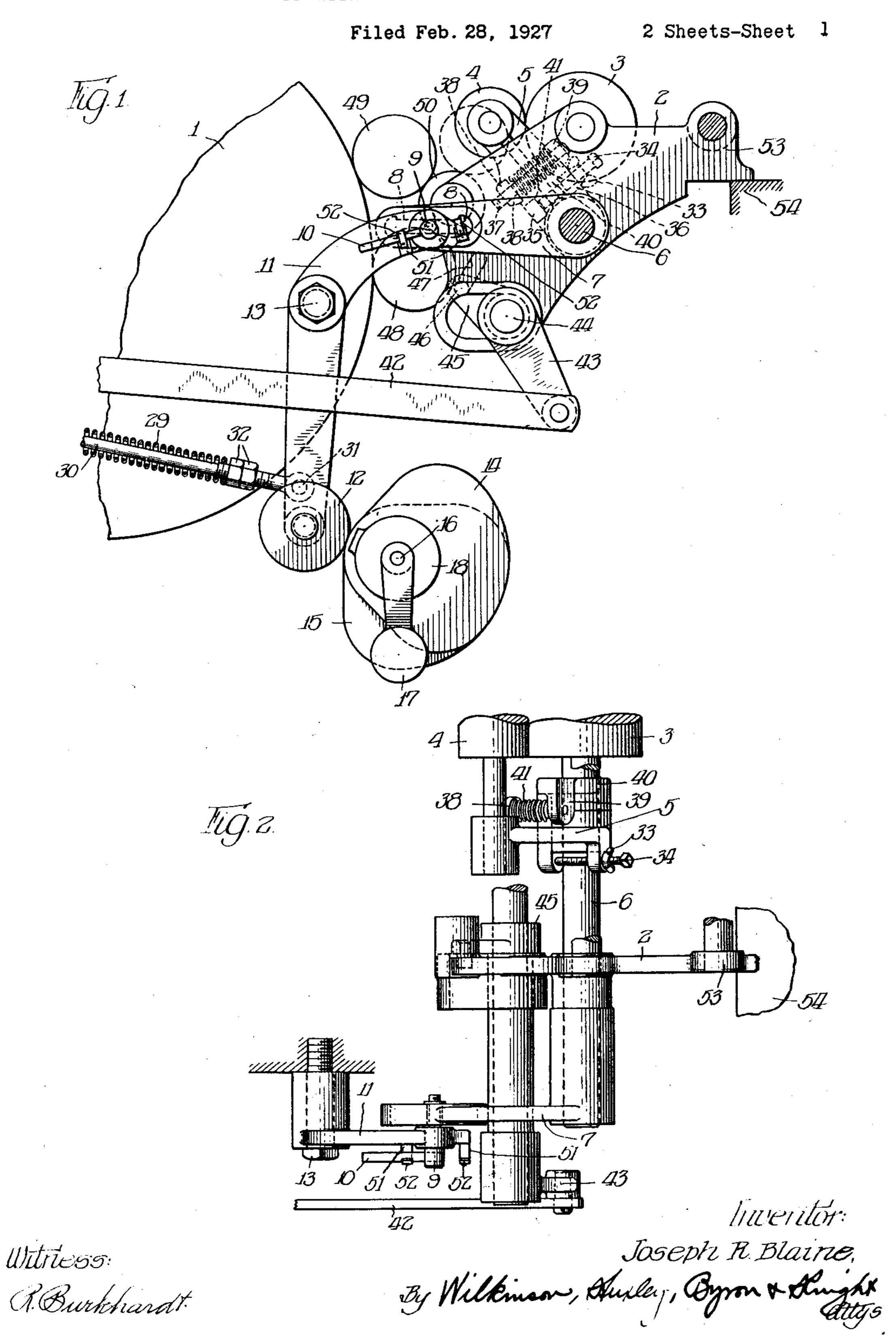
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