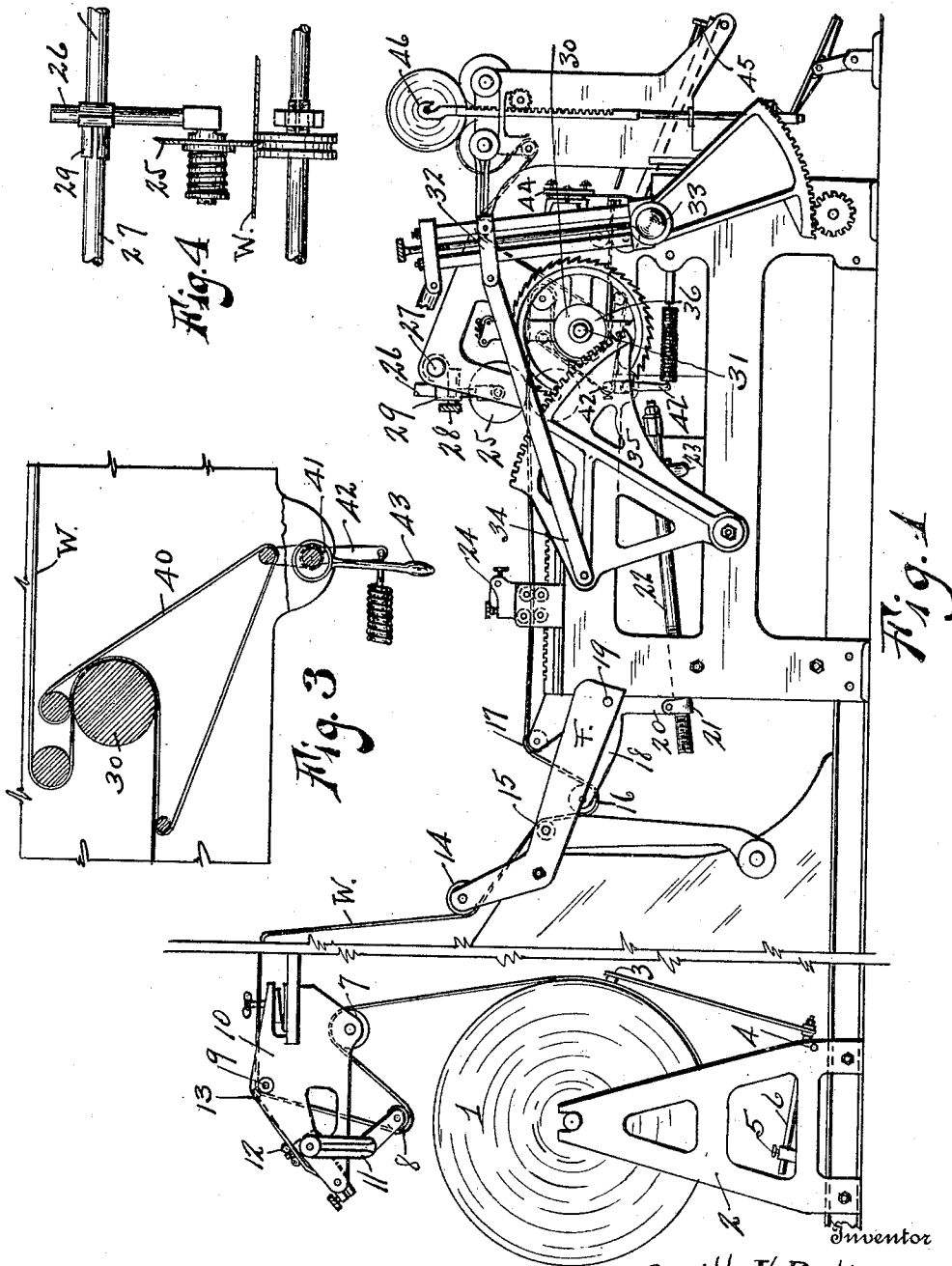


O. V. DUTRO AND A. S. BURROUGHS,
WEB FEEDING MECHANISM.
APPLICATION FILED APR. 8, 1919.

1,402,848.

Patented Jan. 10, 1922.

