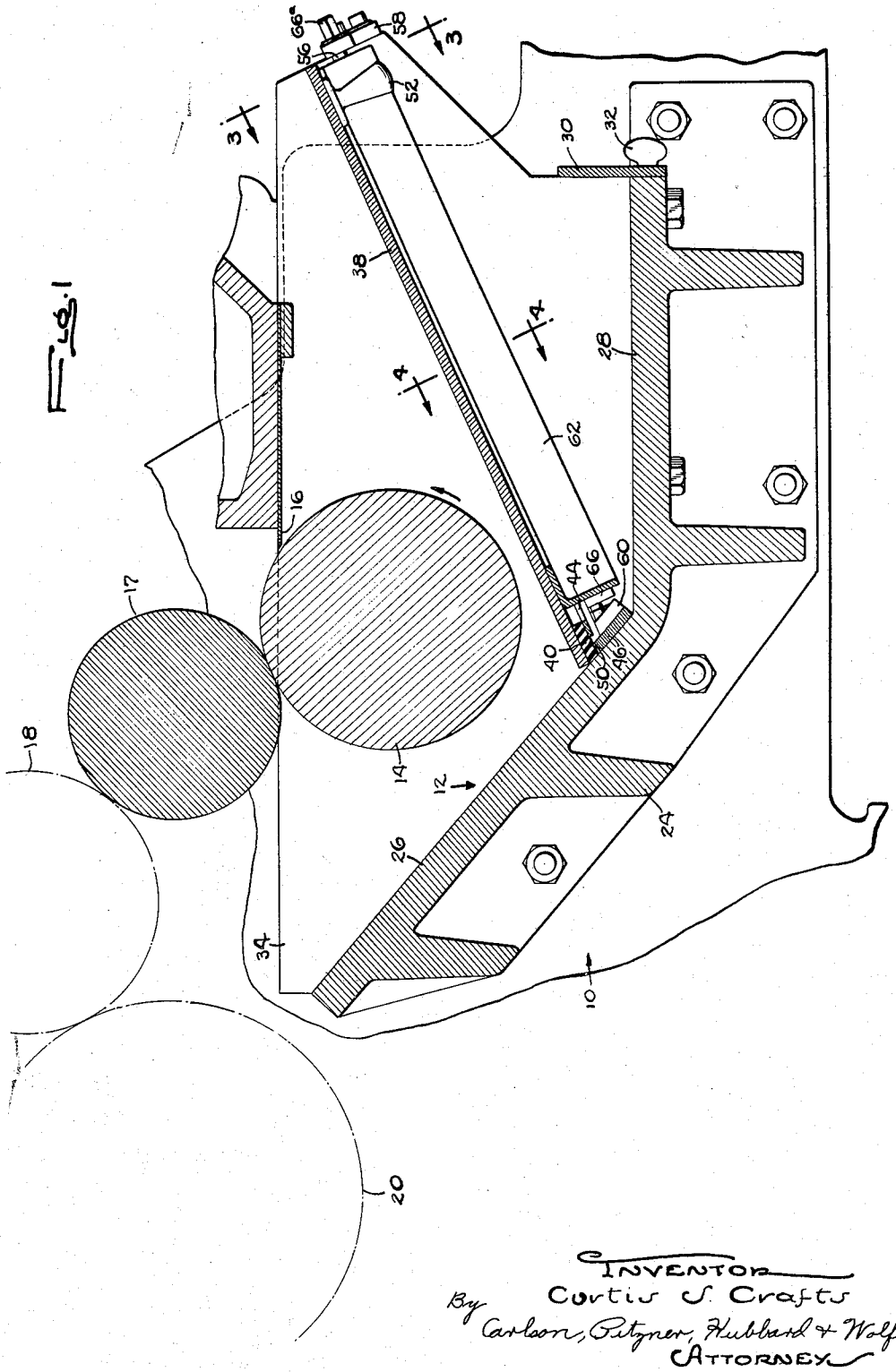
Sept. 27, 1955 C. S. CRAFTS 2,718,848

INK FOUNTAIN FOR PRINTING PRESSES

Filed Feb. 23, 1952 2 Sheets-Sheet 1




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Fig. 2

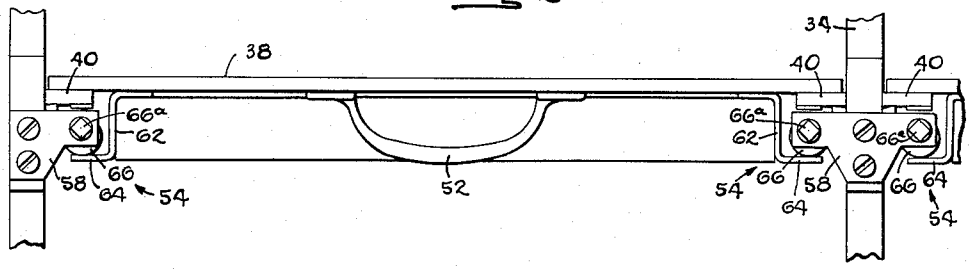



Fig. 3

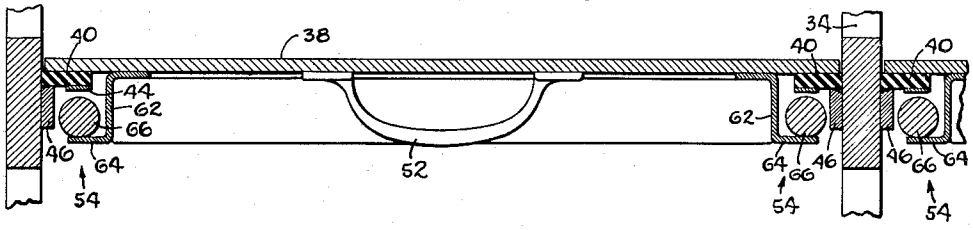



Fig. 4

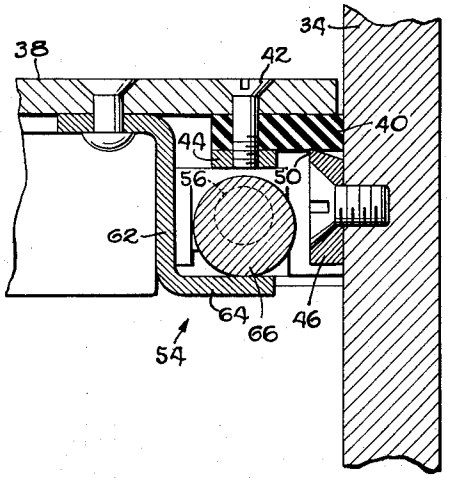
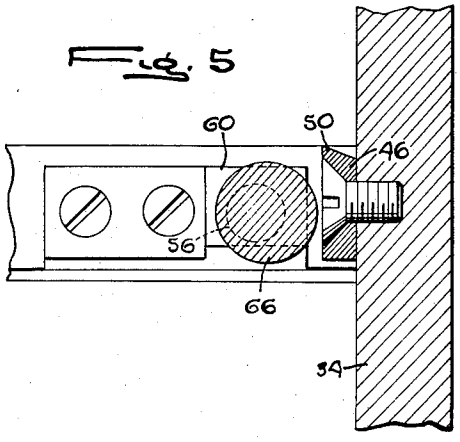



Fig. 5




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# INK FOUNTAIN FOR PRINTING PRESSES

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9 Claims. (Cl. 101—364)

This invention relates to printing presses and more particularly to an improved overshot ink fountain for use therewith.

As compared with undershot fountains, overshot ink fountains have the advantage of complete freedom from leakage of ink at all times, even when the press is shut down. This advantage is particularly significant where the ink fountain is located above the web, as in center color and half deck presses, which are frequently used to adapt ordinary newspaper presses for color printing. When undershot fountains are used on center color or half deck presses, objectionable ink leakage between the fountain roller and the knife is usually experienced, particularly when a continuous ink feeding arrangement is employed rather than an oscillating ductor roller. With a continuous ink feeding arrangement, considerable clearance must ordinarily be provided between the fountain roller and the feed roller, with the result that a correspondingly great clearance is necessary between the fountain roller and the knife in order to provide a sufficiently thick film of ink on the fountain roller. Under these conditions, objectionable leakage of ink almost invariably occurs between the fountain cylinder and the knife.