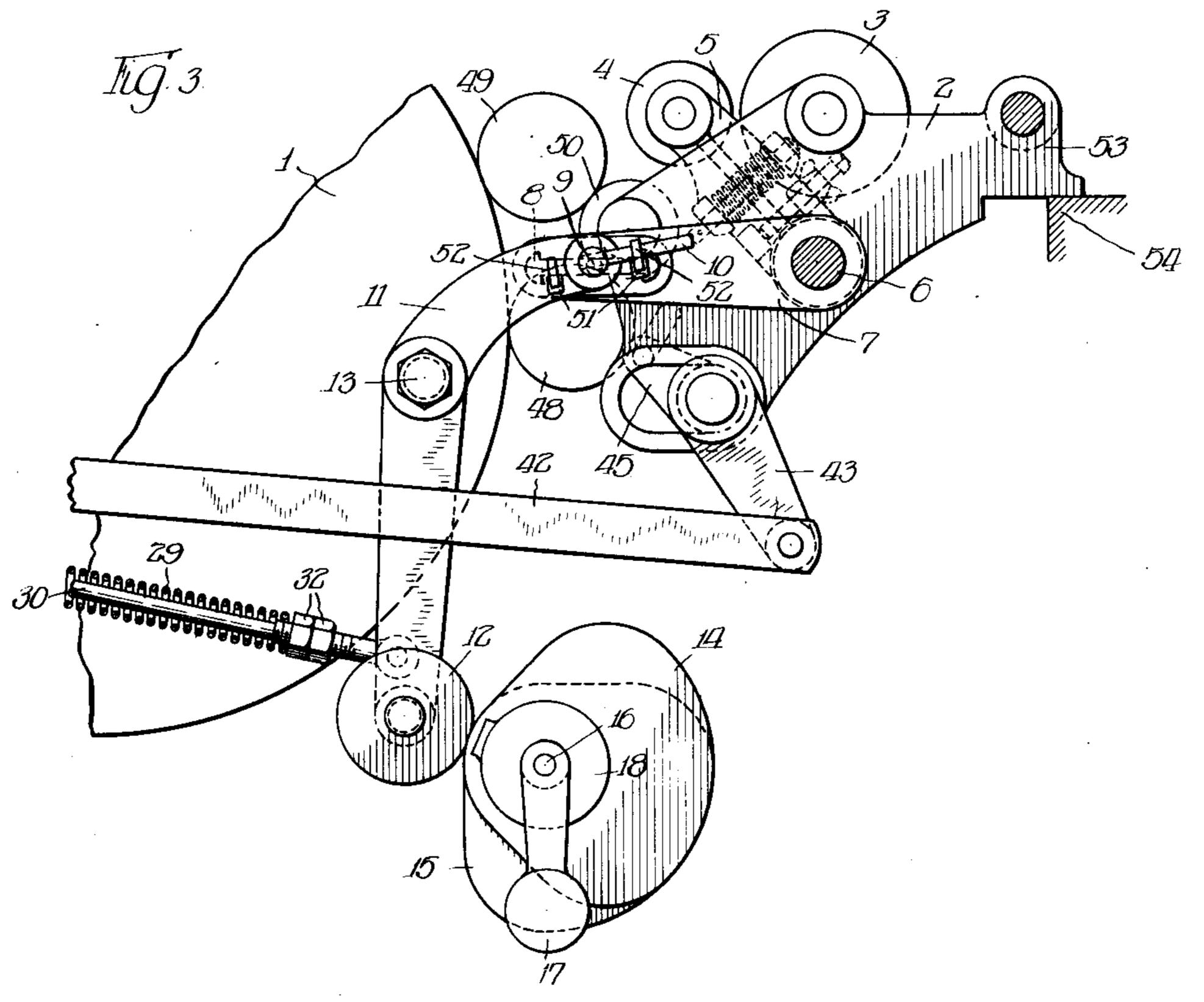
PRINTING PRESS DUCTOR MECHANISM

