Oct. 26, 1937. C. L. BARTHOLDT 2,097,013

PRINTING PRESS FEEDER

Filed Nov. 20, 1936 3 Sheets-Sheet 1

Fig. 1.

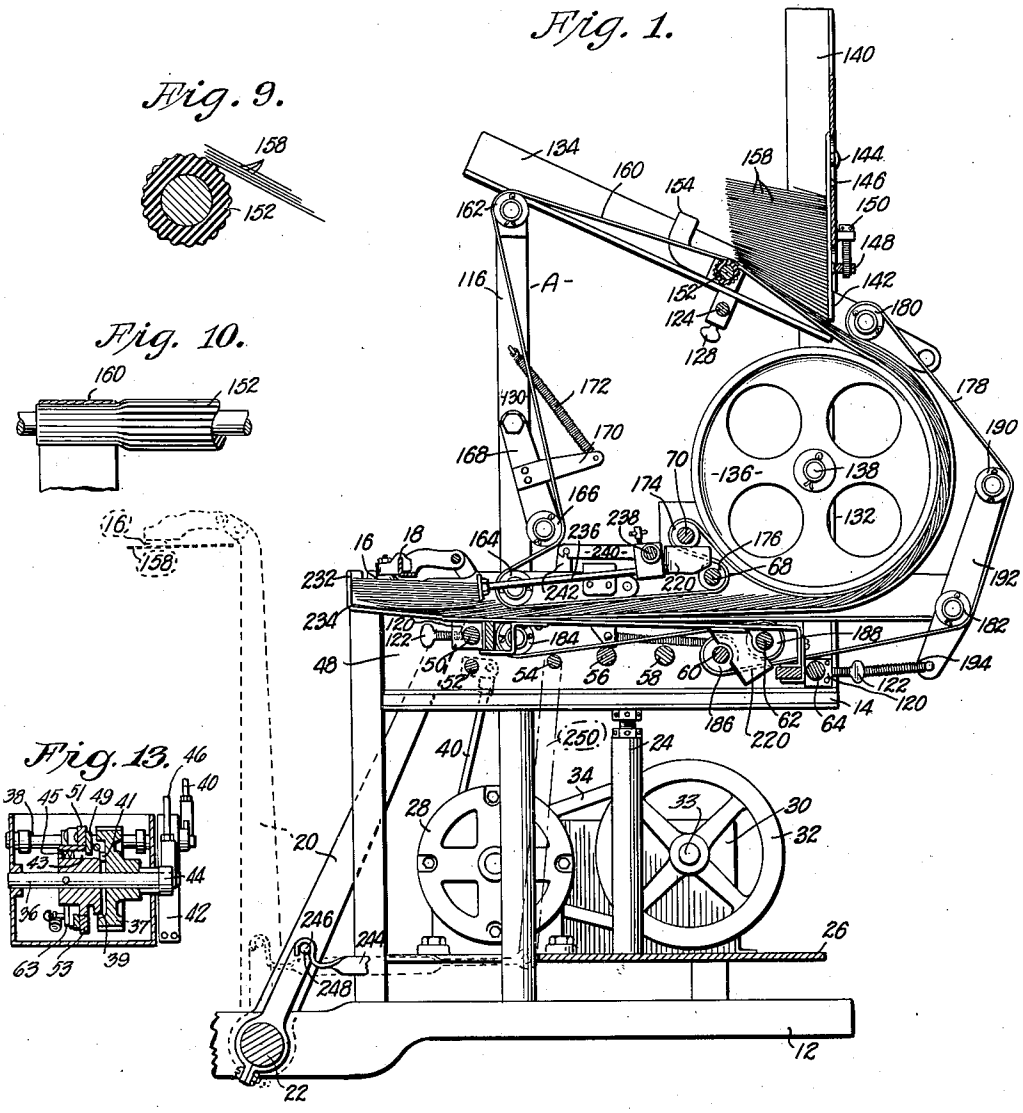


Fig. 9.

Fig. 10.

Fig. 13.

Fig. 7.

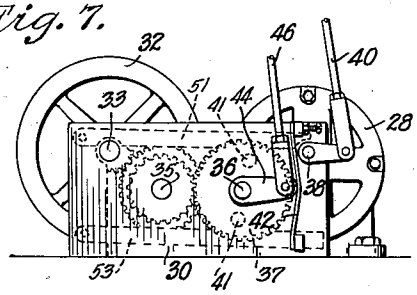


Fig. 12.

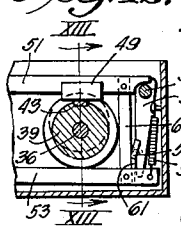
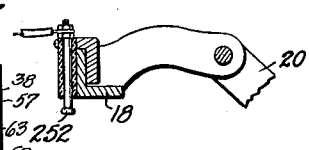


Fig. 8.



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PRINTING PRESS FEEDER

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Fig. 2.

