W. K. HODGMAN.

SHEET CARRYING AND PILING MECHANISM FOR PRINTING PRESSES.

APPLICATION FILED APR. 15, 1909.

1,135,454.

Patented Apr. 13, 1915.

3 SHEETS—SHEET 1.

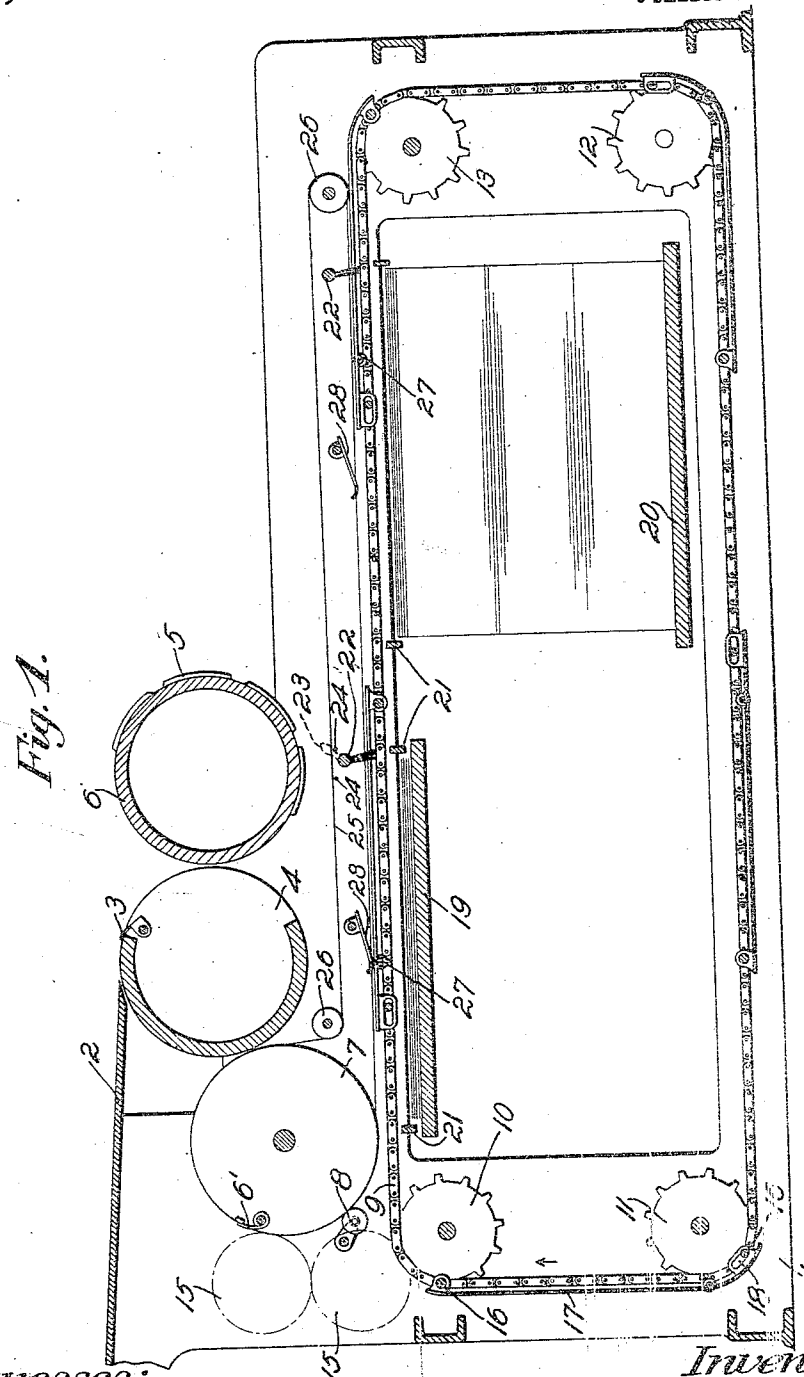


Fig. 1.

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Horace A. Crossman.

Inventor:
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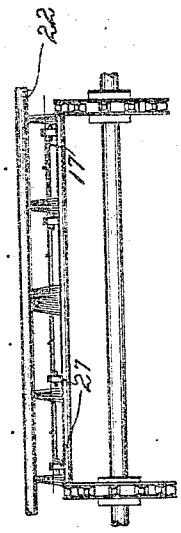


Fig. 2.