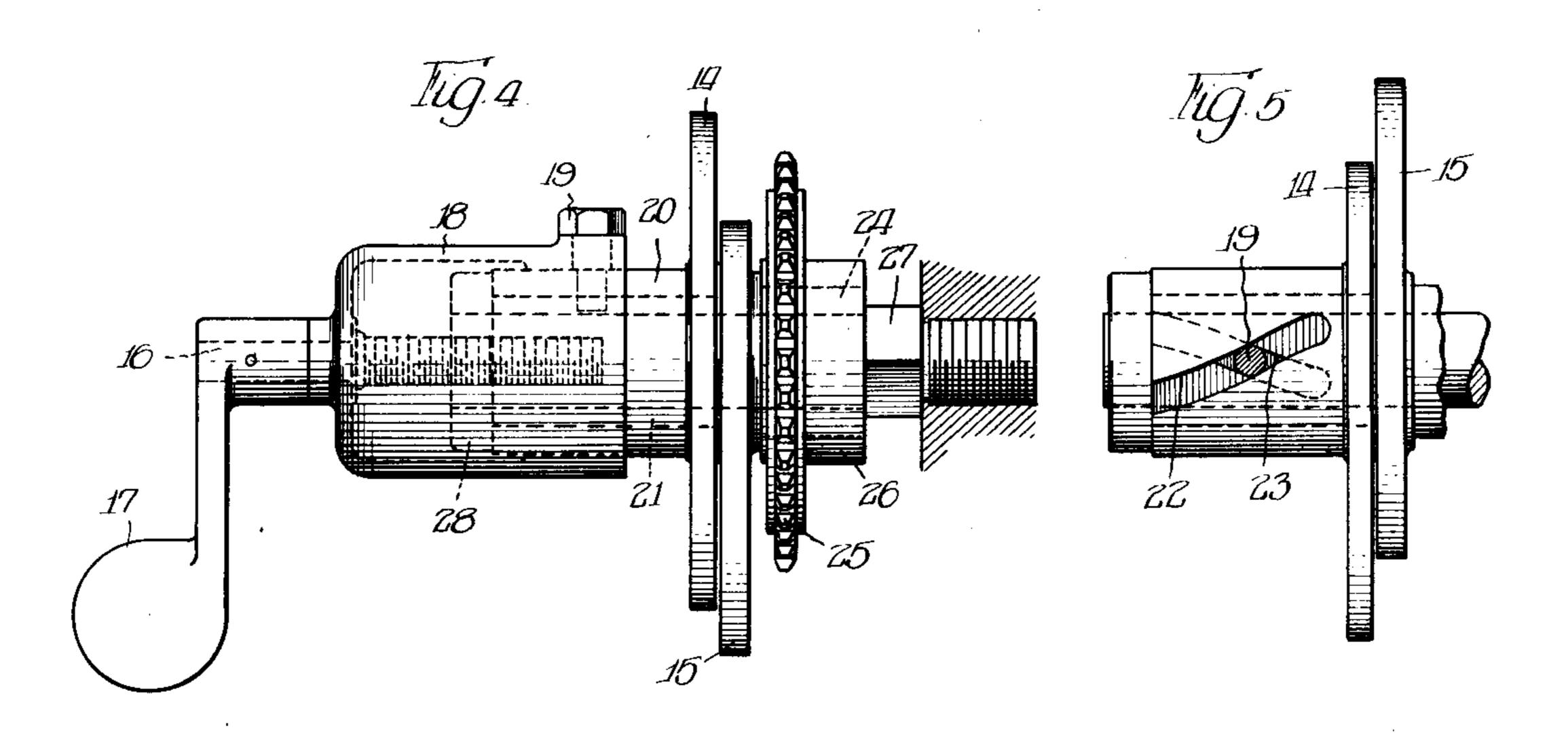


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PRINTING PRESS DUCTOR MECHANISM

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UNITED STATES PATENT OFFICE.

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PRINTING-PRESS DUCTOR MECHANISM.

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The present invention relates to improvements in lithographic dampening mechanisms, particularly adapted for use in configure 4 shows an assembly of the ductor nection with lithographic cylinder presses.

In the use of lithographic presses in genwater to the surface of the plate which carries the subject from which an impression is to be pulled.

In order to accomplish this, a series of dampening rollers are used, comprising a of water is conveyed by means of an oscillating ductor roller to a set of distributing roll-5 ers, whereby the required volume of water is applied to the plate of the press.

