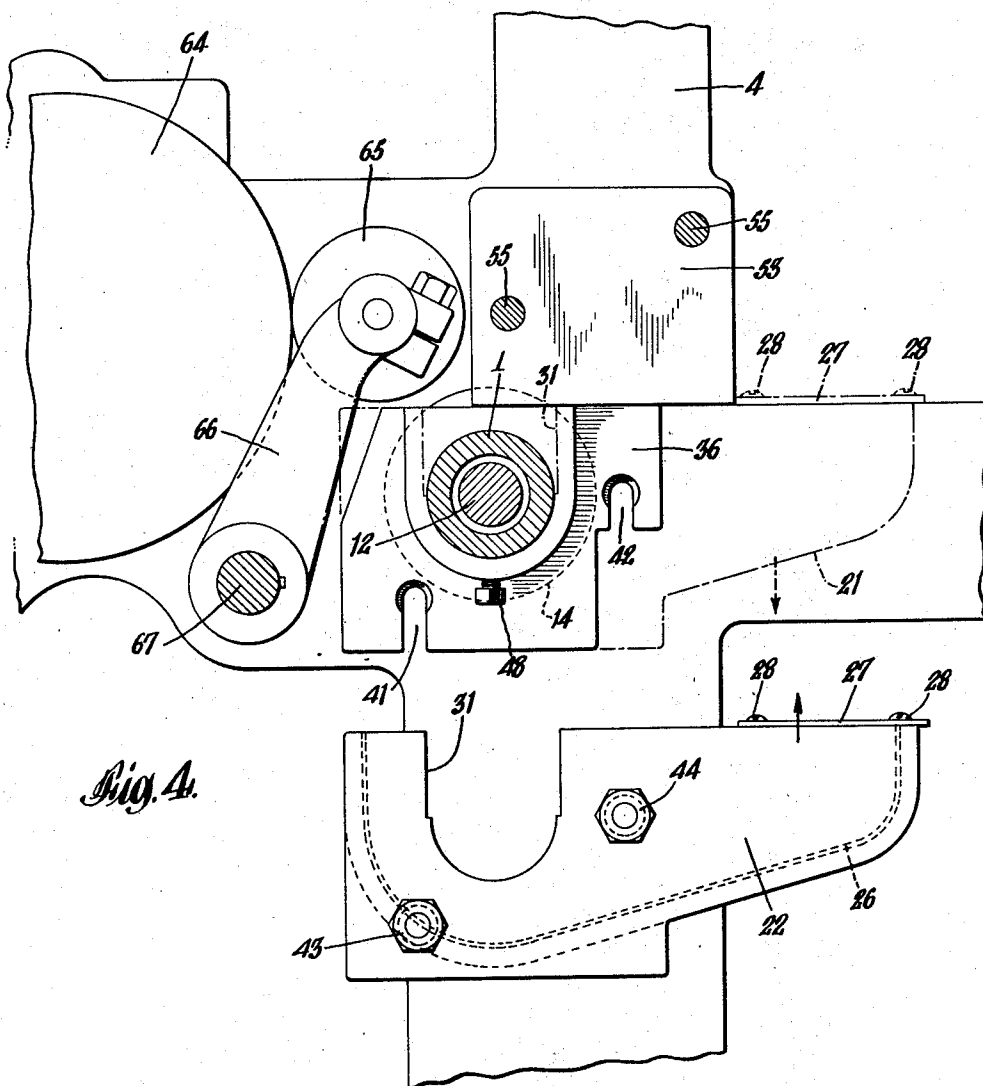


Fig. 4.

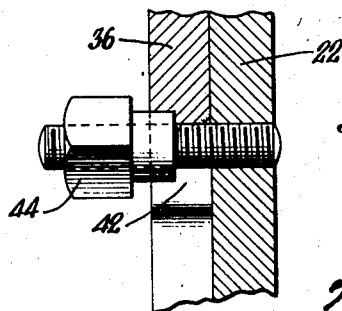


Fig. 5.

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UNITED STATES PATENT OFFICE

2,212,137

ROTARY INKING MECHANISM

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Application March 29, 1939, Serial No. 264,687

7 Claims. (Cl. 101—364)

The invention relates to new and useful improvements in printing press inking mechanisms and more particularly to such improvements in the construction and mounting of ink fountains.

5 Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice with the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claims.

The invention consists in the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

15 The accompanying drawings, referred to herein and constituting a part hereof, illustrate one embodiment of the invention, and together with the description, serve to explain the principles of the invention.

