

April 26, 1927.

1,625,862

E. L. MARTIN

MEANS FOR FORMING NEWS AND TABLOID SECTIONS FROM A CONTINUOUS WEB

Filed June 2, 1926

3 Sheets-Sheet 1

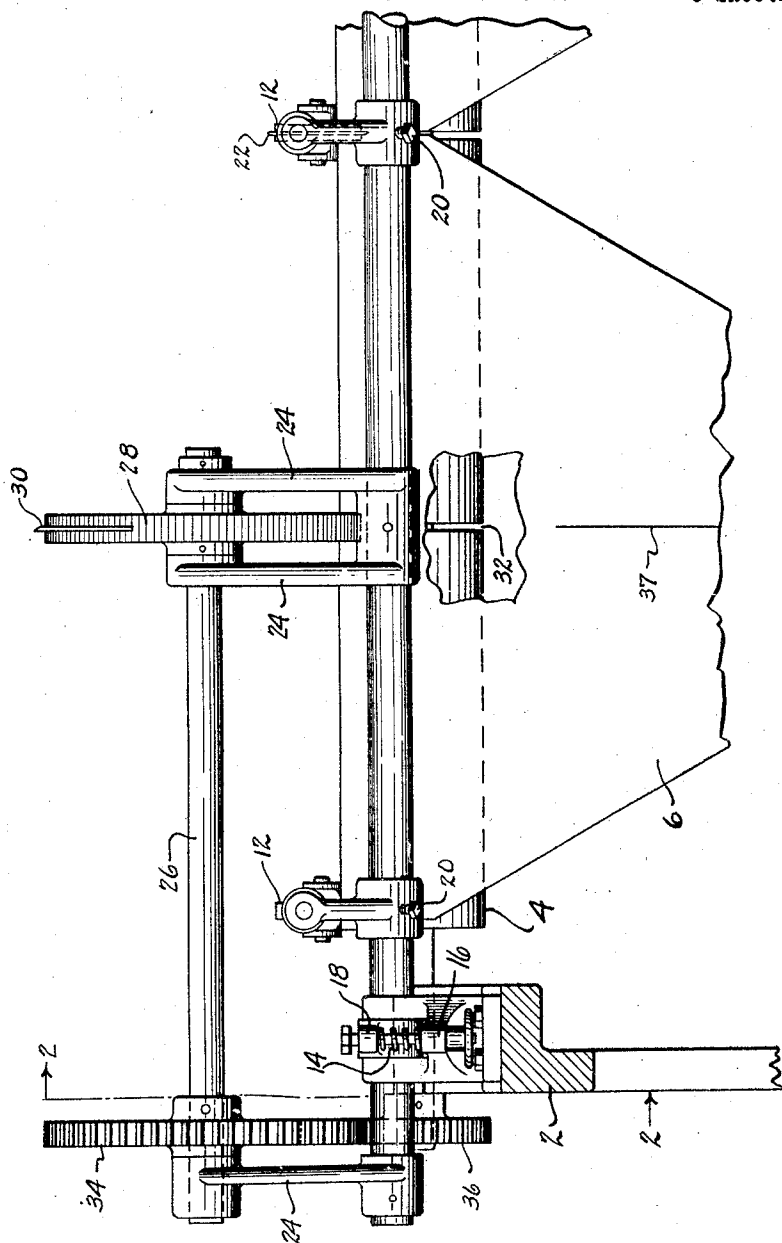


Fig. 1

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April 26, 1927.

