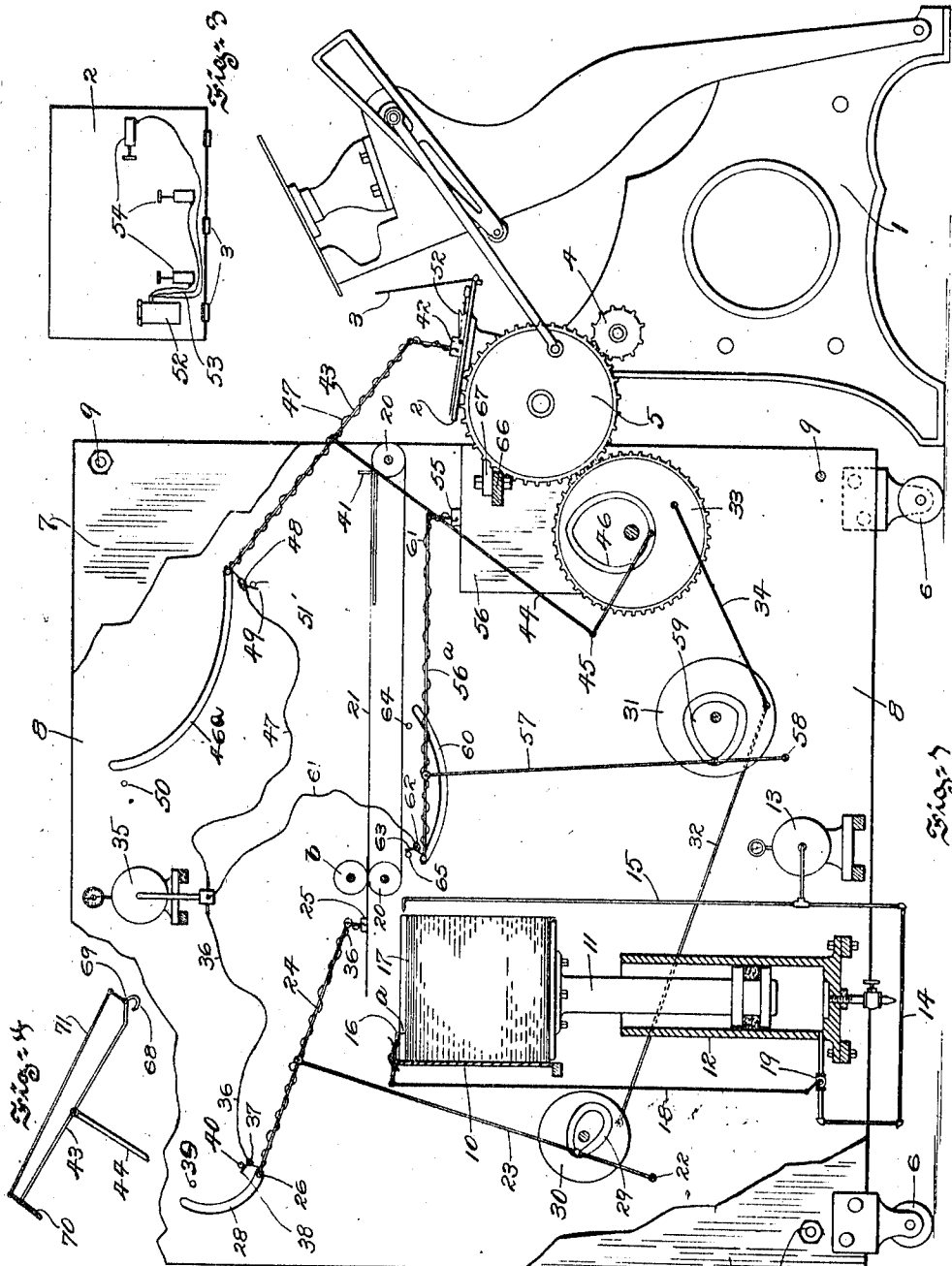


S. W. CORTISSOZ.
 FEED AND DELIVERY ATTACHMENT FOR PRINTING PRESSES.
 APPLICATION FILED AUG. 9, 1910.

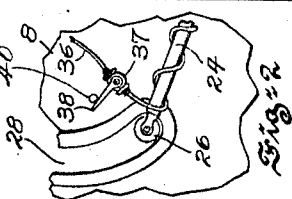
1,061,526.