20 Of the drawings:

Fig. 1 is a transverse vertical section through an ink fountain mechanism embodying the invention;

Fig. 2 is a full elevation looking at Fig. 1 from the right;

Fig. 3 is a horizontal section on line 3—3 of Fig. 1;

Fig. 4 is a full section on lines 4—4 of Figs. 2 and 3, showing the fountain in operating and in withdrawing position;

Fig. 5 is an enlarged fragmentary detail on line 5—5 of Fig. 3.

Objects of the invention are to provide an ink fountain mechanism which is of simple and sturdy construction, of few and simple parts, which are likewise simple and easy to manipulate; and wherein the fountain itself is readily removable for cleaning or substitution of colors, or other purpose, and is as readily replaceable in position; which is easily and accurately positionable and is firmly held in position. The invention is directed to improvements in fountains wherein the fountain roller is journaled in permanent position in the press frame, the fountain roller knife blade, and cooperating parts are also mounted directly in the press frame, while the fountain itself is readily insertible and removable, may be quickly and readily removed and replaced without disturbing the fountain roller or knife, and the fountain passes easily, accurately and reliably into its proper positional relation with respect to the roller and the knife. The invention is in certain respects an improvement on that described and claimed in Patent Number 2,166,631, dated July 18, 1939, to Frank

A. Foster. The present invention is directed mainly to providing a removable and replaceable fountain that is wieldy and fairly light, and yet of strong and firm construction, which can be directly and immediately withdrawn and replaced, positioned and supported in its proper position, and to provide supporting means which are simple, of few parts, inexpensive to manufacture, and simple and easy in operation.

Referring now in detail to the embodiment of the invention illustrated by way of example in the accompanying drawings, two cylindrical sleeves 1 and 2 are fixedly mounted, respectively, in the two side frames 3 and 4 of the press, the exterior ends of the sleeves having respective flanges 5 and 6, which abut against the exterior faces of bosses in the press frames and are held in position by screw bolts 7, the cylindrical sleeves extending inwardly some distance within the press frames. The fountain roller shaft 12 is journaled in a plurality of bushings 13 fitted within the sleeves 1 and 2 at either end thereof, the fountain roller 14 being fixed centrally on its shaft between the inner ends of the two bushings 1 and 2. Suitable seals 11 may be used to prevent ink entering the shaft bearings.

The embodied form of removable and reversible fountain comprises a fountain 21 having side walls 22 and 23 of substantial thickness, the side walls having integral, inwardly-extending flanges 24 and 25, and the body 26 of the fountain, which may be of sheet metal, is supported by the flanges, the edges of the sheet 26 abutting on the side walls 22 and 23. The rear part of the top of the fountain is provided with a closure plate 27, fastened in place by screws 28, this plate closing the top of the fountain from the rear end up to the supporting bar for the fountain roller knife. The side walls 22 and 23 have deep U-shaped recesses 31 formed therein to receive the sleeves 1 and 2, as the fountain is passed up from beneath into operating position, the edges of these recesses fitting tightly about the sleeves.

The means for positioning and holding the fountain firmly and accurately in position while permitting its quick removal and reinsertion of the same or another fountain, comprise supporting plates 36 and 37, having, respectively, flange hubs 38 and 39 encircling the sleeves 1 and 2, the supporting plates being disposed vertically at right angles to their hubs. The supporting plates each have bolt-receiving slots 41 and 42 opening on the bottom side of the plates and extending upwardly. Into each of the side walls 22 and 23 of the fountain are screw-threaded

clamping bolts 43 and 44, and as the fountain is lifted upwardly from the full line position shown in Fig. 4, into operating about the fountain roller, as shown in broken lines in Fig. 4, and as shown in Figs. 1 and 2, the sleeves 1 and 2 pass into the recesses 31, and the bolts 43 and 44 enter the corresponding slots 41 and 42. The bolts then are turned home to firmly fasten the positioned fountain to the supporting plates. The plates 36 and 37 may be held in position longitudinally of the sleeves 1 and 2 by clamping bolts 48 and 49.

