United States Patent [19]

Hardt

[11] **3,783,782**

[45] **Jan. 8, 1974**

[54] **REVOLVING TURRET FOR SUPPORTING PRINTING PRESS CART**

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[73] Assignee: **Faustel Incorporated,** Butler, Wis.

[22] Filed: **Aug. 4, 1972**

[21] Appl. No.: **278,074**

[52] **U.S. Cl.** **101/216,** 101/152, 101/153, 101/247, 101/425

[51] **Int. Cl.** **B41f 9/18,** B41f 31/32

[58] **Field of Search** 101/216, 425, 152, 101/153, 247

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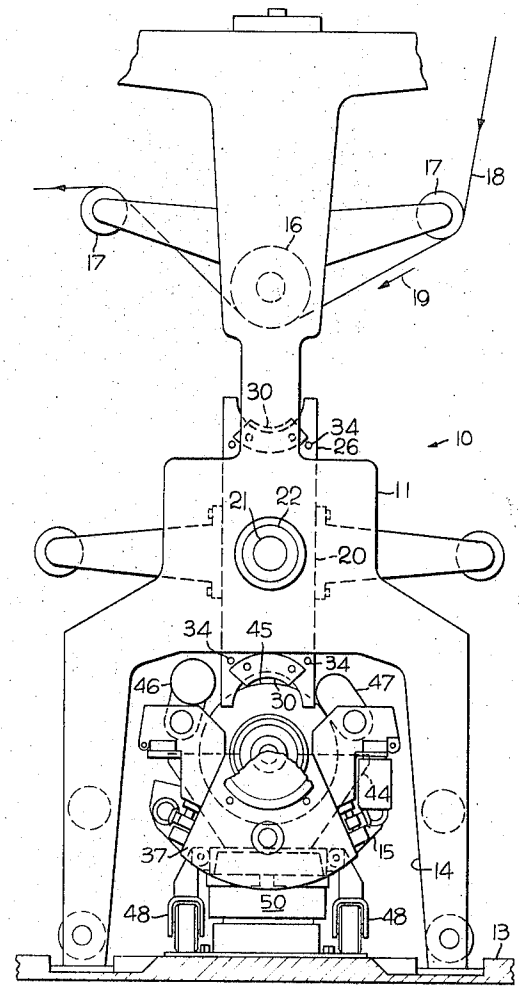
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Primary Examiner—J. Reed Fisher
Assistant Examiner—William Pieprz
Attorney—James E. Nilles

[57] **ABSTRACT**

A wheeled printing press cart comprising an ink pan, a removable printing roll, an ink applicator and a doctor blade is insertable and removable in an upright position through an opening in the side of a web type printing press. When inserted, the cart is raised slightly, pivotably connected to a revolving turret on the press, and the turret is rotated 180° to raise the cart to operating position. The turret is further rotatable 180° to return the cart to lowered position in either the upright position or in inverted position. Return of the cart in upright position allows for removal of the printing roll thereon or removal of the entire cart. Return of the cart in inverted position allows it to be automatically flushed or washed while still on the turret. The turret can accommodate two carts simultaneously on opposite sides.

