Sept. 6, 1927. 1,641,177

E. R. LINEBAUGH

COMBINED PRINTING AND BRONZING MACHINE

Filed Dec. 5, 1925 7 Sheets-Sheet 1

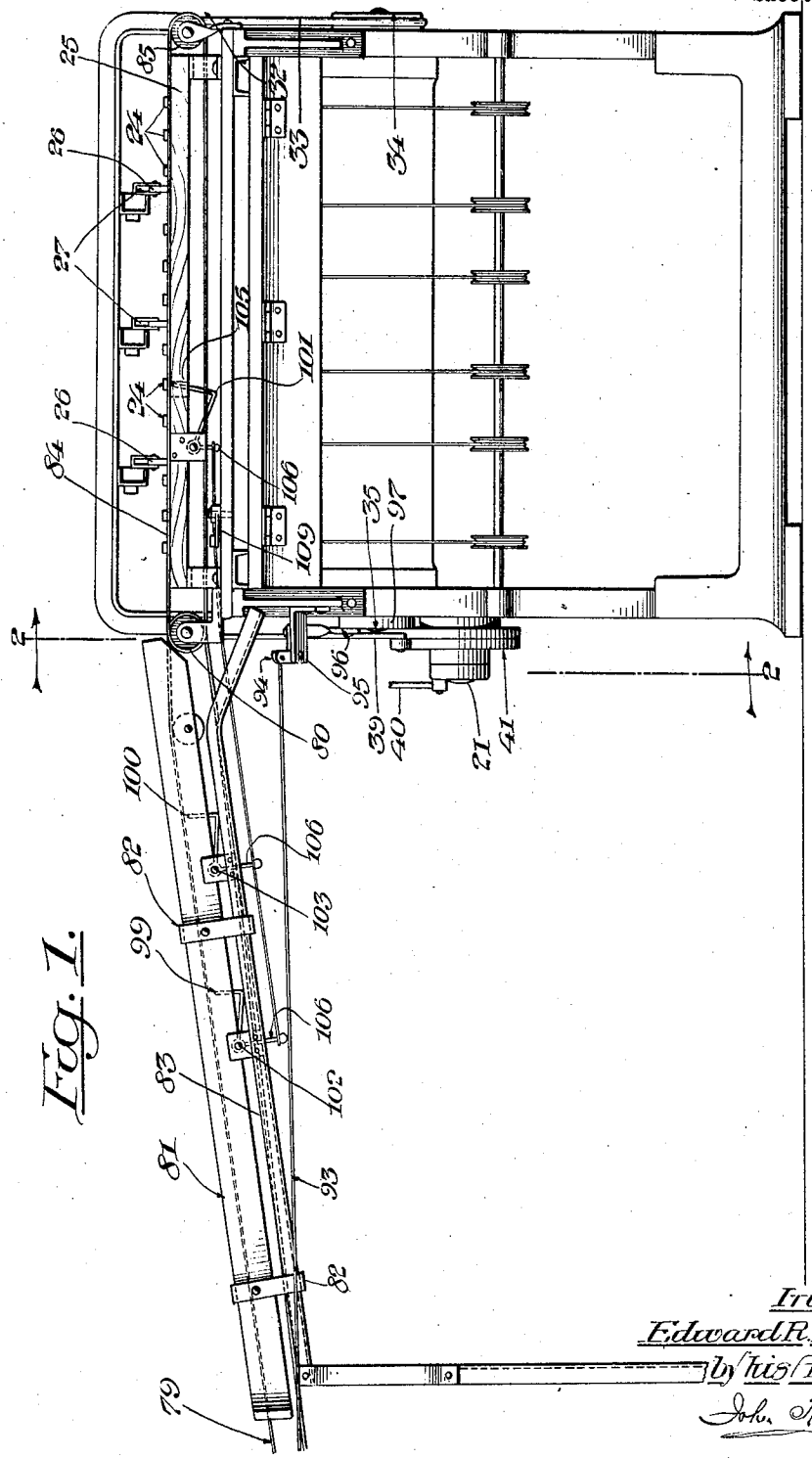


Fig. 1.

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Filed Dec. 5, 1925 7 Sheets-Sheet 2