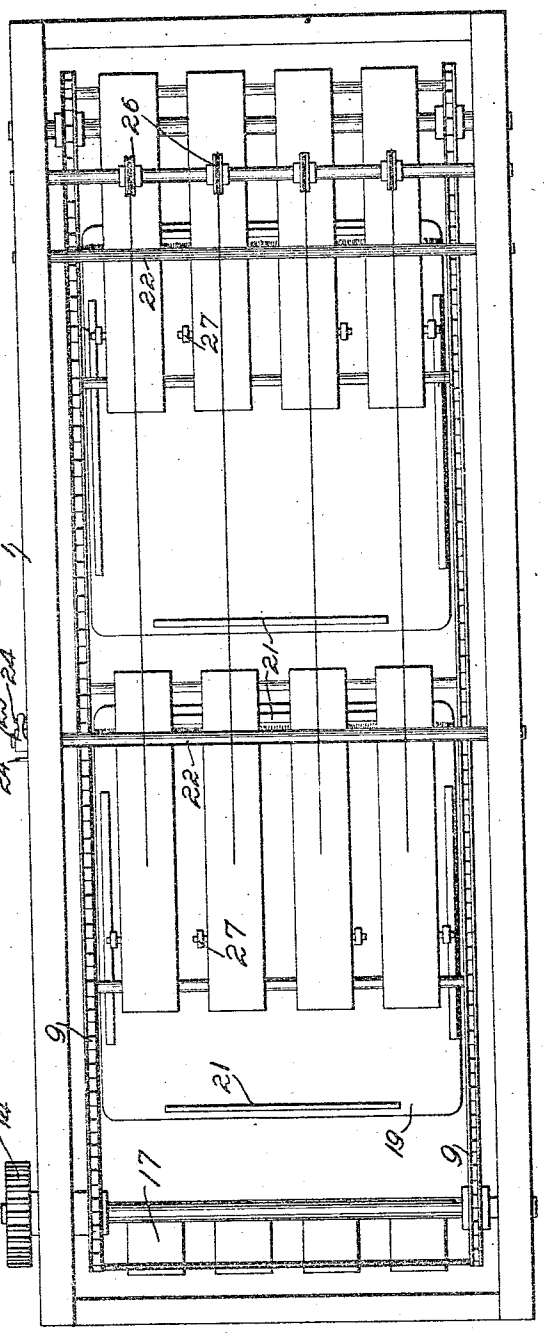


Fig. 3.

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3 SHEETS—SHEET 3.

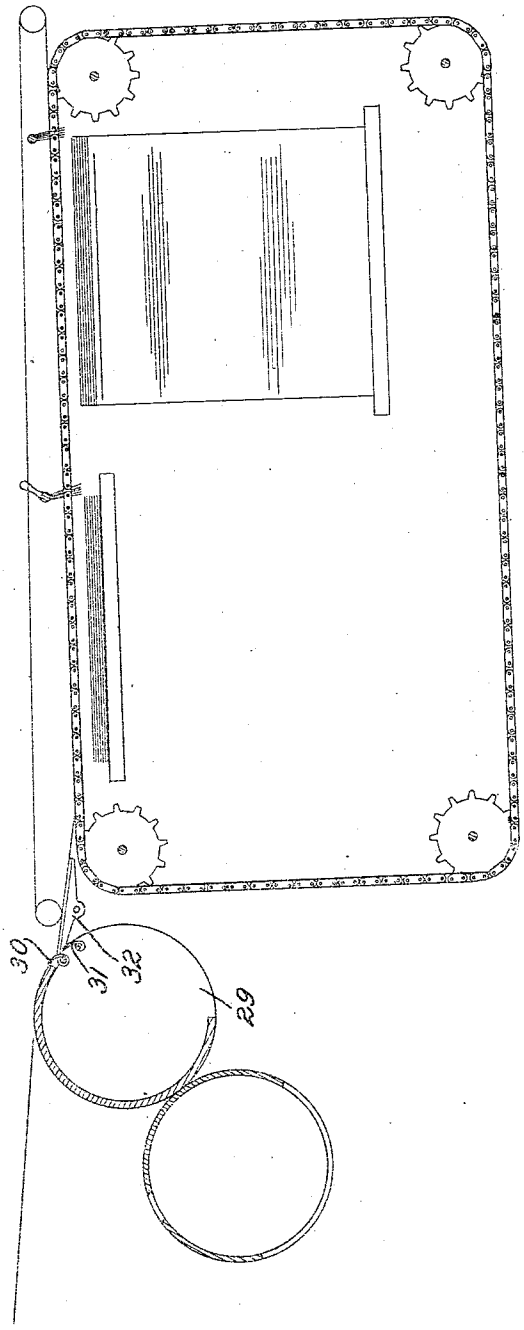


Fig. 4.