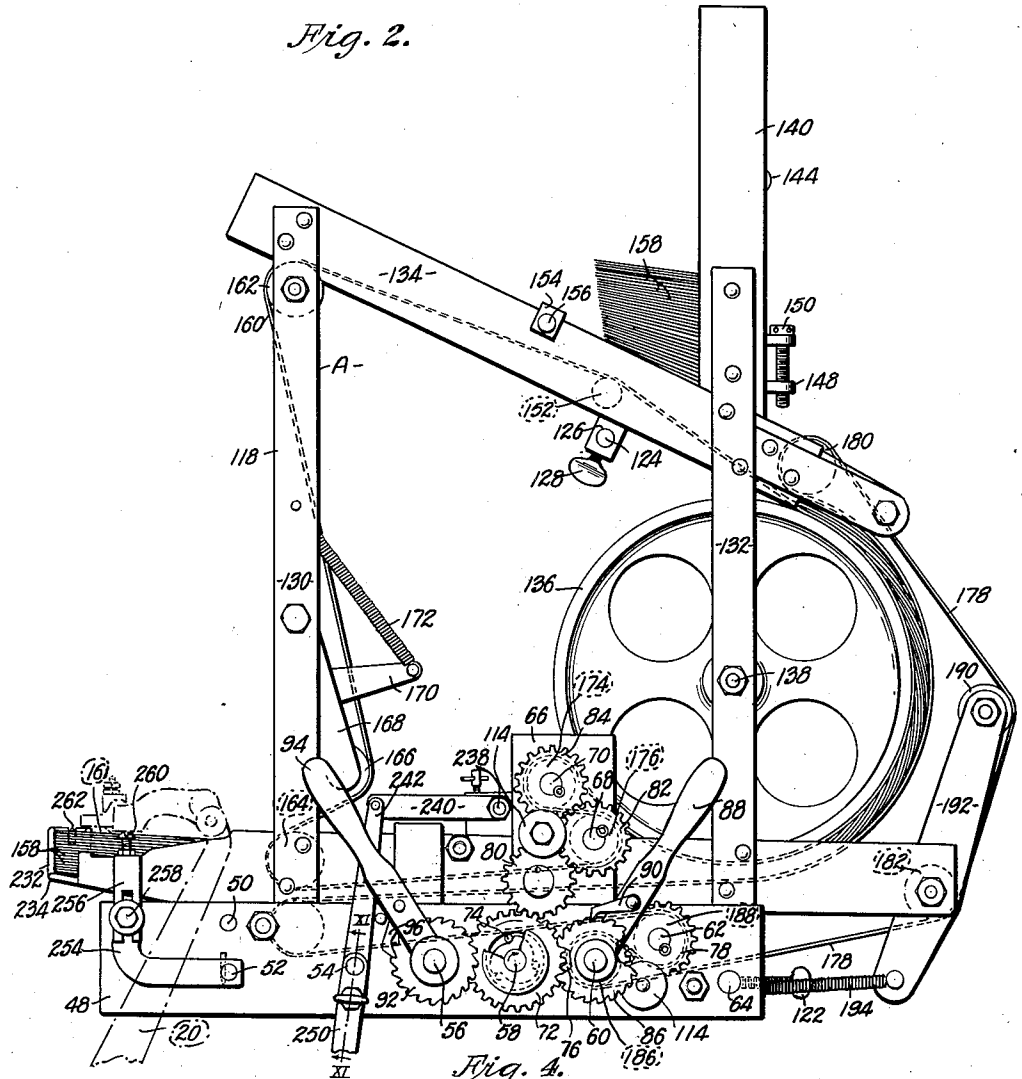
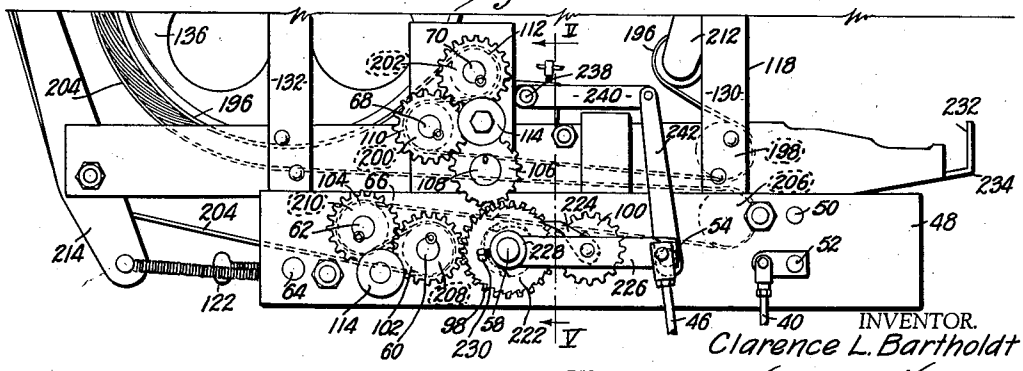


Fig. 4.



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PRINTING PRESS FEEDER

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Fig. 3.

