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 [21] Appl. No. **704,850**  
 [22] Filed **Feb. 12, 1968**  
 [45] Patented **Oct. 20, 1970**  
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 [32] Priority **May 20, 1967**  
 [33] **Germany**  
 [31] **Sch 40,746**

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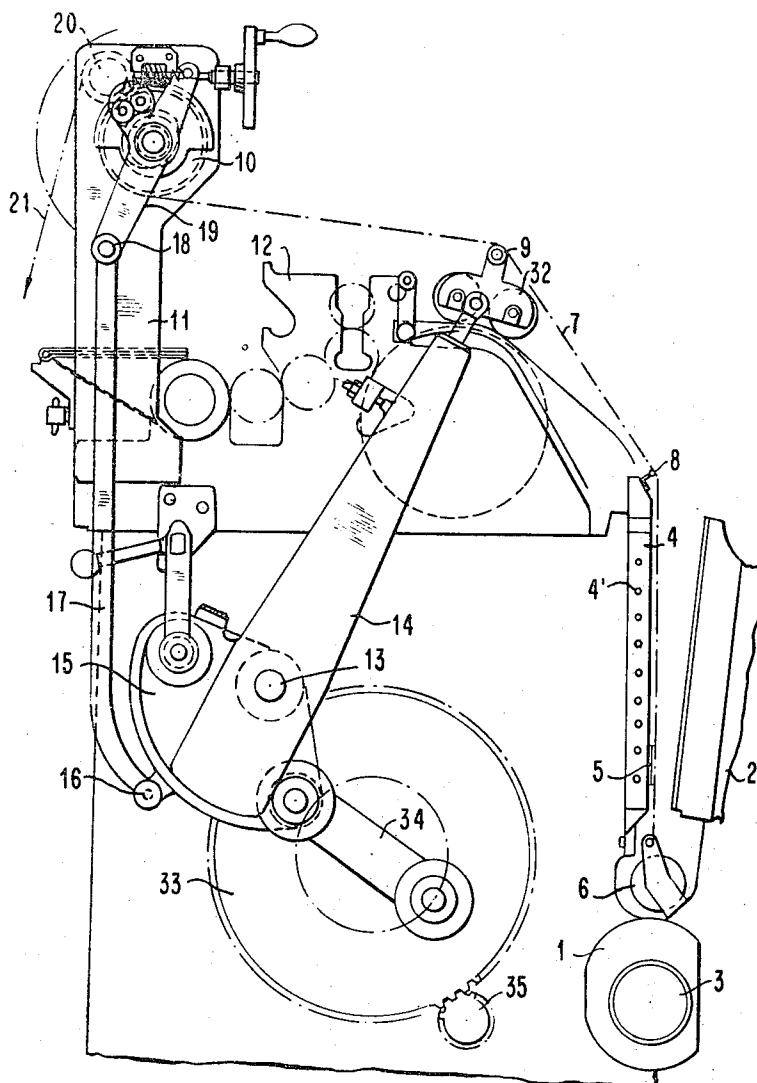
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[54] **DEVICE FOR PROCESSING COLORED FOILS ON A BED-AND-PLATEN PRINTING PRESS**  
 5 Claims, 4 Drawing Figs.

[52] U.S. Cl. .... **101/27,**  
 101/11, 101/336, 101/288  
 [51] Int. Cl. .... **B41f 1/44,**  
 B41f 19/02; B44b 5/00  
 [50] Field of Search..... 101/27, 9,  
 10, 11, 297, 287, 336, 288

