June 17, 1958 E. W. WORTHINGTON ET AL 2,838,996

PAGE CUT-OFF FOR INKING MECHANISM

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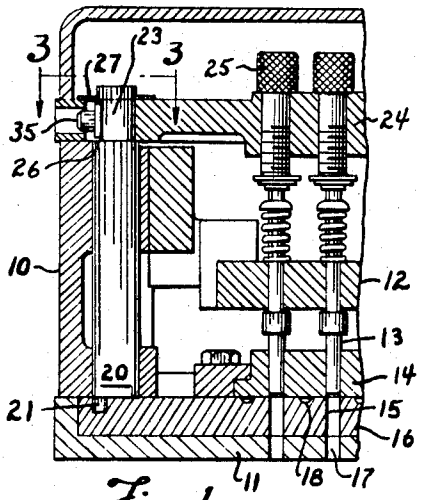


Fig. 1

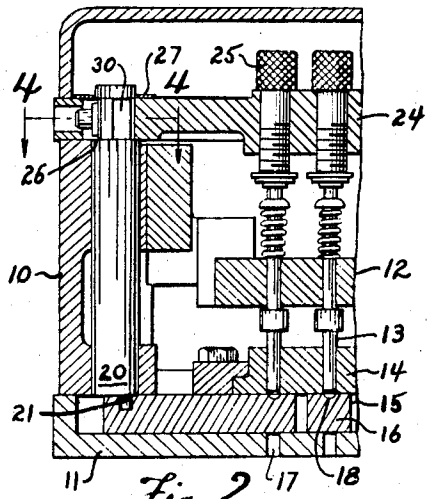


Fig. 2

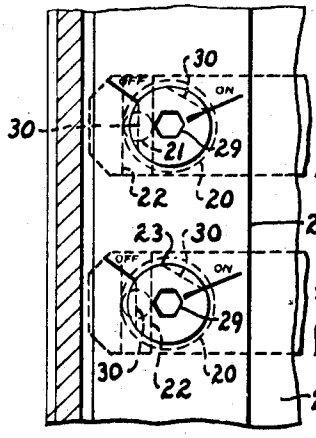


Fig. 3

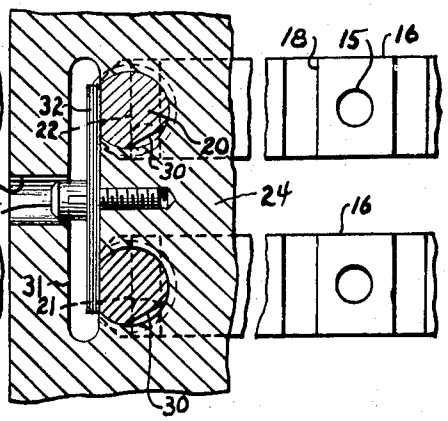


Fig. 4

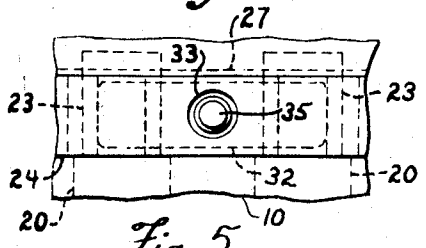


Fig. 5

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PAGE CUT-OFF FOR INKING MECHANISM

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4 Claims. (Cl. 101—365)

This invention relates to improvements in inking mechanisms for printing machines and more particularly to devices for cutting off the supply of ink to one or more pages.

In one typical form of ink pump, as shown for example in Schmidt Patent 1,348,900, a number of pistons or plungers, each pumping ink for one column, are arranged in sets for supplying page widths, all plungers being operated by a common mechanism, and any given set being cut off by slidably adjusting a port plate associated therewith, so as to by-pass the ink back to the reservoir instead of directing it into conduits which supply the ink rail. The mechanism for sliding these port plates has generally required the use of a shaft or rod passing through the wall of the ink pump and reservoir, creating an undesirable leakage condition or a good deal of extra space within the pump and reservoir housing, as viewed in plan, so as to provide external access to the page cut off mechanism, without passing an adjusting member through the housing wall at a point below the ink level. The general object of the present invention is to provide a page cut off mechanism of a compact character and which does not require any packing of a rod or shaft to prevent leakage.

A mechanism embodying the invention in a preferred form will now be described with reference to the accompanying drawing, and the features forming the invention will then be pointed out in the appended claims.

