

Nov. 21, 1933.

F. E. JAMISON

1,935,799

SELECTIVE HEADLINE MECHANISM FOR PRINTING PRESSES

Filed Jan. 25, 1932

2 Sheets-Sheet 1

Fig. 1.

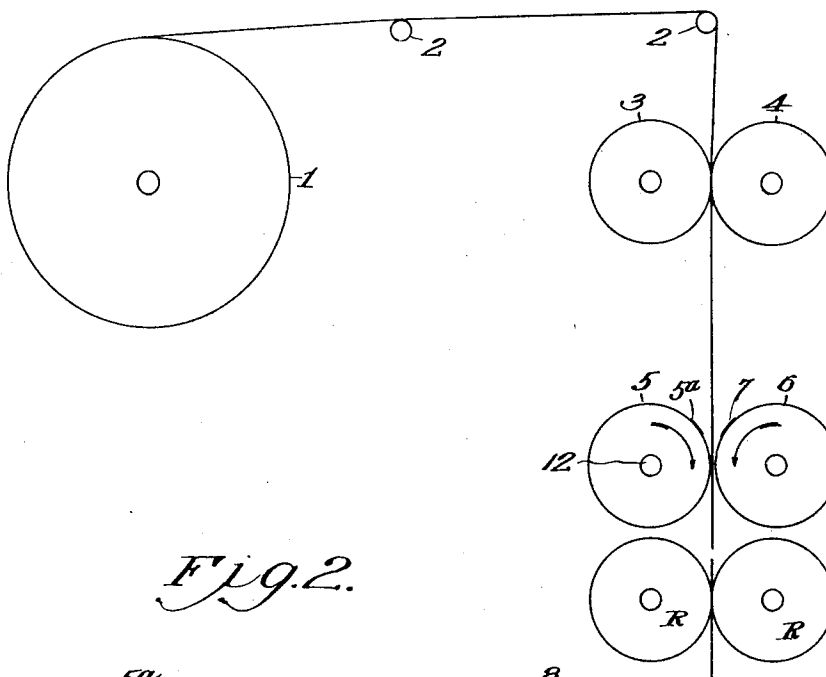
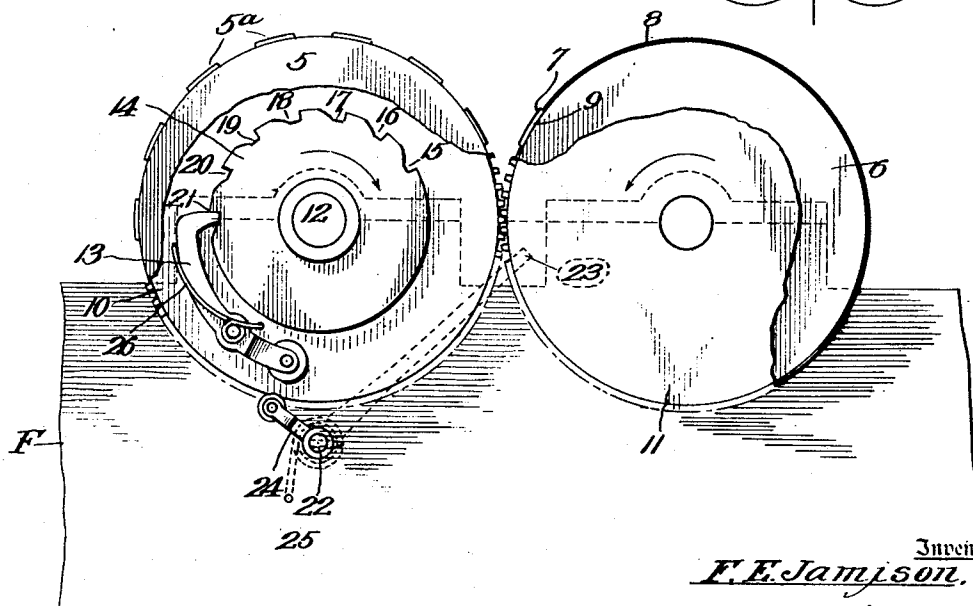


Fig. 2.