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Inventor:
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UNITED STATES PATENT OFFICE

WILLIS K. HODGMAN, OF TAUNTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO MIEHLE PRINTING PRESS & MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

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SHEET CARRYING AND PILING MECHANISM FOR PRINTING-PRESSES.

1,135,454. Specification of Letters Patent. Patented Apr. 13, 1915.

Application filed April 15, 1909. Serial No. 489,983.

To all whom it may concern:

Be it known that I, WILLIS K. HODGMAN, a citizen of the United States, residing at Taunton, in the county of Bristol and State of Massachusetts, have invented an Improvement in Sheet Carrying and Piling Mechanism for Printing-Presses, &c., of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to mechanism for delivering and depositing sheets from any suitable source, such for example as a printing press, and the object thereof is more particularly to deliver printed sheets singly and consecutively in such manner as to permit the removal of any desired quantity of deposited sheets without stopping the printing press or disturbing the sheets being printed.

In order that the principles of my invention may be readily understood, I have disclosed a single illustrative embodiment thereof in the accompanying drawings, wherein—

Figure 1 is a longitudinal vertical section of a single revolution rotary printing press having my invention applied thereto; Fig. 2 is a transverse vertical section of a portion of the mechanism shown in Fig. 1; Fig. 3 is a plan view of the sheet conveying mechanism illustrated in Fig. 1; and Fig. 4 is a view similar to Fig. 1 of a two revolution rotary printing press embodying my invention.

The purpose of my invention is to provide a printing press with a plurality of sheet depositories or receptacles, any one of which may be filled or partially filled and the sheets thereupon without any interruption or slowing down of the press or disturbance of the sheets being printed, be delivered to an unfilled depository or receptacle, thus permitting the removal of the filled or partially filled depository without any interruption in the printing or feeding operation. In order to accomplish this result, I may employ any suitable sheet carrying and piling mechanism, such for example as that shown in my Patent No. 735,977, dated August 11, 1903, wherein means is disclosed for stopping sheets at a single receptacle. In the use of the mechanism there shown with a single receptacle, it has been necessary to stop the operation of the parts in order to remove the printed sheets when the receptacle has become filled. This occasions a very considerable delay which it is the province of my invention to overcome.

Referring more particularly to the drawings, the framing of a single revolution rotary printing press to which my invention may be applied is indicated at 1, it being evident that my invention may be applied to any desired type of printing press or other suitable mechanism. The sheets are fed from the usual feed board 2 by hand or otherwise to the grippers 3 upon the impression cylinder 4 and are printed by the plates 5 mounted on the plate or form cylinders 6, the plates being inked in any usual manner by inking rollers, not herein shown. The printed sheets are taken by the grippers 6′ upon the delivery cylinder 7 of usual construction and with which coöperate friction wheels 8—8 suitably mounted in the framing.

Adjacent and preferably below the delivery cylinder 7 I provide sheet conveying mechanism of any suitable character and herein shown as substantially similar to the sheet conveying mechanism shown in my Patent No. 735,977 above referred to. Such conveying mechanism comprises a pair of sprocket chains 9 supported upon pairs of sprocket gears 10, 11, 12 and 13 mounted upon suitable shafts supported in the frame 1. The shaft whereon the sprocket gears 10 are mounted is provided (see Fig. 3) with a gear 14 receiving motion from the delivery cylinder 7 through the intermediate gears 15—15 and serving to drive the gears 10—10 and the sprocket chains 9 in the direction of the arrow (see Fig. 1). At suitable intervals the sprocket chains 9—9 are provided with cross rods 16 supporting flexible bridges 17 of any suitable character and which may be continuous as shown or of the character illustrated in my said patent. Each bridge is represented as slotted at 18 adjacent its rear end to permit relative

movement of the bridge and adjacent cross rod 16 in passing about the sprocket gears 10, 11, 12 and 13. It is apparent that any other suitable sheet supporting mechanism may be employed.

In proximity to the sheet conveying mechanism and in this type of my invention beneath the upper run of the sprocket chains 9, I provide a plurality of sheet depositories or receptacles, such for example as the sheet delivery boards 19, 20, but two of which are here indicated and which may be provided with automatic mechanism (not shown) for lowering the same as the pile of sheets thereon increases in height, thus maintaining the last printed sheet at a uniform distance from the sheet conveying mechanism.

