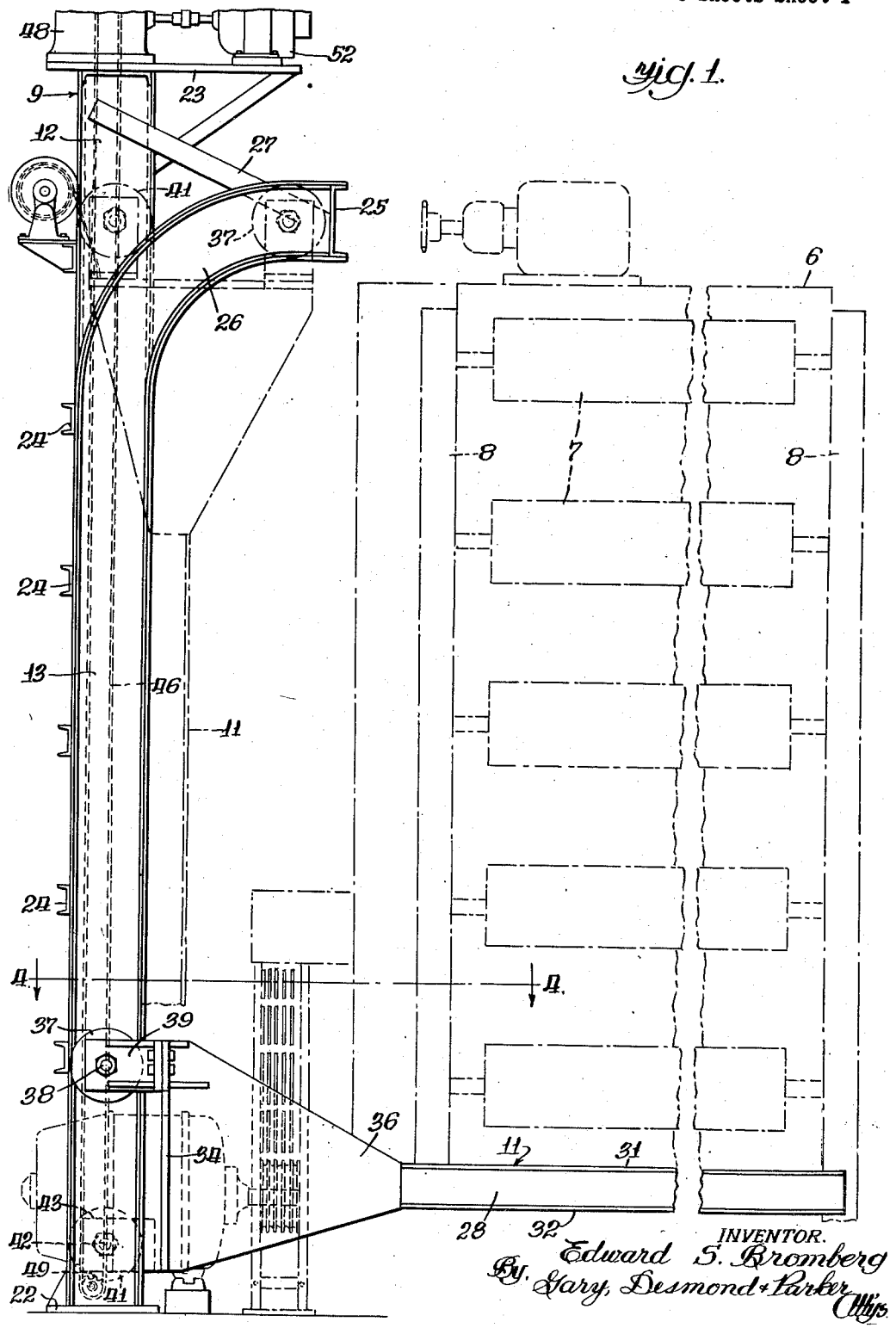
May 3, 1955 E. S. BROMBERG 2,707,530

SERVICE ELEVATOR FOR PRINTING PRESSES

Filed Aug. 26, 1953 3 Sheets-Sheet 1