Patented May 13, 1913.



WITNESSES:

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FEED AND DELIVERY ATTACHMENT FOR PRINTING-PRESSES.

1,061,526.

Specification of Letters Patent.

Patented May 13, 1913.

Application filed August 9, 1910. Serial No. 576,345.

To all whom it may concern:

Be it known that I, SAMUEL W. CORTISSOZ, a citizen of the United States, residing in Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Feed and Delivery Attachments for Printing-Presses, of which the following is a specification.

This invention relates to mechanism for automatically feeding sheets of paper to and removing the same from printing presses, and is particularly designed for use in connection with job presses.

The principal object of the present invention is to utilize an automatically operating feed table for presenting sheets of paper to a suction device for delivery to a conveyer from which the said sheets of paper are transferred to the platen of the printing press, from which platen the printed sheets are automatically removed and deposited upon a receiving table.

A further object of the present invention is to provide means for controlling the operation of these various parts, whereby suction within the feed and delivery mechanism is established and interrupted at predetermined intervals.

A further object of the present invention is to provide means for automatically establishing and interrupting at predetermined intervals pressure beneath the feed table.

A still further object of the present invention is to provide automatically operating sheet adjusting means for the platen of the printing press.

A still further object of the present invention resides in the assembling of feed and delivery mechanism upon a movable framework, whereby said frame may be moved into juxtaposition to a printing press for co-operation therewith and removed therefrom at will.

Other objects of the invention relate to general details of construction and arrangement of parts as will hereinafter more fully appear.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts, which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings, Figure 1, is a view in elevation partly sectioned of a

job printing press having coupled therewith the improved feeding and delivering mechanism, constituting the subject matter of the present invention. Fig. 2, is a fragmentary view drawn to an enlarged scale of one of the valves for establishing and interrupting suction within the feed and delivery mechanism, Fig. 3, is a top or plan view of the platen of the printing press and illustrating the sheet adjusting means of the invention, and Fig. 4, is a fragmentary view in elevation illustrating a slightly modified form of sheet delivery mechanism.

In the drawing and referring more particularly to the right-hand side of Fig. 1, there is disclosed an ordinary job printing press 1, having a platen 2, and its complementary grippers 3, working in the well understood manner. Journaled in the frame of the press 1, is a gear wheel 4, meshing with a gear wheel 5, which gear in addition to accomplishing its usual functions in the operation of the printing press constitutes the working element for operating the feed and delivery devices of the present invention.

In practice should it be desired to use the press in the shop for small jobs, the mechanism about to be described is not connected with the press. However, should a large amount of printing be desired to be run off, the feed and delivery devices of the present invention are wheeled into proper position and attached to the printing press, whereby sheets of paper are automatically delivered to and removed from the platen of the press.

The following description now has reference to the left-hand portion of Fig. 1. Suitably mounted upon rollers 6, is a framework which may consist of side pieces 7, and 8, bolted or otherwise secured together as at 9. Between these side pieces 7, and 8, are located the feed and delivery devices. For feeding sheets of paper or other like material use is made of a suitably supported box like structure constituting a feed table 10, mounted for movement through which is a plunger 11, which works within a cylinder 12. The plunger 11, is operated by pneumatic or hydraulic pressure from a source of supply 13, which in the present instance is shown as being a cylinder for the supply of air. From the cylinder 13, is a pipe 14, which leads to a point beneath the plunger 11, and a pipe 15, which leads to the top of the feed table 10, for a purpose to