15 Claims, 11 Drawing Figures



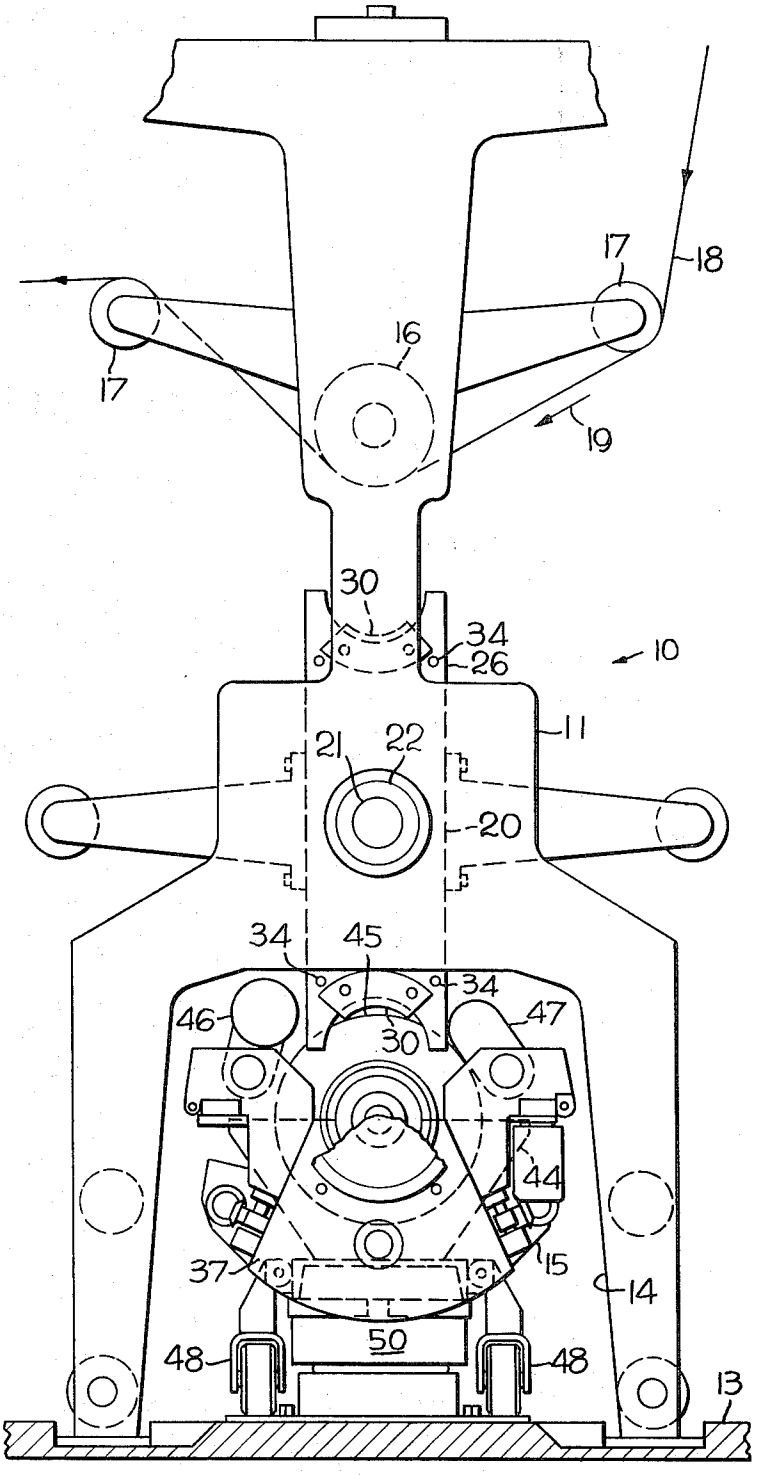

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FIG. 1

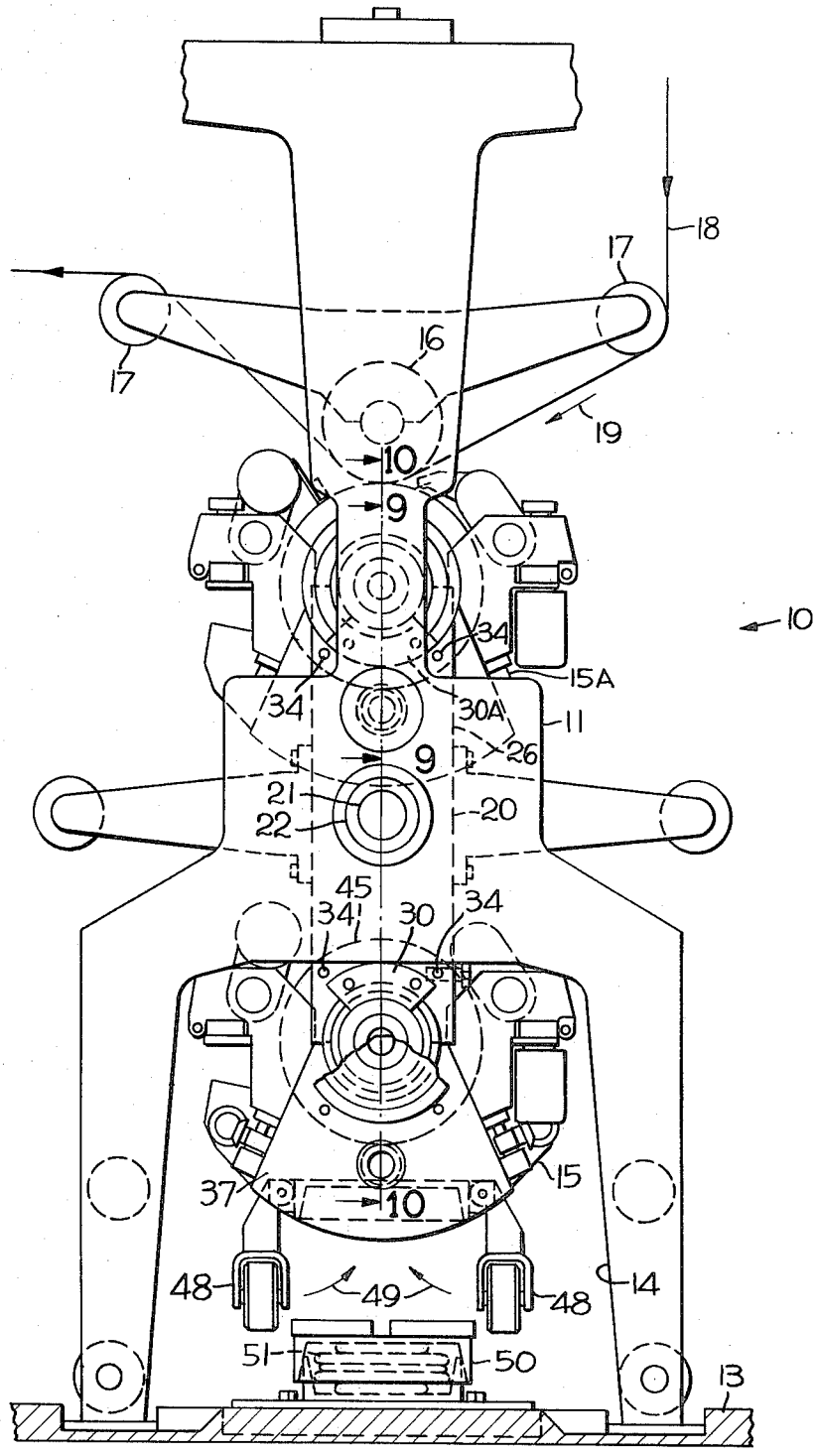

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FIG. 2

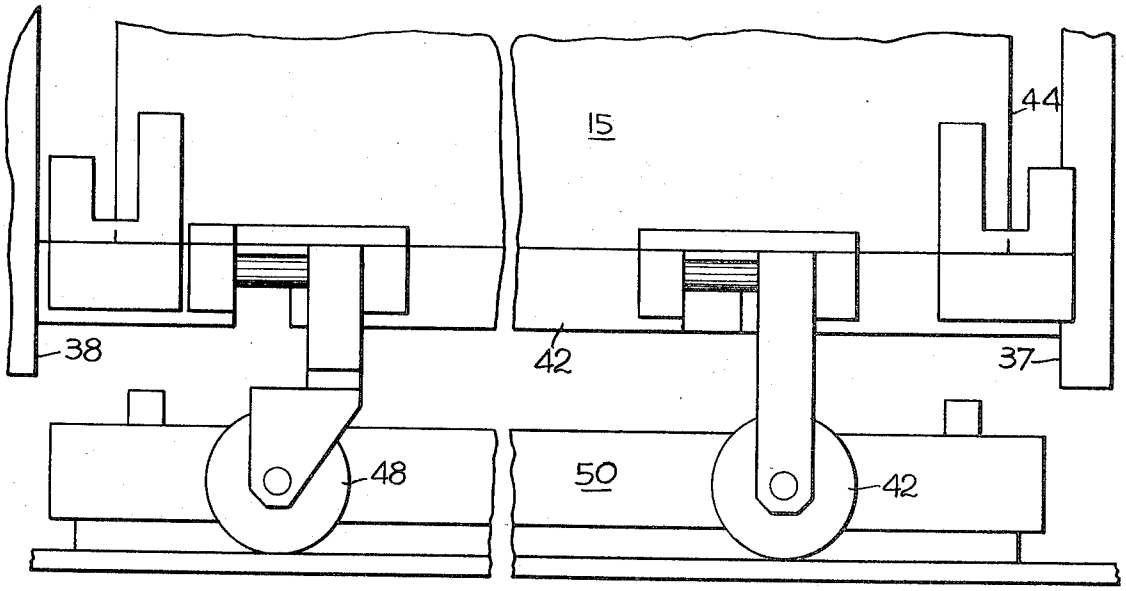

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FIG. 6

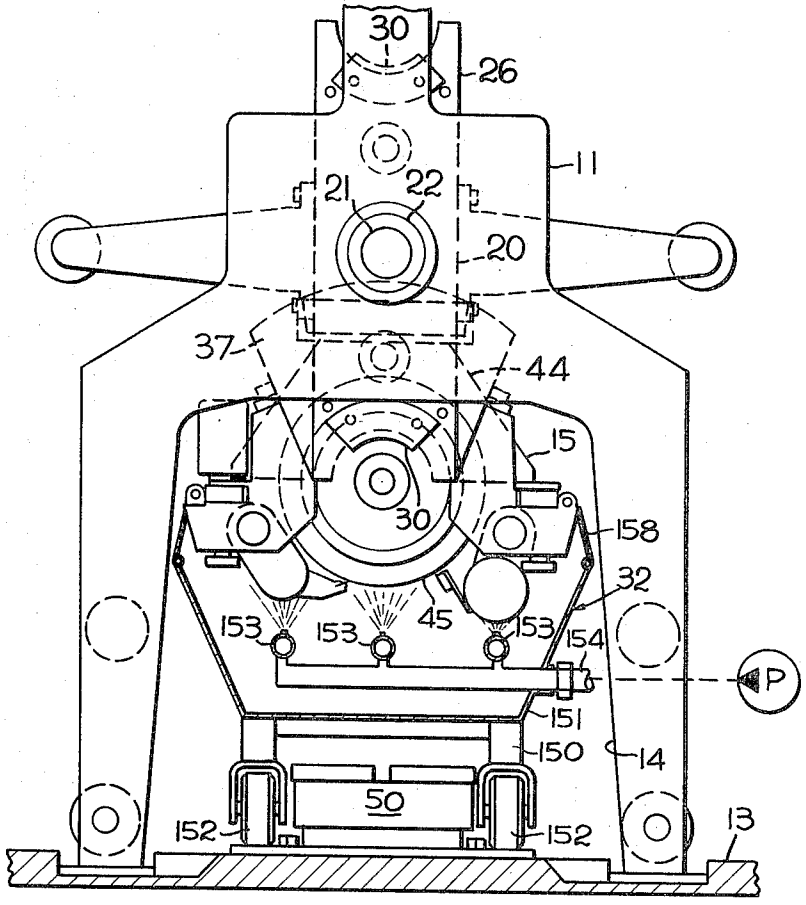

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FIG. 3

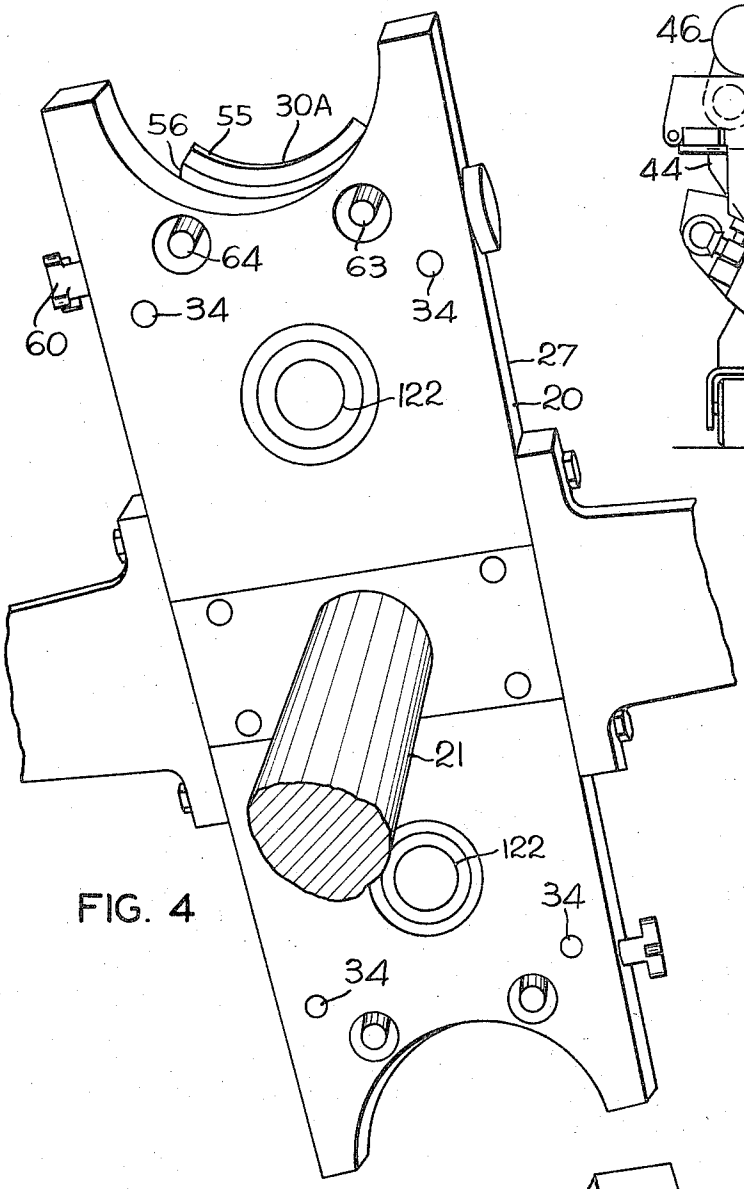


FIG. 4

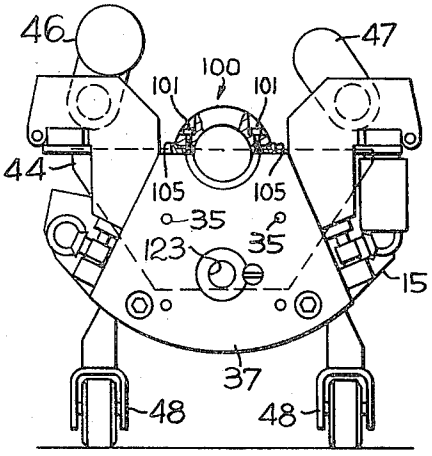


FIG. 7

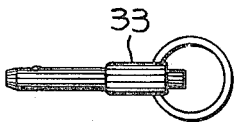


FIG. 8

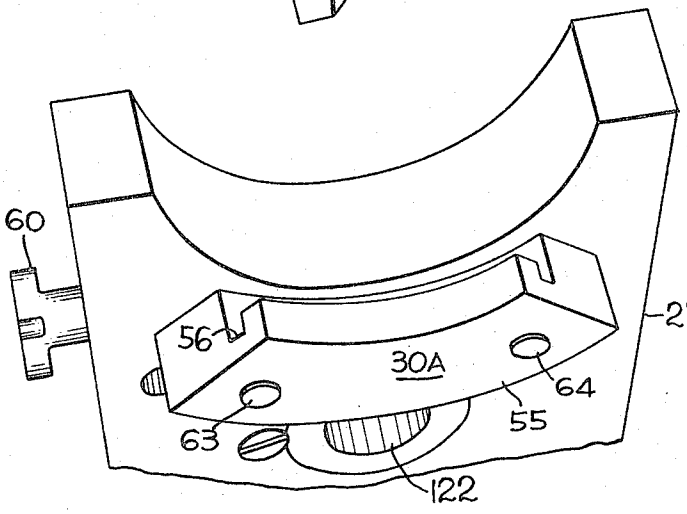


FIG. 5

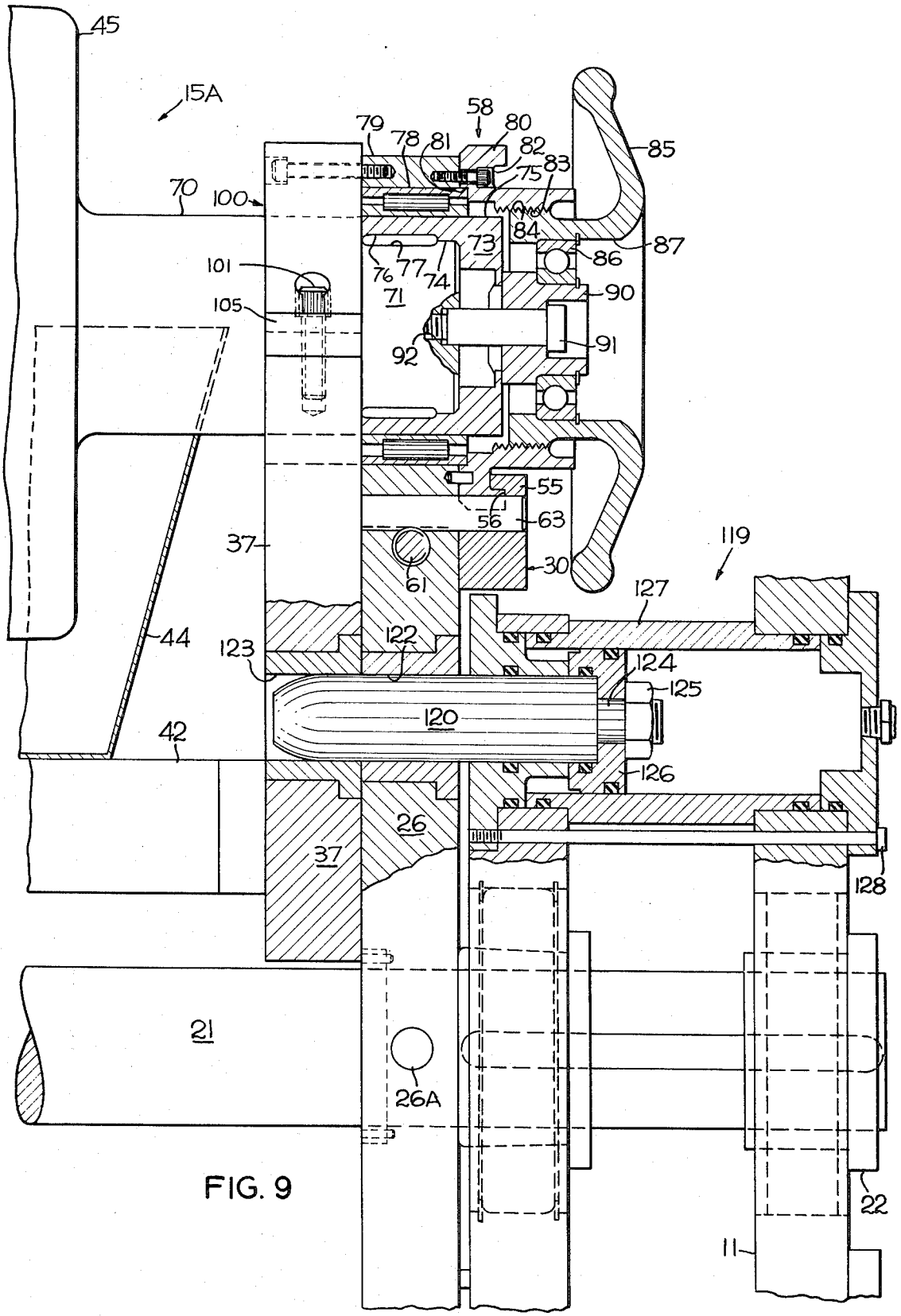

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FIG. 9

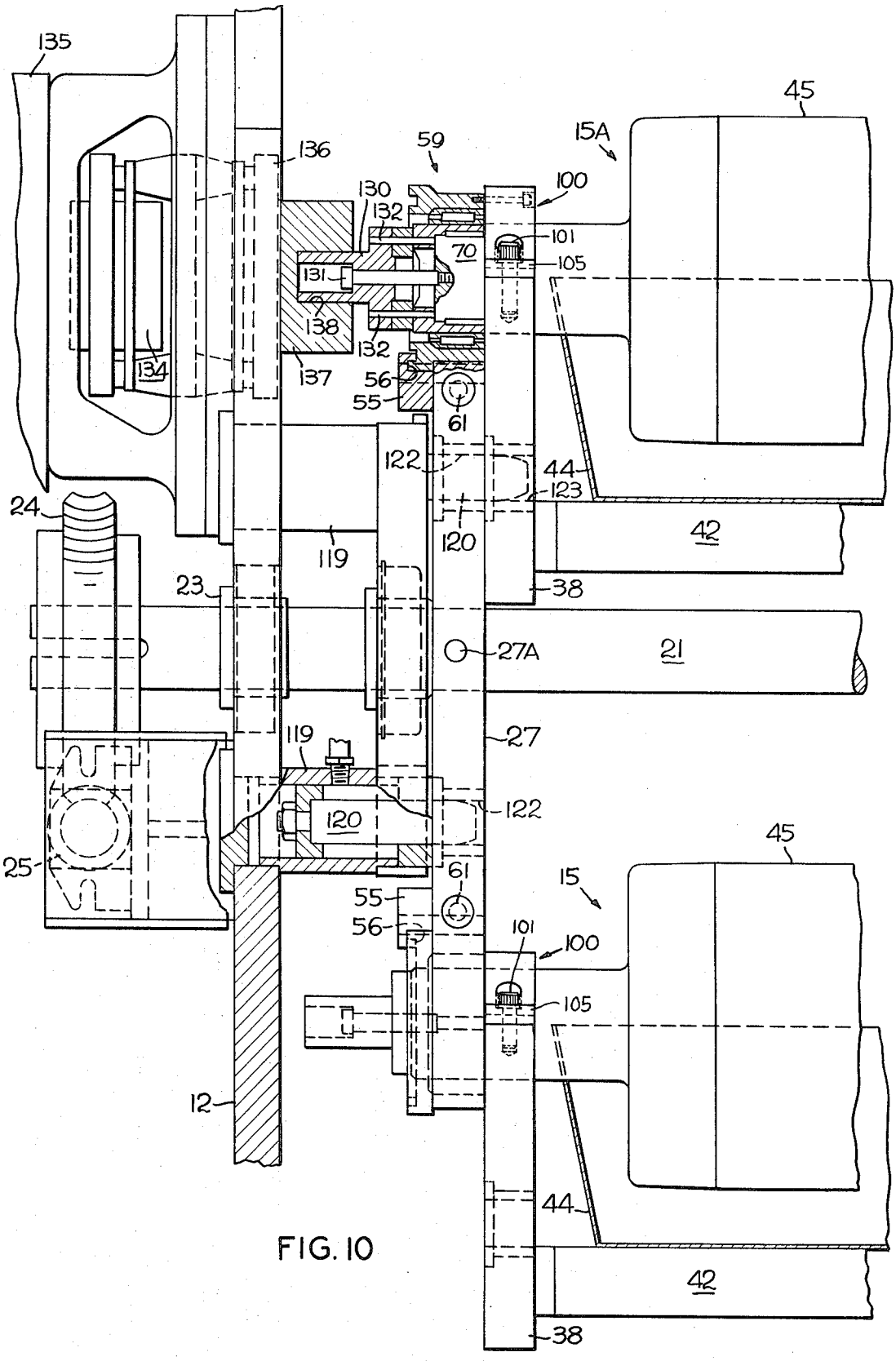

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FIG. 10

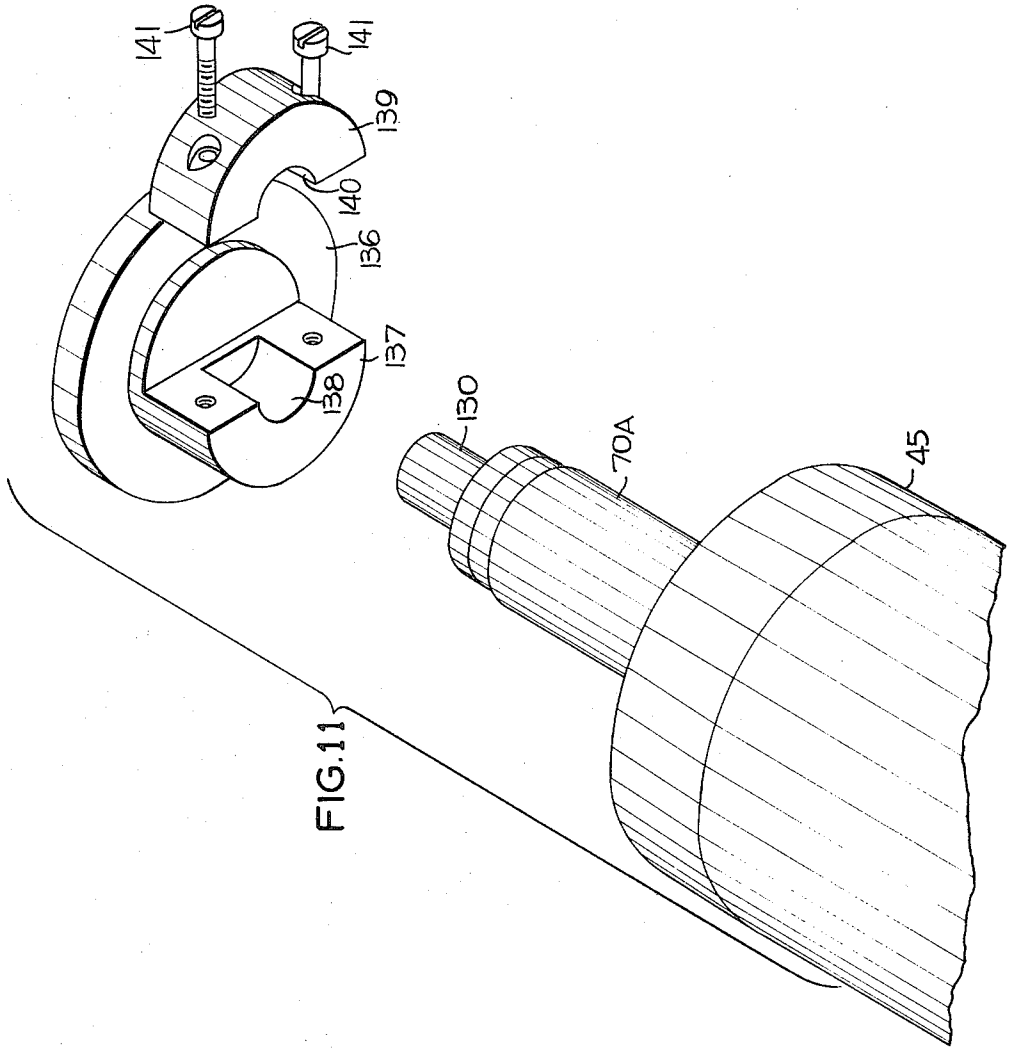


FIG. 11

REVOLVING TURRET FOR SUPPORTING PRINTING PRESS CART

BACKGROUND OF THE INVENTION

1. Field of Use

This invention relates generally to web printing presses, such as rotogravure presses, and particularly to those employing removable printing carts which have a printing cylinder detachably mounted thereon.

2. Description of the Prior Art

