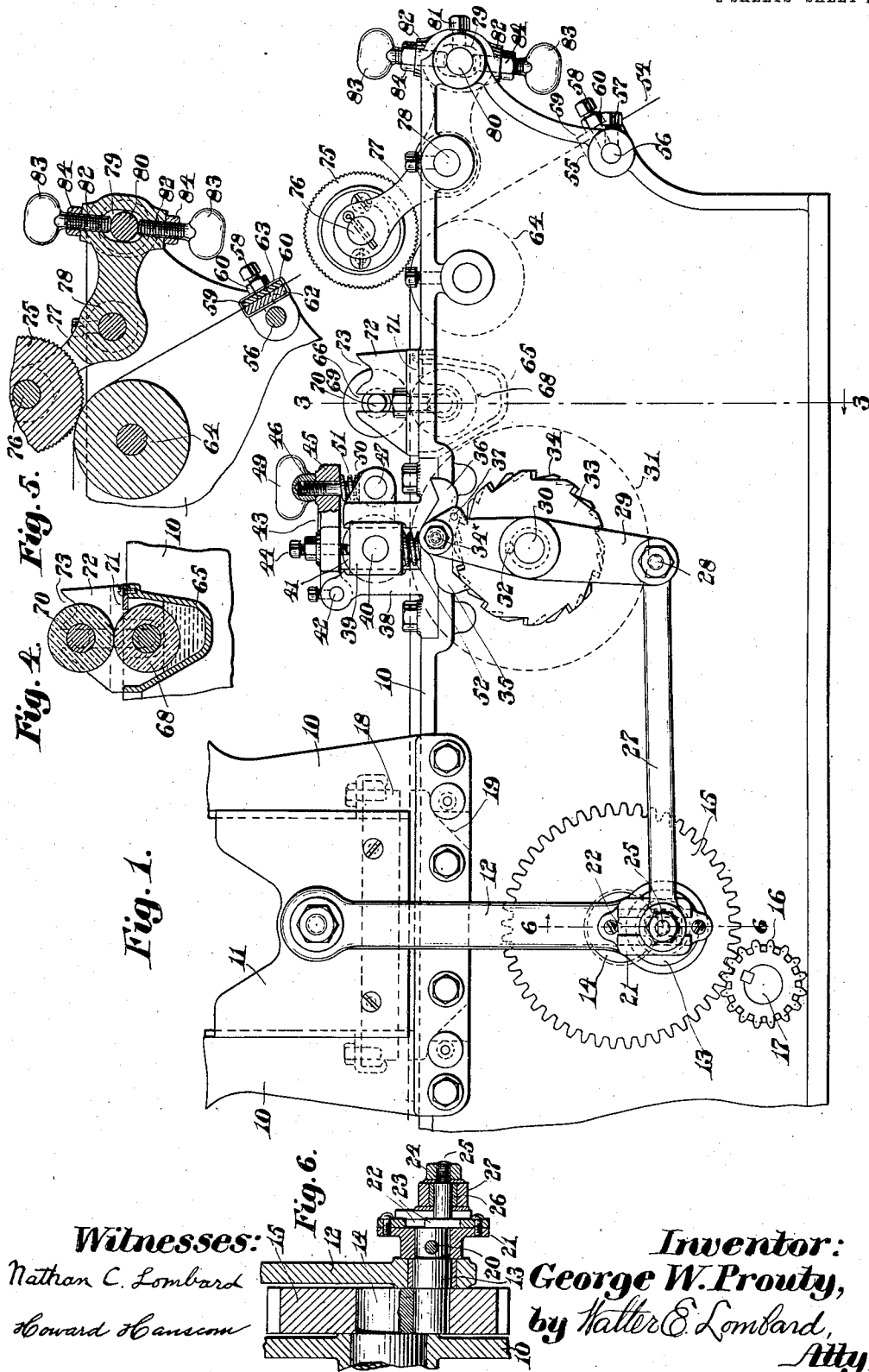


W. PROUTY.

FEED MECHANISM FOR PRINTING PRESSES AND SIMILAR MACHINES.

APPLICATION FILED DEC. 17, 1906.

2 SHEETS—SHEET 1.



Witnesses:
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No. 869,329.