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2 Sheets-Sheet 2

Fig. 3.

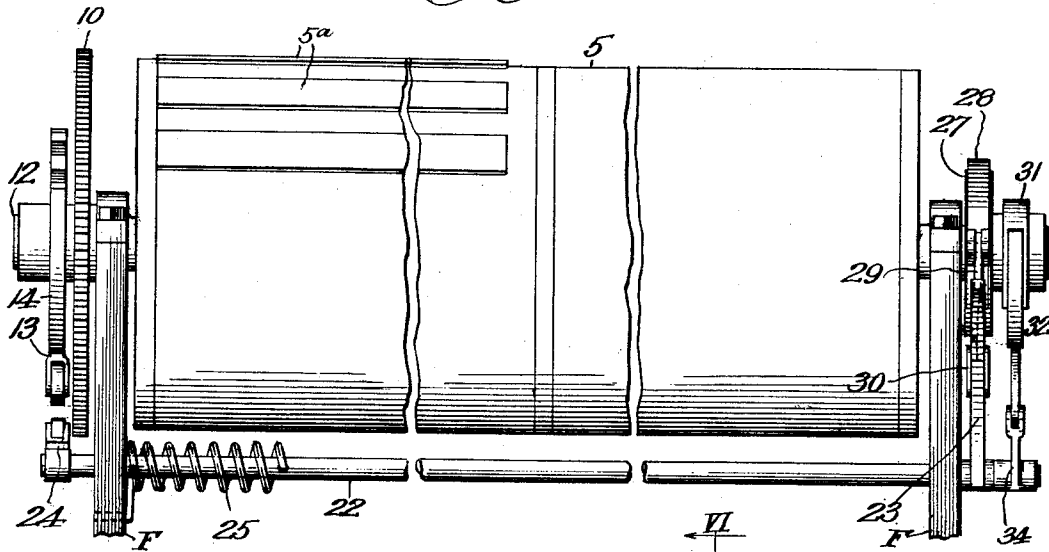


Fig. 4.

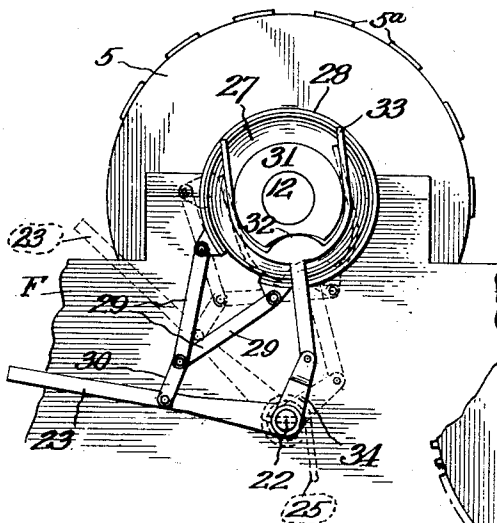


Fig. 5.

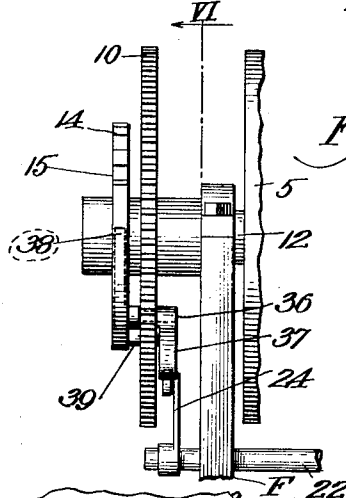
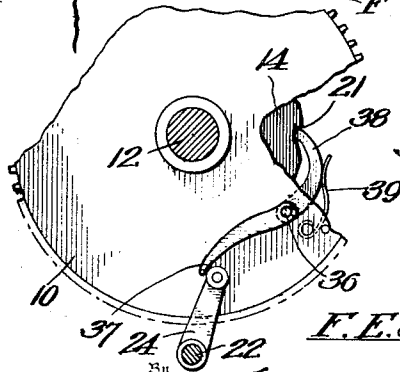


Fig. 6.