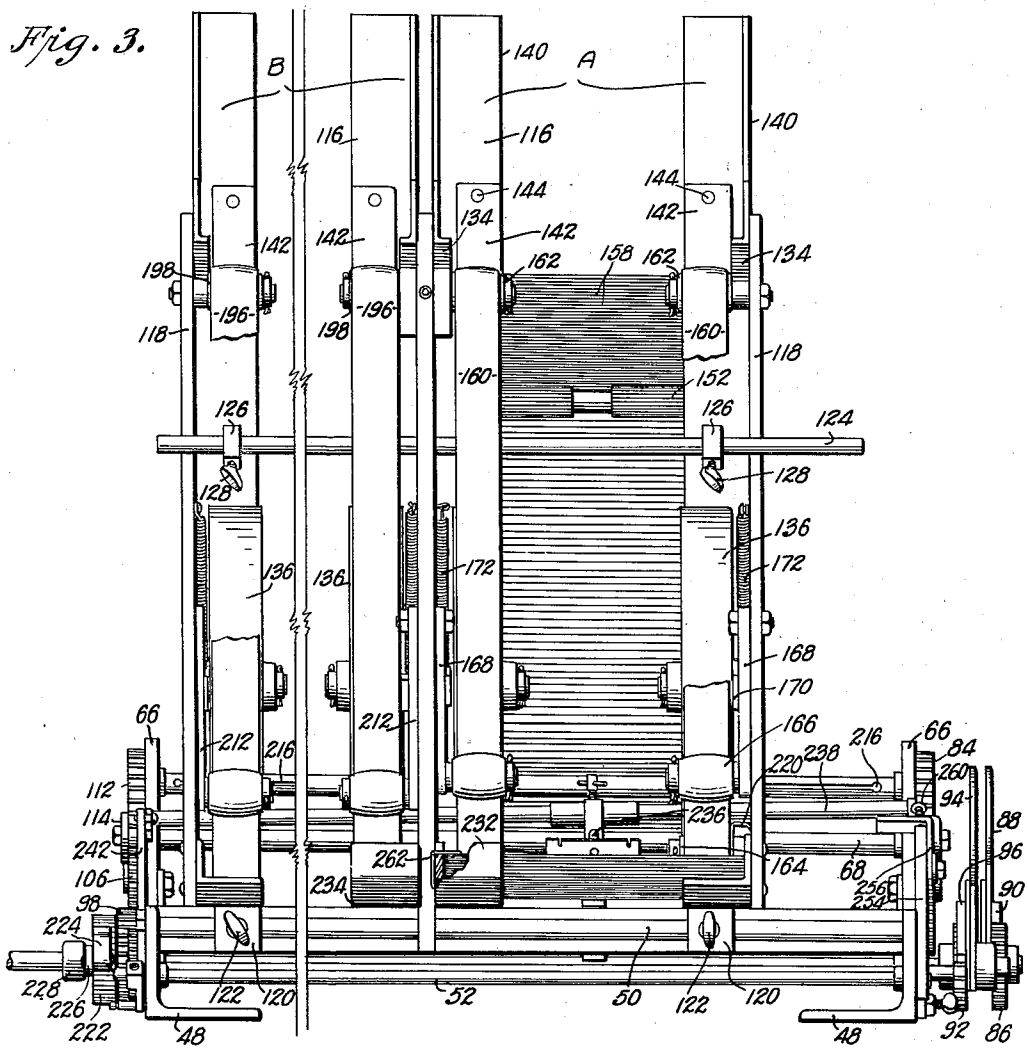


Fig. 5.

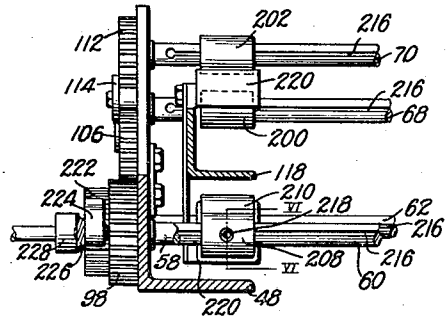


Fig. 6.

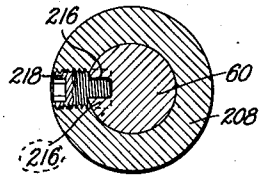
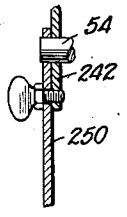


Fig. 11.



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Patented Oct. 26, 1937

2,097,013

UNITED STATES PATENT OFFICE

2,097,013

PRINTING PRESS FEEDER

Clarence L. Bartholdt, Kansas City, Mo.

Application November 20, 1936, Serial No. 111,904

18 Claims. (Cl. 271—37)

This invention relates to printing presses or similar machines that are provided with feeders that successively introduce articles to be printed, and the primary object of the invention is the provision of mechanism for maintaining a supply of a predetermined number of articles in place for the printing press feeder, to the end that the press may be continuously operated for the purpose of avoiding loss of productive time due to shut-downs of durations long enough to replenish the supply of articles as it is diminished by the printing press feeder.

One of the important objects of the instant invention is to provide a printing press feeder which will automatically maintain a predetermined number of articles being printed in a bed available to the feeder arm of the press, which articles are transferred to said bed from a magazine remote therefrom.

A yet further object of the present invention is the provision of a feeder for printing presses, which has a bed for the articles being printed, a magazine for said articles, and a series of uniquely arranged endless tapes that transfer the articles from said magazine to the bed in the form of a continuous train thereof, the number of articles in the bed being appreciably less than the number that may be introduced to the magazine, all to the end that envelopes or like relatively bulky articles, might be fed into the press one by one without the necessity of stopping the press from time to time as the stack of articles on the feed table thereof becomes depleted.

Another aim of this invention is to provide a feeder for printing presses, which is constructed to present two units arranged in side-by-side relation so that the feeder arm of the press may simultaneously receive articles to be printed from both of said units.

A still further object of the invention is to provide a printing press feeder of the aforementioned character, which has adjustable elements movable with respect to each other for the purpose of accommodating articles to be printed of various lengths, which elements may be quickly and easily regulated without disassembling the feeder.

A large number of minor objects of this invention will appear during the course of the following specification, referring to the accompanying drawings, wherein the preferred embodiment is illustrated. In the drawings:

Figure 1 is a vertical section through the printing press feeder, showing the same mounted in operative position upon the feeder platform and table of a printing press.

Fig. 2 is an enlarged, side elevation of the upper portion of the feeder.

Fig. 3 is a front view of the feeder.

Fig. 4 is a fragmentary, side elevation, showing the lower portion of the other side of the feeder from that shown in Fig. 2.

Fig. 5 is an enlarged, fragmentary, detailed, sectional view through a portion of the feeder, taken on line V—V of Fig. 4.