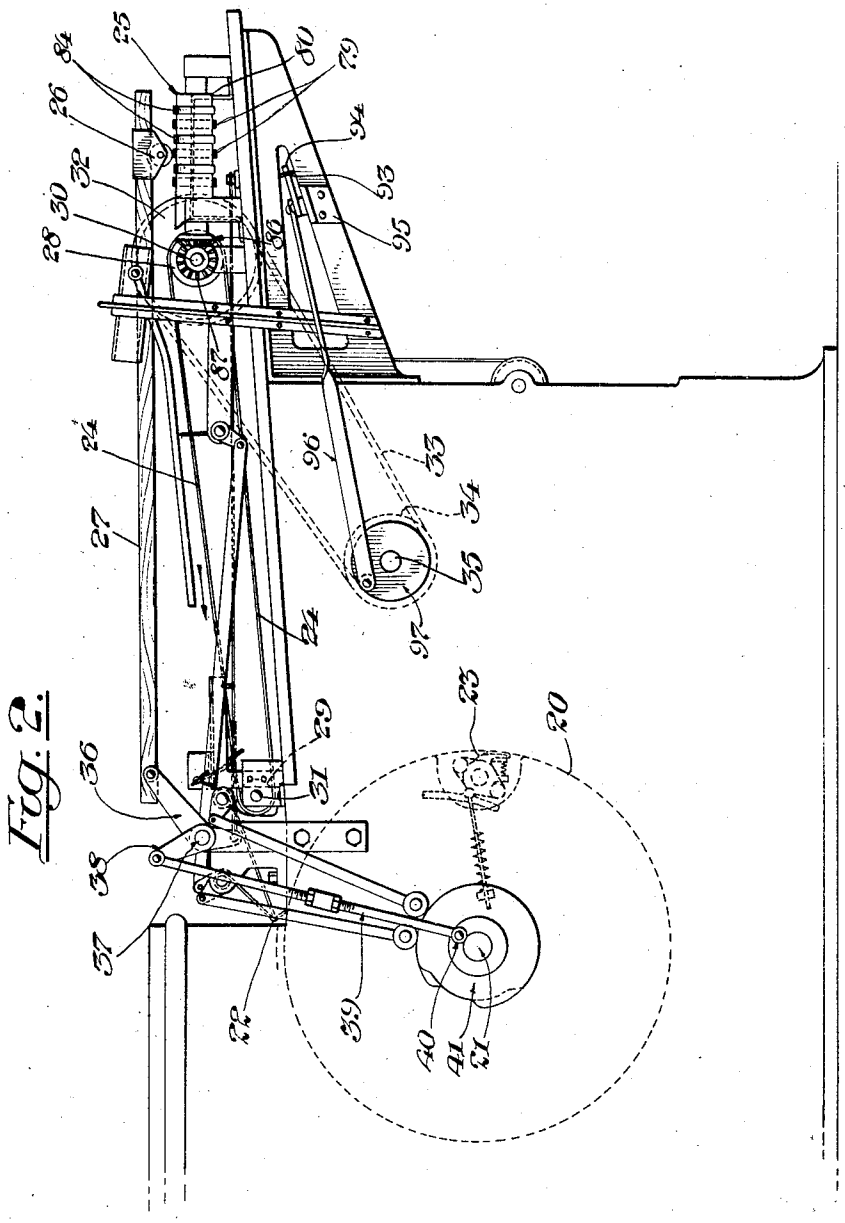


Fig. 2.

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COMBINED PRINTING AND BRONZING MACHINE

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Fig. 3.

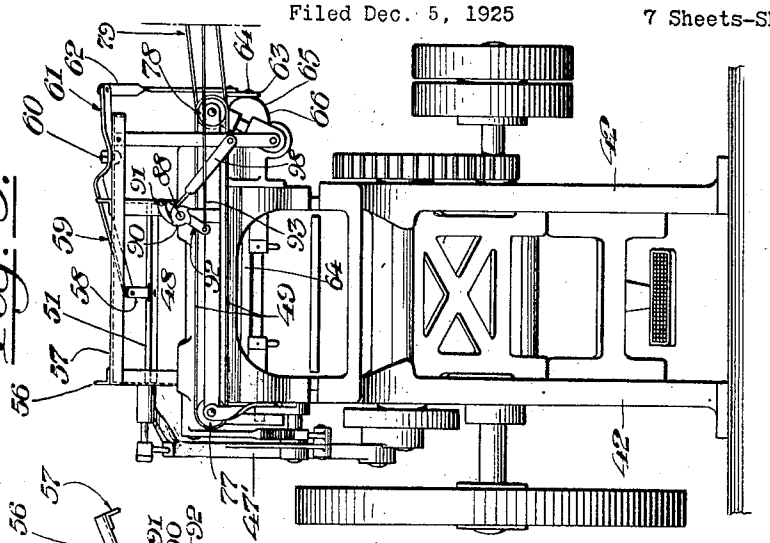
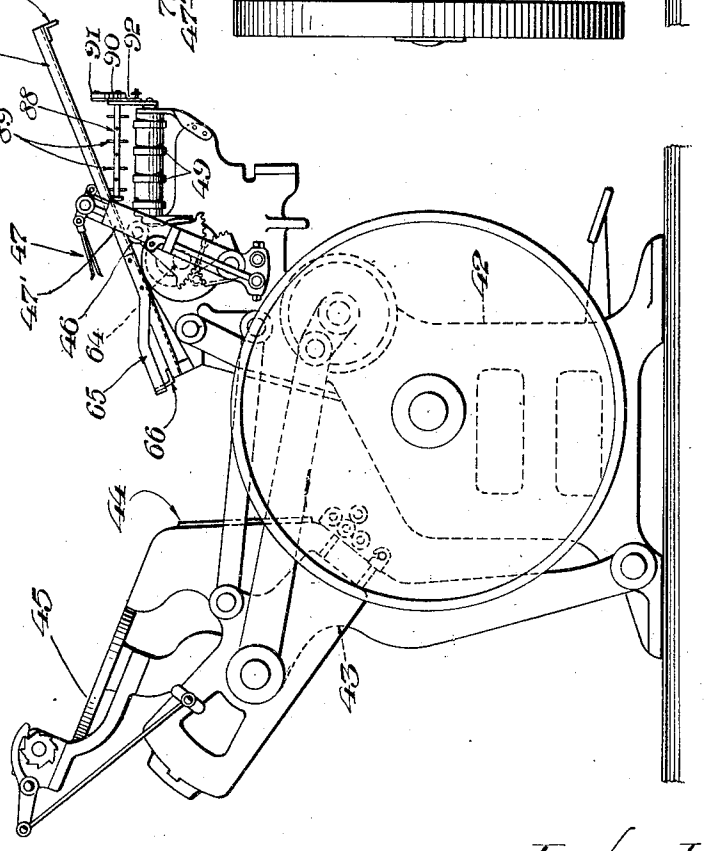


Fig. 4.



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COMBINED PRINTING AND BRONZING MACHINE

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Fig. 5.