Some multicolor rotogravure printing presses, for example, are provided with a plurality of printing stations, one for each color, and comprise a main frame on which a plurality of impression rolls are mounted, one at each station. Such presses often employ a removable printing cart for each station comprising an ink pan, a removable printing cylinder, ink application means and doctor blade means. The printing cart is movable into the press through an opening in the side thereof and is then raised and locked in a position wherein its printing cylinder is in proper relationship with the appropriate impression roll. The advantage of such an arrangement are manifold. First, one entire cart can be removed and another substituted therefor when an ink color change and a printing cylinder change is to be made at a particular station. Second, if only a printing cylinder change is to be made but ink color is to remain the same, the cart can be removed, its printing cylinder changed and the cart then replaced in the press. Finally, the removable cart facilitates cleaning of the press and cart when necessary. U.S. Pat. No. 3,384,012 issued May 21, 1968 to Zernov for "Detachable Printing Cart for Rotary Printing Presses" is an example of a press of the aforesaid character.

SUMMARY OF THE INVENTION

In accordance with the present invention, there is provided an improved web type press of the aforesaid character having a rotatable turret for moving a portable printing cart between the cart insertion position and the cart operating position adjacent an impression roll in the press. The turret is adapted to handle two carts simultaneously, one cart being removably attachable on each side of the turret. The turret is further adapted to enable return of one cart from the operating position to the cart insertion position in either upright condition for removal or in inverted condition for automatic washing and flushing. As the one cart is being returned, another cart can be moved into operating position.

More specifically, the press comprises spaced apart side frames between which the rotatable impression roll is horizontally mounted. At least one side frame has an opening through which the portable ink cart can be inserted or removed. The ink cart comprises an ink pan or trough, a horizontally disposed printing roll rotatably and removably mounted on the pan, ink applicator means and doctor blade means for the printing roll, and retractible ground wheels. The press is provided with selectively operable cart lifting means located below the cart when the latter is inserted in the press. Cart washing orflushing means are insertible through the side opening in the press. The turret for the press is horizontally disposed and rotatably mounted between the side frames above the cart opening. The turret is provided on two opposite sides with identical cart attachment means and is rotatable to a position wherein the cart attachment means on one side are in lower position and the cart attachment means on the opposite side are in raised position.

The cart attachment means are adapted to connect a cart to the turret so that the cart can be raised or lowered between a cart insertion position and an operating position as the turret is rotated. The cart attachment means normally allow for relative rotational movement between the cart and the turret as the latter is being rotated so as to insure that the cart remains in upright position. However, adjustable locking means are provided to prevent relative rotational movement between the cart and the turret. The locking means are applied when a cart is in raised position to enable the cart to assume an inverted position when the turret is rotated to return the cart from raised to lowered position. The automatic cart washing means spray clean an inverted cart when the latter is in lowered position.