Fig. 6 is a detailed, sectional view through one of the rollers and its supporting shaft, taken on line VI—VI of Fig. 5.

Fig. 7 is a side elevation of the gear reduction box and clutch mechanism.

Fig. 8 is a fragmentary, detailed, sectional view through a part of the feeder arm, showing the electrical contact plunger.

Fig. 9 is an enlarged, cross sectional view through the feed roller of the press.

Fig. 10 is a fragmentary view of the feed roller, illustrating the relation of one of the tapes therewith.

Fig. 11 is an enlarged, fragmentary, sectional view, taken on line XI—XI of Fig. 2.

Fig. 12 is a fragmentary sectional view through the clutch portion of the gear reduction assembly, and,

Fig. 13 is a cross section through the gear reduction assembly taken on line XIII—XIII of Fig. 12.

The embodiment of the invention illustrated in the accompanying drawings is particularly useful in connection with so-called "vertical presses". Such presses are equipped with feeding mechanism and tables, and since these parts are conventional with other models of printing presses, the feeder contemplated might be associated with any printing press without a great amount of alteration.

For purpose of clearness, therefore, this feeder will be described by reference to the vertical press, which has as a component part thereof, a feeder platform 12, that is a part of the press frame and which carries a feeder table 14 that may be elevated either manually or as the press is operated, so that the articles being fed are available to suction cups 16 carried by a separator frame 18, mounted upon a pair of opposed feeder arms 20, which are oscillated by a feeder arm shaft 22 upon which they are secured. Feeder table 14 is secured against movement when the printing press feeder contemplated by this invention is employed. A jack support 24 is

interposed between feeder table 14 and a bed plate 26 that carries motor 28 and associated parts, forming some of the elements of the feeder mechanism.

The speed of motor 28 is lowered through the employment of an ordinary gear reduction assembly 30 that is in connection with and driven by wheel 32 connected to motor 28 by belt 34. A clutch forms a part of the gear reduction assembly 30 and shaft 36 is the driven shaft from which the driving force for the hereinafter mentioned parts is taken. A clutch operating shaft 38 is in connection with rod 40, and a resilient stop 42 is periodically in engagement with arm 44 that joins shaft 36 to rod 46. The parts just mentioned are mounted upon bed plate 26 that rests upon feeder platform 12, and which is held in rigid condition by jack support 24.

Wheel 32 is mounted on shaft 33 and an intermediate shaft 35 assists shafts 33 and 36 in supporting speed reduction gears of suitable size and number. One of these gears 37 is loosely mounted on shaft 36 beside clutch member 39 that is pinned to shaft 36 as seen in Fig. 12. Gear 37 carries two diametrically opposite, laterally extended pins 41, one of which is engaged by a clutch pin 43 carried by clutch member 39. A spring 45 urges pin 43 outwardly into the path of travel of pins 41 and a notch formed in pin 43 receives ear 49 on arm 51. One wall of arm 51 forming the notch is inclined so that as member 39 is turned and ear 49 enters the notch, pin 43 is withdrawn to a point where it no longer engages one of pins 41.

The outer periphery of member 39 is concentric to the axis of rotation of the member and another arm 53 is urged thereagainst by spring 55. A finger 57 is provided with a shoulder 59 that engages a shoulder 61 on link 63 which connects arms 51 and 53. When the cam face of member 39 moves against arm 53, both arms are lowered against the tension of spring 55 and the interengagement of shoulders 59 and 61 locks down the two arms 51 and 53. Ear 49 is in place to move pin 34 from engagement with pins 41. Finger 57 is mounted on shaft 38 and an upward pull on rod 40 will rotate shaft 38, move finger 57 and disengages the two shoulders to allow arms 51 and 53 to be pulled up so that ear 49 will not longer hold pin 43 out of engagement with one of pins 41.

The upper portion of the press feeder comprises a base 48, which has journalled therein a number of horizontally disposed and substantially parallel shafts 50, 52, 54, 56, 58, 60, 62 and 64. While some of these said shafts serve as tie rods, others extend through the entire feeder for the purpose of simultaneously actuating both units of the feeder and individually operating one of the units from the control side of the feeder. Shafts 52, 56 and 58, therefore, essentially pass completely through the feeder from side to side thereof. The ends of these aforesaid shafts are journalled in the vertical, opposed walls 66, forming a part of and extending upwardly from base 48. These walls 66 are projected high enough to journal shafts 68 and 70, which are rotated by gears thereon.

The train of gears on one side of the feeder is shown in Fig. 2, and comprises a gear 72 on shaft 58. This particular gear imparts movement to shaft 58 when moved in one direction, and travels freely about the axis thereof when rotated in the opposite direction. The conventional type of over-riding clutch, comprising a number of rollers 74, disposed in notches having inclined bottoms formed in a member secured to shaft 58, is utilized to insure this action. A similar over-riding clutch between a later described gear and shaft 58 at the other end thereof has a like connection therewith.

Meshing gears 76 and 78 are secured to the ends of shafts 60 and 62 respectively and gear 76 is in mesh with gear 72 on shaft 58. An idler gear 80 is carried on a stub shaft mounted on end 66, and is in mesh with gears 72 and 82; the latter being mounted upon the end of shaft 68. Gear 82 is in turn meshed with another gear 84 on shaft 70.