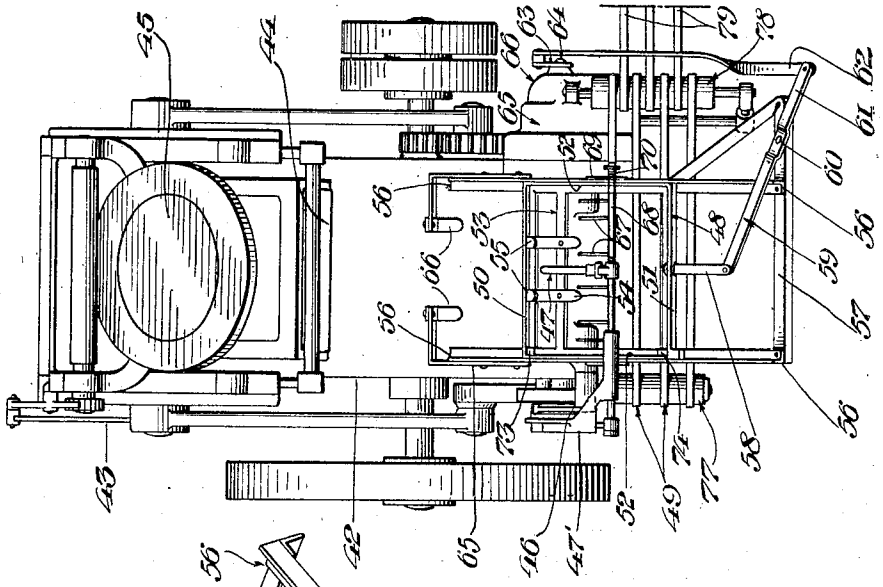
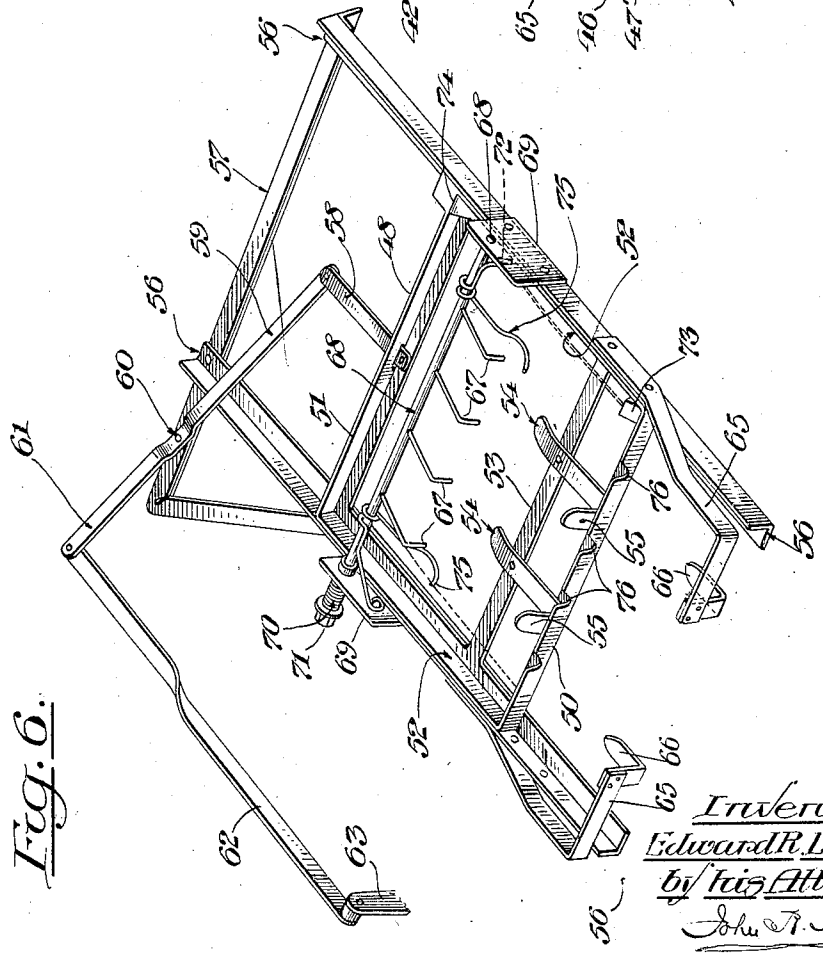


Fig. 6.



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COMBINED PRINTING AND BRONZING MACHINE

Filed Dec. 5, 1925 7 Sheets-Sheet 5

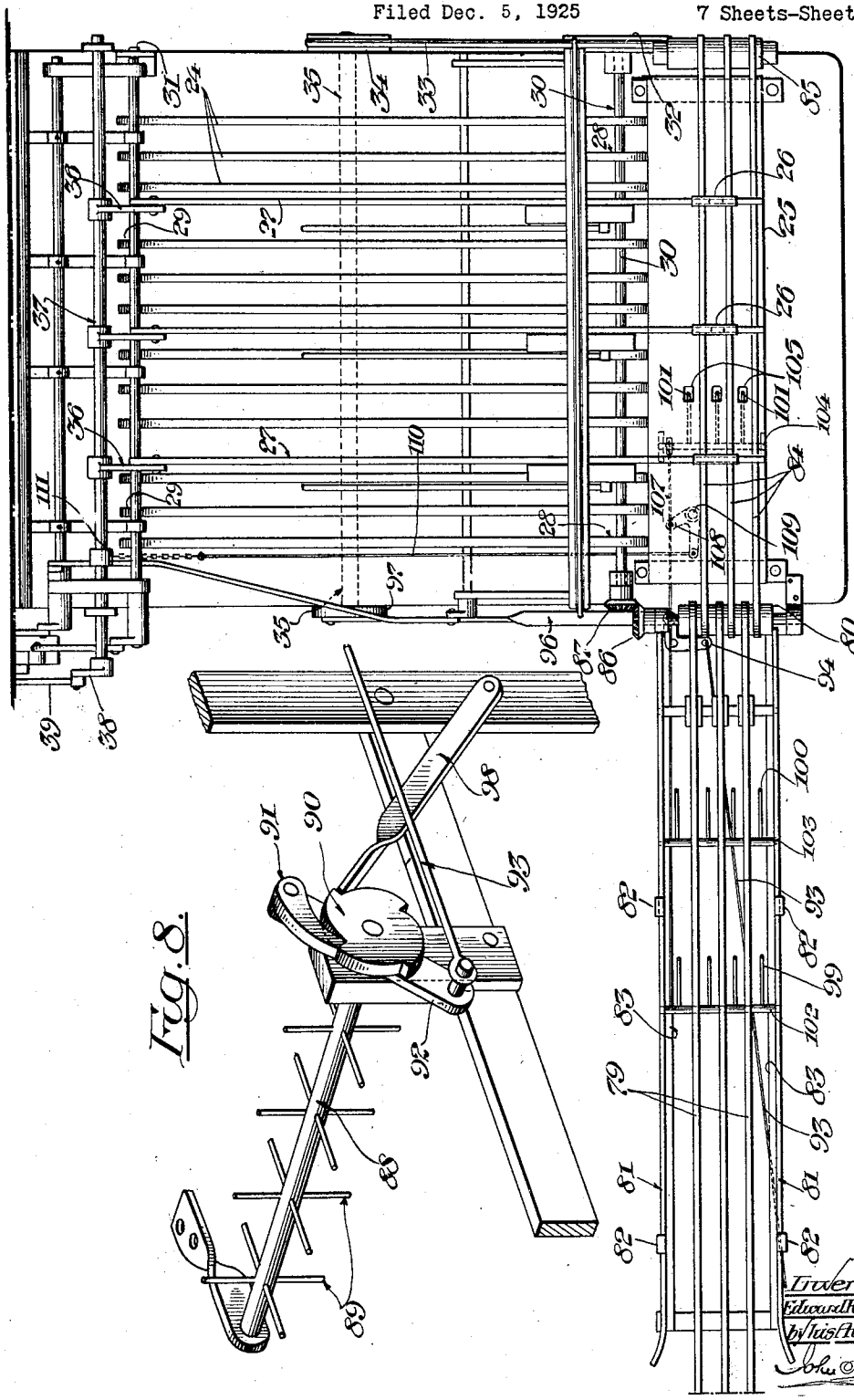


Fig. 7.