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UNITED STATES PATENT OFFICE

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SELECTIVE HEADLINE MECHANISM FOR
PRINTING PRESSES

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Application January 25, 1932. Serial No. 588,659

7 Claims. (Cl. 101—92)

This invention relates to rotary printing presses, of that class whereby any one of a series of different head-line set-ups—such as names and addresses, may be printed on a web or sheet at a predetermined point thereof without interruption of the travel of the web or sheet through the press, and preferably after the web or sheet has been imprinted with advertising matter or the like, cognate or germane to all of the series of names or addresses.

It is common practice for makers or distributors of nationally known products, to provide advertising matter to be issued by their retail dealers, such advertisements sometimes bearing the names of all retailers in certain territory, and sometimes being left with blank spaces wherein each of such dealers may have printed or stamped his own name and address, to give individuality to the advertisement. In the latter class the advertisements are usually in the form of so-called dodgers, and a selected number is supplied to each dealer so that he may have his name and address printed or stamped in the blank space. In the event all of the contiguous dealers employ the same job-press printer, the latter after obtaining or preparing plates bearing the names and addresses of all the dealers, secures one of the plates to the form cylinder. After running a selected number bearing the name and address on said plate, he must stop the press and remove said plate and substitute another one, and so on until each dealer has his proper apportionment of dodgers bearing only his name and address and not that of the other dealers.

Where the products are high priced, it is customary to follow the method last-mentioned as the printing of the individual names and addresses presents the advertisement in more attractive form than where stamping is resorted to.

The method requiring changes of plates is expensive. The stamping method is less expensive but more undesirable as it lacks the character of individuality and dignified advertising, and due to the necessity for handling each dodger, is obviously more expensive than a method whereby the advertisement is common to all the dealers and each bears the names of all dealers. This method, however, is objectionable as obviously emanating from no particular dealer, as conventional in newspaper advertising of this class.

My object, broadly stated, is to provide a form cylinder with a plurality of circumferentially spaced head-line matters, an impression cylinder

for cooperative relation at a particular point with the head-line matter, and means under manual or automatic control, whereby the speed relation between the form and impression cylinders may be momentarily changed and then restored as the speed change brings a different head-line matter into cooperative relation with the said particular point of the impression cylinder.

More specifically, my object is to provide a continuously driven cylinder, a drive shaft geared thereto, a cylinder journaled on said shaft, a pawl and ratchet mechanism normally interlocking the shaft and journaled cylinder together, means for tripping the pawl to permit the journaled cylinder to lag or retard in speed, and means to automatically reestablish the interlocking relation between the shaft and journaled cylinder after a particular circumferential part of the latter has been shifted relative to a particular circumferential part of the said continuously driven cylinder.

Another object, for capacity or output purposes, is to provide an impression cylinder with a plurality of raised impression points, each for cooperation with a selected one of a series of head-line matters on a form cylinder, so that in each revolution, impressions of said head-line matter corresponding in number to the raised impression points, shall be secured.

The method of printing so-called dodgers contemplated by this invention, although providing for advertising characterized by individuality for each retail dealer, is actually less expensive than the conventional cheap method, where stamping is resorted to, as the advertising matter common to all dealers, is printed a predetermined number of times on a travelling web or sheets, in conjunction with a particular head-line matter, and then, without stopping or checking the speed of the driving mechanism or paper, an adjustment can be effected whereby a different head-line matter—the name and address of another retailer—is substituted and printed, the change indicated being repeated until the total number of dodgers desired for each retailer, have been run.

With the objects named in view, the invention consists in certain novel and useful features of construction and organization of parts as hereinafter described; and in order that it may be fully understood, reference is to be had to the accompanying drawings, in which:—

Figure 1 is a diagrammatic view of part of a printing press embodying the invention.

Figure 2 is an end view of an impression and

form cylinder mechanism embodying the invention.

Figure 3 is a foreshortened view of the form cylinder at the side thereof adjacent the impression cylinder.

Figure 4 is a view of the opposite end of the form cylinder mechanism.

Figure 5 is a fragmentary elevation of a slightly modified form of the form of cylinder mechanism.