The framing of the press is open at one or both sides adjacent the delivery boards 19 and 20, so that the pile of sheets accumulated thereon may be readily removed. Preferably I provide with each sheet board the usual joggers 21 to secure the proper registration of the sheets as piled.

I contemplate the employment of suitable means which may be rendered active or inactive at the will of the operator, whereby the sheets may be delivered to any one of the sheet boards or other support and whereby when a pile of sheets has accumulated upon any sheet board the sheets may at the will of the operator be delivered past such filled board or to any unfilled board, all without stopping or slowing the printing mechanism or interfering with the sheets being printed. It is apparent that in this manner the accumulated sheets may be removed from any pile while other sheets are being delivered to another sheet board, and if but a pair of such sheet boards be provided the sheets may be delivered first to one and then to the other board until filled, each board being emptied during the filling of the other. For some classes of work it may be advantageous to arrange an automatically acting stop so that a sheet may be placed on one pile and the next sheet upon another pile, so as to allow more time for the ink to dry upon each sheet before another sheet is superimposed thereon. In this manner alternate sheets may be placed upon alternate piles or successive sheets may be distributed upon any number of piles. If desired, however, I may complete one pile from consecutive sheets and then complete the next pile from consecutive sheets printed and delivered thereafter. Any suitable means may be employed to stop the sheets for the purpose indicated. Preferably I provide means adapted to be operated at the will of the operator. Herein for the purpose I have indicated in Fig. 1 adjacent the forward end of each sheet board sheet stops 22—22 pivoted upon the framing at a suitable distance above the bridges 17 and provided with handles 23 which may be thrown to the right to bring the sheet stops into engagement with limiting pins 24—24 as indicated in Fig. 3. These stops are arranged in transverse series at each delivery board. In Fig. 1, the right hand stop or set of stops 22 is not shown as provided with means to render it active or inactive, but it is apparent that it may be so provided, as for example if another delivery board be arranged in advance thereof or if for any reason it be desired to permit the sheet to be discharged at the front of the press.

When the stops 22 are in the position shown in Fig. 1, they are rendered active, but if swung to the right viewing said figure they will be rendered inactive. While the stops may be of any suitable character, preferably I render them yielding, so that while they project below the upper surface of the bridges 17 they may yield and ride over the tops of the bridges, should this be necessary. The stops are herein shown as brush-like in character for this purpose, but any other suitable construction may be employed.

The sheets are deposited singly and consecutively upon the bridges 17 as they pass beneath the delivery cylinder 7 and are carried forward thereby and preferably beneath strings or tapes 25 passing about the delivery cylinder 7 and guiding rolls 26—26 mounted in the framing, the said strings or tapes being driven at substantially the same speed as the bridges and serving to prevent the front edges of the sheets from winding or curling up and folding back upon themselves.

When a sheet contacts with a stop or set of stops 22 which is active, the result is to stop the sheet, the supporting bridge 17 passing from under the same and permitting the sheet to drop upon its proper delivery board or pile of sheets, the several bridges being suitably spaced to permit such depositing of the sheets. When the sheets are not very thin and flexible, the stops engaging the leading edges thereof are sufficient to stop the sheets and to cause them to be piled upon the delivery boards, but for very thin or flexible sheets I preferably provide means for stopping the tail ends of the sheets or parts of the sheet to the rear of the leading edge thereof at substantially the same time that the front ends are stopped. The purpose of the supplemental or tail end stopping means is to bring the sheets to a full stop by engagement preferably adjacent their tail ends at substantially the same time that the front edges of the sheets contact with the stops 22, for it matters not how thin or flexible the sheets may be after they are brought to a full stop by the supplemental or tail end stops, the front sheet stops are then sufficient and effective to prevent any forward movement of any part of the sheets with the bridges 17.

While any suitable supplemental or tail end stop may be provided, I have herein for the purpose provided some or all of the bridges 17 with rollers 27—27 projecting slightly above their tops and adapted to cooperate with stop fingers 28—28 stationarily mounted upon the framing above the sprocket chains 9. The said rollers raise the sheets and press them against the under side of the stop fingers 28—28, thereby clamping them and bringing them to a full stop at substantially the same time that their front edges contact with the stops 22—22. While the fingers 28 may be of any suitable character, I preferably form them as yielding strips, as clearly indicated in Fig. 1.

The rollers 27—27 may be adjusted laterally by any suitable means not shown and they may also be adjusted longitudinally of the press by any suitable means not shown in order to position them properly with respect to the particular work and so that they may contact with uninked portions of the sheets. The stops 22 are made in the manner described to permit them to yield to the rollers 27 if the latter have been laterally adjusted into alinement therewith.