Fig. 8.

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COMBINED PRINTING AND BRONZING MACHINE

Filed Dec. 5, 1925 7 Sheets-Sheet 6

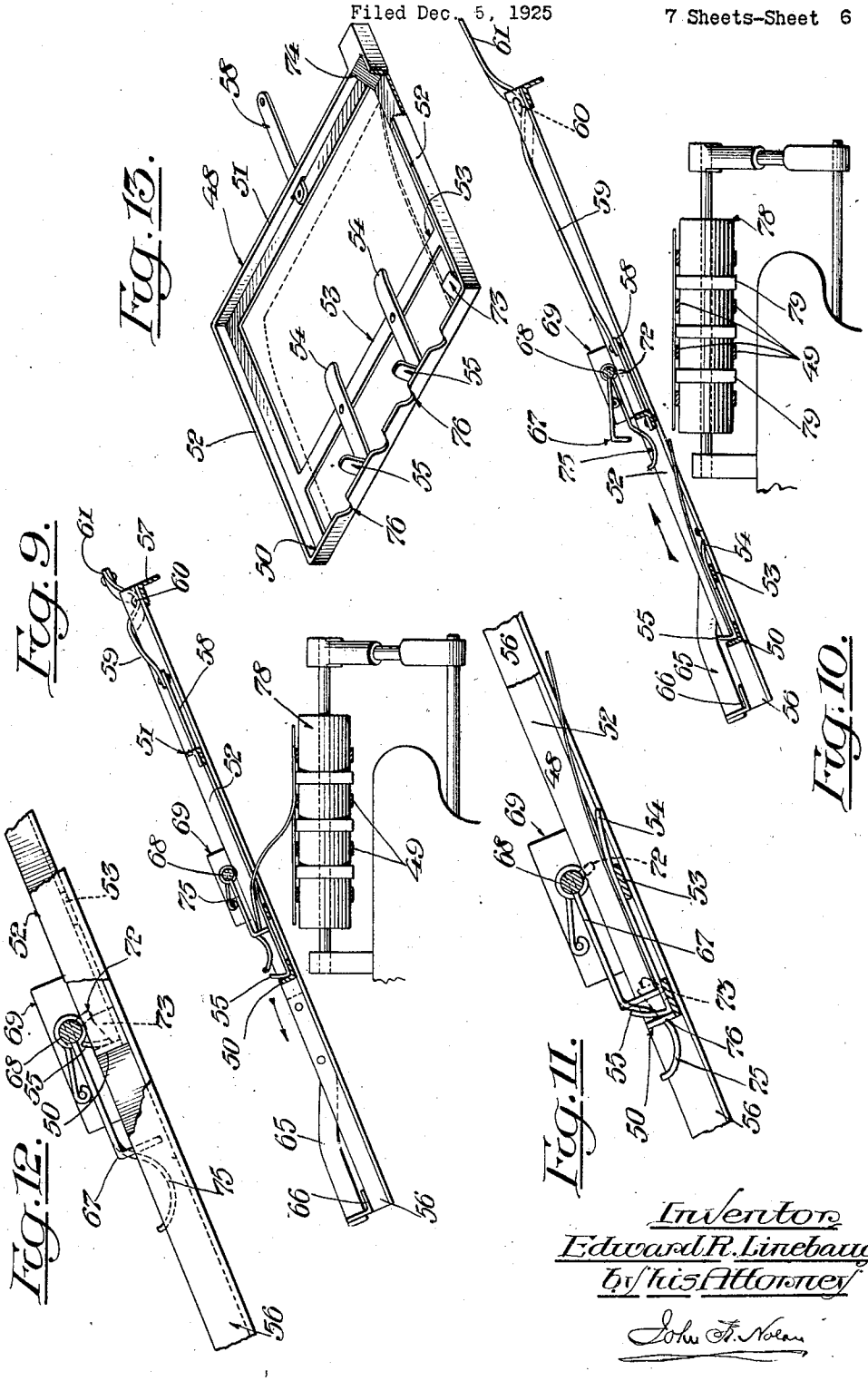


Fig. 9.

Fig. 10.

Fig. 11.

Fig. 12.

Fig. 13.

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Sept. 6, 1927. 1,641,177

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COMBINED PRINTING AND BRONZING MACHINE

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Fig. 14.

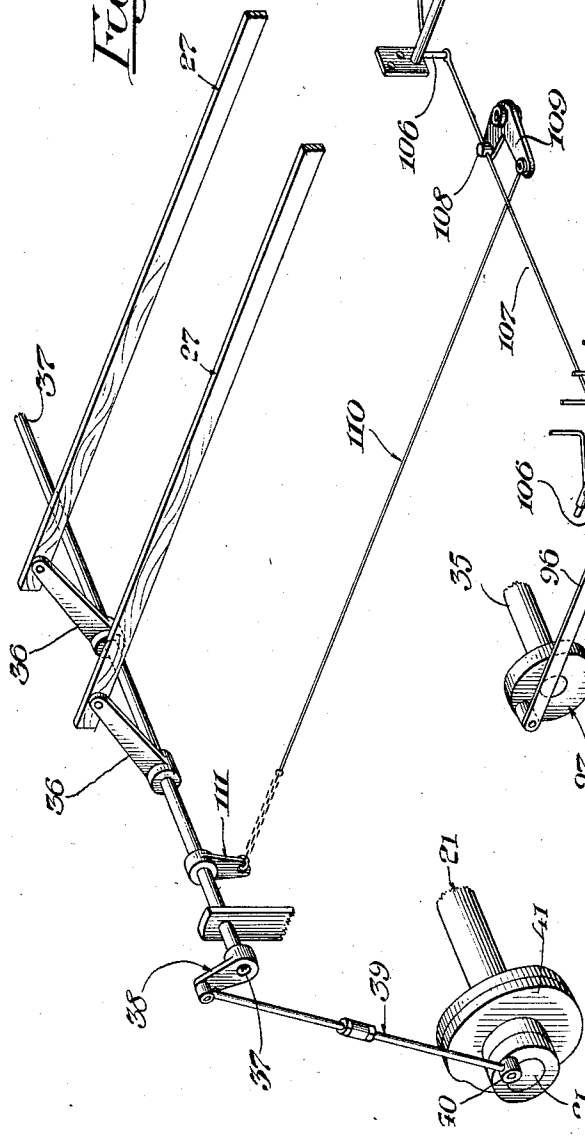
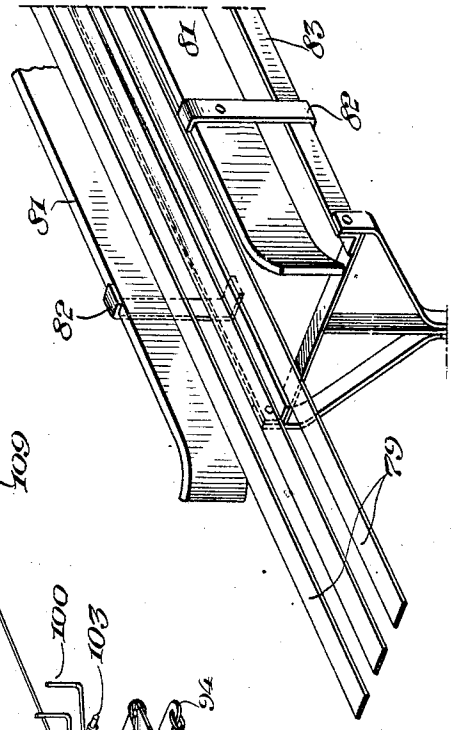