In order to successfully meet different conditions which present themselves in lithoof water that is to be applied to the plate of the press be correspondingly varied.

complishing this, however, it has been found bell crank lever 11, and has secured thereto practical, inasmuch as the respective parts, were not readily accessible to the operator, o and furthermore did not permit of an absolutely positive adjustment of the cooperating parts.

The principal object of this invention, lating the ductor roller 4. plied to such plate.

Other objects of the invention will be ap- the lever 11. ing drawings in which:

mechanism, showing the relative position of which is pinned or otherwise secured, a han- 100 the parts when the ductor roller is in contact dle 17, preferably located at the side of the with the fountain roller;

of the parts omitted in order to more clearly 18 which carries a bolt or stud 19 arranged so mechanism;

roller cam adjusting means;

Figure 5 is a detail of the device shown eral, it is customary to apply a thin film of in Figure 4, illustrating the relative position 60 of the helical slots for adjusting the cams.

As illustrated on the drawings, 1 represents the plate cylinder of a lithographic press; 2 denotes one of the side frames of the water fountain wherein the fountain roller 65 fountain roller from which a small quantity 3 is mounted to rotate, and from which roller water is transferred to water distributing mechanism by means of the ductor roller 4 carried by the oscillating arm or bracket 5. The latter is pivotally supported on the shaft 70 6, and is imparted its oscillatory movement by means of the operating arm 7, as will be graphic printing, and to thereby attain the hereinafter described. The arm 7 is provided desired results, it is essential that the volume at its free end with a substantially horizontal slot 8, which receives an excenter 9 adapted 75 to move longitudinally therein. The excenter In connection with most mechanisms re- 9 is formed on a stud which is pivotally sorted to in the past for the purpose of ac- mounted in the free end of one arm of the that such mechanisms had not proven strictly a manually operated lever 10 whereby the 80 ductor roller can be tripped, as will be dewhereby the adjustment had to be effected, scribed. The operating lever 11 is pivotally mounted to the machine frame as indicated at 13, and carries at its lower extremity a cam roller 12, which operatively engages the 85 cam disks 14 and 15 for the purpose of oscil-

therefore, is to provide an improved litho- In order to vary the time of contact of the 5 graphic dampening mechanism including ductor roller 4 with the fountain roller 3, so novel means whereby the movement of the as to correspondingly vary the volume of 90 ductor roller can be conveniently and posi-water that is to be supplied to the subject tively timed so as to vary its time of contact plate of the cylinder 1, the cams 14 and 15 with the fountain roller and to thereby cor- can be adjusted relatively to each other so o respondingly vary the volume of water sup- as to increase or decrease the operative cam surface which engages the cam roller 12 on 95

parent from the specification and accompany- The mechanism whereby the relative adjustment of the cams 14 and 15 is accom-Figure 1 is a side elevation of the combined plished comprises a threaded shaft 16 to press so as to be readily accessible to the op-Figure 2 is a partial plan view with some erator. The shaft 16 also supports a sleeve illustrate the principal elements of the as to operatively engage within the helical 105 slots 22 and 23 formed in the hubs 20 and 21 Figure 3 is a similar view to that shown in of the cams 14 and 15, respectively, as shown Figure 1, but showing the respective parts in Figures 4 and 5. The cam 15 is also pro-

vided with a hub portion 24 onto which is ed resiliently so that it can yield when the shaft 27 which is secured to the press frame. above mentioned, is pivotally mounted on the 70 so as to be capable of adjustment about the the bracket 40, which is rigidly secured to the hub 21 of the cam 15. The cams 14 and 15 shaft 6 in any suitable manner, has provided are held in position by means of a collar 28 thereon a similar abutment 39. An expan-10 driven onto or otherwise secured to the end sion coil spring 41 is placed between the said 75 of the shaft 27. It will readily be understood two abutments and is held in position by for example, the handle 17 is rotated in an provided in the abutments 38 and 39, so that anti-clockwise direction, the sleeve 18 with it can freely slide therein. The pin 37 is held its stud 19 will slide outwardly on the hub 20 in position by a cotter pin or by any other 80 and away from the cam 14. Inasmuch as the suitable means. cam 15 is positively driven by the sprocket 25. It will be apparent that when the roller 4 the slot 23 formed in the hub 21 of the cam downward movement of the lever 7 is com- 85 ²⁵ will correspondingly change the timing of of the lever 7. the ductor roller 4 inasmuch as it will increase 30 er 4 with the fountain roller 3 will be corre-35 will be decreased and the time of contact of upwardly to bring the roller 4 into contact 100 will be correspondingly increased.