In Fig. 4 I have represented a two revolution rotary printing press wherein the impression cylinder 29 makes two revolutions, printing the sheet during one of said revolutions and delivering it forwardly during the second revolution. The usual grippers 30 release the front edge of the sheet as it is raised by the usual sheet lifter fingers 31 and the sheet is stripped from the cylinder by the usual stripper fingers 32. The sheet conveying mechanism may be and is here shown as substantially similar to that illustrated in Fig. 1.

It is apparent that the mechanism herein illustrated may be used in connection with any desired type of printing press or other mechanism adapted to deliver sheets consecutively.

From the foregoing description it will be apparent that I am enabled by my invention to continuously operate a printing press at any desired speed so as to deliver sheets therefrom singly and consecutively and without interrupting in any manner or slowing down the feed of the press. I may shift or shunt the delivery of the sheets from one receptacle or delivery board to another, thus permitting the filled receptacle or suitable pile to be removed from the press without stopping or slowing down the latter, the delivery of sheets being shifted by the operator from one to another receptacle or depository as a sufficient pile accumulates thereat. In this manner the output of the press is very substantially enhanced.

Having thus described one illustrative embodiment of my invention, I desire it to be understood that although specific terms are employed, they are used in a generic and descriptive sense and not for purposes of limitation, the scope of the invention being set forth in the following claims.

Claims.

1. Sheet carrying and piling mechanism comprising in combination sheet conveying means, a depository coöperating therewith, a sheet stop to engage the front edge of the sheet, means to render it inactive and a sheet clamp to engage the tail end of the sheet.

2. Sheet carrying and piling mechanism comprising in combination sheet conveying means, a roller carried thereby and a stationary yielding clamp above and coöperating with said roller to stop the sheet by engagement with its tail end.

3. In a cylinder printing press in combination an impression cylinder and an endless, gapped, traveling apron acting as a sheet conveyer and piling mechanism and having means selective at the will of the operator to pile the sheets in at least two piles.

4. In a cylinder printing press in combination an impression cylinder, an endless, gapped, traveling sheet conveying and piling mechanism and coöperating means to make a full pile of sheets at any selected one of at least two piling stations, thereby permitting removal of the previous pile of sheets bodily from another station without stoppage.

5. Single, flat, sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories arranged along a single path, endless traveling means to convey sheets flat and singly along said single path and provided with transverse gaps, and means selective at the will of the operator to strip off and drop sheets one by one through said gaps into any of the said depositories.

6. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories arranged along a single path, endless, traveling means to convey sheets singly along said single path and gapped for sheet discharge, and means selective at the will of the operator to discharge sheets from said conveying means into any one of said depositories.

7. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, endless, traveling means to convey sheets to points over said depositories, and gapped for sheet discharge and means selective at the will of the operator to permit withdrawal of said conveying means from beneath said sheets, thereby to discharge them downward into any one of said depositories.

8. Sheet carrying and piling mechanism

comprising in combination sheet conveying means consisting of an endless, gapped, traveling apron, a depository coöperating therewith, a positive obstacle stop placed in the path of the front edge of the sheet adjacent said depository, and a brake for the sheet frictionally clamping the body thereof.

9. Sheet carrying and piling mechanism comprising in combination sheet conveying means, a roller carried thereby, and a stationary clamp above and normally positioned at a level to coöperate with said roller to stop the sheet by engagement with its tail end.

10. A one-by-one, flat sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories arranged along a single path, a gapped, endless, traveling apron to convey sheets singly along said path, and means selective at the will of the operator to strip off through the gaps sheets from said conveying means into any one of said depositories without stoppage or interference with the other depositories.

11. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, traveling, gapped, endless means to convey sheets to different discharge points and thereby to position them over different ones of said depositories as desired, said means being common to all of said depositories, and means selective and manually operative at the will of the operator to permit said conveying means to be withdrawn from beneath said sheets, thereby to discharge them downward into that one of said depositories over which they are positioned by said conveying means.

12. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, sheet conveying means traveling in one direction only, over and then under said depositories, and means selective and manually operative at the will of the operator to direct sheets to any of said depositories without stopping the mechanism, whereby sheets may be deposited in alternation in said depositories, or whereby a full pile of sheets may be piled in one of said depositories, thereby permitting removal of the previously piled sheets from another depository without stoppage of the mechanism.

13. Unfolded, sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories traveling apron-like means provided with transverse sheet gaps to convey sheets to points directly over said depositories, and means selective at the will of the operator to drop sheets directly from said conveying means through said gaps into the selected depository.