Pneumatically operable locking means, including a selectively movable pin, are provided to rigidly secure the cart to the turret and the turret to the press frame when the cart is rotated to raised position to insure proper registration between the printing roll and the web on the impression roll.

The press roll has bearing assemblies at its ends which adapt it to be supported on the cart and detachable cap means hold it in place thereon. The bearing assemblies also enable the cart and its printing roll to be releasably secured to the turret by cart attachment means. The printing roll is axially adjustable while on the turret.

When the cart is rotated to operating position by the turret, drive means on the press engage the end of the printing roll to effect rotation thereof.

DRAWINGS

FIG. 1 is a side view of the operator's side of a printing station in a web type printing press in accordance with the invention and shows the end of a portable printing cart ready to be lifted by a hydraulic lift into engagement with cart attachment means on the lowered side of a rotatable turret;

FIG. 2 is similar to FIG. 1 but shows one printing cart in upright position engaged with the cart attachment means on the lowered side of the turret and shows another printing cart in upright position engaged with the cart attachment means on the opposite raised side of the turret;

FIG. 3 is similar to FIGS. 1 and 2 but shows a printing cart on the lowered side of the turret in inverted position;

FIG. 4 is an enlarged isometric view of the inner side of a turret plate at one end of the turret;

FIG. 5 is an enlarged isometric view of a portion of the outer side of the turret plate shown in FIG. 4;

FIG. 6 is a side view of a printing cart;

FIG. 7 is a view of a portion of one end of the cart shown in FIG. 6;

FIG. 8 is a side view of a locking pin for securing the cart to the turret to prevent relative rotation;

FIG. 9 is an enlarged sectional view taken on line 9—9 of FIG. 2 on the operator's side of the press;

FIG. 10 is an enlarged sectional view taken on line 10—10 of FIG. 2 on the drive side of the press; and

FIG. 11 is an enlarged isometric view of the press roll drive means shown in FIG. 10.

DESCRIPTION OF A PREFERRED EMBODIMENT

FIGS. 1, 2 and 3 show a side view of one printing station of a rotogravure type printing press 10. Press 10 comprises a pair of spaced apart side frames 11 and 12 (edges visible in FIGS. 9 and 10, respectively) which rest on a supporting surface 13. Each side frame 11 and 12 is provided with an ink cart receiving opening 14 therein. An impression roll 16 is mounted for rotation on a horizontal axis between the side frames 11 and 12. A web 18 to be printed (and movable in the direction of an arrow 19) is threaded around impression roll 16 and idler rolls 17 mounted on the press frame. It is to be understood that the assembly comprising impression roll 16 and idler rolls 17 is vertically adjustable to place web 18 in desired operating positions.

Press 10 further comprises a turret 20 which is rotatable about a horizontal axis and which is adapted to have a printing cart 15 removably attached to either or both of two opposite sides of the turret. Turret 20 comprises a shaft 21 journalled for rotation in bearings 22 and 23 located on the side frames 11 and 12, respectively. Turret 20 also comprises spaced apart end plate members 26 and 27 which are rigidly secured to shaft 21 by pins 26*a* and 27*a*, (FIGS. 9 and 10) respectively. Opposite ends of the plate members 26 and 27 are adapted, as hereinafter explained, to be detachably connectable to ink cart 15 by releasable attachment means 30. Turret 20 is selectively rotatable to desired positions by a motor driven worm 25 which engages a gear 24 rigidly secured on shaft 21.

The turret 20 is rotatable to positions wherein the cart supporting or attachment means 30 on opposite sides are in either raised or lowered positions. Thus, FIG. 1 shows the printing cart 15 ready to be lifted into engagement with the cart attachment means 30 on the lowered side of turret 20. FIG. 2 shows one printing cart 15 in upright position engaged with the cart attachment means 30 on the lowered side of turret 20 and shows another printing cart 15A in upright position engaged with the cart attachment means 30A on the opposite raised side of the turret. FIG. 3 shows printing cart 15 engaged with the cart attachment means 30 on the lowered side of turret 20 and with the cart in inverted position and being spray cleaned by a sprayer assembly 32 inserted into side opening 14 of the press.

The cart attachment means 30 are adapted to connect cart 15 to one side of the turret 20 so that the cart 15 can be raised or lowered between a cart insertion position and an operating position as the turret is rotated. The cart attachment means 30 normally allow for relative rotational movement between the cart 15 and the turret 20 as the latter is being rotated so as to insure that the cart remains in upright position. However, selectively insertable locking pins, such as pin 33 shown in FIG. 8, are provided for use on turret 20 to prevent relative rotational movement between the cart 15 and the turret 20. The locking pins 33 are inserted into holes 34 in the turret plates 27 and 28 and into holes 35 in the end plates 37 and 38 of the cart 15 when the cart is in raised position to enable the cart to assume an inverted position when the turret is rotated to return the cart from raised to lowered position.

As FIGS. 4 and 5 best show, the releasable attachment means 30 and 30A at the upper and lower ends of each turret plate member 26 and 27 comprises an arcuate member 55 which is disposed on the outer side surface of the turret plate member and is provided with a groove or slot 56 for engaging a portion of the bearing assemblies 58 and 59 (shown in FIGS. 9 and 10, respectively) for printing roll 45. Arcuate member 55 is understood to be movable inwardly and outwardly i.e., toward and away, from the outer side surface of a turret plate, such as plate 27 shown in FIGS. 4 and 5, by means of a manually rotatable knob 60 which is affixed to a screw shaft 61 (shown in FIGS. 9 and 10). Screw shaft 61 engages a pair of threaded pins 63 (shown in FIGS. 4, 5 and 9) and 64 which are rigidly secured to arcuate member 55.

FIGS. 1, 2, 3 and 7 show end view of ink cart 15 and FIG. 6 shows a simplified side view. Ink cart 15 comprises a supporting framework, including end plates 37 and 38 and side frames 42, on which an ink pan 44, an ink applicator assembly 46, and a doctor blade assembly 47 are mounted. Ground wheels 48 are attached to the framework of ink cart 15 and are manually foldable inwardly in the direction of the arrows 49, shown in FIG. 2. Ink cart 15 also comprises a printing roll 45 which is mounted on the supporting framework of the cart for rotation about a horizontal axis and removable therefrom, as hereinafter explained in detail. In FIG. 7, cart 15 is shown without its printing roll 45.