Referring now to the means for regulating the ink supply from the fountain roller, an angled roller knife supporting bar 50 is mounted upon and extends across between the vertical press frames. As embodied, this bar has a horizontal flange 51 and a vertical flange 52, connected at their ends respectively, to two integral transverse end plates 53 and 54, which abut on and fit between pads 55 and 56 formed on the inner faces of the vertical press frames 3 and 4 (Fig. 2), the knife-supporting bar being fixed to the frames by bolts 55. The fountain roller knife plate 57 is mounted between the under side of the flange 51 and an underneath holding bar 58, and these parts are fastened together by screws 59. A series of thumb screw bolts 60 are screw threaded into the supporting bar and bear upon the knife plate 57 to regulate the ink on the fountain roller 14 in the usual manner. The upper surfaces of the fountain-supporting plates 36 and 37 abut against the bottom surface of the horizontal flange 51 of the knife support, thereby preventing the supporting plates from rotating on the sleeves 1 and 2, and holding them in aligned position to receive the bolts 43 and 44. An ink drum 64 is shown more or less conventionally, and likewise a ductor roller 65 which vibrates between the fountain roller 14 and the ink drum 64. The ductor roller is mounted on arms 66, fixed on a shaft 67. Suitable means for rotating the fountain roller will be provided and as here shown, a driven sprocket 68 is mounted on an end of the fountain roller shaft 12, and is held on by a disc 69 keyed to the shaft and held from axial displacement by a set screw 70. A suitable spring pin clutch 71 is shown between the hub 69 and the sprocket wheel 68. Any suitable means for actuating the ductor roller will be provided and a part of said means is more or less conventionally shown as a cam 73, keyed on the opposite end of the fountain roller shaft 12, and keyed also on said shaft is a vibrator cam 74, which is part of the means for vibrating the ink drum or other part of the inking system. Suitable means for rotating the ink drum (not shown) will be provided.

The invention in its broader aspects is not limited to the specific mechanisms shown and described but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages.

What is claimed is:

1. A rotary printing press inking mechanism including in combination sleeves fixedly mounted in the side frames of the press, a fountain roller intermediate said sleeves and having a shaft journaled in said sleeves, fountain-supporting plates mounted on said sleeves at either side of the fountain roller, an ink fountain having its sides recessed to receive said sleeves and means for fastening said fountain side walls and sup-

porting plates together to support the fountain in ink-supplying position.

2. A rotary printing press inking mechanism including in combination a fountain roller having a shaft journaled in the press frame, a removable and replaceable fountain, fountain-supporting plates extending downwardly below the fountain roller shaft and having downwardly opening slots therein, clamping screws threaded into the side walls of the fountain and adapted to pass into said slots when the fountain is lifted from beneath into operative relation with the fountain roller, said screws serving to clamp the fountain and supporting plates together to position and hold the fountain.

3. A rotary printing press inking mechanism including in combination a fountain roller having a shaft journaled in the press frame, a removable and replaceable fountain, fountain-supporting plates extending downwardly below the fountain roller shaft and having downwardly opening slots therein, devices carried on the side walls of the fountain and adapted to enter said slots to guide and position the fountain as it is lifted from beneath into operative relation with said roller, said devices comprising means for holding the fountain firmly to said supporting plates to maintain the fountain in operating position.

4. A rotary printing press inking mechanism including in combination sleeves fixedly mounted in the side frames of the press, a fountain roller intermediate said sleeves and having a shaft journaled in said sleeves, fountain-supporting plates mounted on said sleeves at either side of the fountain roller and extending downwardly from the sleeves, said plates having downwardly opening slots therein, a removable and replaceable fountain, devices carried on the side walls of the fountain and adapted to enter said slots to guide and position the fountain as it is lifted from beneath into operative relation with said roller, said devices comprising means for holding the fountain firmly to said supporting plates to maintain the fountain in operative position.

5. A rotary printing press inking mechanism including in combination sleeves fixedly mounted in the side frames of the press, a fountain roller intermediate said sleeves and having a shaft journaled in said sleeves, fountain-supporting plates mounted on said sleeves at either side of the fountain roller and extending downwardly from the sleeves, said plates having downwardly opening slots therein, a removable and replaceable fountain, clamping screws threaded into the side walls of the fountain and adapted to pass into said slots when the fountain is lifted from beneath into operative relation with the fountain roller, said screws serving to clamp the fountain and supporting plates together to position and hold the fountain.

6. A rotary printing press inking mechanism including in combination sleeves fixedly mounted on the side frames of the press, a fountain roller intermediate said sleeves and having a shaft journaled in said sleeves, a fountain knife support fixed to and extending across between the press frames and a fountain knife supported thereby, fountain-supporting plates freely mounted on said sleeves at either side of the fountain roller, the upper faces of said plates abutting the bottom face of said knife support to prevent rotation of the plates, there being slots extending upwardly from the bottom end of said plates, an ink fountain having the upper part of

its side walls recessed to receive said sleeves, and bolts threaded into the fountain side walls and passing into the slots in the supporting plates as the fountain is moved into position between the supporting plates from below, said bolts serving to clamp the fountain and supporting plates together.

7. A rotary printing press inking mechanism including in combination sleeves fixedly mounted in the side frames of the press, a fountain roller

intermediate said sleeves and having a shaft journaled in said sleeves, fountain-supporting plates freely mounted on said sleeves at either side of the fountain roller, means for preventing rotational movement of said plates about the sleeves, an ink fountain and means for attaching the ink fountain directly to said supporting plates to maintain the fountain in operative position.

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