14. Sheet carrying and piling mechanism comprising in combination endless, traveling, gapped, apron-like, sheet carrying mechanism movable along a single path, the apron portions being each transversely and longitudinally of sufficient extent to support and convey a large, flat, single, thin sheet, the gaps of said carrying mechanism extending substantially the full width thereof and being of sufficient longitudinal extent to pass the sheets tail end first therethrough when stripped off the onwardly traveling apron, a plurality of sheet receptacles arranged in sequence along said single path, sheet stripping means and separate means selective at the will of the operator above each of said receptacles to render said stripping means active or inactive, whereby sheets may be caused to pass through said apron gaps and thus fill an empty receptacle while the manual emptying of a filled receptacle may proceed without stoppage of any of the mechanism.

15. Single, flat, unfolded, sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, endless sheet conveying means having alternate sheets supporting and transversely gapped portions, means to move said sheet conveying means out over and back under said depositories, the latter being placed wholly between the upper and lower paths of said sheet conveying means, and means selective and manually operative at the will of the operator to direct sheets through said gaps, whereby they may be piled flat in register at any of said depositories without stopping the mechanism.

16. Sheet carrying and piling mechanism comprising in combination a plurality of depositories, endless sheet conveying means traveling in a loop-path wholly surrounding said depositories, and a plurality of stationary means selective at the will of the operator for stopping and dropping sheets while in the upper part of said loop from said conveying means into said depositories whereby one or more sheets may be deposited in any depository.

17. Sheet printing, carrying and piling mechanism comprising in combination printing mechanism having means to deliver individual sheets head on to an endless sheet carrier, a plurality of depositories, an endless, traveling, gapped, apron-like sheet carrier to carry sheets from said printing mechanism to points adjacent to said depositories around all of which depositories said endless carrier passes, and means selective at the will of the operator to deposit sheets singly and flat from said carrier into any of said depositories.

18. Sheet carrying and piling mechanism comprising in combination a sheet depository, sheet conveying means, and a sheet stop for said depository, fixed with relation to

said sheet but yielding with relation to said conveying means, said stop being mounted for movement into and out of operative position at the will of the operator, thereby when operative to engage the leading edge of the sheet to be stopped.

19. Sheet carrying and piling mechanism comprising in combination a sheet depository, sheet conveying means and a sheet stop for said depository to engage the leading edge of a sheet to be stopped, said stop being yielding with respect to said conveying means and mounted for manual movement into and out of sheet engaging position.

20. Sheet carrying and piling mechanism comprising in combination a sheet depository, traveling sheet conveying and supporting means constructed of substantially rigid material, and a safety brush-like sheet stop extending below and adapted to engage and stop the leading edge of a sheet on the conveyer but free to brush past any conflicting part of said conveyer without damage to the parts.

21. Single, flat, sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, endless, traveling, gapped, apron-like, sheet conveying means coöperating therewith, and means adjacent said depositories for stopping said sheets at the depositories selected, said sheet stopping means consisting of two sheet clamping members, the upper one thereof being stationary and extending transversely of the sheet and the other being a free running roller protruding slightly above the surface of the sheet conveyer.

22. In a printing press, the combination of an impression cylinder, sheet delivery means endless, traveling, sheet carrying and piling means having a loop-path and having separated points of delivery in sequence along said path, two sheet receptacles wholly within the looped path, one at each of said delivery points, and means selective at the will of the operator to stop and pile all the sheets in one receptacle directly from said sheet carrying means while the other is being manually and bodily unloaded.

23. Single, flat sheet carrying and piling mechanism comprising in combination a plurality of sheet pile depositories, sheet conveying means consisting of an endless, traveling, transversely gapped, sheet supporting, apron-like device forming the sole sheet support and carrier and movable in a path immediately over the several depositories, and means selective at the will of the operator to deposit sheets in any one of said depositories.

24. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, sheet conveying means consisting of a traveling, gapped, apron-like, endless sheet conveyer of sheets from the point of in-take to a position over the selected pile, and means whereby the sheets are discharged from said conveyer tail end foremost through the gapped portion of said device to the depositories.

25. Sheet carrying and piling mechanism comprising a plurality of sheet depositories, sheet conveying means consisting of an endless, traveling, transversely gapped, apron-like device constituting the sole support and conveyer of sheets from the point of in-take to a position over the selected pile, and means whereby the sheets are discharged from said conveyer tail end foremost through the gapped portion of said device to the depositories.

26. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, sheet conveying means passing out above and back below said depositories and provided with spaced sheet supports and constituting the sole means for supporting and conveying the sheets between the point of in-take and a point directly over the selected pile depository, and stops selective at the will of the operator to cause the discharge of said sheets tail end foremost but practically flat-wise directly from said conveyer onto the piles in said depositories.

27. Sheet carrying and piling mechanism comprising in combination sheet conveying means, a roller carried thereby and stationarily mounted, flexible strip-like member to coöperate with said roller to clamp said sheet stationary between them.

28. Sheet carrying and piling mechanism comprising in combination a sheet depository, sheet conveying means, a roller carried thereby and movable therewith past said depository and a stationarily mounted, flexible plate-like member to coöperate with said roller to hold the sheet stationary by friction between them.

29. Sheet carrying and piling mechanism comprising in combination a sheet depository, sheet conveying means, a roller carried thereby and movable therewith past said depository, and a stationarily mounted, yielding, strip-like member above said conveying means and with which said roller engages to pinch and stop said steel between them.

30. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, sheet conveying means consisting of a traveling, gapped, apron and means selective and manually operative at the will of the operator to deposit therefrom into any one of said depositories whereby sheets may be deposited in alternation in said depositories, or whereby a full pile of sheets may be piled in one of said depositories, thereby permitting removal of the previously piled sheets from another depository without stoppage of the mechanism.

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31. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, sheet conveying means consisting of an endless, traveling, gapped, apron-like device passing around, above and below the sheet depositories, and means selective at the will of the operator to deposit sheets in any one of said depositories.

32. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories placed side by side, a traveling, gapped, apron-like sheet conveyer positioned above said depositories, and means selective at the will of the operator to deposit sheets one upon another in any one of said depositories.

33. Sheet carrying and piling mechanism comprising in combination, a plurality of sheet depositories, sheet conveying means consisting of a traveling, gapped apron, and means selective at the will of the operator for discharging the sheets from said conveyer tail end foremost through the gapped portion of said apron to said depositories.

34. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, sheet conveying means consisting of a traveling, gapped, apron-like device above said depositories, and means selective at the will of the operator to slide sheets tail end foremost through gaps of said traveling device into depositories therebelow.

35. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, sheet conveying means above said depositories and provided with spaced sheet supports, and stops selective at the will of the operator to cause the discharge of said sheets tail end foremost from said spaced supports into said depositories.

36. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, sheet conveying means above said depositories, and provided with spaced sheet supports, and stops selective at the will of the operator to cause the discharge of said sheets practically flatwise directly from the conveying means into said depositories.

37. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, sheet conveying means above said depositories and provided with sheet supports, stops selective at the will of the operator to cause the discharge of said sheets practically flatwise from the conveying means into said depositories, and supplemental means coöperating with said stops and engaging the sheets to assist in delivering the sheets into said depositories.

38. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, sheet conveying means above said depositories and provided with spaced sheet supports, stops selective at the will of the operator to cause the discharge of said sheets tail end foremost from said spaced supports into said depositories, and supplemental means coöperating with said stops and engaging the sheets to assist in delivering the sheets into said depositories.

39. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories arranged along a single path, endless, traveling means to convey sheets singly along said single path, and gapped for sheet discharge, and means selective at the will of the operator to discharge sheets from said conveying means into any one of said depositories.

40. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, endless, traveling means to convey sheets to points over said depositories, and gapped for sheet discharge, and means selective at the will of the operator to permit withdrawal of said conveying means from beneath said sheets, thereby to discharge them downward into any one of said depositories.

41. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, sheet conveying means traveling in one direction only, over and then under said depositories, and means selective and manually operative at the will of the operator to direct sheets to any of said depositories without stopping the mechanism, whereby sheets may be deposited in alternation in said depositories; or whereby a full pile of sheets may be piled in one of said depositories, thereby permitting removal of the previously piled sheets from another depository without stoppage of the mechanism.

42. Sheet carrying and piling mechanism comprising in combination a plurality of depositories, endless sheet conveying means traveling in a loop-path wholly surrounding said depositories, and a plurality of stationary means selective at the will of the operator for stopping and dropping sheets while in the upper part of said loop from said conveying means into said depositories, whereby one or more sheets may be deposited in any depository.

43. Sheet printing, carrying and piling mechanism comprising in combination printing mechanism having means to deliver individual sheets to an endless sheet carrier, a plurality of depositories, an endless, traveling, gapped, apron-like sheet carrier to carry sheets from said printing mechanism to points adjacent to said depositories around all of which depositories said endless carrier passes, and means selective at the will of the operator to deposit sheets singly and flat from said carrier into any of said depositories.