gagement with the cams 14 and 15 by means means of the adjusting screw 34 and locknut 40 of an expansion coil spring 29 mounted on 33. the rod 30, the outer end of which rod is slid- In order to securely hold the trip lever 10 in ably mounted in a bracket not shown, while the other end of the rod is pivoted at 31 to the operating lever 11. The tension spring 29 45 can be adjusted by means of the locknuts 32.

In order to render the ductor roller 4 inopprovided which comprises a tripping lever 10 a variable distance, towards and away from 115 of the tripping lever 10 is formed with an whereby this is accomplished comprises an within the slot 8 formed in the lever 7. a pivoted, manually operated lever not shown, 120 sition shown in Figure 3, the excenter will a bell crank lever 43 as shown on Figures 1 with the fountain roller 3, as indicated in supported on the shaft 44, is provided with a 125 Figure 3, so that during the continuance of stud 46 which engages a slot or recess 47 the oscillating movement of the lever 11, the formed in the frame member 2 of the water with the fountain roller 3.

keyed the sleeve 26 which supports the drive ductor roller 4 engages the vibrating roller ing sprocket 25. The threaded shaft 16 50 of the water distributing means. For screws into the outer end of the supporting this purpose the bracket 5, which, as herein-The hub 20 of the cam 14 is loosely mounted shaft 6, is formed with an abutment 38, while with reference to Figures 1, 4 and 5 that, if means of a pin 37 which passes through bores

and therefore cannot be rotated when the contacts with the vibrating roller 50, as indipress is at a standstill, the stud 19 will follow cated in dotted lines in Figure 1, before the 15, while the cam 14 will be caused to rotate in pleted, then the spring 41 will yield so that an anti-clockwise direction, owing to the en- there will not be any excessive pressure exgagement of the stud 19 with the helical slot erted between the roller 4 and the roller 50 22 formed in the hub 20 of the cam 14. This during the continued downward movement

The lever or bracket 5 is also formed with the time of contact of the cam roller 12 with an abutment 36 which carries an adjusting the high parts of cams 14 and 15 and conse-screw 34 with its set screw 33. The free end quently the time of contact of the ductor roll- of the adjusting screw 34 abuts against a stop 35 formed integral with the bracket 40. In- 95 spondingly decreased. By moving the han- asmuch as the bracket 40 is rigidly secured to dle 17 in a clockwise direction, the cams 14 the shaft 6, the stop 35 will engage the adand 15 will be moved together so that the justing screw 34 during the upward movecontact surface of the high parts of said cams ment of the lever 7, and move the bracket 5 the ductor roller 4 with the fountain roller 3 with the fountain roller 3. The degree of contact between the ductor roller 4 and the The cam roller 12 is held in constant en- fountain roller 3 can be readily varied by

> its two operative positions against the stops 51, such as indicated in Figures 1 and 3, the stops 51 are provided with small leaf springs 52, arranged so that the lever 10 is friction- 110 ally engaged and held in position thereby.

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erative so as to interrupt the supply of wa- The water fountain, together with its coter from the fountain roller 3 to the subject operating vibrating roller 50 and distributplate of the plate cylinder, tripping means is ing rollers 48 and 49, can be moved as a unit, pivotally mounted on the end of one of the the plate cylinder 1 without, however, interarms of the operating lever 11. The pivot rupting its operation. The mechanism excentric portion 9 which slidably operates arm 42, the outer end of which is secured to When the lever 10 is thrown over to the po- while the other end of said arm is pivoted to move the lever 7 downwardly sufficient to and 3. The free end of the arm 45 of said move the ductor roller 4 out of engagement bell crank lever, which latter is pivotally roller 4 will be prevented from contacting fountain. The extension 53 of the fountain frame 2 is slidably supported on the flange 54 Preferably the lever or bracket 5 is mount-provided on the press frame.