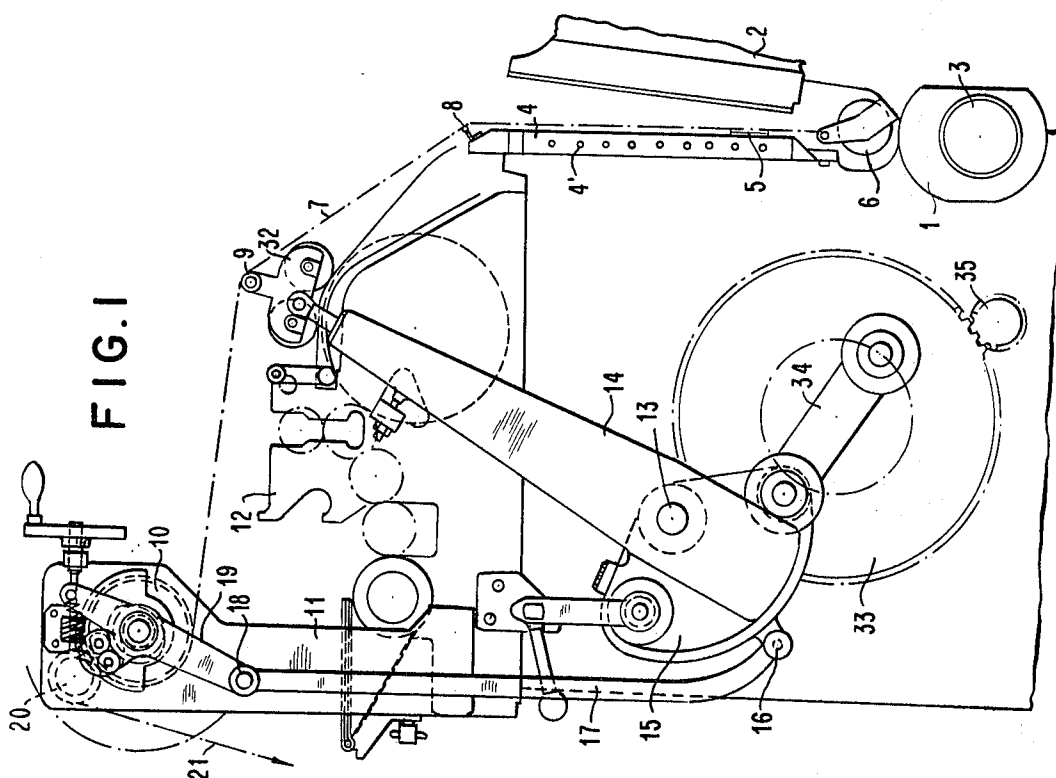
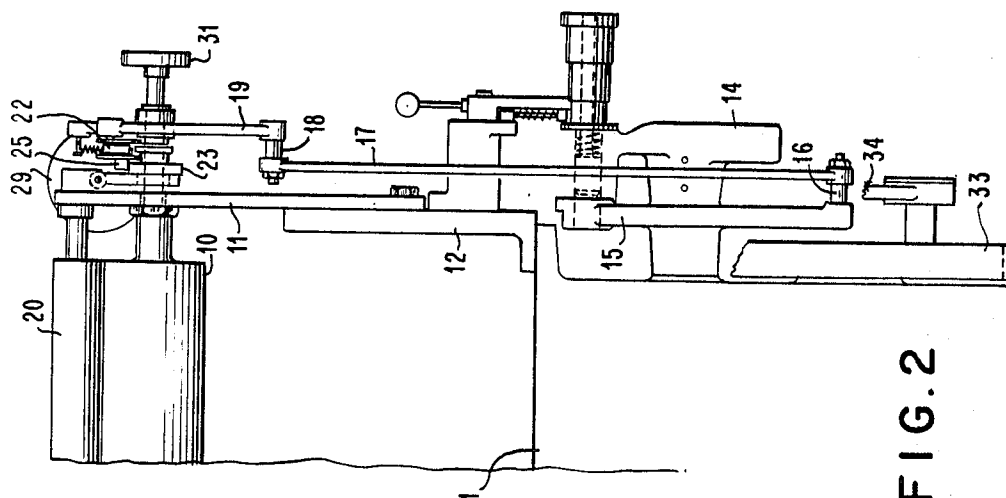
**ABSTRACT:** For use in combination with a bed-and-platen printing press having a roller frame shaft, an oscillating lever freely mounted on the shaft, and a pair of roller frame arms respectively mounted at both ends of the shaft during normal printing operation of the press, the roller frame arms being disconnectible from the shaft, and a device attached to the printing press for processing colored foils, comprising means for feeding a foil through the press, and a drive mechanism for the feeding means connected to the oscillating lever, the pair of roller frame arms being respectively disconnected from the ends of the shaft during the processing of the colored foils by the device.