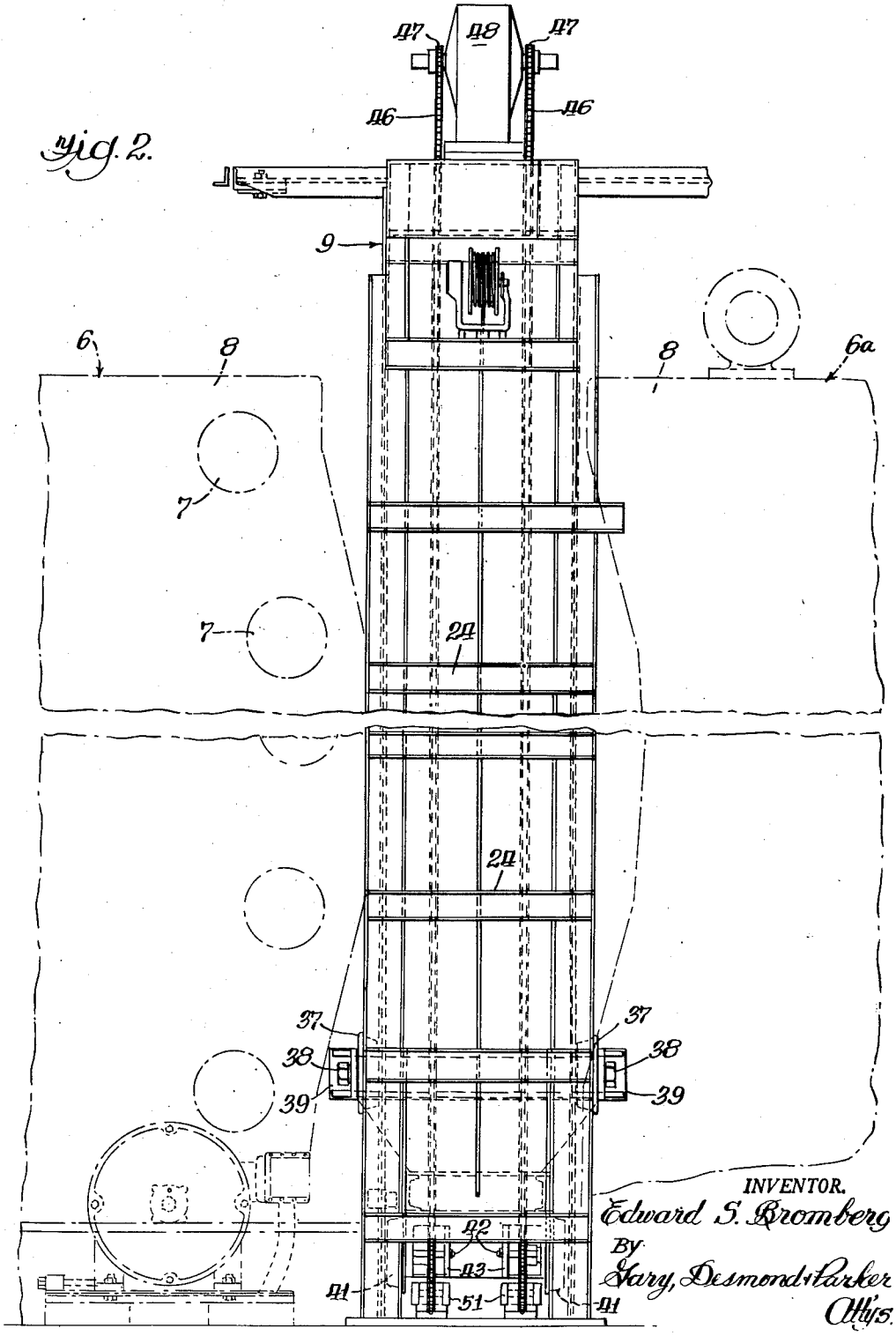
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Fig. 2.



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Fig. 3.

