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G. W. PROUTY.

DAMPENING DEVICE FOR PRINTING PRESSES AND SIMILAR MACHINES.

APPLICATION FILED FEB. 23, 1907.

Fig. 1.

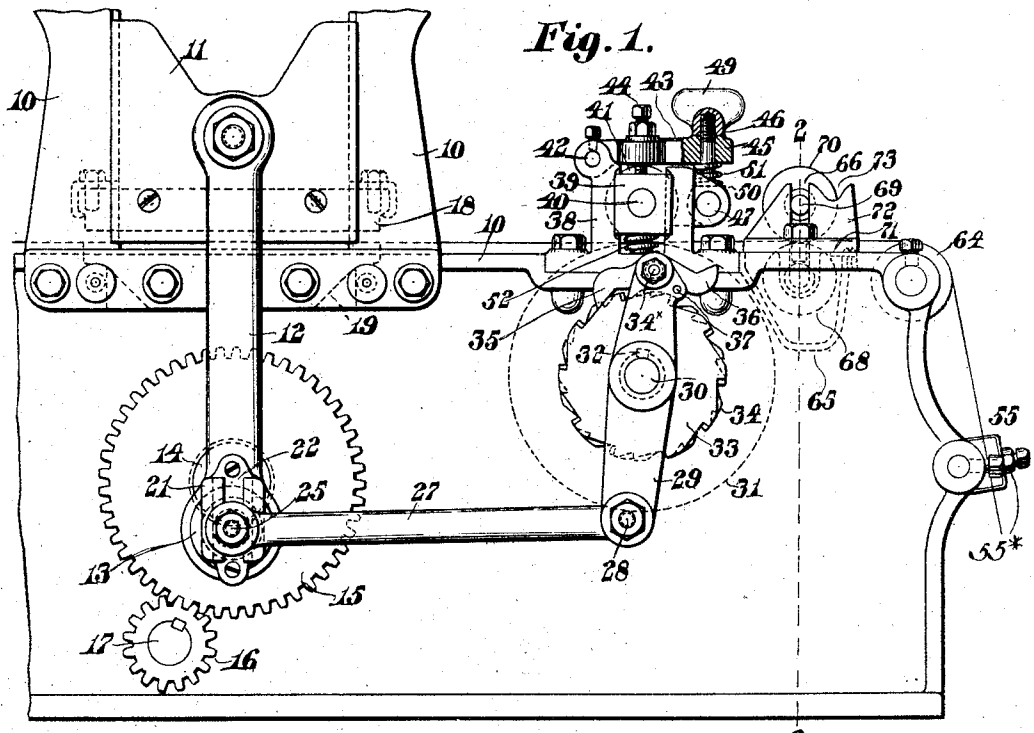


Fig. 2.

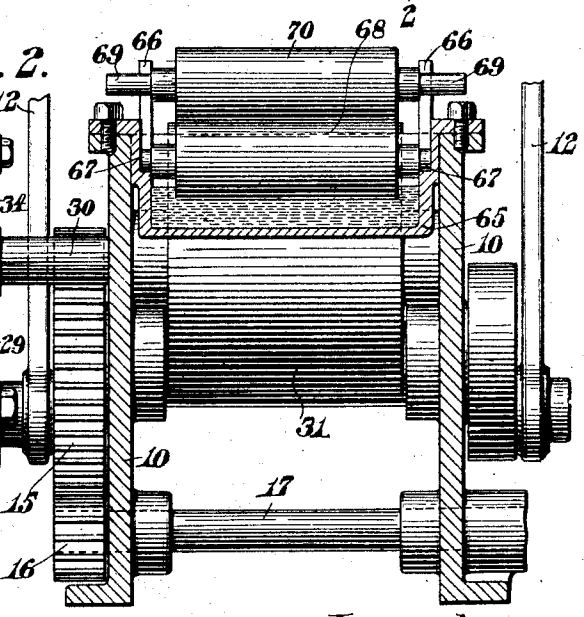


Fig. 3.

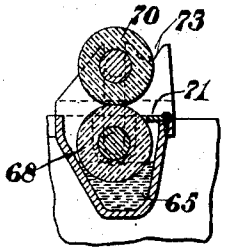
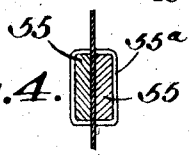


Fig. 4.



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DAMPENING DEVICE FOR PRINTING-PRESSES AND SIMILAR MACHINES.