In operation, cart 15 is rolled or inserted through side opening 14 in side frame 11 of press 10 into a position directly above cart lifting means comprising a vertically movable lift platform 50, shown in FIGS. 1, 2, 3 and 6, which is selectively movable to a lowered position (FIGS. 2, 3 and 6) and to a fully raised position by means of an air-operated bellows 51. Platform 50 is shown partially raised in FIG. 1 to a position wherein it engages the bottom of cart 15. Before cart insertion, turret 20 is rotated to a position to allow clearance for cart insertion. After cart insertion, turret 20 is rotated to the position shown in FIG. 1 wherein it is vertically disposed and the cart attachment means 30 on one side of the turret are directly above cart 15. Cart 15 is then fully raised to the position shown in FIG. 2 by platform 50 and secured by attachment means 30 to turret 20. As hereinafter explained, cart 15 is pivotably connected to turret 20 and, therefore, tends to remain in upright position as the turret is rotated 180° to move the cart from a lower position to a raised position wherein its printing roll 45 is in proper operative relationship with respect to web 18 and impression roll 16. FIG. 2 shows another cart 15A, identical to cart 15, which has been raised by rotation of turret 20 to raised position.

FIG. 9 shows that printing roll 45 is provided at the end closest to the operator's side of press 10, with an integrally formed shaft 70 which terminates in an end portion 71. A bearing assembly 58 is fitted onto the end portion 71 and adapts printing roll 45 to be rotatably and releasably mounted on ink cart 15, as well as serving as a part of the means by which the cart is pivotably attached to turret 20.

Bearing assembly 58 comprises a sleeve 73 having an inner surface 74 and a cylindrical outer surface 75. Inner surface 74 is provided with a cutout 76 which registers with a cutout 77 in tapered end portion 71 of shaft 70. A bearing 78 encased in a sleeve 79 is slideably mounted on sleeve 73. Bearing assembly 58 also comprises a bearing support plate 80 having an inner annular shoulder 81 which engages bearing 78. Bearing support plate 80 is provided with an annular groove 82

on its exterior side which is engageable with arcuate member **55** and has internal threads **83** releaseably engageable with external threads **84** on a manually rotatable knob **85.** A bearing **86** is secured within the hollow interior **87** of knob **85** and is also secured to the exterior of a hub **90.** A bolt **91** which takes into a threaded hole **92** in roll shaft **70** secures hub **90** against the outer end of sleeve **73.** Adjustable rotation of knob **85** causes it to move inwardly or outwardly axially with respect to bearing support plate **80** and effects corresponding axial movement of printing roll **45.** More specifically, as shaft **70** and roll **45** are adjusted axially, bearing **78,** sleeve **79** and bearing support plate **80** remain stationary because of the entrapment of sleeve **73** between cart end **37** and clamping means **55.**

A detachable cap means **100** at each end of roll **45** secures roll **45** to the ink cart shown in FIGS. **7, 9** and **10.** The ends of cap means **100** are attached to the end plates **37** and **38** of a cart by bolts **101.** The cap means **100** is a curved member which is removably attached to positioning member **105.** In normal usage, roll **45** with bearing assemblies **58** and **59** already attached is placed on the ink cart and cap means **100** is positioned around each shaft **70** and secured in place by insertion of the bolts **101.**As FIG. **7** shows, the cap means **100,** i.e., its curved intermediate portion, does not make physical contact with shaft **70.**

When an ink cart is secured to turret **20** and the turret is rotated to place the ink cart in its raised operating position, it is necessary to rigidly secure the ink cart to the turret arms **26** and **27** and the latter to the press frames **11** and **12** to insure that all three elements are rigidly secured together during printing operations so that proper printing registration will occur. This is accomplished by providing four turret lock pin actuators **119,** two for each turret arm. Each actuator inserts a large turret lock pin **120** through an opening **122** in the turret plate and into an opening **123** in an end plate of the cart, as FIG. **9** shows. The pin **120** is secured as by a stud **124** and nut **125** to a movable piston **126** which is disposed in the cylinder **127** of its turret lock pin actuator **119** which is rigidly secured to the side frame of the press as by bolts **128.** The actuators **119** are preferably pneumatically operated to effect insertion and withdrawal of the lock pins. The pin must be withdrawn from the openings in the cart and turret arms before the turret can be rotated.

FIG. **10** shows that the end of roll **45** adjacent the drive side of the press is provided with bearing assembly means **59** and cap attachment means **100** similar to **58** and **100,** respectively, described in connection with FIG. **9.** However, the bearing assembly **59** on the drive side of the press does not include a rotating knob **85** but, instead, is provided with a shaft extension **130** which is secured to the drive end of the shaft **70** by a bolt **131** and pins **132.** The shaft **70** is axially slideable in its bearing during axial adjustment of roll **45.**

As FIGS. **10** and **11** show, means are provided to connect the shaft extension **130** to the shaft **134** of a drive motor **135** which rotates roll **45.** The drive motor **135** is mounted on the outside of side frame **12** of the press and has an adapter **136** for engaging the shaft extension **130** on roll **45.** The adaptor **136** comprises a first semi-circular portion **137** having a semi-circular opening **138** therein which is secured to the shaft **134** of the drive motor **135.** The adaptor **136** also comprises a detachable semi-circular portion **139** having a semi-circular opening **140** therein which is releasably attachable to the first portion **137** by means of two machine screws **141.** The portion **137** of adaptor **136** is so positioned on the drive motor shaft **134** that when the turret is rotated from its lower position to its raised position, the shaft extension **130** automatically positions itself in the semi-circular opening **138** in the portion **137.** Thereupon, the other portion **139** is manually attached by means of the screws **141.**

As FIG. **3** shows, the press is adapted to receive printing cart washing means or sprayer assembly **32,** in the form of a portable cart, which is insertable into and removable from the press through the side opening **14.** The cart washing means **32** are inserted into position when the printing cart is returned to its lower position in inverted condition, when effected by insertion of the pins **33** into the holes **34** and **35** prior to revolution of the turret to lower the cart. The washing means **32** comprise a supporting framework **150** on which a trough **151** is mounted and is provided with ground wheels **152.** The washing means **32** includes a plurality of spray nozzles **153** which are located inside the trough and direct a pressurized washing solution upwardly toward the inverted printing cart. The nozzles **153** are connected to a fluid supply hose **154** located on the outside of the washing assembly **32** which, it is to be understood, is connectible to a suitable pressurized source of washing solution such as a pump P. If preferred and depending on particular press configurations, the sides of the trough **151** may be provided with hinged extensions **158** which can be folded upwardly to insure that the sprayed washing solution remains confined to the region of the printing cart. It is to be understood that prior to inversion of the printing cart in preparation for a washing operation, as much ink as possible is allowed to drain in the conventional manner from the ink applicator assembly **46** and the ink pan **44** and other portions of the printing cart. Furthermore, during the washing operation, the printing roll **45** may easily be rotated manually as required so that fluid from the nozzles **153** may strike all surfaces of roll **45** directly. After washing, the printing cart may be allowed to drain and air-dry while still on the turret in inverted position or it may be rotated to an upright position and removed from the press, as hereinbefore explained, while it dries prior to being used again.