Figure 6 is a vertical section on the line VI of Figure 5.

In the said drawings, the diagrammatic figure discloses a roll of paper 1 which leads over suitable guides 2 and between form and impression cylinders 3 and 4 respectively, whereby matter is printed for distribution by all dealers of a particular product or products. The construction, arrangement and mode of operation of the printing elements is or may be conventional and is not therefore detailed, and this statement also applies to the means for applying ink to the customary printing plate (not illustrated) on the form cylinder.

The web of paper after being imprinted upon its passage between cylinders 3 and 4, passes between cylinders 5 and 6, operated in conventional manner, not illustrated, in synchronous relation to cylinders 3 and 4.

As contemplated herein, what may be generically termed "head-line" matter—in this instance names and addresses of retail dealers—is omitted in the printing operation incidental to the passage of the web between the cylinders 3 and 4, as the form roller 5 is adapted to be equipped with a plate or plates 5a (not detailed) containing such matter, with the different names and addresses spaced circumferentially apart, and the impression cylinder 6 has a raised impression point 7 so disposed that it shall initially bear a cooperative relation to any one of the names and addresses on form cylinder 5.

In the preferred construction of impression cylinder, the customary encircling blanket 8, is caused to project a slightly greater distance from the axis of the cylinder than any other part of the blanket, and an economical method of securing this result is to thicken the blanket by fastening a strip 9—preferably of fabric—to the inner side of the blanket, the strip substantially corresponding in width to any of the lines of names and the address associated therewith, of the form cylinder 5. If desired, the form cylinder 5 may be provided with names and addresses in duplicate with the duplicate names and addresses in diametrically opposite relation. In this case, the impression cylinder 6 will have two of the raised points 7 located in diametrically opposite positions and for respective cooperative relation with said pairs of duplicated names and addresses once in each complete revolution of the impression cylinder, it being understood that the selected names and addresses, and the raised impression point or points, cooperate in imprinting the former in the spaces left blank in the initial printing operation to receive the so-called head-line matter.

To make provision whereby a selected name and associated address on cylinder 5 shall register with the raised impression point 7 once in each revolution, a relative rotary adjustment of the cylinders is essential. It is preferred that the adjustment shall be confined to the form cylinder, and to avoid loss of time it is desirable that the adjustment shall be made without interrupting

or interfering with the printing of the common advertising matter by the cylinders 3 and 4 or the travel of the web or sheets.

In accomplishing this object, the gear wheel 10 of the form cylinder 5 in mesh with the similar gear wheel 11 of the impression cylinder 6, bears a journaled relation to the shaft 12 of the form cylinder, and a spring-actuated dog 13 pivotally mounted on the said gear wheel 10, is normally engaged with a ratchet wheel 14 rigid on shaft 12 so that normally the form cylinder revolves with and at the same speed as the gear wheel 10 and hence a particular name and address will cooperate with the raised impression point 7 of the cylinder 6 for printing purposes until a differential movement is effected between the gear wheel 10 and the form cylinder 5, sufficient to withdraw the functioning name and address out of register with said impression point and replace it with another name and address.

As shown manually operable means are provided to trip the dog from engagement with the wheel. As this result is accomplished, the speed of the ratchet wheel and cylinder 5 retards and the dog, moving with the gear wheel 10, is relatively advanced and therefore withdraws from the restraining influence of the manually-operative means and then instantly snaps back upon the ratchet wheel 14 and enters the next notch of the latter and therefore resumes its positive driving engagement therewith.

The points of positive engagement between the dog and wheel 14 are spaced to conform to the circumferential spacing of adjacent head-line matters on the form cylinder 5 so that the retardation of the speed of the cylinder shall be so momentary, when the press is operating at high speed, as to be hardly perceptible to the eye, it being understood of course, that suitable web-feed rollers R at some convenient point ahead of the cylinders 5 and 6, exert a constant pull on the web to prevent any checking or slowing of its travel as it passes between said cylinders without engagement with the head-line matter and the cooperating raised impression cylinder point.