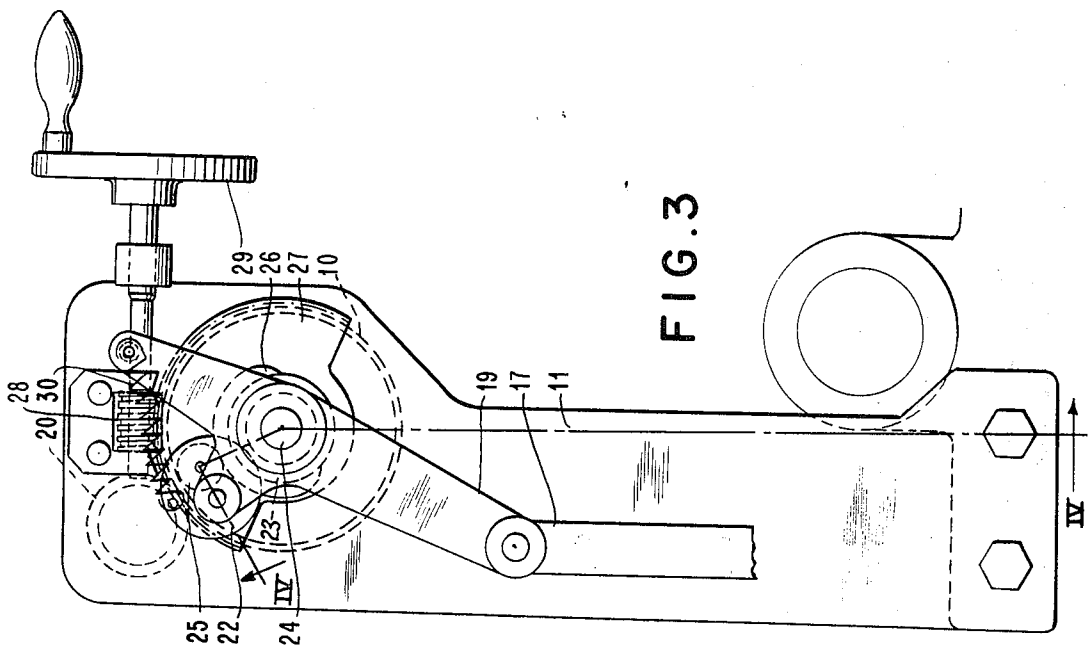
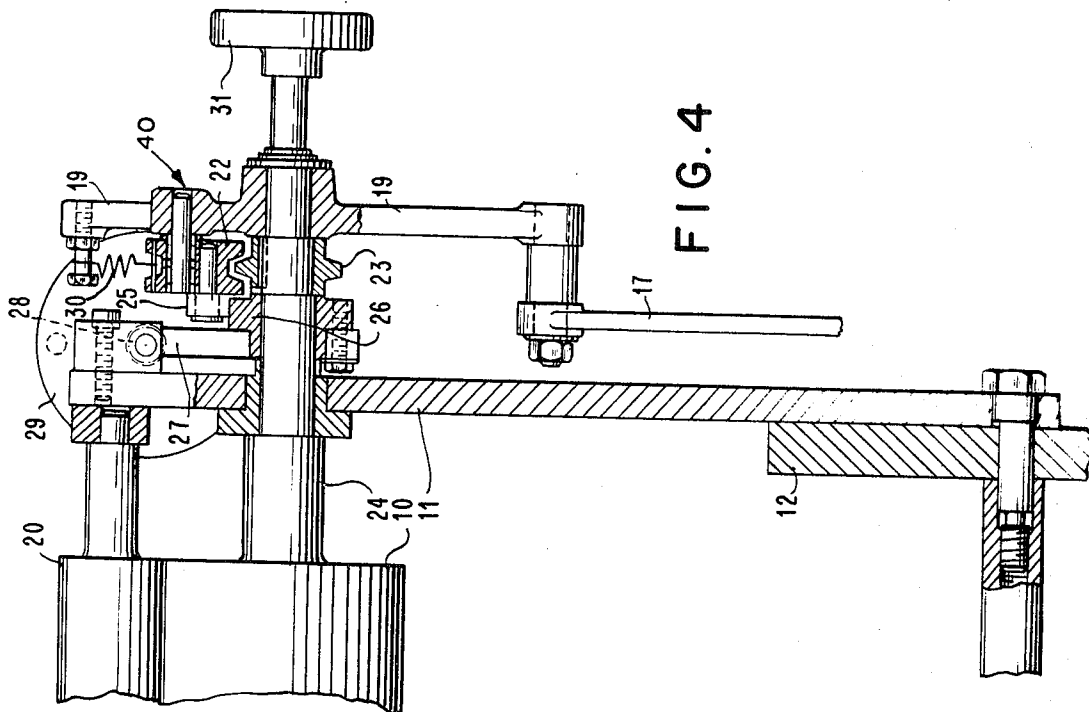