Fig. 15.



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Patented Sept. 6, 1927. 1,641,177

UNITED STATES PATENT OFFICE.

EDWARD R. LINEBAUGH, OF BARBERTON, OHIO, ASSIGNOR TO THE DIAMOND MATCH COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

COMBINED PRINTING AND BRONZING MACHINE.

Application filed December 5, 1925. Serial No. 73,304.

This invention relates to an apparatus for printing and bronzing relatively large heavy sheets of cardboard and the like.

In my pending application Serial No. 686,720 filed January 17, 1924, is disclosed a bronzing machine equipped with sheet-feeding mechanism, including a board or platform upon which the printed sheets are manually stacked in two laterally adjacent piles, and including also reciprocating feed rolls operative to act upon the successive sheets of each pile and deposit them upon forwarding belts which transport the sheets in successive pairs to the gripper cylinder of the bronzing machine.

According to my present invention, the sheets are transferred by simple and efficient mechanism from a printing press to the platform of the sheet-feeding mechanism of the bronzing machine and are accurately positioned in pairs on said platform for delivery to the forwarding tapes by the feed rolls, thereby obviating the necessity of manually transporting stacks of printed sheets from the press to the platform.

My invention comprises novel features of construction and combinations of parts which will be hereinafter fully described; the scope of the invention being defined in the appended claims.

In the drawings—

Figure 1 is a front elevation of a bronzing machine equipped with sheet transfer mechanism embodying my invention, the printing press and the portion of the transfer mechanism adjacent thereto being omitted.

Fig. 2 is a transverse vertical section through the transfer mechanism adjacent the bronzing machine, as on the line 2—2 of Fig. 1.

Fig. 3 is a front elevation of the press, and its transfer connections, the latter being a continuation of the transfer mechanism shown in Fig. 1.

Fig. 4 is a side elevation of the printing press and adjuncts shown in Fig. 3.

Fig. 5 is a plan of the same.

Fig. 6 is a perspective view of the reciprocating sheet receiving and positioning frame, and its connections, on the printing press.

Fig. 7 is a plan of a portion of the sheet-feeding mechanism, including the platform of the bronzing machine, together with a portion of the transfer mechanism leading to the said platform, the latter mechanism being a continuation of the transfer mechanism shown in Fig. 5.

Fig. 8 is a perspective view of intermittently rotatable stop devices which control the initial travel of a plurality of printed sheets from the press.

Fig. 9 is a longitudinal section of the sheet receiving and positioning elevator and adjuncts, including a stripper finger and the underlying conveyor tapes, showing the relation of the parts at or about the time a sheet is being deposited on the tapes and stripped from the elevator during the downward stroke of the latter.

Fig. 10 is a similar view showing the elevator in its initial upward movement, with a sheet supported thereon, the stripper finger being raised to permit the upward travel of the elevator.

Fig. 11 is an enlarged sectional detail illustrating the stripper finger in engagement with the lower edge of a sheet carried by the elevator.

Fig. 12 is a similar detail illustrating the action of dropping the stripper finger by means of an abutment on the elevator during the upward stroke of the latter.

Fig. 13 is a perspective view of the elevator detached, a sheet being indicated thereon in dotted lines.

Fig. 14 is skeleton perspective view of the various stop devices, and their connections, for controlling the travel of the sheets from the printing press to the platform of the bronzing machine.

Fig. 15 is a detail, in perspective, of certain of the conveyor tapes and the side guide boards adjacent thereto.

Referring to the drawings 20 (Fig. 2) designates the sheet carrying cylinder of a bronzing machine; 21 designates the power driven shaft for the cylinder, and 22 designates the oscillating registering fingers mounted adjacent the periphery of the cylinder and operable to position the leading edge of a printed sheet in the path of the usual grippers 23 on the cylinder. The sheet is advanced to the grippers by means of forwarding belts 24, to which the sheets are successively delivered from a platform 25 by means of frictional feed rolls 26 carried by longitudinally reciprocating bars 27 which overhang the belts and the platform. The forwarding belts pass about pulleys 28,

29 mounted on suitably-disposed cross-shafts 30, 31, respectively, one of which shafts is mounted adjacent the platform and the other shaft adjacent the cylinder 20. The shaft 30 is provided at one end with a pulley 32 which is connected by means of a belt 33 with a pulley 34 on a driven shaft 35 of the bronzing machine; the shaft 30 thus being actuated to drive the belts 24 with their upper runs travelling toward the cylinder, as indicated.

The bars 27 are jointed to a pair of arms 36 rising from a rock-shaft 37 having at one end a crank-arm 38 which is connected by means of a rod 39 with a wrist pin 40 on a cam 41 on one end of the cylinder shaft. Hence during the rotation of the cylinder the shaft 37 is oscillated to effect the longitudinal reciprocation of the bars 27 and their feed rolls 26.

The mechanism above referred to being described in the co-pending application Serial No. 686,720 aforesaid, needs no detailed description herein.