A ratchet wheel 86 is secured to the end of shaft 60 adjacent gear 76 and a crank 88, freely mounted upon shaft 60, carries pawl 90 so that upon movement of crank 88, ratchet 86 will rotate shaft 60 in one direction. Another ratchet 92 is mounted upon shaft 56, and a crank 94, freely carried by shaft 56, engages ratchet wheel 92 through the medium of pawl 96 so that said shaft and ratchet wheel 56 and 92 respectively might be moved in one direction by manual manipulation of crank 94.

The other side of the feeder likewise presents a train of gears that are shown in Fig. 4. The end of shaft 58, which is disposed at the side of the feeder opposite from that shown in Fig. 2, has a gear 98 mounted thereon, that is in mesh with gears 100 and 102, mounted on the ends of shafts 56 and 60 respectively. An over-riding clutch, formed as described when referring to element 74, is the means for interconnecting gear 98 and shaft 58. When shaft 58 is moved in one direction, gear 98 will rotate therewith, but when gear 98 is rotated in the opposite direction, shaft 58 will not be effected. Shaft 62 carries gear 104, that is in mesh with gear 102. An idler 106, rotatably mounted on a stub shaft 108, meshes with gear 98 and another gear 110, the latter being on shaft 68. Gear 112, carried by shaft 70, is in mesh with gear 110, and in some instances plates, such as 114, may be employed to maintain these gears in mesh.

Shafts 52, 54, 56 and 58 are solid throughout their length and extend from side to side of the feeder, while the remaining shafts aforementioned, i. e., 60, 62, 68 and 70 are split; that is to say, they are made in two lengths arranged in end to end relation and in axial alignment, but are split between the two units of the feeder. These two units are substantially identical in that each has a stationary vertical frame 116 and a relatively movable similar frame 118. Frames 116 are secured to the base, while frames 118 are slidably mounted upon certain of the shafts. Shafts 50 and 64 serve as sliderods and frame-supporting members, and the movable frames 118 have bearing blocks 120, with set screws 122 for securing the slidable frames 118 in a desired position. All of the frames are maintained in vertical, substantially parallel planes and another tie rod 124 extends through all of the frames and is adjustably joined to movable frames 118 by bearings 126 and thumb screws 128.

Tie rod 124 is anchored to the stationary frames 116. Each frame 116 and 118 comprises at least two standards 130 and 132 and an inclined top member 134. The standard 132 of each frame carries a wheel 136 that is freely rotatable about a stub shaft 138, secured to standard 132. A magazine forming member 140 projects upwardly from each frame 116 and 118 respectively and the articles to be printed are fed from the

magazine so formed through an opening, the size of which is alterable by plates 142, one of which is mounted on the inner side of each member 140. Each plate has a rivet 144 that slides in a slot 146 provided in member 140, and an ear 148 is engaged by adjusting nut 150 for the purpose of raising and lowering plate 142.

Top members 134 are inclined and the said top members of coacting frames 116 and 118 carry a feed roller 152. This feed roller is specially formed of longitudinally grooved, resilient material, and is driven by the hereinafter mentioned tapes. The ends of the roller 152 are reduced as shown in Fig. 10, so that the outer periphery of the roller will be in the same plane as the upper side of the overlying tape. The roller of each unit is carried by a specially formed bearing member 154, which grips one wall of each top member 134 of that unit. A clamping screw 156 is provided in bearing member 154 to retain the roller in place beneath the edges of the articles to be printed, which are here shown to be envelopes 158.

Each unit has a pair of endless tapes on each frame 116 and 118 respectively thereof. Tape 160 directly contacts the face of the respective wheel 136 and passes around appropriate rollers 162 and 164, carried by stub shafts on frame 116.

Each unit A and B is equipped with tapes of identical nature for advancing the articles to be printed. Unit A has a pair of belts 160, arranged in opposed relation. That is, one of said belts 160 is carried by stationary frame 116 and the other belt 160 is carried by movable frame 118. These two belts 160 are passed over opposed rollers 162 and 164, that are carried by stub shafts rigid to the respective frames.

Means for maintaining these two belts 160 in taut condition is conventional structure and is illustrated herein as having a roller 166, which is mounted upon arm 168. Arm 168 carries laterally extending member 170 that receives force from spring 172, that has one end affixed to said member 170, while the other end is secured to the respective frame 116 or 118, as the case may be. These endless tapes 160 engage a part of the peripheries of wheels 136 and pass over rollers 174 and 176, carried by shafts 70 and 68 respectively, between frames 116 and 118 of unit A. A pair of coacting tapes 178 form a part of unit A, and one of these tapes 178 is mounted adjacent each frame 116 and 118 respectively. Rollers 180, 182 and 184, carried in opposed relation by the said two frames, operably support tapes 178 and rollers 186 and 188 on shafts 60 and 62 respectively engage the tapes to drive the same. Tapes 160 and 178 face each other along a part of their length so as to hold articles 158 therebetween in lapped relation.

Tapes 178 are maintained taut by the take-up means which comprises a roller 190, mounted on one end of lever 192, that is urged outwardly by spring 194, secured to the other end of lever 192 and opposite to the fulcrum thereof.

Unit B is constructed like unit A, and has a pair of opposed endless tapes 196 very similar to tapes 160 of unit A and mounted in the same manner. A number of rollers 198, carried by frames 116 and 118, co-operate with rollers 200 and 202 in holding the two opposed tapes 196 in operative position. Rollers 200 and 202 are carried by that part of shafts 68 and 70 respectively which extend across unit B. The relation of tapes 196 and wheels 136, which form a part of unit B, are the same as indicated for unit A. A pair of coacting tapes 204, positioned in unit B in precisely the same manner with relation to the parts thereof as tapes 178 of unit A, are likewise passed over suitable rollers 206 carried by the frame and rollers 208 and 210 mounted upon shafts 60 and 62 respectively.