In the case of overshot ink fountains, leakage of ink is eliminated, but heretofore certain drawbacks have impaired the usefulness of overshot fountains for press units employing colored ink. In newspaper printing practice, the color of the ink employed in center color and half deck press units is frequently changed in order to accommodate various arrangements of color pages on the web. Since thorough cleaning of the ink fountain is required to make a color change, the fountain should be easy to clean. Moreover, it should be operative with as small a pool of ink as possible, since the ink removed from the fountain in making a color change is ordinarily discarded due to contamination by cleaning solvents and the like. Heretofore, however, the virtues of easy cleaning and low ink capacity have been considered incompatible, inasmuch as it has been considered necessary to provide a large space between the ink fountain roller and the bottom of the ink trough in order to facilitate cleaning.

One of the principal objects of the present invention is to provide an overshot ink fountain which combines the advantages of easy cleaning and low ink capacity.

A further object is to provide an improved overshot ink fountain constructed so that a color change can be made with a minimum of time, effort and wastage of ink.

Another object is to provide an improved ink fountain adapted to be employed advantageously on center color and half deck printing press units.

Further objects and advantages of the invention will be apparent from the following description taken in connection with the accompanying drawings in which:

Figure 1 is a sectional view of an illustrative ink fountain constructed in accordance with the invention, the view being taken transverse to the fountain roller.



Fig. 2 is a fragmentary view of the fountain taken at right angles to Fig. 1 and at a downwardly inclined angle, edgewise with respect to a removable bottom plate forming a part of the fountain.

Fig. 3 is a fragmentary sectional view taken along the line 3—3 in Fig. 1.

Fig. 4 is a fragmentary sectional view taken along the line 4—4 in Fig. 1.

Fig. 5 is a fragmentary sectional view similar to Fig. 4 taken with the bottom plate removed.

Referring in greater detail to Fig. 1 of the drawings, the invention is illustrated as embodied in an overshot ink fountain **10** having an ink trough or pan **12**. Positioned in the trough and adapted to dip into the ink therein is a fountain roller **14** mounted at each end in suitable bearings (not shown) and driven at a small fraction of the press speed by suitable means (not shown). Ink which adheres to the roller **14** is smoothed into a film of suitable thickness by means of a knife **16** lying adjacent the fountain roller at a point at which the surface thereof is moving upwardly. A suitable feed roller **17** conveys ink from the fountain roller to a transfer roller **18** which in turn carries the ink to an ink drum **20**. The roller **17** may be of a type to provide either continuous or intermittent ink feeding, but preferably it is of the continuous feed type, and is illustrated as such. From the ink drum **20** the ink is transported to a plate cylinder by means of a series of rollers not shown.

In this instance the ink fountain **10** comprises a base or body **24** of heavy cast construction. Formed integrally therewith is a rear wall **26**, preferably inclined, which merges with a generally horizontal lower wall or apron **28**, the rear wall **26** being both a side and a bottom element of the ink trough **12**. It will be observed that the rear wall **26** extends longitudinally of the roller **14**. To facilitate cleaning, considerable spacing is provided between the rear wall **26** and the fountain roller **14**, and an even greater spacing may be provided between the apron **28** and the roller. An upwardly extending ink retaining plate **30** is detachably secured to the front edge of the apron by means of a plurality of thumb screws **32**. The trough is divided into a plurality of page width sections by means of transverse vertical division pieces or end walls **34** rigidly secured to the base **24**, conventional sealing means being provided between the division pieces **34**, the roller **14**, the rear wall **26**, and the apron **28**, to prevent ink leakage from one section to another. The base or body **24** may be open toward the front along the longitudinal dimension of the roller **14**.

In each section of the ink trough or pan **12**, an individual upwardly inclined panel or plate **38** is removably positioned to provide a front wall therefor. To minimize the ink capacity of the trough, a minimum of clearance is provided between the panel **38** and the fountain roller **14**. When in place in the fountain, the panel is sealed against ink leakage by means of a plurality of soft, resilient, rubberlike sealing strips **40**, secured to the underside thereof along its lower and inclined lateral edges, by means of clamping screws **42** threaded into clamping strips **44**. The sealing strips **40** engage respective sealing bars **46**, rigidly secured to the rear wall **26** and the division pieces **34**. An especially effective seal is obtained between the strips and the bars by providing the latter with relatively sharp, chisel-like upper edges **50** adapted to bite into the strips. A suitable handle **52** is mounted on the panel to facilitate removal and installation thereof.

