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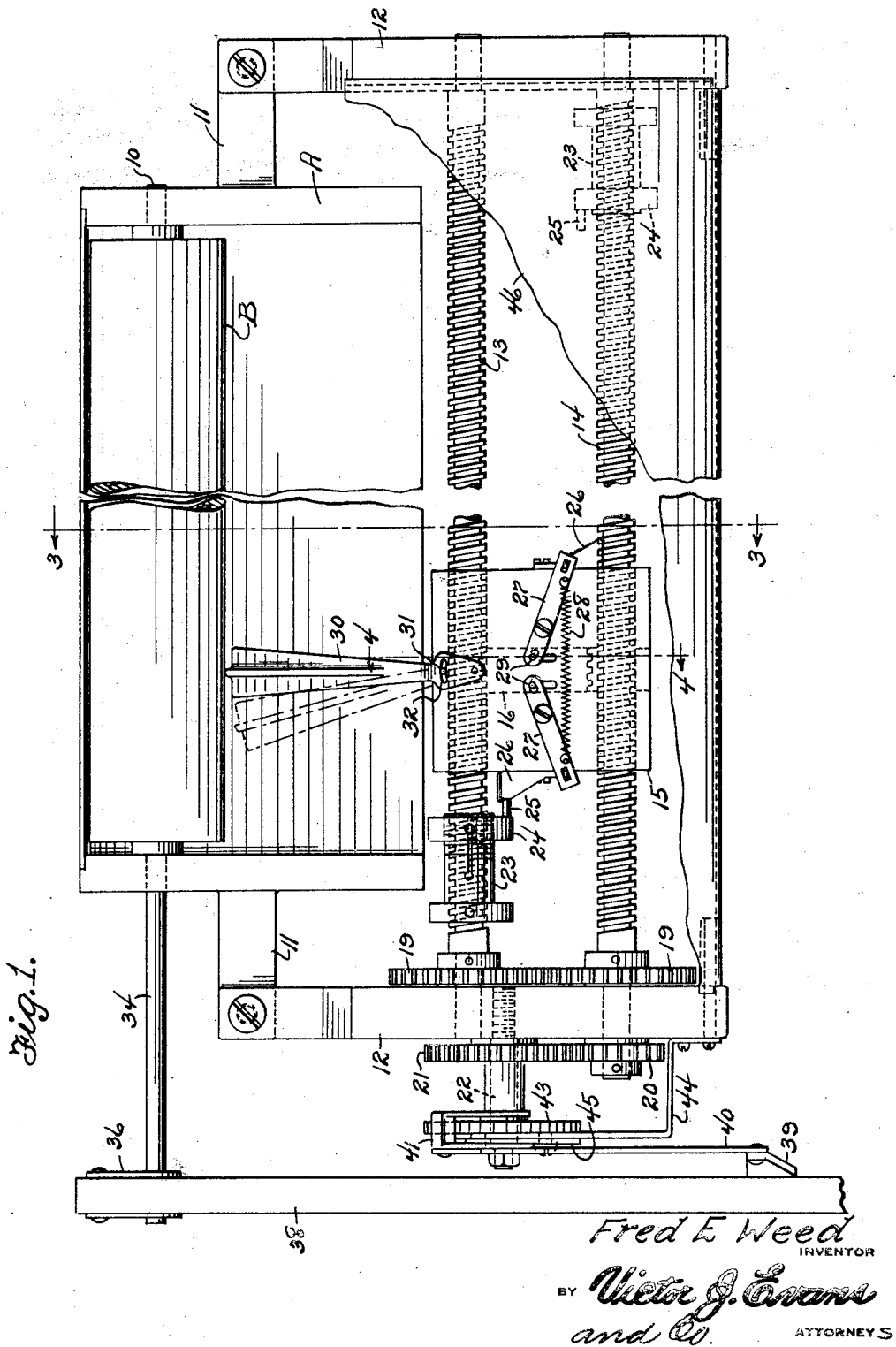
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AUTOMATIC INK AGITATOR FOR PRINTING MACHINES

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# UNITED STATES PATENT OFFICE

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## AUTOMATIC INK AGITATOR FOR PRINTING MACHINES

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The invention relates to a printing press attachment and involves an automatic ink agitator for a printing press.