All of the rollers hereinabove mentioned as being mounted upon shafts are flat-faced metal rollers, and the rollers heretofore mentioned as being mounted upon the frames and carried by the belt tighteners are crowned wooden rollers. The belts 196 and 204 of unit B are maintained tight by belt tighteners 212 and 214 respectively. These belt tighteners are the same as before mentioned with respect to unit A and need no further explanation.

Shafts 60, 62, 68 and 70 are split so that each has a length forming a part of unit A and a length forming a part of unit B. All of the tape-driving rollers mounted upon these shafts are secured thereto in the manner detailed in Figs. 5 and 6. Each shaft is provided with a keyway or longitudinal slot, identical in nature and designated by the numeral 216. An enlarged portion at the end of each slot permits turning of screw plug 218 when it is moved to and from that enlarged portion. After plug 218 has been turned, however, and moved so that it is in the smaller portion of slot 216, the flattened sides of plug 218 will engage the sides of slot 216 and preclude further turning of plug 218.

Plug 218 is not tight enough to keep its roller from moving longitudinally along the supporting shaft, so when movable frames 118 are adjusted, the various rollers mounted on the drive shafts will move therewith. The means for causing these rollers to move is in the form of yokes 220, which are mounted upon a portion of each movable frame 118 respectively. These yokes 220 are U-shaped and, as shown in Fig. 5, the legs thereof pass downwardly at each end of the rollers so that movement of frame 118 in either direction will cause the embraced rollers and their associated tape to move therewith. A ratchet 222 is secured to one end of shaft 158 and a pawl 224 engages the teeth thereof so as to drive both ratchet and shaft in one direction as arm 226 is moved about the axis of shaft 58. This arm is rotatable freely about shaft 58 and held in place by a collar 228, attached to shaft 58 by set screw 230.

The free end of arm 226 is pivotally connected to one end of rod 46, the other end of which is joined to drive shaft 36, previously mentioned.

Means for maintaining the uppermost article 158 against a guide portion or stop 232, forming a part of bed 234, is in the nature of a ram 236, mounted upon shaft 238 that extends clear across the feeder and through both units A and B. There is a ram 236 for each unit and the head thereof rests directly upon the train of lapped articles 158 between the tapes of the units. This ram reciprocates periodically because of its direct connection to feeder arm 20 of the press. Shaft 238 is joined to continuous shaft 54 by links 240 and 242 and upon oscillation of shaft 54, said links 240 and 242 will move shaft 238 and the supported rams to and fro toward and from bed 234.

It is notable that rams 236 are adjustable longitudinally along shaft 238. This aforesaid movement is received from feeder arm 20 merely by continuing link 242 downwardly past shaft 54 to a point of connection with link 244, secured to arm 20 through the medium of its hooked end 246 and a pin 248. A piece 250 added to one end of one

link 242, forms a continuous rigid link from link 244 to the proximal link 240.

Separator frame 18 carries an electrical contact plunger 252, so that when an article 158 has been removed from bed 234, its delivery is assured and its presence insures that the press will continue to run. If, however, an article is not picked up from the two beds 234 when arm 20 reaches the press, plunger 252 will be brought into contact with a plate which forms a part of an electrical circuit, which when made, will stop the press.

Mechanism for tripping the clutch so as to drive shaft 36 extends to proximity with separator frame 18 and other conventional parts carried by arm 20. One end of shaft 52 has secured thereto an L-shaped arm 254, with an adjustable head 256 thereon. This head 256 may be moved toward and from separator frame 18 or any part of the feeder arm assembly, merely by loosening bolt 258. A finer adjustment in the form of a bolt and lock nut 260 is at the upper end of head 256. Under normal conditions, arms 254 will not be operated so long as the number of articles 158 in bed 234 is sufficient to maintain the uppermost one thereof at a certain "pick up" plane.

Very delicate separator spring fingers 262 extend inwardly over the top of the stack of articles 158 in each bed 234. When the uppermost article 158 is lifted by suction cup 16, these fingers 262 will insure that the next underlying article 158 will not travel therewith.

Operation

The manner of adjusting the two units of the feeder so that articles of various widths might be accommodated has been made clear during the foregoing specification, as has the way in which rams 236 serve to maintain articles 158 in bed 234.

Under normal working conditions, articles 158 will be fed from the magazine to the bed in the form of an endless train of overlapped units, and so long as the supply of articles in both magazines is maintained by the operator, the feeder will continue to make available at the bed the necessary number of articles. Because feeder arm 20 will remove articles from beds 234 and therefore periodically drop to a relatively lower position, arm 254 will be depressed to rotate shaft 52 a slight amount. Upon such rotation, rod 40 will be moved upwardly to turn shaft 38 and thereby disengage shoulders 58 and 61. Ear 49 will be withdrawn from the notch in pin 43 and the pin will move out to be engaged by one of the pins 41 on gear 37. Shaft 37 will complete one revolution before ear 49 moves pin 43 out of engagement with one of pins 41 and shoulders 58 and 61 are again in engagement. This relation of parts occurs when shaft 36 has returned 44 to the position shown in Fig. 7, spring 42 will completely stop further movement until the mechanism is again tripped to complete another cycle.