In order to clamp the panel **38** in place while providing for quick removal thereof, the ink fountain is equipped with a plurality of clamping mechanisms **54**,

which in this instance comprise eccentric shafts **56** journaled at their opposite ends in brackets **58** and **60**, secured respectively to the division pieces **34** and the sloping rear wall **26** of the base. Mounted on the panel adjacent its inclined lateral edges are respective Z-shaped angle brackets **62** having lower flanges **64** projecting underneath the eccentrics **66**. Each eccentric is provided with a square driving head **66***a* by means of which it may be rotated so as to engage one of the Z-shaped brackets **62** and thereby clamp the panel downwardly against the sealing bars **46**. To provide added rigidity for the panel **38**, an angle bracket is mounted along the lower edge thereof.

In preparation for a press run, the trough **12** of the ink fountain is filled with ink to a level such as to immerse the lower portion of the fountain roller **14**. Because of the close spacing between the removable panel **38** and the roller, a relatively small quantity of ink will suffice to place the fountain into operation. For this reason the ink level in the fountain can be kept low to avoid wastage of ink in the event that a color change is to be made.

In the usual manner, the ink in the fountain adheres to the roller **14** and is smoothed into a film of suitable thickness by the knife **16**, as the roller is driven counterclockwise by the press. Ink is wiped off the fountain roller **14** by the more rapidly rotating feed roller **17** and is transferred successively to the roller **18** and the drum **20** and thence to the printing plate.

If the color of the ink is to be changed at the end of the press run, the panel **38** is unlocked by rotating the eccentric shafts **56** with a suitable wrench applied to the square heads **66***a*. When the eccentrics have thus been disengaged from the Z-brackets **62**, the handle **52** is grasped and the panel slid edgewise out of the fountain, whereupon the ink remaining in the trough **12** drains downwardly upon the apron **28**. Removal of the panel **38** does not require removal of the roller **14**. The retaining plate **30** may be removed so that the ink can be scraped over the front edge of the apron into a suitable receptacle. With the panel **38** removed, it is a simple matter to clean the sloping rear wall **26**, the division pieces **34**, and the roller **14**. The usual cleaning implements and cloths may readily be inserted through the space between the roller and the rear wall.

After the fountain has been cleaned, the retaining plate **30** is replaced and the panel **38** is installed with the sealing strips **40** engaging the sealing bars **46**. To clamp the panel in place, the eccentrics **66** are rotated into clamping engagement with the lower flanges of the Z-brackets **62**. As finally positioned, the eccentrics are on dead center as shown in Fig. 4 so that the panel cannot be dislodged by vibration or the like. It will be apparent that the panel **38** may thus be removed or replaced in a matter of seconds.

I claim as my invention:

1. In an overshot ink fountain for a printing press, the combination comprising an ink trough having fixed end and rear walls, an access panel forming a movable front wall of the ink trough, sealing means interposed between the lower side of the panel and the end and rear walls, and means including a pair of eccentric shafts extending along the edges of the panel adjacent the end walls for removably clamping the panel into sealing engagement with the end and rear walls.

2. In an overshot ink fountain for a printing press, the combination comprising an ink trough having fixed end and rear walls, an access panel forming a movable front wall of the ink trough, sealing means interposed between the lower side of the panel and the end and rear walls, a pair of Z-brackets secured to the panel along its edges adjacent the end walls, and a pair of eccentric shafts engageable with the Z-brackets for removably clamping the panel against the sealing means.

3. In an overshot ink fountain for a printing press, the combination comprising an ink trough having fixed end and rear walls, a flat access panel forming a removable front ink trough wall, soft resilient sealing strip means around the edges of the panel on its underside, a plurality of sealing bars on the end and rear walls for engaging the sealing strip means, and clamping means for removably securing the panel against the sealing bars.