The primary object of the invention is the provision of an attachment of this character wherein the ink in the fountain of a printing press will be agitated or stirred so as to secure an even flow of ink at all times and to keep the ink in the fountain working downwardly against feed roller or inking roll and whereby the pigment or dirt in the ink will not collect against the feed roller or inking roll and retard the flow of ink.

Another object of the invention is the provision of an attachment of this character wherein the ink within the ink fountain will be constantly agitated and the operation of the attachment carried forth automatically whereby heavy bodied ink will be prevented from settling in the fountain as it will be constantly worked to maintain the proper amount of ink flowing during the operation of the printing press, thereby relieving the operator from manual labor in the working of the ink in the fountain by hand.

A further object of the invention is the provision of an attachment of this character wherein the agitator finger is of novel form and is operated automatically within the ink fountain of a printing press to agitate or stir the ink contained within said fountain to assure the fluidity thereof and to avoid the settling of the ink with resulting variance in its density and in this manner the proper flow of the ink is assured in the press when the same is in operation.

A still further object of the invention is the provision of an attachment of this character which is comparatively simple in construction, thoroughly reliable, efficient and automatic in its operation, possessing but few parts, thus minimizing expense for replacement of such parts, requiring little or no attention by an operator of the press, readily accessible for cleaning purposes and inexpensive to manufacture and install.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described in

detail, illustrated in the accompanying drawings, which disclose the preferred embodiment of the invention, and pointed out in the claims hereunto appended.

In the accompanying drawings:—

Figure 1 is a top plan view of an inking fountain and its inking roller of a printing press, showing the automatic ink agitator attachment constructed in accordance with the invention applied thereto, the cover or lid of such attachment being partly broken away for purposes of illustrating details.

Figure 2 is an end elevation of the agitator attachment, certain parts being broken away to illustrate adjunct parts.

Figure 3 is a sectional view on the line 3—3 of Figure 1 looking in the direction of the arrows.

Figure 4 is a detail sectional view on the line 4—4 of Figure 1 looking in the direction of the arrows.

Figure 5 is a sectional view on the line 5—5 of Figure 4 looking in the direction of the arrows.

Figure 6 is a sectional view on the line 6—6 of Figure 4 looking in the direction of the arrows.

Figure 7 is a plan view of the agitator finger removed from the attachment.

Figure 8 is an end view thereof.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail, A designates generally an inking fountain of a printing press, the fountain being of conventional form, and B the inking roller or feed roller for the ink which is supported by a journal 10 within the fountain B, the journal 10 having its bearing in the opposite ends of said fountain.

Formed at opposite ends of the fountain A are lateral hangers or brackets 11 to which is connected the attachment including a frame having end pieces 12. The pieces 12 of the frame have journaled therein spaced parallel screw shafts 13 and 14 respectively, these constituting alternate feed screws for a carriage 15 supported thereby. This carriage 15 is in the form of a block-like casing

and has adjustably fitted centrally therein a screw clutch 16, the clutching ends 17 and 18 respectively being alternately engageable with the feed screws, the clutch end 17 being  
 5 engageable with the screw 13 and the clutch end 18 being engageable with the screw 14 as the clutch 16 is disposed between these screws 13 and 14 and is shiftable for alternate engagement therewith in a manner presently  
 10 described.

The shafts 13 and 14 at the left hand end of the frame including the end pieces 12 have fixed thereto meshing gears 19 so that motion imparted to one of the gears will permit motion to the other gear and these gears rotate  
 15 the shafts 13 and 14 reversely to each other, while the shaft 14 outside of the frame including the end pieces 12 carries a pinion 20 fixed thereto and meshing with an intermittently  
 20 movable gear 21 on a stud journal 22 mounted in one of the end pieces next thereto of the frame. The gear 21 is intermittently operated in a step by step manner as will be hereinafter fully described.

Adjustably threaded on the shafts 13 and 14 at or near their respective ends opposite each other are adjustable split sleeves 23, each being held adjustably threaded by means of a binding collar 24 tapped on the  
 30 split end thereof and these collars of said sleeve carry tripping pins or lugs 25 to alternately coact with tripping arms 26 pivotally supported upon the carriage 15 at opposite ends thereof and these arms are operatively connected with spring tensioned pivotal links 27 on the carriage 15, the spring  
 35 28 being connected with said links for the tensioning thereof. The links 27 are connected with and operate shift pins or lugs 29 mounted in the clutch 16 so that on movement being imparted to either link 27 the said clutch 16 will be shifted within the carriage 15 to bring it into engagement with  
 40 either screw 13 or 14 and in this manner the carriage 15 will be reversely fed in the frame on the inking fountain A so that the said carriage will be reciprocated back and forth from one end piece 12 to the other end piece of said frame.