1,683,248

When the arm 42 is drawn to the left as viewed in Figures 1 and 3, the bell crank lever 43 will be moved in a clockwise direction, and the engagement of the stud 46 with the 5 wall of the slot or recess 47 will cause the fountain to move as a unit to the right, that is, out of operative engagement with the plate cylinder 1.

During the movement of the fountain 10 mechanism as a unit away from the plate operation of said ductor roller to vary its 75 cylinder, the excentric portion 9 of the trip time of contact with said fountain roller and lever pivot will slide in the slot 8 of the arm 7. Inasmuch as it is necessary to thoroughly means for adjusting the water fountain as a saturate the distributing rollers with water unit substantially horizontally and a variable 15 prior to the commencement of the actual distance towards and away from the print-80 printing operation of a lithographic press, ing plate of the press. i. e., before the said rollers are brought into contact with the plate of the press, it will be ing mechanism, the combination of a water understood that the ductor roller must be fountain, a fountain roller, water distribut-²⁰ adapted to operate effectively, also when the ing means, a ductor roller intermittently en- 85 fountain mechanism is in its removed or tripped position.

the fountain as a unit away from the plate operation of said ductor roller to vary its 25 cylinder does not appreciably affect the throw time of contact with said fountain roller and 90 of the ductor during the latter's operation the amount of water conveyed therefrom, when the fountain is tripped, it is essential means for adjusting the water fountain as a that said slot be in a substantially horizontal unit towards and away from the printing position when the ductor roller 4 is in contact plate of the press, and means for tripping with the fountain roller 3, as indicated in said ductor roller to render it inoperative, 95

Figure 1.

It will be readily understood that various ment. modifications may be embodied in the construction of the mechanism described and il- ing mechanism, the combination of a water 35 lustrated with reference to the accompany- fountain, a fountain roller, water distribut- 100 ing drawings without, however, departing ing means, a ductor roller intermittently enfrom the spirit of the invention; therefore, I gaging said fountain roller and said disintend to cover all such modifications that tributing means for conveying water from will come within the scope of the appended 40 claims.

I claim as my invention:

ing mechanism, the combination of a water and means for tripping said ductor roller to fountain, a fountain roller, water distribut- prevent it from moving into contact with 45 ing means, a ductor roller intermittently en- said fountain roller, without interrupting its 110 gaging said fountain roller and said dis- intermittent movement. its time of contact with said fountain roller ing means, a ductor roller intermittently en- 115

ing mechanism, the combination of a water roller and the amount of water conveyed fountain, a fountain roller, water distribut- therefrom, and manually operated means for ing means, a ductor roller intermittently en- tripping said ductor roller to prevent it from gaging said fountain roller and said dis- moving into contact with said fountain roller, tributing means for conveying water from without interrupting its intermittent move- 125 the former to the latter, means for timing ment. the operation of said ductor roller to vary 7. In lithographic printing press dampenits time of contact with said fountain roller ing mechanism, the combination of a water

to render it inoperative, without interrupting its intermittent movement.

3. In lithographic printing press dampen ing mechanism, the combination of a water fountain, a fountain roller, water distribut- 70 ing means, a ductor roller intermittently engaging said fountain roller and said distributing means for conveying water from the former to the latter, means for timing the the amount of water conveyed therefrom, and

4. In lithographic printing press dampengaging said fountain roller and said distributing means for conveying water from Therefore, in order that the movement of the former to the latter, means for timing the without interrupting its intermittent move-