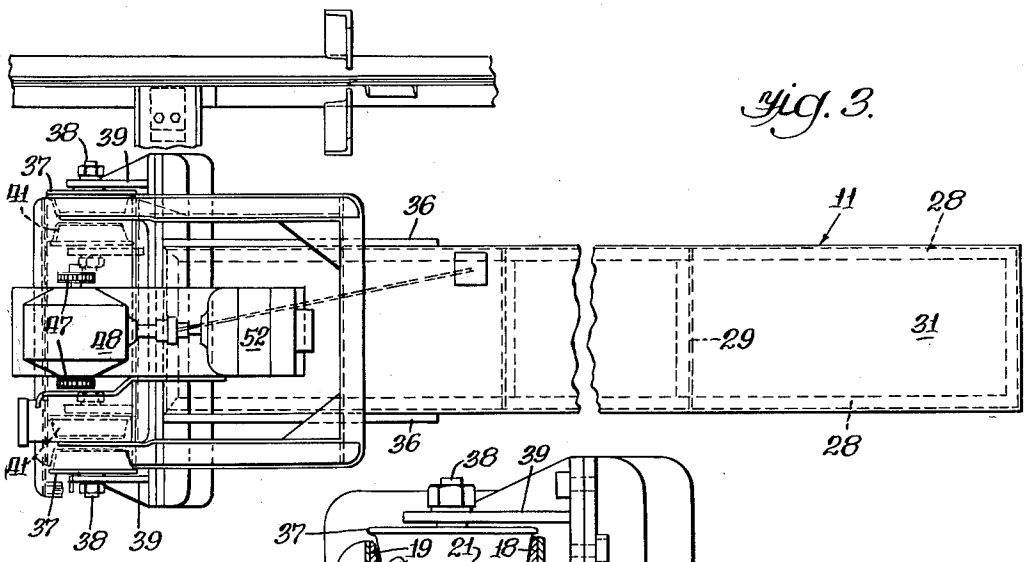


Fig. 4.

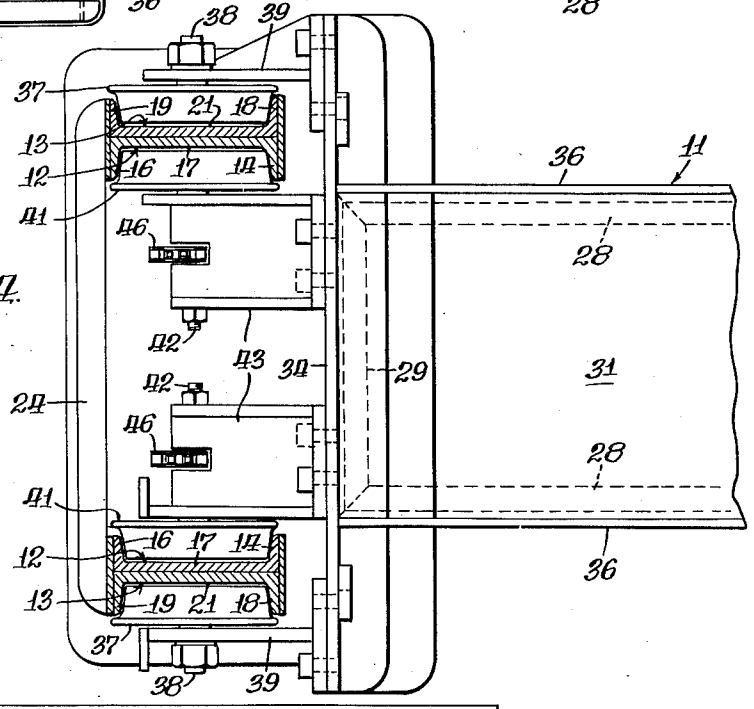
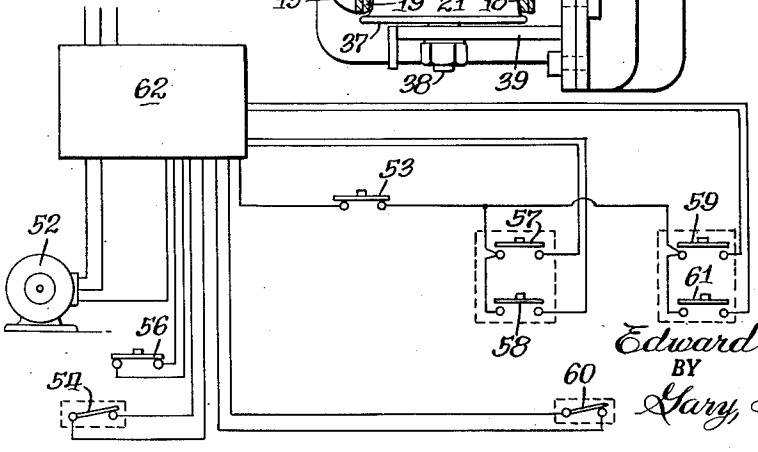


