Aug. 28, 1934. C. S. CRAFTS 1,971,771

PRINTING PRESS

Filed Jan. 5, 1933 2 Sheets-Sheet 1

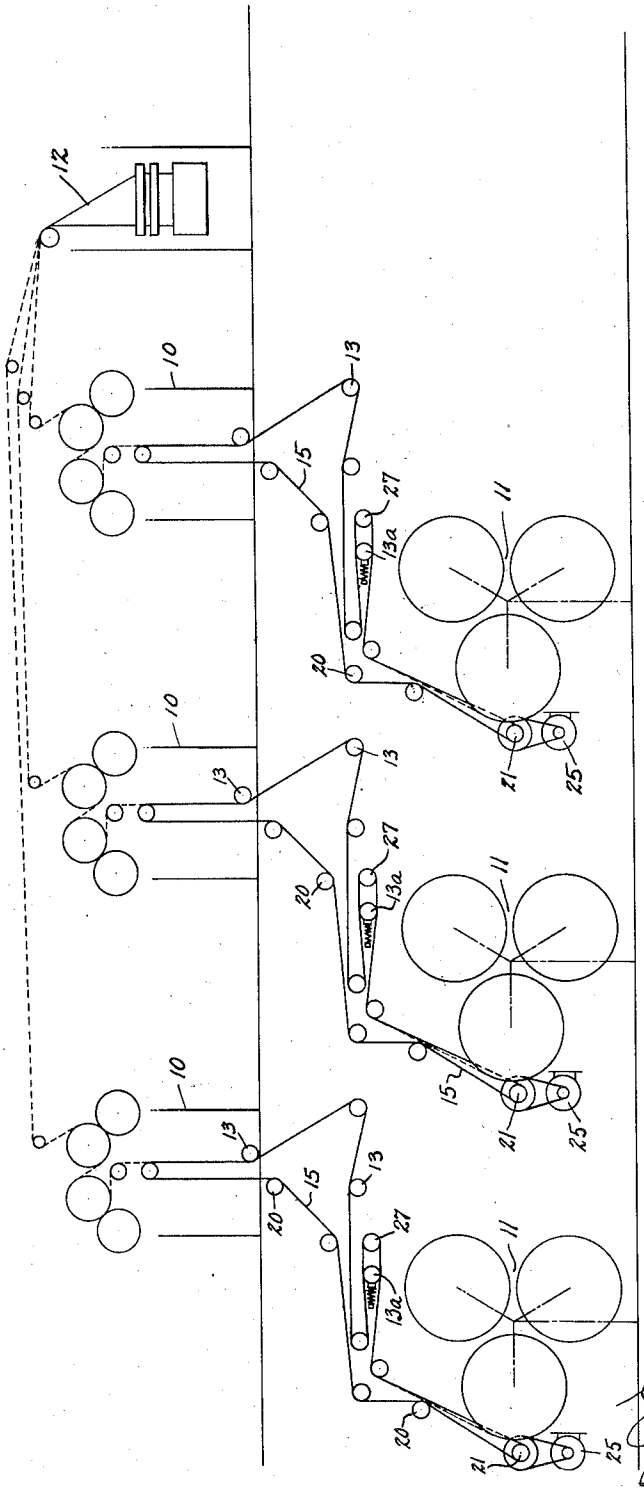


Fig. 1

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Fig 3

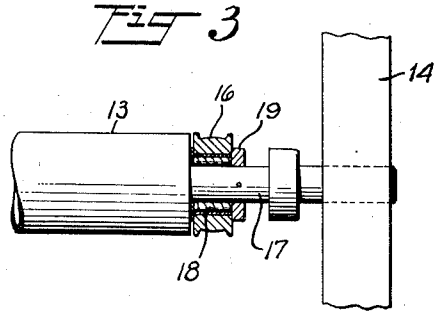


Fig 2

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Patented Aug. 28, 1934 1,971,771

UNITED STATES PATENT OFFICE

1,971,771

PRINTING PRESS

Curtis S. Crafts, Oak Park, Ill., assignor to The Goss Printing Press Company, Chicago, Ill., a corporation of Illinois

Application January 5, 1933, Serial No. 650,224

8 Claims. (Cl. 101—225)

The present invention relates to printing presses and more particularly to a novel and improved web threading means particularly adapted for use with high speed newspaper presses.

Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice with the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claims.

The invention consists in the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

The accompanying drawings, referred to herein and constituting a part hereof, illustrate one embodiment of the invention, and together with the description, serve to explain the principles of the invention.

Of the drawings:

Figure 1 is a side elevation of a printing press in accordance with the present invention, with many parts omitted and other parts shown diagrammatically;

Figure 2 is a detailed side elevation, with certain parts broken away, of one of the units shown in Figure 1; and

Figure 3 is a fragmentary detailed view of a combined roller and tape pulley for use with the present invention.

The present invention has for its object the provision of an improved newspaper printing press in which the wastage of paper web due to rethreading of the press is greatly reduced. A further object is the provision of a web threading means which can be operated independently of the press. Still another object is the provision of such a mechanism which need be operated only during the threading of the press.

Referring now in detail to the illustrative embodiment of the invention as shown in the accompanying drawings, the invention is shown in connection with a high speed rotary newspaper printing press comprising a plurality of rotary perfecting printing couples 10, which may be of conventional construction. Each of these couples is provided with its individual web supplying means 11, also of conventional construction, from which the webs are led to their respective printing couples. The perfected webs after leaving the printing couples may be associated at the head of the folding mechanism 12 by which they are cut into sheets, folded and delivered in the usual manner.