5. In lithographic printing press dampen-

the former to the latter, means for timing the operation of said ductor roller to vary its 105 time of contact with said fountain roller and 1. In lithographic printing press dampen- the amount of water conveyed therefrom,

tributing means for conveying water from 6. In lithographic printing press dampenthe former to the latter, means for timing ing mechanism, the combination of a water the operation of said ductor roller to vary fountain, a fountain roller, water distributand the amount of water conveyed therefrom, gaging said fountain roller and said disand means for adjusting the water fountain tributing means for conveying water from as a unit a variable distance towards and the former to the latter, cam means for timaway from the printing plate of the press. ing the operation of said ductor roller to 2. In lithographic printing press dampen-vary its time of contact with said fountain 120

and the amount of water conveyed therefrom, fountain, a fountain roller mounted therein, and means for tripping said ductor roller water distributing means, a ductor roller 130

and said distributing means for conveying timing said ductor roller to vary its time of water from the former to the latter, manual- contact with said fountain roller and the ly adjustable means for timing the operation amount of water conveyed therefrom, each of 5 of said ductor roller to vary its time of con-said cams having a hub with a helical slot 70 tact with said fountain roller and the amount formed therein, said slots extending in oppoof water conveyed therefrom, and means for site directions relative to each other, means adjusting the water fountain as a unit a engaging said slots and operable to effect variable distance towards and away from the relative adjustment of said cams, means for

o printing plate of the press. 8. In lithographic printing press dampen- and means for tripping said ductor roller to ing mechanism, the combination of a water render it inoperative. 15 termittently engaging said fountain roller ductor roller intermittently engaging said 80 and said distributing means for conveying fountain roller, means for timing the inter-20 contact with said fountain roller and the therefrom, and means for tripping the ductor 85 amount of water conveyed therefrom, and roller to render it inoperative without intermanually operative means for adjusting the rupting its intermittent movement. 25 zontally towards and away from the printing

plate of the press. 9. In lithographic printing press dampen-

ing mechanism, the combination of a water fountain, a fountain roller mounted therein, 30 water distributing means, a ductor roller intermittently engaging said fountain roller water from the former to the latter, manual- tent movement. ly adjustable cam means for timing the op- 14. In combination with printing press 35 eration of said ductor roller to vary its time fountain mechanism, a fountain roller, a 100 render it inoperative without interrupting its intermittent movement.

10. In lithographic printing press dampening mechanism, the combination of a water fountain, a fountain roller mounted therein, water distributing means, a ductor roller 45 intermittently engaging said fountain roller and said distributing means for conveying water from the former to the latter, manually adjustable, relatively movable cams for timing said ductor roller to vary its time of con-50 tact with said fountain roller and the amount of water conveyed therefrom, each of said cams having a hub with a helical slot formed therein, said slots extending in opposite directions relative to each other, means engag-55 ing said slots and operable to effect relative adjustment of said cams, and means for tripping said ductor roller to render it inoperative.

ing mechanism, the combination of a water resiliently mounted ductor roller intermit- 125 fountain, a fountain roller mounted therein, tently engaging said fountain roller, a pair of water distributing means, a ductor roller in- relatively adjustable cams for timing the intermittently engaging said fountain roller termittent movement of the ductor roller to and said distributing means for conveying vary its time of contact with said fountain 65 water from the former to the latter, manu-roller and the amount of substance conveyed

intermittently engaging said fountain roller ally adjustable, relatively movable cams for moving said fountain mechanism as a unit, 75

fountain, a fountain roller mounted therein, 12. In combination with printing press water distributing means, a ductor roller in- fountain mechanism, a fountain roller, a water from the former to the latter, manually mittent movement of said ductor roller to adjustable cam means for timing the opera- vary its time of contact with said fountain tion of said ductor roller to vary its time of roller and the amount of substance conveyed

water fountain and associated parts as a unit 13. In combination with printing press a variable distance and substantially hori- fountain mechanism, a fountain roller, a ductor roller intermittently engaging said 90 fountain roller, manually adjustable means for timing the intermittent movement of said ductor roller to vary its time of contact with said fountain roller and the amount of substance conveyed therefrom, and means for 95 tripping said ductor roller to render it inand said distributing means for conveying operative without interrupting its intermit-

of contact with said fountain roller and the resiliently mounted ductor roller intermitamount of water conveyed therefrom, and tently engaging said fountain roller, manumeans for tripping said ductor roller to ally adjustable cam means for timing the intermittent movement of said ductor roller to vary its time of contact with said fountain 105 roller and the amount of substance conveyed therefrom, and means for tripping said ductor roller to prevent its contact with said fountain roller without interrupting its intermittent movement.