Such complete rotation of drive shaft 36 will turn shaft 58 because of the connection therewith of ratchet 222 and the operating parts 224 and 226. The turning of shaft 58 will impart movement to the trains of gears on each end of the feeder. All rollers on shafts 60, 62, 68 and 70 in both units A and B will be turned to advance the tapes associated therewith. Thus articles 158 in both units will be moved toward bed 234 from magazine 140. Obviously, roller 74 will be in position to secure together shaft 58 and gear 72.

Assume now that the operator desires to advance articles 158 in unit A, without advancing the articles in unit B. Crank 88 is moved so as to drive shaft 60 in one direction, which will operate all of the gears in the train on one end of the feeder shown in Fig. 2, without operating the gears on the other end thereof. Element 74 will not serve to transmit such force as is exerted through crank 88 to shaft 58 because of its position in the larger part of the notch of the overriding clutch. This position is that illustrated in Fig. 2. Manifestly, shaft 58 will not be turned at all and only shafts 62, 68 and 70 will be caused to rotate by virtue of the train of gears previously described.

In the event the operator desires to advance articles 158 in unit B, crank 94 is manipulated so that pawl and ratchet 96 and 92 respectively will serve to impart rotation to shaft 56. This shaft 56 extends continuously through to the other end of the feeder, where gear 100 is secured thereto. When gear 100 is rotated, therefore, the lengths of shafts 60, 62, 68 and 70, which bridge the distance between frames 116 and 118 of unit B, will be turned so as to move tapes 196 and 204 of said unit and therefore advance articles 158 from the magazine to the bed.

When gear 98 is employed in the movement of the train of gears just mentioned, the overriding clutch shown in dotted lines of Fig. 4 will permit rotation of gear 98 without effecting shaft 58.

It is conceivable that printing press and feeders of different physical appearances and characteristics than that illustrated and described might be made to embody the broad objects and specific details contemplated by this invention, and it is desired to be limited only by the scope of the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A printing press feeder of the character described comprising a magazine for the articles to be printed; a bed remote from the magazine from which the articles are fed directly to the printing press; tapes extending from the magazine to the bed to maintain a continuous train of lapped articles extending from the magazine to the bed; and a ram for maintaining the uppermost article in the bed against a portion thereof.

2. A printing press feeder of the character described comprising a magazine for the articles to be printed; a bed remote from the magazine from which the articles are fed directly to the printing press; tapes extending from the magazine to the bed to maintain a continuous train of lapped articles extending from the magazine to the bed; a ram for maintaining the uppermost article in the bed against a portion thereof; and means for driving the tapes to advance the train of lapped articles when the height of the stack thereof in said bed drops below a predetermined level.

3. A printing press feeder of the character described comprising a magazine for the articles to be printed; a bed remote from the magazine from which the articles are fed directly to the printing press; tapes extending from the magazine to the bed to maintain a continuous train of lapped articles extending from the magazine to the bed; and a ram, said articles being fed into the said bed from the train by the ram.

4. A printing press feeder of the character described comprising a magazine for the articles to be printed; a bed remote from the magazine

from which the articles are fed directly to the printing press; tapes extending from the magazine to the bed to maintain a continuous train of lapped articles extending from the magazine to the bed; and a feed roller serving with certain of the tapes to support the articles to be printed in said magazine and actuated by said certain tapes to move the articles from the magazine into the train.

5. A printing press feeder of the character described comprising a magazine for the articles to be printed; a bed remote from the magazine from which the articles are fed directly to the printing press; tapes extending from the magazine to the bed to maintain a continuous train of lapped articles extending from the magazine to the bed; and a feed roller actuated by certain of the tapes for moving the articles from the magazine into the train, said feed roller being provided with longitudinal grooves for engaging the edge of the lowermost article in the magazine as the tapes are advanced.

6. A printing press feeder of the character described comprising a magazine for the articles to be printed; a bed remote from the magazine from which the articles are fed directly to the printing press; tapes extending from the magazine to the bed to maintain a continuous train of lapped articles extending from the magazine to the bed; and a feed roller actuated by certain of the tapes for moving the articles from the magazine into the train, said feed roller being provided with longitudinal grooves for engaging the edge of the lowermost article in the magazine as the tapes are advanced, said feed roller being provided with longitudinal grooves for engaging the edge of the lowermost article and serving as a support for the articles in the magazine.

7. A printing press feeder of the character described comprising a base; a pair of vertical, opposed frames supported for adjustment toward and from each other above the base; endless tapes on each frame respectively for conveying articles to be printed; and means for moving the tapes, said articles to be printed bridging the space between said frames and engaged between said tapes of both frames.

8. A printing press feeder of the character described comprising a base; horizontal shafts journalled for rotation in the base; a pair of vertical, opposed frames supported for adjustment toward and from each other above the base; rollers on certain of the shafts adjacent the respective frames; endless tapes carried by the rollers for conveying articles to be printed; and means for rotating at least one of said certain shafts to move the tapes, said articles to be printed bridging the space between said frames and engaged between the tapes adjacent both frames.

9. A printing press feeder of the character described comprising a base; horizontal shafts journalled for rotation in the base; a pair of vertical, opposed frames supported above the base; rollers on certain of the shafts adjacent the respective frames; endless tapes carried by the rollers for conveying articles to be printed; and means for rotating at least one of said certain shafts to move the tapes, said articles to be printed bridging the space between said frames when engaged by the tapes adjacent both frames, one of said frames being slidably mounted on some of the horizontal shafts for movement toward and from the other frame for the purpose specified.