2 SHEETS—SHEET 1.



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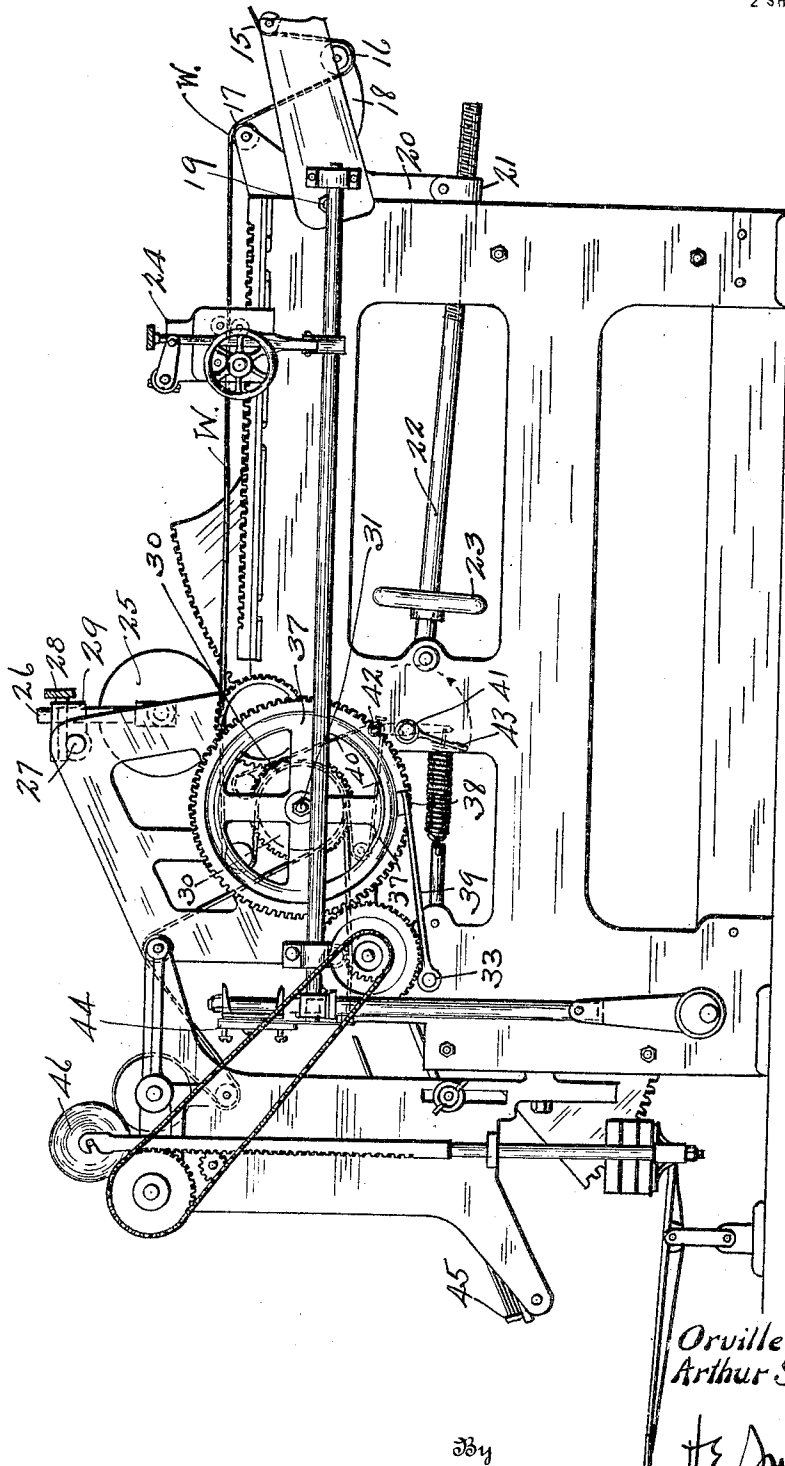


Fig. 2

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ORVILLE VINCENT DUTRO AND ARTHUR S. BURROUGHS, OF SPOKANE, WASHINGTON.

WEB-FEEDING MECHANISM.

1,402,848.

Specification of Letters Patent.