be presently described. Carried by the top of the feed table 10, is a pivotally arranged spring controlled device 16, one end of which is adapted to rest upon the uppermost sheet of a pile of paper 17, within the feed table 10, the opposite end of said device 16, having pivotal relation with a rod 18, adapted to operate a valve 19, upon the pipe 14. In this connection, it may be remarked that normally the valve 19, is closed but when the uppermost sheet of the pile 17, is removed for delivery to the printing press, the end *a*, of the device 16, drops sufficiently to operate the valve 19, for the admission of air beneath the plunger 11, whereupon the said plunger 11, raises the pile of sheets to the height occupied before the removal of the top-most sheet. This movement of the plunger 11, operating against the end *a*, of the device 16, closes the valve 19. Located slightly above the feed table 10, are rolls 20, operating an endless band 21, said band being adapted to receive sheets of paper from a pile 17, and convey them to a point designed adjacent the platen 2, of a printing press.

A description will now be given of a feeding device for lifting sheets from the feed table 10, to the conveyer 21. Fulcrumed as at 22, is an arm 23, pivotally supporting at its top a cross-bar 24, one end of which is equipped with a suction device 25, and the opposite end of which is provided with a roller 26, see Fig. 2, which travels in a slot 28, in the side piece 8. Motion is imparted to the arm 23, by virtue of a cam 29, in the disk 30, motion being imparted to the disk 30, from the disk 31, by a connecting link 32, the disk 31, in turn receiving its movement from the gear wheel 33, and link 34, the gear wheel 33, in turn meshing with the gear wheel 5, of the printing press. As the arm 23, is operated by the cam 29, the cross arm 24, is guided by the slot 28, to lower the suction device 25, into a position upon the top sheet of the pile 17, on the table 10. Just prior to its contact with said sheet, suction will be established through the suction device 25 by apparatus about to be described. In this connection, it may be remarked that the pipe 15, is blowing air received from the cylinder 13 beneath the uppermost sheet of the pile 17, in order that said sheets may not stick together. The uppermost sheet of the pile 17, will be conveyed by the suction device 25, in the return movement of the arm 24, to a point in alignment with the rolls 20, and the roller 7, whereupon suction will be interrupted as the sheet of paper is drawn between said rolls to the conveyer 21. Suitably supported between the side pieces 7, and 8, is a suction pump or the like 35, connecting which and the suction device 25, of the arm 24, is a tube 36, provided with a valve 37. The valve 37, is provided with

a tappet arm 38, adapted to engage pins 39, and 40, which are located adjacent the respective ends of the slot 28, and in the path of the tappet arm 38, of the valve 37, as it moves with the arm 24; it being understood that the tube 36, is wound around the arm 24, as clearly illustrated in Fig. 2. These elements serve as means for establishing and interrupting suction to the suction device 25, and the other suction devices about to be described likewise are suitably connected so as to have suction established and interrupted in connection therewith. The sheet of paper lifted from the stack 17, and deposited upon the conveyer 21, travels along until it reaches the stop 41. At this point a suction device 42, carried by the cross arm 43, of a generally L-shaped arm 44, fulcrumed as at 45, and operated by the cam 46 in the gear wheel 33, engages said sheet of paper and deposits the same upon the platen 2, of the printing press, it being understood that the slot 46^a, guides said arm 43, during this movement. The suction device 42, and the suction pump 35, are connected by a tube 47, equipped with a valve 48, having a tappet arm 49, for contacting with pins 50, and 51, for establishing and interrupting suction as hereinbefore described. In order to properly position the sheet of paper thus delivered to the platen 2, of the printing press, the platen is provided with a bellows 52, connected with which as by tubing 53, are pneumatic plungers 54. As the platen 2, moves into position for printing in the well understood manner one of the grippers 3, in folding, presses the bellows 52, thereby causing the pneumatic plungers 54, to operate upon and properly position a sheet of paper. As the platen 2, returns to normal position, the third suction device 55, takes the printed sheet and transfers the same to a receiving table 56. In this connection, it may be remarked that the suction arm 56^a which in turn is carried by and operated by an arm 57, is fulcrumed as at 58, and is operated by a cam 59, of the disk 31. The arm 56^a, in turn is guided by a slot 60. Connecting the suction device 55, and the suction pump 35, is a tube 61, equipped with a valve 62, and a tappet arm 63. The tappet arm 63, by contacting with the pins 64, and 65, establishes and interrupts suction through the device 55. The construction and operation of the arms 23, 57, and 44, are similar and their movements are so timed as to work collectively and continuously in the feeding and delivering operation. The side pieces 7, and 8, may be provided with lugs 66, which may be bolted or otherwise secured to lugs 67, carried by the printing press.