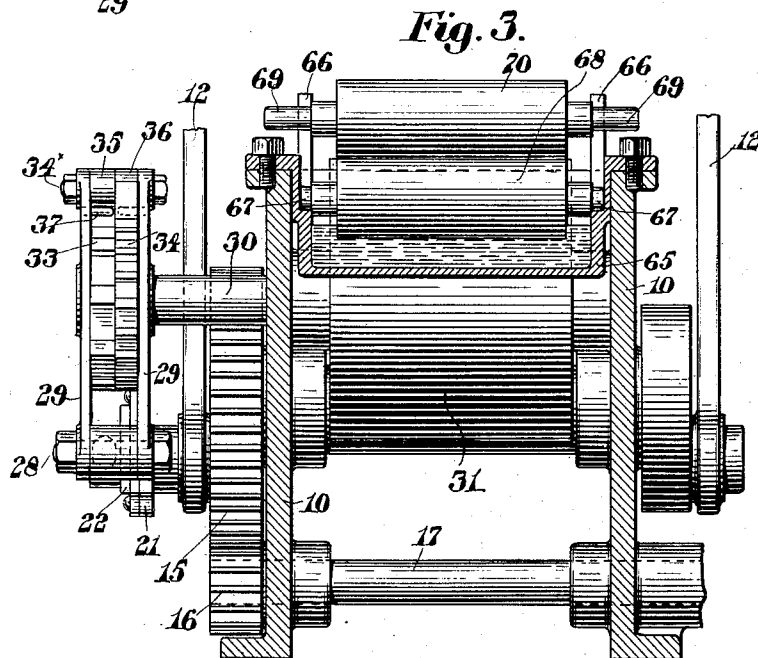
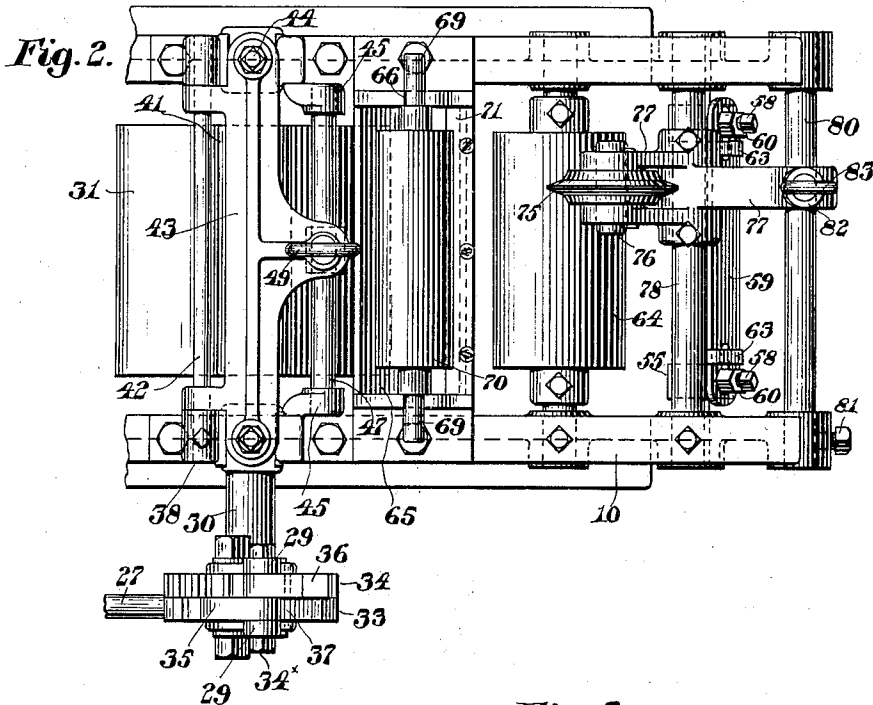
PATENTED OCT. 29, 1907.

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UNITED STATES PATENT OFFICE.

GEORGE W. PROUTY, OF DORCHESTER, MASSACHUSETTS.

FEED MECHANISM FOR PRINTING-PRESSES AND SIMILAR MACHINES.

No. 869,329.

Specification of Letters Patent.

Patented Oct. 29, 1907.

Application filed December 17, 1906. Serial No. 348,135.

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 Feed Mechanisms for Printing-Presses and Similar Machines, of which the following is a specification.

This invention relates to feed mechanism for printing presses and similar machines, and has for its object the production of a machine of this class in which a suitable work feeding mechanism is provided in which the tension upon the feed rolls may be regulated and which provides a ready means of separating the rolls for the insertion of new stock without changing the adjustment of the tension regulating devices.

It has for a further object the provision in a suitable perforating device interposed between the friction mechanism and the feed rollers of suitable means for regulating the operation thereof.

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 plan of the end of a machine of this class. Fig. 3 represents a vertical section on line 3—3 on Fig. 1 looking in the direction of the arrow. Fig. 4 represents a transverse section through the dampening device. Fig. 5 represents a transverse section through the friction device and the mechanism for regulating the operation of the perforator, and Fig. 6 represents a section of the crank mechanism.