Patented Jan. 10, 1922.

Application filed April 8, 1919. Serial No. 288,545.

To all whom it may concern:

Be it known that we, ORVILLE V. DUTRO and ARTHUR S. BURROUGHS, citizens of the United States, residing at Spokane, in the county of Spokane and State of Washington, have invented certain new and useful Improvements in Web-Feeding Mechanisms, of which the following is a specification.

The present invention relates to an improved web feeding mechanism particularly appropriate for use in connection with a printing press of the Gordon type or hand feed press, and the subject matter of the present invention is designed to facilitate the progress of the web through the press from the supply roll to the re-winding roll, the latter being employed to re-wind the residue of the web from which strips have been longitudinally cut or severed, and then subsequently the strips themselves having been cut into sheets.

The web is passed through the machine and the impression is placed on the upper face thereof so that the work of the press is visible and can accordingly be regulated and controlled, and to prevent marring the work of the press on the web the rolls that contact with the printed side of the sheet are in all cases provided with a roughened surface, as sand-paper so that the face of the supporting roller will not contact with the printed face, thus preventing smearing or removal of the fresh ink from the printed sheet.

In its progress through the printing machine, the web or paper is drawn from the supply roll under regulated and controlled movement, and is guided to pass accurately through the printing press, and after being printed, the sheet or strip of paper is cut longitudinally and then this longitudinal strip is cut transversely into sheets which are finally deposited on a receiving board at the rear end of the machine. The proper tension is maintained on the web as it passes through the machinery and the intermittent movement required in order that the web may remain stationary while receiving its impression, is provided for by a web control device to prevent slack in the web.

Some of the features of the present machine are separately embodied in various applications for patents and are therein specifically described and claimed, and therefore their details are not herein set forth.

The two main figures of the drawings il-

lustrate side views of the machine in so far as it is necessary to illustrate it.

Figure 1 is a side view of the machinery by which the web is manipulated as it passes from the supply roll to the receiving board for printed sheets and to the rewind roll for unused strips of the web, the actual printing part of the printing press or machine being eliminated, as indicated by broken dash lines.

Figure 2 is an enlarged, side elevation, from the side of the machine opposite that of Figure 1, showing only the part of the machine through which the web passes after leaving the press.

Figure 3 is a cross section of that portion of the machine showing the draw roll, the draw roll tapes, and the eccentrically mounted tension devices and eccentric lever whereby tension is relieved upon the tapes.

Figure 4 is a partial cross section showing the relative position of the disk cutter attachment with respect to the web.

Starting with the paper roll 1 in Figure 1 it will be seen that the roll is journaled in a supporting frame 2 and provided with a retarding or brake device 3, comprising a transverse bar pivoted at 4 in the frame 2, and equipped with an adjustable weight 5 on the arm 6 designed to hold the bar at all times against the web as it leaves the roll 1 and regulate the feed of the roll.

Above the roll is located the driven roll 7 and guide rolls 8 and 9 around which the web W passes, and these rolls are supported from the brackets 10, the roll 8 being journaled in swinging arms 11 to take up slack in the web or to provide the proper tension for the feeding device of the web. At this point also are located friction fingers, as at 12, 13, for contact with the web to accurately guide it to the printing press, not shown.

After the web emerges from the printing press with its printed impression, it passes over a set of supporting rollers 14, 15, 16, 17, which form a web-control device for coordinating the printed web with the device or cutter for severing it into sheets. The control device or compensator, as it is termed in the trade, includes the three stationary rolls, 14, 15, 17 that are supported and journaled in suitable brackets forming part of the frame F, while the movable and adjustable roller 16 is journaled in a pair of pivoted arms, fulcrumed at 19 in the frame and

the short arm 20 has a threaded nut 21 pivoted thereon through which the screw bar 22 passes, the bar being equipped with a hand wheel 23. It will be remembered that the web moves with a step by step movement or intermittent movement through the machine, so that when the hand wheel 23 is turned the sheet that is to be cut from the web is positioned in proper relation with the printed matter, by the action of the screw bar on the pivoted arms 18 which are caused to swing on their fulcrum to raise or lower the roller 16.