It is thought that the above description sufficiently describes the invention without resorting to further description of the operation of the apparatus. In lieu of using

the suction device 42, upon the arm 43, use may be made of a hook-like device 68, pivoted as at 69, to said arm 43. Pivotally connecting the hook-like device 69, and a pivoted tappet arm 70, is a link 71, whereby when the tappet arm engages the pin 50, or 51, hereinbefore described, the said hook 68, will engage or be disengaged from a sheet of paper.

While the above description has been restricted to the operation of a device for feeding and delivering sheets of paper, obviously the same mechanism could be made to feed and deliver small boxes or other articles without materially changing the construction of the apparatus; therefore, the invention herein described is not to be considered as limited thereto, as many changes may be made and the construction still fall within the scope of the following claims.

What I claim is:

1. Apparatus of the class recited comprising a table operated through the instrumentality of pressure, said table containing articles to be fed, means for supplying pressure beneath said table for elevating the same vertically, a horizontally arranged endless conveyer, a reciprocating arm equipped with a suction device for transferring one at a time said articles from said table to the conveyer, a pneumatic device for relatively separating said articles prior to transfer, valved means responding to the removal of an article from the table for causing the admission of pressure beneath the table to elevate it a predetermined distance, means for reciprocating said arm and means actuated by the reciprocating arm for establishing and interrupting suction through said suction device.

2. Apparatus of the class recited comprising a table constructed to be automatically lifted containing sheets of paper to be fed, an endless conveyer, a reciprocating arm equipped with a suction device for transferring one at a time said sheets of paper from the table to the conveyer, means responding to the removal of a sheet of paper from the table for lifting the same a predetermined distance, a reciprocating arm equipped with a suction device for transferring said sheets of paper from the conveyer to the platen of a printing press, a reciprocating arm carrying a suction device for delivering the printed sheets, means for reciprocating said arms and means actuated by the reciprocating arms for establishing and interrupting suction through said device.

3. Apparatus of the class recited comprising a table equipped with a plunger, said table containing sheets of paper to be fed, a cylinder through which the plunger works, means for supplying pressure within the cylinder, an endless conveyer, a reciprocating arm equipped with a suction device for transferring one at a time said sheets of paper from the table to the conveyer, means responding to the removal of a sheet of paper from the table for causing the admission of pressure within the cylinder, a reciprocating arm equipped with a suction device for removing the sheets from the endless conveyer, means for reciprocating said arms and means actuated by the reciprocating arms for establishing and interrupting suction through said devices.

4. In an attachment for printing presses, the combination of a portable structure, traction wheels therefor, a feed table constructed to be automatically lifted containing a stack of paper, an endless conveyer, a reciprocating arm equipped with a suction device for transferring one at a time said sheets of paper from the table to the conveyer, a second reciprocating arm equipped with a suction device for transferring sheets of paper from the conveyer to the platen of the printing press, a third reciprocating arm equipped with a suction device for removing the printed sheets from said platen, means for reciprocating said arms, and means actuated by the reciprocating arms for establishing and interrupting suction through said devices.

5. In combination a printing press including its complementary platen and grippers, pneumatic sheet adjusting means operatively mounted upon said platen said means being operated by said platen grippers, a reciprocating arm equipped with a suction device for delivering sheets of paper to said platen, a reciprocating arm equipped with a suction device for removing the printed sheets from said platen, means carried by the press parts for operating said platen and grippers and said reciprocating arms and means actuated by said reciprocating arms for establishing and interrupting suction through said devices.

In testimony whereof I have hereunto signed my name.

SAMUEL W. CORTISSOZ.

Witnesses:

WILLIAM J. JACKSON,
AGNES E. CASKEY.