15. In combination with printing press fountain mechanism, a fountain roller, a resiliently mounted ductor roller intermittently engaging said fountain roller, a pair of relatively adjustable cams for timing the inter- 115 mittent movement of the ductor roller to vary its time of contact with said fountain roller and the amount of substance conveyed therefrom, and means, comprising a manually operated lever, for tripping said ductor roller 120 to render it inoperative without interrupting its intermittent movement.

16. In combination with printing press 11. In lithographic printing press dampen- fountain mechanism, a fountain roller, a

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tric and a member for actuating said excentric a ductor roller intermittently engaging said for the purpose of tripping said ductor roller fountain roller, means for timing the interto prevent its contact with said fountain roll- mittent movement of said ductor roller, 55 er without interrupting the intermittent means for moving said fountain mechanism movement of said ductor roller.

nism, the combination of a fountain roller, a when said fountain mechanism is moved, ductor roller intermittently engaging said and comprising cam operated means to effect 60 fountain roller, adjustable means for timing the intermittent movement of said ductor the intermittent movement of said ductor roller, a rock arm having formed therein a roller, means for moving said fountain slot which extends in a direction parallel to mechanism as a unit substantially horizon- the direction of movement of said fountain tally and a variable distance towards and mechanism, and a stud provided on said cam 65 15 away from the printing plate of the press operated means and operatively engaging without interrupting its operation, and means said slot. whereby the throw of said ductor roller will 21. In a printing press fountain mechanot be appreciably affected when said foun- nism, the combination of a fountain roller, a

the combination of a fountain roller, a ductor mittent movement of said ductor roller, roller intermittently engaging said fountain means for tripping said ductor roller to renroller, means for timing the intermittent der it inoperative, means for moving said movement of said ductor roller, means for fountain mechanism as a unit, means where- 75 moving said fountain mechanism as a unit, by the throw of said ductor roller will not means whereby the throw of said ductor roll- be appreciably affected when said fountain er will not be appreciably affected when said mechanism is moved and comprising cam fountain mechanism is moved and comprising operated means to effect the intermittent cam operated means to effect the intermittent movement of said ductor roller, a rock arm 80 movement of said ductor roller, a rock arm having formed therein a slot which extends having formed therein a substantially hori- in a direction parallel to the direction of zontal slot, and a stud provided on said cam movement of said fountain mechanism, and operated means and operatively engaging a stud provided on said cam operated means said slot.

19. In printing press fountain mechanism, 22. In a lithographic printing press, the the combination of a fountain roller, a ductor combination of a fountain mechanism, a roller intermittently engaging said fountain fountain roller supported thereby, a ductor roller, means for timing the intermittent roller intermittently engaging said fountain ping said ductor roller to render it inopera- movement of said ductor roller to vary its tive, means for moving said fountain mecha- time of contact with said fountain roller, nism as a unit, means whereby the throw of means for tripping said ductor roller to presaid ductor roller will not be appreciably af- vent its contact with said fountain roller moved and comprising cam operated means ment, and means for variably moving the to effect the intermittent movement of said fountain mechanism as a unit towards and therein a substantially horizontal slot, and a Signed at Chicago, Illinois, this 25th day stud provided on said cam operated means of February, 1927. 50 and operatively engaging said slot. 20. In a printing press fountain mecha-

therefrom, and means comprising an excen- nism, the combination of a fountain roller, as a unit, means whereby the throw of said 17. In printing press fountain mecha- ductor roller will not be appreciably affected

tain mechanism is moved.

ductor roller intermittently engaging said 70 18. In printing press fountain mechanism, fountain roller, means for timing the interand operatively engaging said slot.

movement of said ductor roller, means for trip-roller, means for varying the intermittent 90 fected when said fountain mechanism is without interrupting its intermittent move- 95 ductor roller, a rock arm having formed away from the printing plate of the press.

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