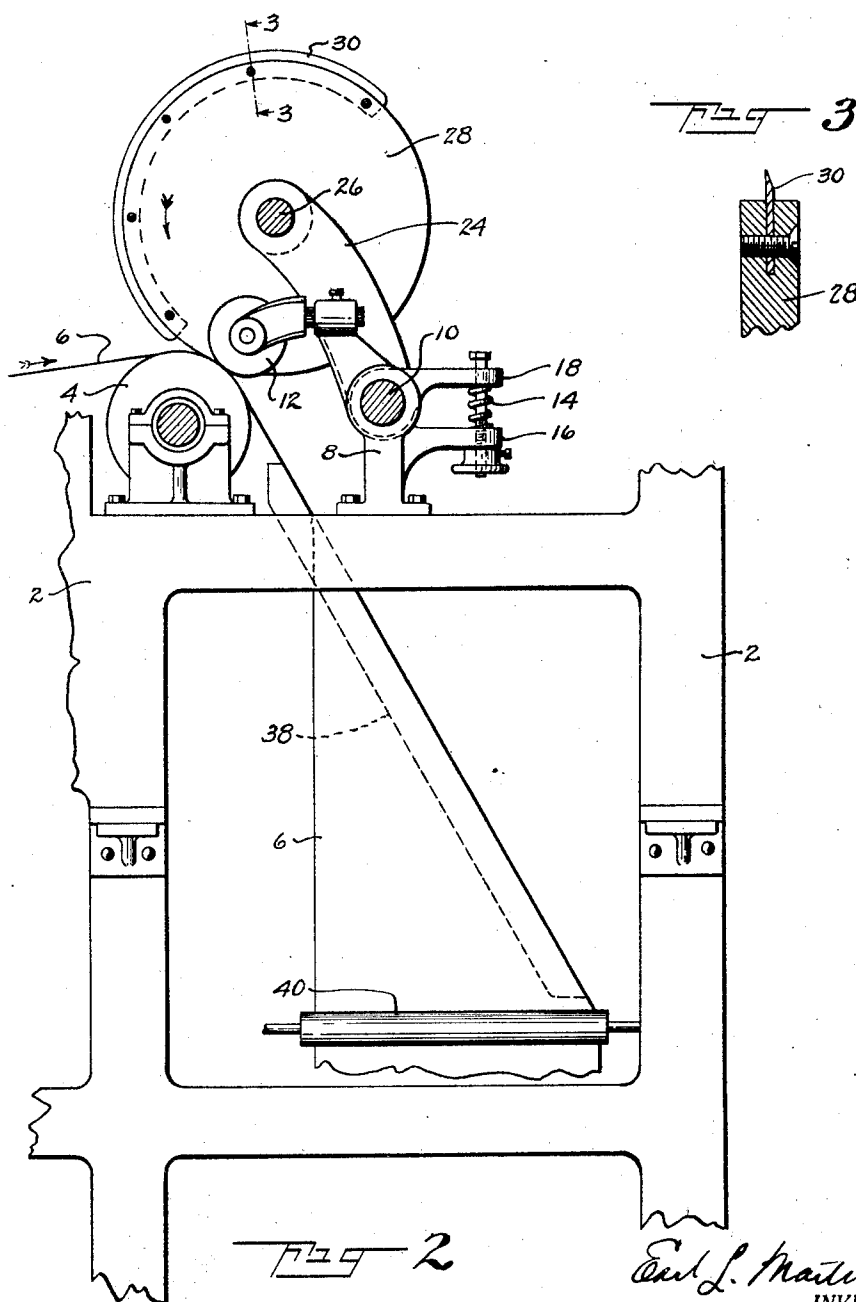
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MEANS FOR FORMING NEWS AND TABLOID SECTIONS FROM A CONTINUOUS WEB

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3 Sheets-Sheet 2



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April 26, 1927.