Fig. 5.



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SERVICE ELEVATOR FOR PRINTING PRESSES

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6 Claims. (Cl. 187—17)

This invention relates to service elevators for printing presses of the type embodying a plurality of roll stacks each having a group of vertically spaced rolls.

In the performance of various service operations on relatively large presses of this type, it is necessary to provide means, such as platforms, scaffolds, ladders, etc., to support workmen at different elevations above the floor. To facilitate such service operations, the present invention contemplates the provision of an elevator structure comprising a working platform movable to selected levels between the upper and lower ends of a roll stack.

An object of the present invention resides in the provision of an elevator structure embodying a working platform movable vertically between a pair of roll stacks during servicing operations on the press; after which, the platform is movable from a horizontal plane between roll stacks to a vertical inoperative position adjacent one side of the press where it is available for subsequent service operations.

Another object of the invention resides in the provision of an elevator structure having manually operable means by which a workman on the platform may cause the latter to move vertically between predetermined vertically spaced horizontal planes.

A further object of the invention resides in the provision of an elevator structure embodying means manually operable from a point remote from the platform for moving the latter from an operative horizontal position between a pair of roll stacks to an inoperative vertical position adjacent one side of the press.

Another object of the invention resides in the provision of an elevator structure having a working platform supported in cantilever arrangement upon an upright support disposed adjacent one side of a printing press.

Another object of the invention resides in the provision of an elevator structure in which the upright support embodies two sets of tracks for engagement by two sets of wheels journaled on one end of the working platform, the tracks being formed and arranged to maintain the platform horizontally between predetermined elevations and to cause the platform to swing toward a vertical plane as the platform approaches the upper end of its upright support.

This invention embodies other novel features, details of construction and arrangement of parts which are hereinafter set forth in the specification and claims, and illustrated in the accompanying drawings, wherein:

Fig. 1 is a side elevational view illustrating an elevator structure embodying features of the present invention.

Fig. 2 is a rear elevational view of same.

Fig. 3 is a top plan view of same.

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 1.

Fig. 5 is a wire diagram illustrating the means employed for controlling the operation of the elevator.

Referring now to the drawings for a better understanding of the present invention, the elevator structure is shown as arranged for use in servicing a conventional

printing press embodying spaced roll stacks 6 comprising vertically spaced rolls 7 journaled in side frames 8—8.

The elevator structure is shown as comprising generally an upright support 9 disposed at one side of the printing press and having a cantilever platform 11 mounted thereon for vertical movement between adjacent roll stands during servicing of the press, the platform being swingable from its operative horizontal position to an inoperative vertical position during operation of the press.

To support the platform 11 for movement to various positions relative to a roll stand, the upright support 9 is provided with spaced parallel inner tracks 12—12 and spaced parallel outer tracks 13—13. Each inner track is of channel section to provide spaced inboard and outboard flanges 14 and 16, respectively, and a connecting web 17, and each outer track is also of channel section to provide spaced inboard and outboard flanges 18 and 19, respectively, and a connecting web 21.