The drawings disclose the ratchet wheel as provided with seven notches, 15 to 21 inclusive, spaced regularly apart and extending around half of the periphery of said wheel, but it will be obvious that the particular number of notches is unimportant, provided there is one for each head-line matter where the latter is to be printed but once in each revolution.

The dog remains in engagement with a notch as long as necessary to print the associated name and address on any particular number of advertisements. To trip the dog out of engagement, there is a rock shaft 22 journaled in the frame F, and said shaft has an operating lever 23 to be manipulated manually preferably, because it may be desirable to imprint one of the names and addresses for a run of ten thousand impressions, another for a run of nine thousand, another eight hundred and fifty, and so on. Of course, where it is intended that the runs for all the names and addresses shall be equal, suitable means actuated by a conventional impression counter device (not shown), may be employed to actuate the lever 23.

The rock-shaft 22 has an arm 24 which (see Figures 2 and 3), is disposed by operation of the lever 23, in the path of the dog to trip the same as it passes, the shaft being then restored by a spring 25 to normal position to withdraw arm 24 out of the path of the dog. As the dog is tripped and thus removes the impelling force from the

ratchet wheel and cylinder 5, their speed of rotation falls below that of the dog, and at the same instant the latter passes out of contact with the arm 24, and a spring 26 snaps the dog onto the ratchet wheel so that it enters the next notch thereof and therefore again applies driving force thereto, and as the second name and address is spaced in accordance with said next notch, it takes the position relative to the impression point of cylinder 6 formerly occupied by the name and address which has been thus thrown out of register with the impression point. It will thus be seen that until the rock shaft is again operated to trip the dog, all imprinting performed shall be of the substituted name and address, the changes in the imprinting being repeated with each operation of the rock shaft until all of the different names and addresses have been successively imprinted in order from the first to the last. Of course, if it is desired to skip the printing of a name and address, it can be accomplished by operating the rock shaft twice in quick succession, each operation effecting a tripping operation and an advance of the dog relative to the ratchet wheel.

As a means of accelerating the adjustment of the dog, it may be found desirable to provide means for applying braking force on the form cylinder 5 at the moment the arm 24 trips the dog, the braking features shown by Figures 3 and 4, comprising a wheel 27 rigid on shaft 12, a brake band 28 encircling the wheel, and links 29 pivotally connecting the ends of the band to a short link 30 pivoted to the lever 23 of the rock-shaft. In the event the braking devices are employed, it is essential that means be provided to prevent the operation of the rock shaft and the consequent application of the brake band to wheel 27 except at the moment arm 24 is positioned to trip the dog, as otherwise the retardation of the cylinder would likewise affect the gear wheel. To accomplish this purpose the shaft 12 may be equipped with a cam 31 having a flat face or recess 32 for engagement by a fork 33 engaged with an arm 34 mounted on the rock shaft. Normally the fork 33 is out of retarding contact with or rides loosely on the cam, but is close enough to the latter to prevent sufficient operation of lever 23 to dispose the arm 24 in the path of the dog and apply the brake except at the moment the flat face or recess 32 of the cam has attained a position permitting sufficient movement of the fork 34 toward the cam to enable the rock shaft 22 to operate, it being understood that the connections are preferably such that the momentum of the form cylinder shall, through the continued rotation of the cam, overcome the braking force applied by the rock-shaft and effect repression of the fork 33 and the release of the brake the instant arm 24 has caused the tripping of the dog, so that at the instant the dog engages the next notch of the ratchet wheel, the latter will be free to turn and at the same speed as the dog.

In the modified construction shown in Figures 5 and 6, the gear wheel is equipped with a through pivot 36 provided at its opposite ends with oppositely-projecting arms 37 and 38, the former to engage the arm 24 of the rock-shaft when the latter is operated for that purpose. As a result, the resistance of spring 39, carried by the gear wheel and applying pressure on the dog, is overcome, and the dog tripped from engagement with the ratchet wheel, and the differential movement already explained occurs, this differential movement ending as the dog enters the next notch of the ratchet wheel and interlocks the same to the

gear wheel with the next name and address in operative position. This principle of construction and mode of operation is the same in both constructions. That of Figures 5 and 6 is preferred because the trip arm 37 being between the ratchet and gear wheels, minimizes the chance offered for tampering or of an operator being injured when making adjustments or doing other work during the operation of the press.