10. A printing press feeder of the character described comprising a base; horizontal shafts journalled for rotation in the base; a pair of vertical, opposed frames supported above the base; rollers on certain of the shafts adjacent the respective frames; endless tapes carried by the rollers for conveying articles to be printed; and means for rotating at least one of said certain shafts to move the tapes, said articles to be printed bridging the space between said frames when engaged by the tapes adjacent both frames, one of said frames being slidably mounted on some of the horizontal shafts and having yokes thereon positioned to engage the ends of some of the rollers to slide the same along their supporting shafts as the frame is slid along its supporting shafts in either direction.

11. A printing press feeder of the character described comprising a base; horizontal shafts journalled for rotation in the base; a pair of vertical, opposed frames supported above the base; rollers on certain of the shafts adjacent the respective frames; a plurality of stub shafts on each frame respectively; a wheel on one of the stub shafts of each frame respectively; rollers on the remaining stub shafts of each frame respectively; endless tapes carried by the rollers and wheel of each frame respectively for conveying articles to be printed; means for rotating at least one of said certain shafts to move the tapes; and a magazine formed by the opposed frames above the wheels mounted thereon, two of said tapes forming the bottom of the magazine and extending outwardly therefrom in a plane substantially tangent to the periphery of the said wheels.

12. A printing press feeder of the character described comprising a base; horizontal shafts journalled for rotation in the base; a pair of vertical, opposed frames supported above the base; rollers on certain of the shafts adjacent the respective frames; a plurality of stub shafts on each frame respectively; a wheel on one of the stub shafts of each frame respectively; rollers on the remaining stub shafts of each frame respectively; endless tapes carried by the rollers and wheel of each frame respectively for conveying articles to be printed; means for rotating at least one of said certain shafts to move the tapes; a magazine formed by the opposed frames and the tapes above said wheels; and a roller bridging the space between the frames at the bottom of said magazine, said roller being rotated by the tapes as they are moved.

13. A printing press feeder of the character described comprising a base; horizontal shafts journalled for rotation in the base; a pair of vertical, opposed frames supported above the base; rollers on certain of the shafts adjacent the respective frames; a plurality of stub shafts on each frame respectively; a wheel on one of the stub shafts of each frame respectively; rollers on the remaining stub shafts of each frame respectively; endless tapes carried by the rollers and wheel of each frame respectively for conveying articles to be printed; means for rotating at least one of said certain shafts to move the tapes; a magazine formed by the opposed frames and the tapes above said wheels; an outlet opening provided in one side of the magazine; and a roller bridging the space between the frames at the bottom of the magazine, said roller being rotated by the tapes as they are moved, the roller being mounted on the opposed frames for movement toward and from the said outlet opening whereby to be stationed at one edge of the article being fed through

the opening when the opposite edge is at said opening.

14. A printing press feeder of the character described comprising a base; horizontal shafts journalled for rotation in the base; two fixed, intermediate, vertical frames on the base; a movable frame on each side respectively of the fixed frames whereby to create a pair of side-by-side feeder units; a plurality of opposed rollers carried by the frames of each feeder unit respectively; rollers on certain of the horizontal shafts; tapes carried by the rollers adjacent each frame respectively; motor driven means for rotating one of said certain shafts to move all the tapes of both units; a crank on another of said certain shafts for moving the tapes of but one of said units; and another crank on a third of said certain shafts for moving only the tapes of the other unit.

15. In a printing press having an oscillating feeder arm, a magazine for the articles to be printed; a bed remote from the magazine from which the feeder arm individually receives the articles; tapes extending from the magazine to the bed to maintain a continuous train of lapped articles extending from the magazine to the bed; a ram for forcing the uppermost article in the bed against a portion thereof; and means operable by the feeder arm for advancing the ram after each removal of an article from the magazine.

16. In a printing press having an oscillating feeder arm with suction cups thereon for transferring an article to be printed to the press; a magazine for the articles to be printed; a bed remote from the magazine from which the suction cups receive the articles; tapes extending from the magazine to the bed to maintain a continuous train of laped articles extending from the magazine to the bed; a motor for moving the tapes; a clutch and a train of gears operable to connect and disconnect the motor from the tapes; and linkage operable by the feeder arm when at one end of its path of travel to render the clutch operable to connect the motor and tapes when the uppermost article in the bed is below a predetermined level.

17. In a printing press having an oscillating feeder arm with suction cups thereon for transferring an article to be printed to the press; a magazine for the articles to be printed; a bed remote from the magazine from which the suction cups receive the articles; tapes extending from the magazine to the bed to maintain a continuous train of lapped articles extending from the magazine to the bed; a motor for moving the tapes; a clutch and a train of gears operable to connect and disconnect the motor from the tapes; and linkage operable by the feeder arm when at one end of its path of travel to render the clutch operable to connect the motor and tapes when the uppermost article in the bed is below a predetermined level, said clutch having a stop in connection therewith for breaking the connection between the motor and the tapes after the latter have been moved to deliver a predetermined number of articles to the bed.

18. In a printing press having an oscillating feeder arm with suction cups thereon for transferring an article to be printed to the press; a magazine for the articles to be printed; a bed remote from the magazine from which the suction cups receive the articles; tapes extending from the magazine to the bed to maintain a continuous train of laped articles extending from the magazine to the bed; a motor for moving the tapes; a clutch and a train of gears operable to connect and disconnect the motor from the tapes; and linkage operable by the feeder arm when at one end of its path of travel to render the clutch operable to connect the motor and tapes when the uppermost article in the bed is below a predetermined level, said clutch having a stop in connection therewith for breaking the connection between the motor and the tapes after the latter has been moved to deliver a predetermined number of articles to the bed, said stop serving to break the connection before the feeder arm returns to the said one end of its path of travel.

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