Adjacent inner and outer tracks 12 and 13 have their webs 17 and 21 in abutting engagement throughout the major portion of their lengths to form a pair of structural columns of I-beam section. A base plate 22 is welded or otherwise secured to the lower ends of the tracks 12—12 and 13—13, and a top plate 23 is welded or otherwise secured to the upper ends of the inner tracks. Vertically spaced transverse members 24 are welded or otherwise secured to the outboard flanges 16 and 19 of the tracks. The upper ends of the outer tracks 13—13 are curved at 26 to project upwardly and inwardly toward the upper end of the press and are secured together at their ends by a channel member 25 and connected to the upper ends of adjacent inner tracks 12 by braces 27—27.

The platform 11 is preferably of fabricated construction comprising longitudinal and transverse members 28 and 29, respectively, secured together and enclosed within a top plate 31, bottom plate 32. A wheel support plate 34 is secured to one end of the platform 11 and reinforced by means of side gusset plates 36. A pair of outer wheels 37—37 are journaled on stud shafts 38—38 secured to brackets 39—39 mounted on the wheel support plate, each wheel being disposed between the flanges 18 and 19 of its related outer tracks 13. A pair of inner wheels 41—41 are journaled on stud shafts 42—42 secured to brackets 43—43 mounted on the wheel support plate 34, each wheel being disposed between the flanges 14 and 16 of its related inner track 12.

To move the platform along the tracks 12—12 and 13—13, a pair of endless sprocket chains 46—46 are secured to related stud shafts 42—42 and extend around driving sprockets 47—47, keyed to the shaft of a conventional speed reduction unit 48, and idler sprockets 49—49 rotatably mounted on brackets 51—51 secured to the base plate 22. The unit 48 is secured to the top plate 23 and driven by a reversible electric brake motor 52 which is also secured to the top plate.

An upper limit switch 53 is mounted on the upper end of the curved sections 26—26 of the outer tracks 13—13 to open an electrical circuit between a source of current and the motor 52 when engaged by the platform 11 during upward swinging movement of the latter from its horizontal position to its vertical position. A lower limit switch 54 mounted on the lower end of the upright support 9 is operable to open an electrical circuit between a source of current and the electric motor 52 when engaged by the platform 11 during downward movement of the latter. A dump limit switch 56 mounted adjacent the lower end of the curved section 26 of a track 13 is operable to open an electrical circuit between a source of current and the motor 52 when engaged by the platform 11 during upward movement of the latter and prior to pivotal movement of the platform from its

horizontal position to its inoperative vertical position.

Manually operable switches 57 and 58 are mounted on the platform 11 to be actuated by an operator thereon to cause the platform to move to different positions between the lower limit switch 54 and dump limit switch 56. The switch 57 is operable to close a circuit between a source of current and the motor 52 to cause the motor to rotate in, for example, a clockwise direction to raise the platform toward but not past the dump limit switch 56. The switch 58 is operable to close a circuit between a source of current and the motor 52 to cause the motor to rotate in a counterclockwise direction to lower the platform toward but not past the lower limit switch 54.

Manually operable remote control switches 59 and 61 are disposed at a place remote from the platform 11, the switch 59 being operable to close a circuit between a source of current and the motor 52 to cause the motor to rotate in a clockwise direction to raise and swing the platform from a horizontal to a vertical position toward but not past the upper limit switch 53, and the switch 61 being operable to close a circuit between a source of current and the motor to cause the latter to rotate in a counterclockwise direction to lower and swing the platform from its vertical inoperative position to its horizontal operative position. To prevent operation of the elevator prior to movement of a roll stack to its service position away from its adjacent stack, a limit switch 60 is interposed in the circuits leading from the switches 57, 58, 59, and 61 and is engaged and closed only when the roll stack reaches its service position.

To start, stop and control the direction of rotation of the motor 52, a conventional reversing starter 62 is interposed in a circuit leading from a source of current to the motor. The several switches 53, 54, 56, 57, 58, 59, 60, and 61 are connected to the reversing line contactor 62 by suitable circuits, as diagrammatically illustrated in Fig. 5 in the drawings. As the construction and operation of reversing starters is well known in the electrical art, and as the present invention is not concerned with the provision of a specific type of reversing starter or the specific manner in which the switches are electrically connected to the starter to control the operation of the motor, it is not believed necessary to more particularly describe same.