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 cooperate 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 there-

to 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 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 cooperating 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 cooperate 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. These members 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 op-

erate 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.

10 In order to more perfectly feed the strips of material between the feed rolls it is essential that a friction mechanism be provided to hold the material 54 taut as it is fed between the rollers 31 and 41. To provide for this the members 55 are clamped to a shaft 56 extending transversely of the machine from one side frame 10 to the other, said shaft being held in position by means of the set screw 57.

The blocks 55 are adjustable about the axis of the shaft 56 and are secured in adjusted position by means of the set screw 58. Extending from one block 55 to the other is a strip 59 clamped in position by means of the nut 60. A wooden strip 62 is held against the inner face of the strip 60 by means of rubber bands 63 or other equivalent means and the material 54 is passed between these strips 60 and 62 and sufficient tension is created thereon to keep the material taut as it passes over the idler roller 64 to the feed rolls 31 and 41. As the material passes between the plates 60 and 62 of this friction device 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.

Cooperating with the idler roller 64 is a perforator 75 mounted upon a shaft 76 revoluble in bearings in the end of a lever 77 secured at 78, the ends of which are mounted in bearings in the side frames 10. The opposite end of the lever 77 is provided with a slot 79 through

which extends a shaft 80 extending from one side frame 10 to the other and secured in position therein by means of the set screw 81. The slot 79 is elongated and at either end thereof the lever 77 is provided with bosses 82 through which is threaded the adjusting members 83 the inner ends of which bear upon said shaft 80 and which are held in adjusted position by the lock nuts 84. By this construction it is obvious that any adjustment may be readily accorded to the perforator so that any degree of bite upon the material may be secured as it passes over the idler supporting roller 64.

This makes a very convenient apparatus for feeding strips of material to a printing press or any other similar apparatus 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 a type bed, a platen, and means for giving an impression to stock passed between the two; of a pair of feed rolls; means operable by the impression device for intermittently rotating one of said rolls; blocks slidable toward and from the axis of said roll and supporting the other roll; a pivoted member; adjustable devices supported by said pivoted member bearing upon said blocks; springs for forcing said blocks and devices in contact; and an independent adjustable tension mechanism interposed between the free end of said pivoted member and the frame to which said member is pivoted.
2. In a printing press, the combination with a type bed, a platen, and means for giving an impression to stock passed between the two; of a pair of feed rolls; means operable by the impression device for intermittently rotating one of said rolls; blocks slidable toward and from the axis of said roll and supporting the other roll; means for operating said blocks comprising a pivoted member; adjustable devices bearing upon said blocks; springs for forcing said blocks and devices in contact; a threaded rod pivoted to a fixed point and extending through said member; a spring surrounding said rod; and an adjustable nut on the threaded end of said rod.
3. In a printing press, the combination with a type bed, a platen, and means for moving one of said elements into position to cooperate with the other; of a pair of feed rolls; a pivoted perforator provided with a slotted arm; a fixed rod extending through said slot; and adjustable members in said lever cooperating with said rod to regulate the operation of said perforator.
4. In a printing press, the combination with a type bed, a platen, and means for giving an impression to stock passed between the two; of a pair of feed rolls; means operable by the impression device for intermittently rotating one of said rolls; blocks slidable toward and from the axis of said roll and supporting the other roll; means operable upon said blocks for normally separating said rolls; a pivoted member; adjustable devices bearing upon said blocks; a threaded rod pivoted to a fixed point and extending through said member; a spring surrounding said rod; and an adjustable nut on the threaded end of said rod.
5. In a printing press, the combination with a type bed, a platen, and means for giving an impression to stock passed between the two; of a pair of feed rolls; means operable by the impression device for intermittently rotating one of said rolls; blocks slidable toward and from the axis of said roll and supporting the other roll; springs operable upon said blocks for normally separating said rolls; a pivoted member; adjustable devices bearing upon said blocks; a threaded rod pivoted to a fixed point and extending through said member; a spring surrounding said rod; and an adjustable nut on the threaded end of said rod.
6. In a printing press, the combination with a type bed,

a platen, and means for giving an impression to stock passed between the two; of a pair of feed rolls; means operable by the impression device for intermittently rotating one of said rolls; blocks slidable toward and from the
5 axis of said roll and supporting the other roll; means operable upon said blocks for normally separating said rolls; a pivoted member; members threaded to said pivoted member bearing upon said blocks; a threaded rod pivoted to a fixed point and extending through said member; a

spring surrounding said rod; and an adjustable nut on the 10 threaded end of said rod.

Signed by me at Boston, Mass., this 14th day of December, 1906.

GEORGE W. PROUTY.

Witnesses:

WALTER E. LOMBARD,
EDNA C. CLEVELAND.