Referring to Figs. 3, 4 and 5 of the drawings 42 designates the stationary main frame of a typical printing press which is located laterally of and some distance from the bronzing machine. 43 designates the swinging bed frame of the press, which frame supports the type-form at 44, and also the relatively inclined ink distributing disk 45 and the inking devices and their appurtenances. 46 designates oscillatory take-off mechanism, including grippers 47 operative to grip the upper edge of each succeeding sheet as rapidly as it is printed, and transfer the sheet to a receiving structure on the supporting frame. These grippers are carried by an oscillatory arm 47' which is actuated from a driven shaft 64 of the press through interposed cam and gear mechanism in the usual manner. The sheet receiving structure, in lieu of the stationary bed heretofore employed, includes an inclined reciprocating elevator 48 (Figs. 6 and 13) upon which each succeeding sheet is successively deposited by the grippers 47, which elevator carries the sheet to a position above, and deposits it upon conveyer tapes 49 extending at right angles to the press. The elevator is a rectangular structure comprising two end members 50, 51 two side members 52, and a cross-piece 53 spaced from the lower end member 50. This cross-piece has secured thereto a pair of spaced-apart strips 54 formed with angular end portions 55 which lie adjacent to and project above the end member 50, and are adapted in the downward motion of the elevator to pass under and engage the lower edge of a sheet which has been carried over by the grippers. The elevator is slidably mounted on a pair of inclined angle-bars 56 which are affixed to the main frame of the press, the upper ends of the bars being connected by a cross-bar 57. The lower ends of the bars 56 are provided with upwardly and inwardly extending bracket members 65, on the free ends of which are inclined fingers 66 that are so located as to receive the trailing end of the sheet when the sheet is being carried over by the grippers. The fingers 66 and their bracket members 65 hold the sheet in its proper position until the elevator has completed its downward travel and the angular end portions 55 are in a position to engage the lower edge of the sheet preparatory to the upward travel of the elevator.

The upper end bar 51 of the elevator is flexibly connected by means of a link 58 with one arm 59 of a lever which is fulcrumed, as at 60, on an extension of the cross-bar 57, the other arm 61 of the lever being, in turn, connected by means of a link 62 with a crank 63 on the shaft 64 of the printing press. (See Figs. 3 and 5.) Hence during the operation of the press the elevator is reciprocated longitudinally of the inclined supporting bars 56, the motion of the elevator being so timed in relation to that of the grippers 47 that in each down stroke of the elevator the projections 55 pass under and engage the lower or trailing end of the sheet carried over by the grippers as previously mentioned, which sheet is then carried upward with the elevator to a position where it is stripped therefrom. The stripper comprises a series of spaced-apart angular fingers 67 extending from a rock-shaft 68 which is journaled in suitably-disposed bearing brackets 69 on the respective side bars 56. This shaft 68 overlies the elevator, and one end of the shaft is extended beyond the adjacent bracket and is encircled by a spring 70 which is interposed between the bracket and a nut or head 71 on the shaft extension, so as to exert sufficient tension on the shaft to maintain it yieldingly in a position with the fingers 67 either raised or lowered in respect to the path of the elevator. At one end of the shaft 68 is a depending toe 72 which is actuated by spaced-apart abutment cams 73, 74 at one side of the elevator, during the reciprocation of the latter, so as to turn the shaft, first in one direction and then in the other, in a manner to lower and raise the pins at stated intervals.

In the upward movement of the elevator, the sheet supported thereon, together with the lower end of the elevator, passes beneath the up-raised fingers 67, whereupon the cam 73, as the elevator approaches the limit of its stroke, impinges against the opposing toe and effects the downward movement of the fingers to position their depending portions behind the trailing end of the sheet. (See Fig. 12.) Hence in the initial return

or down stroke of the elevator the fingers engage the opposing edge of the sheet and strip the sheet from the elevator, thus permitting it to fall upon the underlying conveyer tapes 49. (See Figs. 9, 10 and 11.)

As the elevator descends, after the removal of the printed sheet therefrom, the cam 74 impinges against the opposing toe 72 and effects the upward movement of the fingers to position their depending portions above the path of the next succeeding sheet on the elevator when the latter again moves upward. (See Fig. 10.)

It is to be noted that the lower end bar 50 of the elevator is suitably notched at spaced intervals, as at 76, to permit the end bar to clear the fingers when the latter are in their down or sheet-engaging position.

As a simple and efficient means to cam down any sheet on the elevator that may be curled or buckled, I arrange adjacent the respective ends of the shaft sheet leveling fingers 75 against which bears the top of the progressing sheet. These fingers are preferably composed of suitably shaped wires, one end of each of which is secured to the adjacent bracket 69, the body of the wire being loosely coiled around the rock-shaft and then extended laterally of the shaft and downwardly bowed as shown. These fingers are thus stationary and the rock-shaft, with its stripper fingers, is movable relatively thereto.

The conveyer tapes 49 upon which the sheets are successively deposited, are supported and guided by rolls 77, 78 mounted below the respective sides of the elevator. These tapes transfer the sheets to a set of conveyer tapes 79 which lead to the horizontal board or platform 25 upon which the sheets are successively delivered and from which they are fed in an orderly manner to the forwarding belts 24 preparatory to the delivery of the sheets to the cylinder of the bronzing machine. The tapes 79 pass about the roll 78 and a similar roll 80 mounted adjacent the board or platform 25. The sheets borne by the tapes 79 are guided on their passage to the platform of the bronzing machine by parallel side boards 81 which are supported by brackets 82 rising from a suitable frame work 83. Extending along the top of the platform 25 are the upper runs of conveyer tapes 84 which pass about the roll 80 at the receiving end of the platform, and about a similar roll 85 mounted at the opposite end of the platform. (See Figs. 1 and 7.)

The shaft of the roll 80 bears a bevel gear 86 with which meshes a similar gear 87 on one end of the driven shaft 30 above referred to, and in consequence the roll 80 is rotated and the sets of belts 49, 79, 84 are concurrently driven in the same direction, as indicated by the arrows, and at the same speed as the forwarding belts 24 of the bronzing machine.

In the present instance the cylinder 20 of the bronzing machine is designed to operate upon two laterally adjacent printed sheets during the rotation of the cylinder, and hence sheet controlling mechanism is provided whereby successive pairs of printed sheets are delivered to the conveyer tapes 49 at the printing press and thansferred thence by the succeeding conveyer tapes 79 84 to the platform and properly positioned on the latter for delivery to the forwarding belts 24 and in timed relation to the operation of the bronzing machine.