In the operation of the elevator to service a printing press or other equipment, the platform is moved from its inoperative vertical position to a horizontal position and thence downwardly toward the floor by holding the switch 61 in closed position until the platform is located adjacent the floor to receive a workman. The workman on the platform then actuates the switches 57 and 58 thereon to raise or lower the platform intermediate but not beyond the limit switches 54 and 56 which serve to break the circuit between a source of current and the motor 52 when engaged by the platform. After servicing the press, the workman steps off the platform and closes the remote control switch 59 to cause the platform to move to the upper end of the support 9 and to swing to its vertical position alongside the support.

While this invention has been shown in but one form, it is obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications without departing from the spirit and scope of the claimed invention.

I claim as my invention:

1. In a service elevator for printing press roll stacks, a platform to extend in a horizontal position between a pair of adjacent roll stacks, upright support means adjacent one side of the press to support the platform for movement between the ends of the support means and to alternately swing the platform between its horizontal position and a vertical depending position, said support means comprising tracks, and said platform having wheels journaled thereon for movement along related tracks, said tracks being parallel for a portion of their lengths and diverging upwardly from each other adjacent the upper end of the support means.

2. In a service elevator for printing press roll stacks, a platform to extend in a horizontal position between a pair of adjacent roll stacks, upright support means adjacent one side of the press to support the platform for movement between the ends of the support means and to alternately swing the platform between its horizontal position and a vertical depending position, said support means comprising tracks, and said platform having wheels journaled thereon for movement along related tracks, said tracks being parallel for a portion of their lengths and diverging upwardly from each other adjacent the upper end of the support means, and means to move said platform along said tracks.

3. In a service elevator for printing press roll stacks, a platform to extend in a horizontal position between a pair of adjacent roll stacks, upright support means adjacent one side of the press to support the platform for movement between the ends of the support means and to alternately swing the platform between its horizontal position and a vertical depending position, said support means comprising tracks, and said platform having wheels journaled thereon for movement along related tracks, said tracks being parallel for a portion of their lengths and diverging upwardly from each other adjacent the upper end of the support means, power means including an endless chain operative to move said platform along said tracks.

4. In a service elevator for printing press roll stacks, a platform to extend in a horizontal position between a pair of adjacent roll stacks, upright support means adjacent one side of the press to support the platform for movement between the ends of the support means and to alternately swing the platform between its horizontal position and a vertical depending position, said support means comprising tracks, and said platform having wheels journaled thereon for movement along related tracks, said tracks being parallel for a portion of their lengths and diverging upwardly from each other adjacent the upper end of the support means, power means including an endless chain operative to move said platform along said tracks, manual control means on said platform operative to actuate said power means to move said platform between predetermined vertically spaced horizontal planes.

5. In a service elevator for printing press roll stacks, a platform to extend in a horizontal position between a pair of adjacent roll stacks, upright support means adjacent one side of the press to support the platform for movement between the ends of the support means and to alternately swing the platform between its horizontal position and a vertical depending position, said support means comprising tracks, and said platform having wheels journaled thereon for movement along related tracks, said tracks being parallel for a portion of their lengths and diverging upwardly from each other adjacent the upper end of the support means, power means including an endless chain operative to move said platform along said tracks, manual control means on said platform operative to actuate said power means to move said platform between predetermined vertically spaced horizontal planes, other manual control means remote from said platform operative to actuate said power means to alternately swing said platform between its horizontal and vertical positions.

6. In a service elevator for printing press roll stacks, a platform to extend in a horizontal position between a pair of adjacent roll stacks, upright support means adjacent one side of the press to support the platform for movement between the ends of the support means and to alternately swing the platform between its horizontal position and a vertical depending position, said support means comprising tracks, and said platform having wheels journaled thereon for movement along related

tracks, said tracks being parallel for a portion of their lengths and diverging upwardly from each other adjacent the upper end of the support means, power means including an endless chain operative to move said platform along said tracks, manual control means on said platform operative to actuate said power means to move said platform between predetermined vertically spaced horizontal planes, and limit means rendering said manual control means and power means ineffective to move said platform beyond said predetermined vertically spaced horizontal planes.

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