Pivotally mounted upon the top of the carriage 15 on the side of the latter next to the fountain A is an agitator finger 30 which is limited in its swinging movement by a pin 31 working in an arcuate-shaped slot 32  
 55 formed in the pivoted end of said finger. This finger 30 carries a fin 33 and the same is extended into the inking fountain A so as to act upon the ink contents of this fountain to agitate the same.

The inking roller B has its journal 10 extended as at 34 at one end and fixed to this extended end is a ratchet pinion or wheel 35 while loosely connected to said extended end 34 is an arm 36 carrying a pivoted ratchet  
 60 pawl or dog 37 for engagement with the

ratchet pinion or wheel 35 to move the same in a step by step manner to turn the inking roller B in the fountain A. The arm 36 has pivotally connected thereto an actuator member 38  
 70 which is operatively connected with the power mechanism of the printing press. Also connected with this member 38 is a fixed arm 39 to which is pivotally connected a link 40, the same being also pivotally connected to a rocker arm 41 carrying a ratchet pawl 42, the same being engageable with a ratchet pinion or wheel 43 fixed with the gear 21 so that the actuator arm 39 will impart a step by step movement to said gear 21 which transmits motion to the feed screws 13 and 14 as will be  
 80 clearly obvious. The arm 41 is loosely mounted on the stud journal 22 and adjustably fixed to a bracket 44 secured to the end piece 12 adjacent thereto of the frame for the agitator mechanism is a cam 45, the latter being designed to regulate the action of the pawl 42 on the ratchet pinion or wheel 43 as by setting said cam it will control the engagement of the pawl and ratchet wheel accordingly to a determined number of the  
 90 teeth of said pinion or wheel so that in this manner the speed of rotation of the screws 13 and 14 and the travel of the carriage 15 will be controlled.

Hinged to the front of the frame at the end pieces 12 thereof is a cover or lid 46 which overhangs the frame to conceal the screws 13 and 14 and the carriage 15 as well as adjunct parts thereof, yet on the lifting of the lid or cover 46 access may be readily had thereto.  
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The spring 28 when the links 27 are shifted passes from one side of the pivotal axis of said links to the other, thus reversing the position of the trip arm 26 on the carriage 15 as should be obvious and in this manner the back and forth travel of said carriage on the screws 13 and 14 will be automatically controlled through the trip pins or lugs 25. The agitator finger 30 is operated automatically and continuously during the working of the printing press and the actuator member 38 is connected as usual with the arm on the printing press which operates the inking roller B within the fountain A as is usual.  
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From the foregoing it is thought that the construction and manner of operation of the attachment will be clearly understood and therefore a more extended explanation has been omitted.  
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What is claimed is:—  
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1. The combination with an ink fountain of a printing press, of spaced parallel reversely feeding screws supported relative to the fountain, a carriage slidably supported upon the said screws and adapted to be reciprocated, an agitator finger pivotally carried by the carriage and adapted for limited swinging movement within the fountain, means in the carriage for alternate engagement with the screws and automatically shiftable,  
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means adjustably supported upon the screws and alternately operable upon the first named means for the automatic shifting thereof, means for imparting step by step movement  
5 to the feed screws, and an inking roller having connection with the last named means and located within the fountain.

2. The combination with an inking fountain of a printing press and an inking roll  
10 within the fountain, of spaced parallel reversely feeding screw supported relative to the fountain, a block slidable upon said screws and constituting a reciprocatory carrier, an agitator finger carried by said block  
15 and projected into the fountain, a clutch slidably fitted within the block and alternately engageable with the screws, trips carried by the block and operating said clutch, adjustable sleeves carried by the screws and operative upon the trips for controlling the same,  
20 gears carried by the screws and meshing with each other for imparting reverse motion thereto, and means associated with the gears to impart intermittent movement thereto.

25 In testimony whereof I affix my signature.

FRED E. WEED.

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