The preferred form of sheet controlling mechanism herein illustrated is as follows: Mounted above and transversely of the conveyer tapes 49 at the printing press is an intermittently rotatable shaft 88 provided with four equally-spaced sets of radially projecting pins 89 which are so arranged that in each dwell of the shaft a set of pins depends in close relation to the plane of the upper runs of the conveyer tapes 49 and thus serves an end stop to arrest the progress of a printed sheet imposed on the traveling tapes by the elevator. When the shaft 88 is partially rotated the depending stop pins are raised and the sheet is permitted to travel with the tapes. On one end of the shaft 88 is a ratchet wheel 90 with which engages a pawl 91 on a vibratory lever 92 loose on the shaft, which lever is connected by means of a link 93 with one arm of a bell-crank 94 fulcrumed on a bracket 95 on the frame of the bronzing machine. The other arm of this bell-crank is connected by means of a link 96 with a crank disk 97 on the driven shaft 35 of the bronzing machine, and, therefore, in the rotation of the shaft 35 the bell-crank is rapidly oscillated in a manner to vibrate the pawl lever 92, thus effecting the intermittent rotation of the ratchet wheel and the shaft 88 bearing the stop pins 89. A back stop pawl 98 engages the teeth of the ratchet wheel 90. (See Figs. 8 and 14.) The intermittent rotation of the shaft 88 in relation to the speed of the elevator and to that of the conveyer tapes 49, is such that in each dwell of the shaft 88 a printed sheet is deposited upon the tapes 49 and temporarily arrested by the depending stop pins, and that in each movement of the shaft 88 such sheet is carried by the tapes 49 beyond the up-swinging stop pins and, coincidentally, a second sheet is deposited on the tapes 49 and carried thereby beyond the stop pins and spaced from the preceding sheet. This done, a second set of stop pins is brought into arresting relation to the tapes 49, another sheet is deposited on the tapes, and the arresting and releasing operations are repeated, and so on. In this way the operation of the stop pins is controlled by the

bronzing machine to time the delivery of successive pairs of sheets from the printing press by the conveyer tapes 49. The successive pairs of sheets pass on to the tapes 79 which then carry the sheets to and upon the tapes 84, the latter in turn, carrying the sheets upon the platform and in position to be acted upon by the feed rolls 26, as previously described.

During the progress of the sheets toward and upon the platform they encounter stops 99, 100, 101 which are periodically moved into and from the path of the sheets. These stops are formed by the up-projecting members of sets of angular pins which are fast on rock-shafts 102, 103, 104, respectively, journaled in suitably-disposed brackets. The shafts 102, 103 are arranged in spaced relation to each other beneath the upper runs of the tapes 79, whereby when such shafts are properly turned the stop pins 99, 100 are moved into and from the path of the sheets borne by said tapes. The shaft 104 is arranged below the platform, and the latter is provided with suitable apertures 105 through which the stop pins 101 are moved when the shaft 104 is properly rotated.

Each of the shafts 102, 103, 104 is provided at one end with a depending arm 106, and the three arms are connected by a rod 107 which extends through a pivot stud 108 on one arm of a bell-crank 109 which is fulcrumed on the bed of the bronzing machine. The other arm of this bell-crank is connected by means of a link 110 with a crank-arm 111 on the rock-shaft 37 of the bronzing machine, whereby during the operation of the shaft 37 the bell-crank is oscillated and the rock-shafts 102, 103, 104 are simultaneously actuated in a manner to move the sets of stop pins 99, 100 and 101 into and out of the paths of the respective sheets. (See Fig. 14.)

The relation of the stop pins 99, 100 is such that when they are down the leading sheet of a pair carried by the tapes 79 escapes the stop pins 99 before the rearward sheet has advanced to the plane of the latter. All the pins are then raised, whereupon the pins 100 arrest the advance of the rearward sheet. When the pins are again lowered the two sheets are carried onward with the tapes 79, and the next succeeding pair of sheets encounter the pins 99, 100, and are temporarily arrested thereby, and so on. The pairs of sheets are carried up to the platform, as previously described. When the leading sheet is advancing upon the platform the pins 101 are down and the sheet passes over them, which pins are thereupon raised so as to arrest the travel of the second sheet. At this stage, the two sheets being properly positioned on the platform, the feed rolls act at once on such sheets and deliver them to the forwarding belts 24 which carry them to the bronzing cylinder. Immediately the sheets are removed from the platform by the feed rolls, a succeeding pair of printed sheets are delivered to and positioned on the platform, and so on.

From the foregoing it will be seen that my invention is characterized by the provision of transfer mechanism of simple and efficient construction which is interposed between the printing press and the bronzing machine, and is so co-ordinated with the printing and bronzing instrumentalities that the printed sheets which are delivered in rapid succession by the press are positioned in sets upon the transfer mechanism and are transported thereby in an orderly manner to, and in accurate position for efficient engagement by the sheet-feeding mechanism of the bronzing machine.

It is to be understood that my invention is not limited to the specific construction herein disclosed, as the mechanisms may be modified within the principle of the invention and the scope of the appended claims.

I claim—

1. The combination with a bronzing machine having a rotatable sheet-receiving cylinder and mechanism for simultaneously feeding a plurality of sheets to the cylinder, of a printing press in co-operative relation to the bronzing machine, sheet conveying mechanism interposed between the said printing press and the sheet feeding mechanism of the bronzing machine, means for transferring the sheets successively from the press to the sheet conveying mechanism, and means for temporarily arresting the travel of predetermined sheets when they are imposed on said conveyer at the printing press, said last-named means being operatively connected with the feeding mechanism of the bronzing machine.

2. The combination with a bronzing machine having a rotatable sheet-receiving cylinder and mechanism for simultaneously feeding a plurality of sheets to the cylinder, of a printing press in co-operative relation to the bronzing machine, sheet conveying mechanism interposed between the printing press and the sheet feeding mechanism of the bronzing machine, said conveying mechanism including successive units, means for transferring the sheets successively from the press to the receiving unit of the sheet conveying mechanism, means operated by an element of the feeding mechanism of the bronzing machine for temporarily arresting the travel of predetermined sheets when they are imposed on said receiving unit, and means operated by an element of the feeding mechanism for temporarily arresting the travel of predetermined sheets when they are borne by each of the succeeding units.