Preliminary to transverse cutting of the web, it may be perforated or punched, as at 24, and the web is also cut longitudinally before it is cut transversely to form the completed printed sheet. The longitudinally cutting operation is accomplished by the beveled edge disk or cutter 25 which is located above the web and journaled in a stem or holder 26, and preferably the cutter disk is spring pressed to bear upon the web as it passes over the die block 27 shown in dotted lines, Fig. 1. The disk is vertically adjustable through its stem in the transverse bar 27, and may be held in adjusted position by the set screw 28, and the disk is also adjustable laterally on the transverse bar through the holder 29, so that the width of the sheet to be cut may be first determined by moving the block and cutter laterally to the desired point for the disk to bear on the web. Then as the web passes under the disk and between said disk and its die block the web is cut longitudinally the length of the sheet to be subsequently severed from the web, leaving a continuous portion of the original web to be handled by the machine.

The step by step or intermittent feed of the web is accomplished by the draw roll 30 journaled transversely of the machine on its shaft 31, and the roll, over which the web passes and positively engages, is turned, from the power driven bed and platen press (not shown) through the instrumentality of the oscillating arm 32, pivoted in the frame on its rock shaft 33, and the pitman 34, segmental rack 35, rack pinion 36 on the shaft 31, and suitable clutch mechanism which permits the rotation of the draw roll in one direction only to properly feed or draw the web, the pitman 34 being adjustably connected with the arm 32 to properly regulate the amount of pull imparted to the web and thus the length of the sheet that is to be cut from the web may be increased or diminished as conditions warrant. In connection with this draw-feed of the web, a brake device is utilized to prevent extra motion which might be caused by momentum. Thus it will stop and hold the web stationary at the proper time for the punching and transverse cutting operations. Thus, a hand

wheel 37 is provided on the shaft 31 outside the frame, and a brake block 38 with friction head of leather or other friction material, bears on the periphery of the wheel, the block being carried at the end of the brake arm 39 fixed on an extension outside the frame of the rock shaft 33. The parts are so arranged that when the draw roll is being rotated, the movement of the rock shaft 33 swings the brake block 38 away from the hand wheel and the roll is free to revolve, then when the rock shaft is reversed the brake is applied at the end of the thrust to the wheel to stop it and hold it at the proper point for the operation of the punching and cutting devices. The hand wheel 38 may also be utilized for threading the web through the machine in its initial movement; thus facilitating the preparation for work.

Another one of the meritorious features of the device is embodied in the eccentric arrangements whereby the strain is removed from the draw roll tapes 40, when not in operation. Normally the tapes are held in a comparatively taut condition, but overnight, for instance, when the press is not operating it is desirable that the tension be released, and for this purpose an eccentric shaft 41 is located beneath, or at a lower level than the draw roll, and the tapes are passed around the tension device 42 on the shaft. To relieve the tension of the tapes, the eccentric shaft is turned by grasping the hand lever 43 and swinging it in the proper direction as indicated.

The transverse cutter is indicated at 44 and it will be understood that this cutting device, which reciprocates in unison with the intermittent feed of the web and the punching machine or device, severs into sheets, only the printed strip of the web i. e. that portion of the strip upon which the impressions have been laid in the printing press, and after cutting, these printed sheets fall upon the receiving board 45 at the extreme end of the machine. The remainder of the web, which is a continuous strip, is wound upon the rewinding roll 46, as particularly detailed and specified and claimed in a co-pending application for patent.

The various rolls, such as 14, 16 and 30 that contact with the printed face of the web, are faced with a sand-paper or an abrasive so that the impression will not be removed or offset and in the case of the roll 30 so that a positive grip will be effected between the roll and the web to prevent slippage. Operating with the roll 30 are the series of individually tensioned tapes 40 which press the web against the roll 30 and insure positive contact or grip.

Claim—

The combination with power operating mechanism a supply roll and positively ac-

tuated means for imparting an intermittent movement to a web therefrom, means for controlling the movement of the web and means for positively holding the web stationary between its movements, a device for severing the web into strips, a transverse cutting device for severing a portion of the web into strips, a re-winding device, and connections from said operating mechanism for synchronously actuating said operating means and devices. 10

In testimony whereof we affix our signatures.

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