RESUME

A web type press has a rotatable turret **20** for moving a portable printing cart **15** between a lower cart-insertion position and a raised cart-operating position adjacent an impression roll **16** in the press. The turret **20** is adapted to handle two carts simultaneously, one cart being removably attachable on each of two opposite sides of the turret. The turret **20** is further adapted to enable return of one cart from the operating position to the cart insertion position in either upright condition for removal or in inverted condition for automatic washing and flushing. As the one cart is being returned, another cart can be moved into operating position.

The press comprises spaced apart side frames **11** and **12** between which the rotatable impression roll **16** is horizontally mounted. At least one side frame, such as **11,** has an opening **14** through which the portable ink cart **15** can be inserted or removed. The ink cart **15** comprises an ink pan or trough **44,** horizontally disposed printing roll **45** rotatably and removably

mounted on the pan, ink applicator means **46** and doctor blade means **47** for the printing roll **45**, and retractible ground wheels **48**.

The press is provided with selectively operable cart lifting means **50** located below the cart **15** when the latter is inserted in the press. Cart washing or flushing means **32** are insertible through side opening **14** in the press. The turret **20** is horizontally disposed and rotatably mounted between the side frames **11** and **12** above the cart opening **14**. The turret **20** is provided on two opposite sides with end plates **26** and **27** which have identical cart attachment means **30** at each end. Turret **20** is rotatable to a position wherein the cart attachment means on one side are in lower position and the cart attachment means on the opposite side are in raised position.

The cart attachment means **30** are adapted to connect a cart **15** to turret **20** so that the cart can be raised or lowered between a cart insertion position and an operating position as the turret is rotated. The cart attachment means **30** normally allow for relative rotational movement between the cart and the turret as the latter is being rotated so as to insure that the cart remains in upright position. However, adjustable locking means including manually insertable pins **33** are provided to prevent relative rotational movement between the cart and the turret. The pins **33** are insertable to holes **34** in the turret and holes **35** in the ends **37** and **38** of the cart and are used when a cart is in raised position to enable the cart to assume an inverted position when the turret is rotated to return the cart from raised to lowered position. The automatic cart washing means **32** has nozzles **153** which spray clean an inverted cart when the latter is in lowered position.

Pneumatically operable locking means **119** including a selectively movable pin **120**, are provided to rigidly secure the cart **15** to the turret **20** and the turret to the press frames **11** and **12** when the cart is rotated to raised position to insure proper registration between the printing roll **45** and the web **18** on the impression roll **16**. The pins **120** are insertable into holes **122** in the turret and into holes **123** on the cart.

The press roll **45** is provided with bearing assemblies **58** and **59** at its ends which adapt it to be supported on the printing cart **15** and also enable it to be releasably secured to turret **20** by cart attachment members **55**. The bearing assembly **58** includes a handle wheel **85** which effects axial adjusting movement of the printing roll **45** on the turret **20**. Cap means **100** secure the roll **45** to the printing cart **15**.

Drive means on the press, including a motor **135** and adapter members **137** and **139**, engage roll **45** to effect rotation thereof.

I claim:

1. In a printing press: a supporting frame; an impression roll supported for rotation on said frame; a turret supported for rotation on said frame and having at least two spaced apart ink cart attachment locations on the circumference thereof at each of which a portable ink cart is releasably attachable, and a portable ink cart releasably mounted at either location on said turret including a printing roll rotatably mounted thereon for cooperation with said impression roll and inking means adjacent said printing roll, said turret being rotatable between one position wherein said cart can be attached to or detached from a location on said turret and another position wherein said printing roll of an attached cart is in printing relation with respect to said impression roll, means permitting said cart to rotate relative to said turret during movement from said one position to said another position, and means to selectively permit or prevent relative rotation between said turret and said cart during movement from said another position to said one position whereby said cart can be returned to said one position either in an upright or inverted position.

2. A press according to claim **1** including means to releasably and rigidly secure said turret, said cart, and said frame in fixed position with respect to each other when said turret is in said other position.

3. A press according to claim **2** wherein said means comprises a movable locking member mounted on said frame and selectively movable into and out of engagement with said turret and said cart when said turret is in said other position.

4. A press according to claim **3** wherein said means comprises a remotely operable actuator on said frame and wherein said locking member is mounted on and movable by said actuator.

5. A press according to claim **1** wherein said cart is pivotably mountable on said turret at either location and normally assumes an upright position as said turret rotates, and including means for releasably securing said cart to said turret when the latter is in said other position to prevent relative movement therebetween so that said cart assumes an inverted position when said turret is rotated to said one position.

6. A press according to claim **5** wherein said last recited means comprises a member releasably engageable with said turret and said cart.

7. A press according to claim **5** including selectively operable cart washing means including spray means for washing said cart when the latter is in inverted position.

8. A press according to claim **1** wherein said frame includes an opening in a side thereof through which said cart is insertable and removable for attachment to or detachment from said turret, and further including means for raising and lowering said cart into and out of engagement with said turret when the latter is in said one position.

9. In a printing press having a pair of spaced apart supporting frames and rotatable impression roll horizontally mounted between the frames: a rotatable turret horizontally mounted between said frames and on which at least two ink carts are attachable, said turret comprising a shaft and a pair of spaced apart end plates rigidly mounted thereon, cart attachment means on opposite sides of each end plate, a portable ink cart releasably and pivotably connected to either side of said turret by said cart attachment means on one side of said end plates, said ink cart including a rotatable printing roll horizontally mounted thereon for cooperation with said impression roll and inking means adjacent said printing roll, means permitting said cart to rotate relative to said turret during movement from said one position to said another position, and means to selectively permit or prevent relative rotation between said turret and said cart during movement from said another position to said one position whereby said cart can be returned to said one position either in an upright or inverted position, and drive means on said press releasably engageable with said printing roll to drive the latter when said turret is rotated from one position wherein said cart is attachable to or detachable from

said turret to another position wherein said printing roll is in printing relation with respect to said impression roll.

10. A press according to claim **9** including locking means to releasably and rigidly secure said turret and said cart to said frame when said turret is in said other position, said locking means comprising a movable locking member mounted on said frame and selectively movable into and out of engagement with holes in said turret and said cart when said turret is in said other position.

11. A press according to claim **10** wherein said cart attachment means enable said cart to normally assume an upright position as said turret rotates, and including removable pin means for releasably securing said cart to said turret to prevent relative movement therebetween when the latter is in said other position so that said cart assumes an inverted position when said turret is rotated to said one position.

12. A press according to claim **11** including selectively operable cart washing means including spray means for washing said cart when the latter is in inverted position.

13. A press according to claim **9** wherein at least one of said frames includes an opening in a side thereof through which said cart is insertable and removable for attachment to or detachment from said turret, and further including means for raising and lowering said cart into and out of engagement with said cart attachment means on said turret when the latter is in said one position.

14. A press according to claim **13** wherein said cart attachment means are selectively movable into and out of engagement with bearing assemblies which support said printing roll on said ink cart.

15. A press according to claim **14** wherein said printing roll is removably mounted on said printing cart and is secured thereto by releasable attachment means.

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