3. The combination with a bronzing ma-

chine having a rotatable sheet-receiving cylinder and mechanism for feeding sheets thereto, of a printing press in co-operative relation to the bronzing machine, sheet conveying mechanism interposed between the said printing press and the bronzing machine, an inclined elevator comprising an open frame structure to which the sheets are successively delivered by the printing press and thereby carried to a position above the conveyer mechanism, means for reciprocating the frame structure, a stripper element overlying the path of said structure, and means for actuating said stripper element during the reciprocation of the structure, whereby each succeeding sheet carried upward by the evelator is released therefrom and deposited on the conveyer mechanism.

4. The combination with a bronzing machine having a rotatable sheet-receiving cylinder and mechanism for feeding sheets thereto, of a printing press in co-operative relation to the bronzing machine, sheet conveying mechanism interposed between the said printing press and the bronzing machine, an inclined elevator comprising an open frame structure to which the sheets are successively delivered by the printing press and thereby carried to a position above the conveyer mechanism, means for reciprocating the frame structure, a stripper element comprising a rock-shaft mounted in bearings so as to overlie the path of said frame structure, a depending toe on said shaft, pins of said shaft, and frictional retaining means for said shaft, and spaced-apart abutments on said frame operative to impinge in alternation against the toe during the reciprocation of the frame structure, whereby each succeeding sheet carried upward by the elevator is released therefrom and deposited on the conveyer mechanism.

5. The combination with a bronzing machine having a rotatable sheet-receiving cylinder and mechanism for feeding sheets thereto, of a printing press in co-operative relation to the bronzing machine, sheet conveying mechanism interposed between the said printing press and the bronzing machine, an inclined elevator comprising an open frame structure to which the sheets are successively delivered by the printing press and thereby carried to a position above the conveyer mechanism, means for reciprocating the frame structure, a stripper element comprising a rock-shaft mounted to overlie the path of said frame structure, a depending toe on said shaft, pins on said shaft, and frictional retaining means for said shaft, sheet leveling members adjacent said shaft, and spaced-apart abutments on said frame operative to impinge in alternation against the toe during the reciprocation of the frame structure, whereby each succeeding sheet carried upward by the elevator is released therefrom and deposited on the conveyer mechanism.

6. The combination with a bronzing machin having a rotatable sheet-receiving cylinder and mechanism for simultaneously feeding a plurality of sheets to the cylinder, of a printing press in co-operative relation to the bronzing machine, sheet conveying mechanism interposed between the said printing press and the sheet feeding mechanism of the bronzing machine, means for transferring the sheets successively from the press to the receiving unit of the sheet conveying mechanism, and means for temporarily arresting the travel of predetermined sheets when they are imposed on said conveyer at the printing press, said last named means comprising an intermittently rotatable shaft mounted to overlie the conveyer, radial pins on said shaft, and shaft actuating means connected with and operated by the feeding mechanism of the bronzing machine.

7. The combination with a bronzing machine having a rotatable sheet-receiving cylinder and mechanism for simultaneously feeding a plurality of sheets to the cylinder, of a printing press in co-operative relation to the bronzing machine, sheet conveying mechanism interposed between the printing press and the sheet feeding mechanism of the bronzing machine, said conveying mechanism including successive units, means for transferring the sheets successively from the press to the receiving unit of the sheet conveying mechanism, means operated by an element of the feeding mechanism of the bronzing machine for temporarily arresting the travel of predetermined sheets when they are imposed on said receiving unit, and means for temporarily arresting the travel of predetermined sheets whey they are borne by each of the succeeding units, said last-named means comprising rock-shafts having projecting stop members, cranks on said shafts, a link connecting the cranks, and operative connections between said link and an element of the feeding mechanism of the bronzing machine.

8. The combination with a bronzing machine having a rotatable sheet-receiving cylinder and mechanism for feeding sheets thereto, of a printing press in co-operative relation to the bronzing machine, sheet conveying mechanism interposed between the said printing press and the bronzing machine, an inclined elevator comprising an open frame structure to which the sheets are successively delivered by the printing press and thereby carried to a position above the conveyer mechanism, a guide element for the frame structure having a support for the trailing end of a sheet overlying the said structure, means for reciprocating the frame structure, a stripper element overlying the path of said structure, and means for actu-

ating said stripper element during the reciprocation of the structure, whereby each succeeding sheet carried upward by the elevator is released therefrom and deposited on the conveyer mechanism.

9. The combination with a printing press including take-off gripper mechanism, of an inclined elevator arranged to receive the successive sheets from the gripper mechanism, said elevator comprising an open frame structure having fingers adapted to engage the lower end of a sheet imposed thereon, a guide element for the frame structure having a support for the trailing end of the sheet before its engagement by the said fingers, means for reciprocating the frame structure toward and from the said support, a stripper element overlying the path of said structure, means for actuating said stripper element during the reciprocation of the structure whereby each succeeding sheet carried upward by the elevator is released therefrom, and a sheet-receiving conveyer underlying the elevator.

10. The combination with a printing press including take-off gripper mechanism, of an inclined elevator arranged to receive the successive sheets from the gripper mechanism, said elevator comprising an open frame structure having fingers adapted to engage the lower end of a sheet imposed thereon, a guide element for the frame structure having a support for the trailing end of the sheet before its engagement by the said fingers, means for reciprocating the frame structure toward and from the said support, a stripper element comprising a rock-shaft mounted to overlie the path of the frame structure, stripper fingers on said shaft, and means for actuating said shaft during the reciprocation of the structure whereby each succeeding sheet carried upward by the elevator is released therefrom, and a sheet-receiving conveyer underlying the elevator.

11. The combination with a printing press including take-off gripper mechanism, of an inclined elevator arranged to receive the successive sheets from the gripper mechanism, said elevator comprising an open frame structure having fingers adapted to engage the lower end of a sheet imposed thereon, a guide element for the frame structure having a support for the trailing end of the sheet before its engagement by the said fingers, means for reciprocating the frame structure toward and from the said support, sheet leveling fingers arranged to act upon the top of the sheet imposed on the elevator, a stripper element comprising a rock-shaft mounted to overlie the path of the frame structure, stripper fingers on said shaft, and means for actuating said shaft during the reciprocation of the structure whereby each succeeding sheet carried upward by the elevator is released therefrom, and a sheet-receiving conveyer underlying the elevator.

Signed at Barberton, in the county of Summit and State of Ohio, this 3rd day of December, A. D. 1925.

EDWARD R. LINEBAUGH.