No. 882,536. Specification of Letters Patent. Patented March 17, 1908.

Original application filed December 17, 1906, Serial No. 348,135. Divided and this application filed February 23, 1907. Serial No. 358,806.

To all whom it may concern:

Be it known that I, GEORGE W. PROUTY, a citizen of the United States of America, and a resident of Dorchester, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Dampening Devices for Printing-Presses and Similar Machines, (being a division of application filed December 17, 1906, Serial No. 348,135,) of which the following is a specification.

This invention relates to feed mechanisms for printing presses and similar machines and it has for its object the production of a machine of this class in which a suitable dampening device is provided adjacent to the feed rollers and which is adapted to remove from the material passing to said feed rollers the electricity generated therein.

The invention consists in certain novel features of construction and arrangement of parts which will be readily understood by reference to the description of the drawings and to the claims to be hereinafter given.

Of the drawings: Figure 1 represents a side elevation of a portion of a printing press embodying the features of the present invention. Fig. 2 represents a vertical section on line 2—2 on Fig. 1, looking in the direction of the arrow. Fig. 3 represents a transverse section through the dampening device, and Fig. 4 represents a section through the friction device for holding taut the strip of material as it is fed to the dampening rolls.

Similar characters designate like parts throughout the several figures of the drawings:

In the drawings, 10 represents the side frames of a printing press, said side frames being provided with reciprocating slides 11, having pivoted thereto one end of a draw bar 12, the opposite end of which is connected to a crank pin 13 mounted upon a revoluble shaft 14 extending transversely of the machine from one side frame to the other and mounted in bearings therein. This shaft 14 is driven by means of a gear 15 secured to said shaft by means of the crank pin 13 which has a seat partly in the gear 15 and partly in the shaft 14. The gear 15 meshes with a pinion 16 secured to the end of a revoluble shaft 17 mounted in suitable bearings in the frames 10 and driven in any suitable manner. The reciprocating frames 11 have secured thereto a type bed 18 adapted to coöperate with a platen 19 both of which may be of any well-known construction adapted for printing an impression upon material passed between the two. The crank pin 13 has secured thereto by means of a pin 20, a block 21, provided with a diametral groove 22 in which is mounted a block 23 adjustable lengthwise of said groove and adapted to be clamped thereto by means of the clamping nut 24. On the shank 25 of said block 23 is mounted a collar 26 extending through an opening in one end of a connector 27, the opposite end of which is pivoted at 28 to a pair of levers 29 loosely mounted upon one end of the revoluble shaft 30 extending transversely of the machine from one side frame 10 to the other and having secured thereto intermediate of said frames the lower feed roll 31.

Interposed between the levers 29 and keyed to the shaft 30 as indicated in dotted lines at 32 in Fig. 1 are two ratchet wheels 33 and 34 each provided with a different number of teeth from the other. To the free ends of each of the levers 29 is mounted on the connecting stud $34^{\times}$ the pawls 35 and 36 adapted to mesh, respectively, with the ratchets 33 and 34. Each of the levers 29 is provided with a supporting pin 37 adapted to support one of the pawls 35 and 36 when thrown out of engagement with its coöperating ratchet wheel. It is obvious that only one of the pawls 35 is in engagement with a ratchet wheel at a time and when the machine is in operation this pawl will coöperate with its ratchet wheel to produce an intermittent step by step motion to the feed roll 31 to feed the material to the impression mechanism or other mechanism operating upon the material fed. When a different feed is desired the engaging pawl may be thrown back out of engagement upon the supporting pin 37 and the other pawl thrown into engagement with its ratchet wheel. Immediately above the feed roll 31 on either side frame 10 is secured a slotted frame 38 in each of which is mounted a box 39 in which is mounted a trunnion 40 of the upper feed roll 41.

At 42 is pivoted a plate 43 provided at either end with threaded adjustable members 44 bearing upon the upper ends of the boxes 39 to create the proper degree of tension between the feed rolls 41 and 31 to properly operate upon the material being fed and control the amount of dampness in said strip

as it is fed to the impression devices. These member 44 are adjustable for different thicknesses of stock and when once adjusted it is undesirable to change the adjustment every time a new piece of material of the same thickness is to be inserted between the feed rollers. To provide for this the plate 43 has an extension 45 through which extends a shank 46 pivoted at 47 to ears 48 extending from the frame 38. To the upper end of the shank 46 is threaded thereto a clamping nut 49 and interposed between the projection 45 and the shoulders 50 of said shank 46 is a spring 51. It is obvious that when the nut 49 is loosened the spring 51 will act upon the member 43 to move it about its pivot 42, thereby lifting the adjusting members 44.