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3 Sheets-Sheet 3

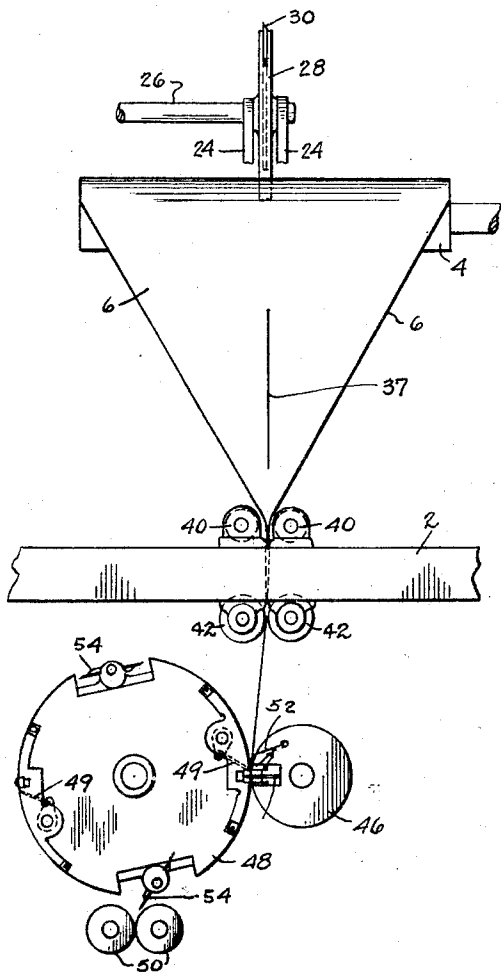


Fig. 4

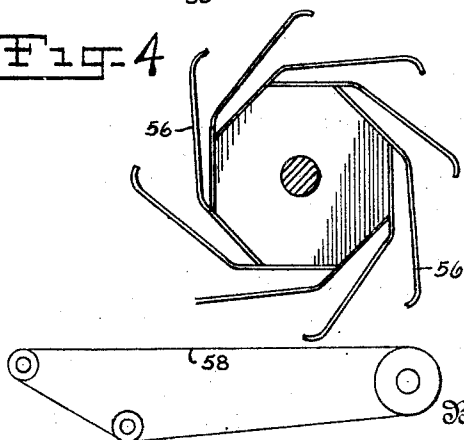
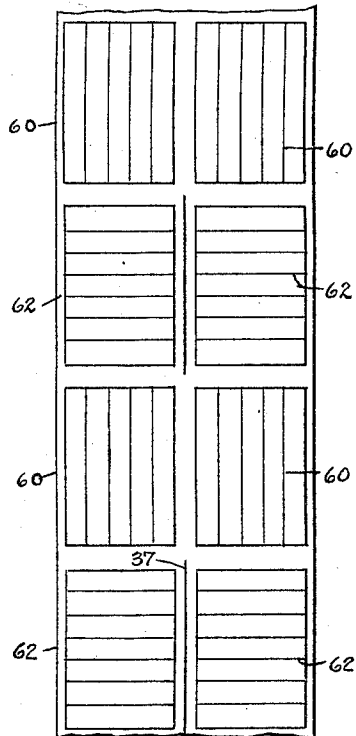


Fig. 5

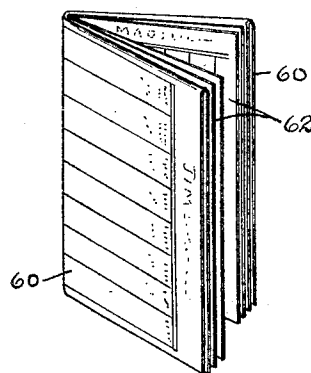


Fig. 6

Inventor:
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UNITED STATES PATENT OFFICE.

EARL L. MARTIN, OF NEW YORK, N. Y.

MEANS FOR FORMING NEWS AND TABLOID SECTIONS FROM A CONTINUOUS WEB.

Application filed June 2, 1926. Serial No. 113,135.

My invention relates to improvements in means for forming news and tabloid sections from a continuous web and has for its object to produce a web printing press which will produce alternate news and tabloid sections from one former. A further object of my invention is to provide an improvement in printing presses whereby from one former both news sections and tabloid sections can be produced, which two sections are automatically assembled in folded form by the regular assembling and folding mechanism, thus saving the labor of manually inserting tabloid sections within news sections, as at present practiced when only one former is in use or when a double former press is run at full capacity. A further object of my invention is to produce a tabloid slitter attachment which can be applied to various web presses at present in use at comparatively slight expense, so as to produce from one former both tabloid sections and news sections.

The following is a description of an embodiment of my invention reference being had to the accompanying drawings, in which:

Figure 1 is an end elevation of a press showing the novel features resulting in my improvement;

Fig. 2 is a view partly in side elevation and partly in section on the line 2—2, Fig. 1;

Fig. 3 is a detail sectional view of a slitting knife on the line 3—3, Fig. 2;

Fig. 4 is a diagrammatic view showing my improvement in connection with a press delivering a web of paper and cut and folded sections to a conveyor;

Fig. 5 shows a detail view of a web slit in accordance with my invention; and

Fig. 6 is a perspective view showing tabloid and news sections formed and folded together by a press embodying my invention.

Referring more particularly to the drawings 2 is the delivery end portion of a frame for the operating parts of the press proper. Suitably journaled on this frame is the usual paper drag roll 4 over which a web of paper 6 passes after it has gone through the printing press proper. This web is a multiply web being composed of from two to sixteen thicknesses of paper which have been printed upon the cylinders, according as the press is a quadruple, sextuple or octuple. Mounted upon the frame are bearings 8 supporting a shaft 10 carrying the ordinary

trolleys 12 which are pressed into contact with the web 6 upon the roll 4 by the spring 14 bearing against an arm 16 on the bearing 8 and an arm 18 connected to the shaft 10, the trolleys being clamped to the shaft in the ordinary manner by set screws 20. Where two formers are used the right hand trolley has the usual slitting knife 22. Upon the trolley shaft are rigidly secured three arms 24 rigidly mounted on the shaft 10, in whose ends are journaled a shaft 26 carrying a disk 28 secured thereto so as to rotate therewith. This disk is provided with a knife 30 extending around one half of the periphery thereof. This disk takes the place of the ordinary central trolley and bears upon the central portion of the paper 6 so as to keep it from buckling. The drag roll 4 is made in two sections, the sections being spaced apart beneath the center of the web 6 as at 32, so as to permit the passage of the knife 30. The cutting edge of the knife bears against the edge of one of said sections so as to produce in conjunction therewith a shearing action upon the web passing over the drag roll.