**Patented Oct. 20, 1970.**

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# DEVICE FOR PROCESSING COLORED FOILS ON A BED-AND-PLATEN PRINTING PRESS

My invention relates to device for processing colored foils on bed-and-platen printing presses and, more particularly, for effecting colored foil embossing with such process.

Heretofore, special platen printing presses have been employed for colored foil embossing by stamping out the embossment with heated stamping dies from a strip or band of metallic foil unwound from a roll thereof. Such a foil generally is formed of a lamination of transparent plastic material and either a gold, silver or otherwise colored metal lamination. More recently, devices have become known which are adapted to be attached to conventional bed-and-platen printing presses to effect colored foil embossing accordingly. Thus, the invention of the instant application is directed to such attachment devices.

Requirements of attachment devices of this type are that they be attachable to the conventional platen printing presses in a relatively simple manner and that the attachment device, when installed, offer no hindrance or obstruction to the operation of the automatic printing press to which it is attached when conventional printing operations are to be carried out thereon. The heretofore known attachable devices of the aforementioned type have proven, however, to be deficient in these just-mentioned requirements because, for example, the control mechanism of the lifting and ductor cylinders or rollers in the automatic printing press per se as well as other mechanisms thereof are employed as the mechanism for feeding the foils to the attachable device. Consequently, these heretofore known attachable devices must be disassembled or detached from the control mechanism of the printing press per se in order to carry out conventional printing operations and, when again sought to be used, the attachable devices must be reassembled or reconnected to the control mechanisms of the printing presses with relatively great expenditure of time and labor.

It is accordingly an object of my invention to provide such a foil embossing attachment device which will avoid the aforementioned disadvantages of the heretofore known devices of this type and which will more specifically not require disassembly thereof from the conventional printing press per se when the latter is to be used for conventional printing operations, so as to thereby conserve time and labor.

With the foregoing and other objects in view, I provide foil embossing attachment device with a drive for a mechanism feeding the foils which is operatively connected to the platen press oscillating lever loosely mounted on the drive shaft of the platen press roller frame, the platen press roller frame arms secured at both sides of the drive shaft being detachable therefrom.

Consequently, no devices or mechanisms forming part of the conventional platen printing press proper are required for use in the processing of the foils with my attachment device, and it is therefore possible to leave the installed foil embossing attachment device in the machine at all times after installation thereof since the disposition of the feed mechanism for the foils is so adjusted that no obstacle is presented to the operation of the printing press for conventional printing.

The operative connection of the feed mechanism for the colored foils to the oscillating lever is advantageous for the roller movement when the reciprocating movement of the printing rollers is discontinued by uncoupling the roller frame arms from the ends of the drive shaft. Similarly, the employment of a foil guide in the form of a guiding pin located above the now stationary printing rollers is of particular advantage in accordance with the invention.