In the drawing Fig. 1 is a fragmentary vertical section through part of an ink pump embodying the invention in a preferred form. Fig. 2 is a view similar to Fig. 1 but showing the parts in another position. Fig. 3 is an enlarged section on a line 3—3 of Fig. 1. Fig. 4 is an enlarged section on a line 4—4 of Fig. 2 and Fig. 5 is a fragmentary side elevation.

The pump generally is of known construction such as shown for example in the Schmidt patent above referred to, and the details thereof will not be described herein, except in so far as necessary for an understanding of the present invention. The pump includes a reservoir and housing structure including side walls **10** and a bottom **11**, which form an ink reservoir and also support the pumping mechanism. That mechanism includes a plate **12** carrying the various pistons or plungers **13** and imparting to them suitable vertical reciprocal and horizontal movements. The cylinders are formed in a plate **14**, which is slidable and follows the piston plungers in their horizontal movement, so as to bring them over discharge ports **15** formed in bars **16** (Fig. 1). The ports **15** communicate with discharge openings **17**, for discharging the ink, and in operation also communicate with inlet or supply ports (not shown), the entire operation being conventional and well understood. The bars **16**, one of which is provided for each set of plungers supplying a page width, are slidably supported in the housing bottom **11** for movement between a pumping position

(Fig. 1) and a cut-off position (Fig. 2). In the latter position the ports **15** are blocked off, and transverse grooves **18** in the bars **16** are brought under the plungers **13**, so that ink entering the pumps is returned to the reservoir, thus cutting off the supply of ink in question. The operation as thus far described does not differ in any substantial particular from prior practice as exemplified in the Schmidt patent mentioned above.

The improved mechanism for giving the required movements to the bars **16** comprises for each bar, a vertical shaft **20** journaled in a bore in the housing wall **10**, and carrying a crank pin **21** received in a slot or groove **22** in the member **16**. This forms a scotch yoke type of connection, by means of which turning the shaft **20** will move the associated bar **16** from the position of Fig. 1 to that of Fig. 2.

The reduced upper part **23** of shaft **20** is received in a bore in a top member **24** which supports the usual piston stroke adjusting mechanisms **25**, and shaft **20** is located vertically by shoulder **26** engaging under the member **24**. The head of each shaft **20** is formed with a hexagonal socket **29** to take an Allen or similar wrench and the reduced portion **23** is formed with two flats **30** for locating the shaft in either of the positions of Fig. 1 and Fig. 2. Adjacent each pair of shafts **20** is an elongated opening **31** in the member **24** which receives a leaf spring **32**. A bore **33** in the member **24** serves to accommodate a screw **35** which holds the spring in place. Turning a shaft **20** forces back one end of the spring **32** until one of the flats comes opposite this element at which point it snaps back into place holding the shaft in adjusted position. "On" and "off" markings, as shown, are provided on an index plate **27** secured to the member **24**.

As will be apparent the mechanism in the invention provides a cut-off operating mechanism which creates no possibility of leakage; which requires no increase in the dimensions of the pump; which does not involve the placing of new mechanism within the general ink reservoir space and hence creates no difficulty in cleaning, and which locates the external operating element, or top of the shaft, immediately adjacent the pump structure regulating elements, so that all adjustments are placed conveniently and accessibly.

What is claimed is:

1. In a printing machine ink pumping mechanism, having a page cut off member comprising a horizontally slidable ported bar movable within a housing between two positions for respectively discharging ink and bypassing it back to a reservoir, operating mechanism comprising for each such page cut-off bar, a rotatable vertical shaft, a pin and slot connection inside the housing, formed in the shaft and bar respectively and substantially coplanar with the upper surface of the bar, and a manually turnable end upon the said shaft extending upwardly beyond the ink level within the housing and accessible from the exterior of the housing.

2. Page cut-off operating mechanism according to claim 1, in which the housing wall has a bore rotatably carrying the said shafts.

3. In a printing machine ink pumping mechanism, having stroke adjusting means, a member carrying the same, and a page cut-off member comprising a horizontally slidable ported bar movable between two positions for respectively discharging ink and bypassing it back to a reservoir housing, operating mechanism comprising for each such page cut-off bar, a rotatable vertical shaft, a pin and slot connection inside the housing, formed in the shaft and bar respectively and substantially coplanar with the upper surface of the bar, and a manually turnable end upon the said shaft extending upwardly beyond

the ink level within the housing, accessible from the exterior of the housing, and located adjacent the stroke adjusting means.

4. Page cut-off operating mechanism according to claim 3, in which the housing wall has a bore rotatably carrying the said shafts.

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