From the above description it will be apparent that I have described constructions embodying the features of advantage set forth as desirable, and while I have illustrated what now appears to be the preferred form of the invention, I reserve the right to make all changes within the spirit of the invention and without the ambit of the prior art.

I claim:—

1. In a machine of the character described, a constantly driven rotary member, a rotary cylinder, and a pair of normally interlocked rotary members, one rotatable with the constantly driven member and the other with the cylinder, means for breaking the interlocked relation between the said pair of rotary members to effect a change in the radial relation thereof, and means to apply braking force to one of said pair of members to facilitate the changing of radial relation between said pair of members.

2. In a machine of the character described, a constantly driven rotary member, a rotary cylinder, and a pair of normally interlocked rotary members, one rotatable with the constantly driven member and the other with the cylinder, means for breaking the interlocked relation between the said pair of rotary members to effect a change in the radial relation thereof, means to apply braking force to one of said pair of members to facilitate the changing of radial relation between said pair of members, and means to remove the braking force the instant the change of relation is effected.

3. In a machine of the character described, a constantly driven rotary member, a rotary cylinder, normally interlocked ratchet wheel and spring-actuated pawl members, one rotatable with the constantly driven member and the other rotatable with the cylinder, an arm for disposition in the path of said pawl to trip the same from engagement with the ratchet wheel, means to apply braking force to one of said members, and means to remove the braking force and withdraw said arm from operative position the instant the change of relation is effected.

4. In a machine of the character described, a constantly driven rotary member, a rotary cylinder, and a pair of normally interlocked rotary members, one rotatable with the constantly driven member and the other with the cylinder, means for breaking the interlocked relation between the said pair of rotary members to effect a change in the radial relation thereof, means to apply braking force to one of said pair of members to facilitate the changing of radial relation between said pair of members, and means to prevent the application of the braking force prematurely with respect to the time of the breaking of the interlocked relation between said pair of members.

5. In a machine of the character described, a constantly driven rotary member, a rotary cylinder, and a pair of normally interlocked rotary members, one rotatable with the constantly driven member and the other with the cylinder, means for breaking the interlocked relation between the said pair of rotary members to effect

a change in the radial relation thereof, means to apply braking force to one of said pair of members to facilitate the changing of radial relation between said pair of members, a cam rotatable with one of said pair of members, and means for engaging said cam at a point nearest its axis concurrently with the breaking of the interlocked relation of said pair of members and the application of the said braking force to the member rotatable with said cam.

6. In a machine of the character described, a constantly driven rotary member, a rotary cylinder, a pair of normally interlocked rotary members, one rotatable with the constantly driven rotary member and the other with said cylinder, a cam wheel rotatable with the cylinder and provided with a recess, a brake wheel also rotatable with the cylinder, an element for braking engagement with the brake wheel, manually-operable means for imparting movement to said element toward the brake wheel, means actuated by the manually-operable means to engage the cam wheel and, if not with the recess thereof, arrest the movement of the manually-operable means before the said brake element operates on the brake wheel, and means actuated by the manually-operable means for braking the interlocked relation between the pair of rotary members as the rotation of the cam disposes its recess in register with the cam-engaging means and the latter and the said braking element respectively engage said recess and the brake wheel under the force applied through the manually-operable means.

7. In a machine of the character described, a constantly driven rotary member, a rotary cylinder, and a pair of normally interlocked rotary members, one rotatable with the constantly driven member and the other with the cylinder, means for breaking the interlocked relation between the said pair of rotary members to effect a change in the radial relation thereof, means to apply braking force to one of said pair of members to facilitate the changing of radial relation between said pair of members, means to prevent the application of the braking force prematurely with respect to the time of the breaking of the interlocked relation between said pair of members, yielding means for effecting reestablishment of the interlocked relation between said pair of normally-interlocked members, and yielding means to return the manually-operable means, braking element and cam-engaging means to their initial positions as said interlocked relation of the said pair of members occurs.

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