44. In a printing press, the combination of an impression cylinder, sheet delivery means, endless, traveling, sheet carrying and piling means having a loop-path and having separated points of delivery in sequence along said path, two sheet receptacles wholly within the looped path, one at each of said delivery points, and means selective at the will of the operator to stop and pile all the sheets in one receptacle directly from said sheet carrying means while the other is being manually and bodily unloaded.

45. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories placed side by side, a traveling, gapped, apron-like, endless sheet conveyer positioned around said depositories and forming the sole sheet support from the in-take to a position over the pile in the depository, and means selective at the will of the operator to deposit sheets in any one of said depositories.

46. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, sheet conveying means consisting of a traveling, gapped apron, and means selective and manually operative at the will of the operator to deposit therefrom into any one of said depositories, whereby sheets may be deposited in alternation in said depositories, or whereby a full pile of sheets may be piled in one of said depositories, thereby permitting removal of the previously piled sheets from another depository without stoppage of the mechanism.

47. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, sheet conveying means consisting of a traveling, gapped apron, and means selective at the will of the operator for discharging the sheets from said conveyer tail end foremost through the gapped portion of said conveyer to the depositories.

48. Sheet carrying and piling mechanism comprising in combination, traveling, gapped, apron-like, sheet carrying mechanism movable along a single path, the apron portions being each transversely and longitudinally of sufficient extent to support and convey a large, flat, single, thin sheet, the gaps of said carrying mechanism extending substantially the full width thereof and being of sufficient longitudinal extent to pass the sheet substantially flatwise therethrough when stripped off the onwardly traveling apron, a plurality of sheet receptacles arranged in sequence along said single path and sheet stripping means adjacent each of said receptacles.

49. Sheet carrying and piling mechanism comprising in combination, a plurality of sheet depositories placed side by side, a traveling, gapped, apron-like, endless, sheet conveyer positioned around said depositories and forming the sole sheet support from the in-take to a position over the pile in the depository, and means at each of said depositories for discharging sheets substantially flatwise thereinto from said conveyer.

50. Sheet printing, carrying and piling mechanism comprising in combination, printing mechanism having means to deliver individual sheets to an endless sheet carrier, a plurality of depositories, an endless, traveling, gapped, apron-like, sheet carrier to carry sheets from said printing mechanism to points adjacent to said depositories around all of which depositories said endless carrier passes, and means at each of said depositories to deposit sheets singly and substantially flatwise from said carrier thereinto.

51. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, sheet conveying means having a surface whereon the sheets may be loosely supported, said conveying means traveling in one direction only over and then under said depositories, and means at each of said depositories to cause the discharge of said sheets tail end foremost from said supporting surface and to direct said sheets substantially flatwise to said depositories without stopping the mechanism, whereby the sheets may be deposited in alternation in said depositories without stoppage of the mechanism.

52. Sheet carrying and piling mechanism comprising in combination a plurality of sheet depositories, sheet conveying means traveling in one direction only over and then under said depositories, means overlying and adjacent to the upper run of said sheet conveying means to prevent winding up of the conveyed sheets, and means at each of said depositories to direct sheets substantially flatwise thereto without stopping the mechanism, whereby the sheets may be deposited in alternation in said depositories without stoppage of the mechanism.

53. Sheet printing, carrying and piling mechanism comprising in combination, printing mechanism having means to deliver individual sheets to an endless sheet carrier, a plurality of depositories, an endless, traveling, gapped, apron-like, sheet carrier to carry sheets from said printing mechanism to points adjacent to said depositories around all of which depositories said endless carrier passes, means overlying and adjacent to the upper run of said sheet carrier to prevent conveyed sheets from winding up, and means at each of said depositories to deposit sheets singly and substantially flatwise from said carrier thereinto.

54. Single, flat, unfolded, sheet carrying and piling mechanism comprising in combination, a plurality of sheet depositories, endless sheet conveying means having alternate sheet supporting and transversely

gapped portions, means to move said sheet conveying means out over and back under said depositories, the latter being placed wholly between the upper and lower paths of said sheet conveying means, means overlying and adjacent to the upper run of said sheet conveying means to prevent the conveyed sheets from winding up, and means to direct sheets substantially flatwise through said gaps, whereby they may be piled in register at said depositories without stopping the mechanism.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

WILLIS K. HODGMAN.

Witnesses:
IRVING U. TOWNSEND,
MAY H. LOWRY.