The left hand end of the shaft is supported by the third arm 24 carried by and fixed to the trolley shaft and between that arm and the disk is a gear 34 whose pitch line is of substantially the same diameter as the diameter of the disk 28. Meshing with this gear is a gear 36 mounted upon the shaft of the drag roll and having its pitch line of substantially the same diameter as the drag roll 4, so that the disk 28 rotates at substantially the same peripheral speed as the web passing over the drag roll. The drag roll being driven in the ordinary manner, the disk is driven at substantially the same peripheral speed as the drag roll and the knife 30 intermittently cuts a slit 37 in the web, the slit portion corresponding to the length of a tabloid section and being followed by an unslitted portion corresponding to the length of a news section. This intermittently slitted web is then received by a former 38 in the ordinary way and folded upon itself, passing between the usual guide and folding rolls 40 and 42 and being thereafter fed to the well known cutting and folding cylinders 46, 48 and 50. The cutting cylinder 46 is adjusted in the well known way for what is commonly known as "cylinder collect" so that it collects and super-

imposes alternate sections by means of the usual collector pins 52. The cylinder 46 is so adjusted that it collects and carries around a news section so as to superimpose it upon the following tabloid section in the manner in which unslitted sections are now collected, after which the combined sections are carried by the cylinder 48 with its usual collecting pins 49 and pushers 54 to the well known folding rollers 50 which delivers them to the conveyor distributor 56, which receives them and deposits them upon the conveyor 58, folded together in the form shown in Fig. 6 which shows a news section 60 formed and folded together with a tabloid section 62 cut and folded and located within the folded outer sheets.

When it is desired to use the press for ordinary printing without the formation of tabloids, the semi-circular slitting knife 30 is removed whereupon the disk 28 performs the function of the ordinary trolley, although it is positively driven.

The cylinder 48, as is usual, is twice the diameter of the collecting cylinder 46, resulting in the superimposing of the two sections when the collector cylinder pins 52 of the roller 46 are adjusted to collect the news sections thereon.

In operating a press embodying my invention, the multi-ply web of printed paper is supplied to the drag roll 4 in the ordinary manner, and while passing over that roll is intermittently slit by the semi-circular knife, producing the result shown in Fig. 5 with its news sections 60 and tabloid sections 62. The paper then passes over the former 38 and through the guide rolls 40, 42 and then down to the cutting and collecting rolls 46, 48, the mechanism being so adjusted that an unslitted portion of the web constituting the regular news page, such as is shown at 60 in Fig. 5, comes first and is collected by the roll 46 and is then followed by a slitted portion or tabloid section 62 upon which it is superimposed whereupon both sections are collected by the cylinder 48 and fed by the pushers 54 to the folding rolls 50, so that when folded the news section comes on the outside of the tabloid section, as shown in Fig. 6, thus producing from a single web of paper a formed and folded section comprising regular news pages having folded within them tabloid sections and doing away with the necessity of separately printing and manually inserting tabloid sections.

As will be evident to those skilled in the art, my invention permits various modifications without departing from the spirit thereof or the scope of the appended claims.

What I claim is:

1. In a printing press, the combination of a drag roll, a slitting device intermediate of the ends of said drag roll and having a cylindrical surface adapted to constantly engage the web upon the drag roll and a knife extending around substantially one-half of the periphery thereof and adapted to intermittently slit the web as it passes over said drag roll.

2. In a printing press, the combination of a drag roll, a slitting device intermediate of the ends of said drag roll and having a cylindrical surface adapted to constantly engage the web upon the drag roll and a knife extending around substantially one-half of the periphery thereof and adapted to intermittently slit the web as it passes over said drag roll, and means for positively driving said cylindrical surface at substantially the same peripheral speed as the drag roll.

3. In a printing press, the combination of a drag roll, a slitting device intermediate of the ends of said drag roll and having a knife extending around substantially one-half of the periphery thereof and adapted to intermittently slit the web as it passes over said drag roll, said device having on its periphery surfaces constantly bearing upon the surface of the web passing over said drag roll.

4. In a printing press, the combination of a drag roll, a slitting device intermediate of the ends of said drag roll and having a knife extending around substantially one-half of the periphery thereof and adapted to intermittently slit the web, said device having on its periphery surfaces bearing upon the surface of the web passing over said drag roll, and means for holding said surfaces in yielding contact with said web and means for driving said surfaces at substantially the same peripheral speed as said roll.

5. In a printing press, the combination of a roll, a slitting device intermediate of the ends of said roll having a semi-circular knife extending around part of the periphery thereof and adapted to intermittently slit the web as it passes over said roll, a former for forming the intermittently slit web, and cutting and collecting means adapted to superimpose two alternate sections of said folded web, and means for folding them after being superimposed.

In testimony whereof, I have signed my name to this specification this 1st day of June, 1926.

EARL L. MARTIN.