In accordance with the present invention, each of the printing units 10 is provided with a web threading means which may be independently operated and serves to bring the leading end of the web from the web supply means to a point closely adjacent to the printing couple, where it may be grasped by an operator and properly fed in to the couple. For this purpose, the web is led over a plurality of web guiding rollers 13 which are freely rotatable and journalled at their ends in the press frame or sub-frame 14. One of these rollers, 13—*a*, is preferably resiliently mounted at its ends in the usual manner to compensate for sudden changes in web tension or other irregularities in the running of the web. An endless tape is provided to which the leading end of the web may be clipped, and is supported so that in its movement from the web supply means to a point closely adjacent to and preferably directly beneath the printing couple 10, it follows substantially the same path as does the running web. As embodied, endless tape 15 follows the path shown in Fig. 2 by the heavy, full and dotted lines, while the path of the web is indicated by a dot and dash line where it departs from the path of the tape.

Means are provided for supporting the endless tape 15 at one side of the normal path of the web and for this purpose each of the rollers 13 is provided at one end with a wide-faced pulley 16 freely rotatable on roller shaft 17, and mounted thereon by roller bearings 18. Pulleys 16 are held against substantial axial movement by the end of their respective rollers and by collars 19 pinned to the shaft 17. On the return run of the tape, that is, from the printing couple to a point adjacent to the web supply means, the tape 15 runs over freely rotatable pulleys 20 journalled in the side frames of the press, although pulleys 16 mounted on rollers 13 may be used for this purpose.

At the point where the web passes over roller 13—*a*, the web threading tape 15 is preferably supported upon an independent pulley 27 mounted in pivoted arms 28 by which it may be moved back and forth to take up any slack in the tape. This also serves to prevent slackening of the tape due to movement of the roller 13—*a*, at the same time preventing interference of tapes 15 with the normal movements of roller 13—*a*.

Means are provided for driving the tapes 15 individually and independently of their respective units, and for this purpose a driving pulley 21 is provided adjacent to the web supply means and over which the tape is passed. Pulley 21 is fast to shaft 22 rotatably journalled in brackets 23 on the press frame and is driven by relatively large

pulley 24 which in turn is driven by motor 25 through belt 26.

Means are also provided for independently and individually controlling the driving motor 25 for each unit, and as embodied a plurality of control stations are provided for each motor 25, one of said stations 30 being positioned on the printing unit, while another station 31 is positioned adjacent to the web supply means 11 where it is accessible to the web roll attendant. These control stations 30 and 31 may be of any desired construction, but preferably include start and stop buttons so that the operation of the motor may be controlled from either station.

When one of the webs breaks, so that rethreading of the press is required, the operator attaches the edge of the web to the tape, and presses the "start" button at station 31, whereby the web is properly threaded around guide rollers 13 and 13—*a*. When the lead end of the web approaches the uppermost roller 13, the press operator may stop motor 25 by pressing the "stop" button at station 30. The operator may then detach the lead end from the tape and present it to the printing couple and by then inching the press feed the web through the press. In this way, wastage of the web is largely avoided as the webs for the other units need not be fed during the rethreading of any unit.

The invention in its broader aspects is not limited to the specific mechanisms shown and described but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages.

What I claim is:—

1. In a printing press, the combination of a plurality of web fed printing units, means for associating the printed webs from said units, a web supply means for each of said units, web threading means for each unit operable independently of the units and means for individually operating said threading means whereby wasting of the webs is avoided.

2. In a printing press, the combination of a rotary printing couple, web supply means, web guiding means for directing the web from said supply means to said couple and web threading means comprising an endless tape following substantially the path of said web from said supply means to a point closely adjacent to said couple and at one side of the normal path of said web and means for driving said tape independently of said couple.

3. In a printing press, the combination of a rotary printing couple, web supply means, web guiding means for directing the web from said supply means to said couple and web threading means comprising an endless tape following substantially the path of said web from said supply means to a point closely adjacent to said couple, means for driving said tape independently of said couple and driving control means positioned adjacent to said couple and said supply means.

4. In a printing press, the combination of a rotary printing couple, web supply means, web guiding means for directing the web from said supply means to said couple and web threading means comprising an endless tape following substantially the path of said web from said supply means to a point closely adjacent to said couple, motor means for driving said tape independently of said couple and motor control stations positioned adjacent to said couple and to said supply means.

5. In a printing press, the combination of a rotary printing couple, web supply means, web guiding means for directing the web from said supply means to said couple and web threading means comprising an endless tape substantially following the path of said web from said supply means to a point closely adjacent to said couple and at one side of the normal path of said web, motor means for driving said tape independently of said couple and two motor control stations one of which is positioned adjacent to said couple and the other adjacent to said supply means.

6. In a printing press, the combination of a rotary printing couple, web supply means, web guiding means for directing the web from said supply means to said couple including guide rollers over which the web is led and web threading means comprising an endless tape following substantially the path of said web from said supply means to a point closely adjacent to said couple, pulleys freely rotatable on said guide rollers and at one end thereof and supporting said tape and motor means for driving said tape independently of said couple.

7. In a printing press, the combination of a plurality of web fed printing units, means for associating the webs printed by said units, individual web supply means for each of said units, web threading means leading a web from said supply means to a point closely adjacent to the corresponding unit, each of said threading means being operable independently of its unit, and means for individually operating said threading means whereby any couple may be rethreaded without operating the units.

8. In a printing press, a plurality of web fed rotary printing couples, means for associating the webs printed by said couples, web supply means for feeding a web to each of said couples, web threading means for each of said couples and means for driving said web threading means independently of said couples.

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