4. In an overshot ink fountain for a printing press, the combination comprising an ink trough having fixed end and rear walls, a flat access panel forming a removable front ink trough wall, soft resilient sealing strip means around the edges of the panel on its underside, a plurality of sealing bars on the end and rear walls for engaging the sealing strip means, and eccentric shafts extending along the edges of the panel adjacent the end walls for removably securing the panel against the sealing bars.

5. In an overshot ink fountain for a printing press, the combination comprising an ink trough having fixed end and rear walls, a flat access panel forming a removable front ink trough wall, soft resilient sealing strip means around the edges of the panel on its underside, a plurality of sealing bars on the end and rear walls for engaging the sealing strip means, a pair of Z-brackets secured to the panel along its edges adjacent the end walls, the brackets having outwardly extending lower flanges, and a pair of eccentric shafts engageable with the lower flanges for removably securing the panel against the sealing bars.

6. In an ink fountain for a printing press or the like, the combination comprising a frame, a generally horizontal ink roller journaled in said frame, a trough member underlying said roller and supported in said frame, said trough member being of generally L-shape having a forwardly and downwardly sloping rear wall and a generally horizontal apron extending forwardly from the lower edge of said rear wall and joined thereto, the spacing between said apron and said roller being substantially greater than the spacing between said rear wall and said roller to afford access between the trough member and said roller for cleaning purposes, said trough member having vertical divider members spaced from one another and forming an ink-tight joint with said rear wall and said apron, a removable panel member of flat rectangular shape extending bridgingly between the inwardly facing surfaces of said divider members, said panel member being arranged closely adjacent said roller and in V formation with the rear wall of said trough member so that the roller lies generally above the root of the V, and manually releasable sealing means for sealing the edges of said panel to said divider members and to said rear wall respectively, said apron having an upwardly extending ink retaining member along its forward edge to retain the ink on said apron when the panel member is removed.

7. In an ink fountain for a printing press or the like, the combination comprising a frame, a generally horizontal ink roller journaled in said frame, a trough member underlying said roller and supported in said frame, said trough member having a forwardly and downwardly sloping rear wall positioned adjacent said roller and further having an apron joined thereto and extending forwardly from the lower edge of said rear wall, the spacing between said apron and said roller being substantially greater than the spacing between said rear wall and said roller to afford access between the trough member and said roller for cleaning purposes, said trough member having vertical walls spaced from one another and forming an ink-tight joint with said rear wall and said apron, a removable panel member of rectangular configuration extending bridgingly between said divider walls, said panel member being arranged closely adjacent said roller and in V formation with the rear wall of said trough member so that the roller lies generally above the root of the V, and manually releasable sealing means for sealing the

edges of said panel to said divider members and said rear wall respectively.

8. In an ink fountain for a printing press or the like, the combination comprising a frame, a generally horizontal ink roller journaled in said frame, an ink trough underlying said roller and supported in said frame, said ink trough having a forwardly and downwardly sloping rear wall positioned adjacent said roller and having a generally horizontal apron extending forwardly from the lower edge of said rear wall, the spacing between said apron and said roller being substantially greater than the spacing between said rear wall and said roller to afford access between the apron and said roller for cleaning purposes, said ink trough having vertical end walls spaced from one another, a removable panel member of rectangular configuration extending bridgingly between said vertical end walls, said panel member being arranged closely adjacent said roller and in V formation with the rear wall of the ink trough so that the roller lies generally above the root of the V, and manually releasable sealing means for sealing the edges of said panel to said divider members and said rear wall respectively.

9. In an ink fountain for a printing press or the like, the combination comprising a frame, a generally horizontal ink roller journaled in said frame, a trough member underlying said roller and supported in said frame, said trough member having a forwardly and downwardly sloping rear wall and a generally horizontal apron extending forwardly from the lower edge of said rear wall, said trough member having vertical end walls spaced from one another and forming an ink-tight joint with said rear wall and said apron, a removable panel member of rectangular configuration extending bridgingly between said end walls, sealing bars on the end walls and rear wall of said trough member for engaging the presented edges of the panel member and for locating the same closely adjacent said roller in V formation with the rear wall of said trough member and with the roller located generally above the root of the V, and manually releasable sealing means for sealing the edges of said panel to said sealing bars.



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