In accordance with a further feature of the invention, the foil feeding mechanism is located sufficiently above the inking apparatus and the ink supply container for the platen printing press so that an unhampered operation of the inking apparatus is possible in spite of the fact that the device of my invention remains installed in the printing press during normal printing operation of the press.

In accordance with additional features of the invention, the feed mechanism for the colored foils comprises a feed roller and is controllable infinitely variably from zero feed to, for example, a feed of 100 mm. of roll foil by a trip gear operatively connected with the feed roller. The device of my invention is particularly suitable for installation on the well-known conventional Heidelberg automatic platen printing presses.

Other features which are considered as characteristics for the invention are set forth in the appended claims.

Although the invention is illustrated and described herein as device for processing colored foils on a platen printing press, it is nevertheless not intended to be limited to the details shown, since various modifications and structural changes may be made therein without departing from the spirit of the invention and within the scope and range of equivalents of the claims.

The construction and method of operation of the invention, however, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings, in which:

FIG. 1 is a side elevational view of part of a platen printing press to which there is attached the device for processing colored roll foils in accordance with my invention;

FIG. 2 is a view of FIG. 1 as seen from the left-hand side of FIG. 1;

FIG. 3 is an enlarged side elevational view of the support for the foil-processing device with infinitely variable control of the feed rollers secured to the inking mechanism as shown at the upper left-hand side of FIG. 1; and

FIG. 4 is a view of FIG. 3 as seen from the left-hand side of FIG. 3 and taken partly in section along the line IV-IV in FIG. 3.

Referring now to the drawings, there is shown in FIGS. 1 to 4 a base frame 1 of a bed-and-platen printing press. In a known manner, a printing platen 2 is mounted so that it is reciprocatingly swingable about a shaft 3 so as to successively present sheet material such as paper, supplied thereto by conventional nonillustrated means, into substantial abutment with a substantially perpendicularly disposed type bed or matrix 4 on which one or more stamping dies are secured. A heating device 4', such as a heating coil, is embedded in the matrix 4. A roll of foil 6 is revolvably mounted between suitable brackets located on the printing platen 2 and consequently follows the reciprocable swinging movement of the printing platen 2. The foil 7 extends along a path which places it in contact with the heated die 5 just before the platen 2 swings a sheet into contact therewith so as to effect embossment thereof. A clean fusion of the metallic foil color pigment and transfer thereof to the sheet being embossed from the transparent film on which the foil was laminated are thereby afforded. The path of the foil 7 extends over guide rod 8 and 9 to a feed roller 10. The feed roller 10 is mounted between two supports 11 which are secured on both sides to the side walls 12 (only one shown) of the inking mechanism of the printing press.

The drive for the feed roller 10 is provided by the oscillatable lever 15 freely mounted on the shaft 13 at both ends of which the respective roller frame arms 14 (only one shown) are mounted when the press is operated for conventional printing. The roller frame arms 14 are suitably disconnectible from the shaft 13 in order to effect the foil embossing in accordance with my invention. The tie rod 17 is articulately connected with the oscillatable lever 15 by means of a bolt 16. The upper end of the rod 17 is connected by a bolt 18 with a respective double-armed lever or bell crank 19 which is rotatably mounted on the end pin 24 (FIG. 4) of the rotary feed roller 10. A rubber roller 20 yieldingly abuts the feed roller 10. The foil 7, guided in a path below the feed roller 10 and the rubber roller 20 and the diverted portion 21 of the employed foil are advanced, by means of an infinitely variable, controllable foil indexing means or trip lever mechanism 40 including the bell crank 19, a distance of from zero to 100 mil-

limeters for example, for each embossing operation, i.e. for each swing of the platen 2 toward the die 5, whereby the oscillatable lever 15 freely mounted on the shaft 13 actuates the tie rod 17 and thereby the feed mechanism.