Beneath the boxes 39 are spiral springs 52 which operate upon the said boxes to lift them and cause them to follow the adjusting members 44 when lifted by the movement of the member 43 about the pivot 42, thereby separating the rollers 41 and 31 and permitting readily the insertion of the new material between the same. When this new material has been inserted between the rollers, by means of the nut 49, the plate 43 may readily be returned to its normal position without varying the adjustment of the threaded members 44.

In order to more perfectly feed the strips of material between the feed rolls it is essential that a friction mechanism 55 be provided to hold the material taut as it is fed between the rollers 31 and 41. This friction mechanism consists of a pair of plates or strips secured to the side frames by screws 55* and held together by means of a band 55[a] of yielding material so that when the strip of material is inserted between the two plates the band will normally hold a strip in contact with either face of said material thereby creating a friction upon the strip of material and holding it taut as it is moved forward by means of the feed mechanism. As the material passes between the plates of this friction device 55 a certain amount of electricity is generated in the material which it is very necessary should be eliminated therefrom before it is presented to the impression mechanism. In order to accomplish this a suitable dampening device is interposed between the friction device and the feed rollers. This dampening device consists of a trough 65 supported on the side frames 10 having suitable slots 66 at either end for the reception of the trunnions 67 of the lower dampening roll 68 and the trunnions 69 of the pressure roll 70. The dampening roller 68 is partly immersed in water or other suitable liquid contained within the trough 65, a certain amount of which is collected on the surface thereof as the roller is revolved by its contact with the material being fed thereover. A suitable doctor plate 71 is provided which removes all surplus material from said dampening roller and permits only the requisite amount of liquid to be applied to the under face of the material passing between the rollers 68 and 70. The roller 70 is of sufficient weight to produce a suitable pressure upon the material and squeeze therefrom any surplus liquid which may have accumulated thereon. The side frames 72 are provided at either end with a depression 73 in which the trunnions 69 of the pressure roll may be inserted to hold the same out of position while new material is being passed over the dampening roller between the feed rolls 31 and 41, these trunnions 69 being of sufficient length to extend beyond the side plates so that they may be readily handled by the operator.

This makes a very convenient apparatus for feeding strips of material to a printing press or any other similar apparatus and eliminating the electricity from the material being fed thereto, and it is believed that from the foregoing description the operation and its advantages will be fully apparent.

Having thus described my invention, I claim:

1. In a printing press, the combination with positively driven mechanism adapted to feed a strip of material between the platen and type bed; of a trough adapted to contain liquid; a dampening roller revoluble therein over which said strip is adapted to move as it moves toward said feeding mechanism; a pressure roller revoluble therewith; and means on either side of said strip holding it taut as it passes to said dampening device.

2. In a printing press, the combination with positively driven mechanism adapted to feed a strip of material between the platen and type bed; of a friction device between two parts of which said strip passes adapted to hold it taut; a trough adapted to contain liquid; a dampening roller revoluble therein over which said strip of material is adapted to move; and a pressure roller revoluble therewith.

3. In a printing press, the combination with positively driven mechanism adapted to feed a strip of material between the platen and type bed; of a trough adapted to contain liquid; a dampening roller revoluble therein over which said strip of material is adapted to move; means for applying pressure to the material as it passes over said roller; and friction strips between which said strip passes to said dampening device.

4. In a printing press, the combination of a trough adapted to contain liquid; a dampening roller revoluble in part therein; a pressure roller revoluble with said dampening roller; a friction device bearing on both sides of the strip of material through which said strip is fed to the dampening roller;

and a pair of feed rolls interposed between the impression device and said trough.

5. In a printing press, the combination of a trough adapted to contain liquid; a dampening roller revoluble in part therein; a pressure roller revoluble with said dampening roller; a friction device bearing on both sides of the strip of material through which said strip is fed to the dampening roller; a pair of feed rolls interposed between the impression device and said trough; and means for adjusting the pressure of said feed rolls to regulate the amount of dampness in said strip.

Signed by me at Boston, Mass., this 21st day of February, 1907.

GEORGE W. PROUTY.

Witnesses:
WALTER E. LOMBARD,
EDNA C. CLEVELAND.