The feed mechanism for the foil 7 comprises, for example, a clamping stop member or detent wherein, as shown in FIGS. 2 to 4, a trip gear mechanism 40 including a roller 22 having a wedge-shaped profile (see FIG. 4, particularly) meshes with a roller 23 of corresponding matching profile on the periphery thereof, which is keyed or wedged on the pivot pin or journal 24 of the feed roller 10. The trip gear mechanism 40 further includes a roller 25 coaxially mounted alongside the roller 22 for running around on or following a cam 26 which is mounted for free rotation on the pin 24. The cam 26 is secured by screws to a circular segment member 27 which is capable of being turned by means of a helical screw 28 advanced by an adjusting wheel 29. By suitably adjusting the angular position of the cam 26 relative to the pin 24, the length of feed of the foil 7 or the angular displacement of the feed roller 10 is thereby regulated in that the roller 22 which has the wedge-shaped profile is maintained disengaged from the roller 23 for a longer or shorter period during the oscillating movement of the double-armed lever or bell crank 19 and, for rotating the feed roller 10, is correspondingly engaged with the roller 23. A tension spring 30 biases the roller 22 into engagement with the roller 23 as soon as the position of the cam 26 permits such engagement to take place. A hand wheel 31 at the end of the pin 24 serves for rotating the feed roller 10 by hand for initially inserting the foil end 21 through the device of my invention.

When an embossing operation is to be effected with the foil processing device of my invention, the reciprocating motion of the inking rollers 32 is halted by disconnecting the roller frame arms 14 from the shaft 13. The oscillating lever 15 is actuated by a driving gear 33 acting through a tie rod 34, and thereby the feed roller 10 is rotated by means of the tie rod 17. A flywheel pinion 35 conventionally rotates the drive wheel 33 a single rotation per printing or embossment in the direction indicated by the associated arrow in FIG. 1.

I claim:

1. In a bed-and-platen printing press having a type bed and a platen oscillatably mounted with respect to the type bed to and from printing position, and having ink roller means for reciprocable movement over and away from the type bed during each oscillation of the platen in a printing cycle, in com-

bination therewith of an ink roller frame, an ink roller mounted in said frame, drive means for said ink roller frame and said platen, said drive means including a shaft, an oscillatable lever connected to said shaft and including roller frame arms each connected to said ink roller frame at one end thereof and each disconnectibly secured to said lever at the other end thereof, means for feeding a colored foil over the type bed to effect colored embossing during bed-and-platen operation during which ink roller reciprocation is made ineffective, said foil feeding means including rod means connected to said oscillatable lever and to foil indexing means to cause movement of said foil indexing means in each operating cycle, said ink roller means being rendered ineffective to ink said type bed during colored foil embossing by disconnecting said ink roller frame arm from said oscillatable lever.

2. The combination of claim 1, wherein said inking mechanism is mounted for movement over a given path, said colored foil feeding means comprising a feed roller for advancing the foil, and support arm means mounted on the printing press for supporting said feed roller at a location above the inking mechanism and out of said given path in noninterfering relation to said inking mechanism whereby said foil feeding means can remain attached to the printing press during a printing cycle.

3. The combination of claim 1, wherein said feeding means comprises a foil feed roller supported on the printing press, and a trip lever mechanism operatively connected therewith, said trip lever mechanism being infinitely controllable between predetermined minimum and maximum feeds for varying the feed of the foil between said limits.

4. The combination of claim 8, wherein said indexing means comprises a bell crank coaxially connected with said feed roller and through said rod means with said oscillating lever, said bell crank being oscillatable by the oscillating lever for alternately engaging and disengaging a roller connected to said bell crank and disposed eccentric to the axis of said feed roller with a roller coaxially connected to said feed rollers for periodically feeding the foil.

5. The combination of claim 4, including manually adjustable cam means for infinitely varying the distance between given limits of the roller connected to said bell crank from the roller coaxially connected to said feed roller whereby the oscillating period of said bell crank and the periodic rotation of said feed roller is varied accordingly.

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