

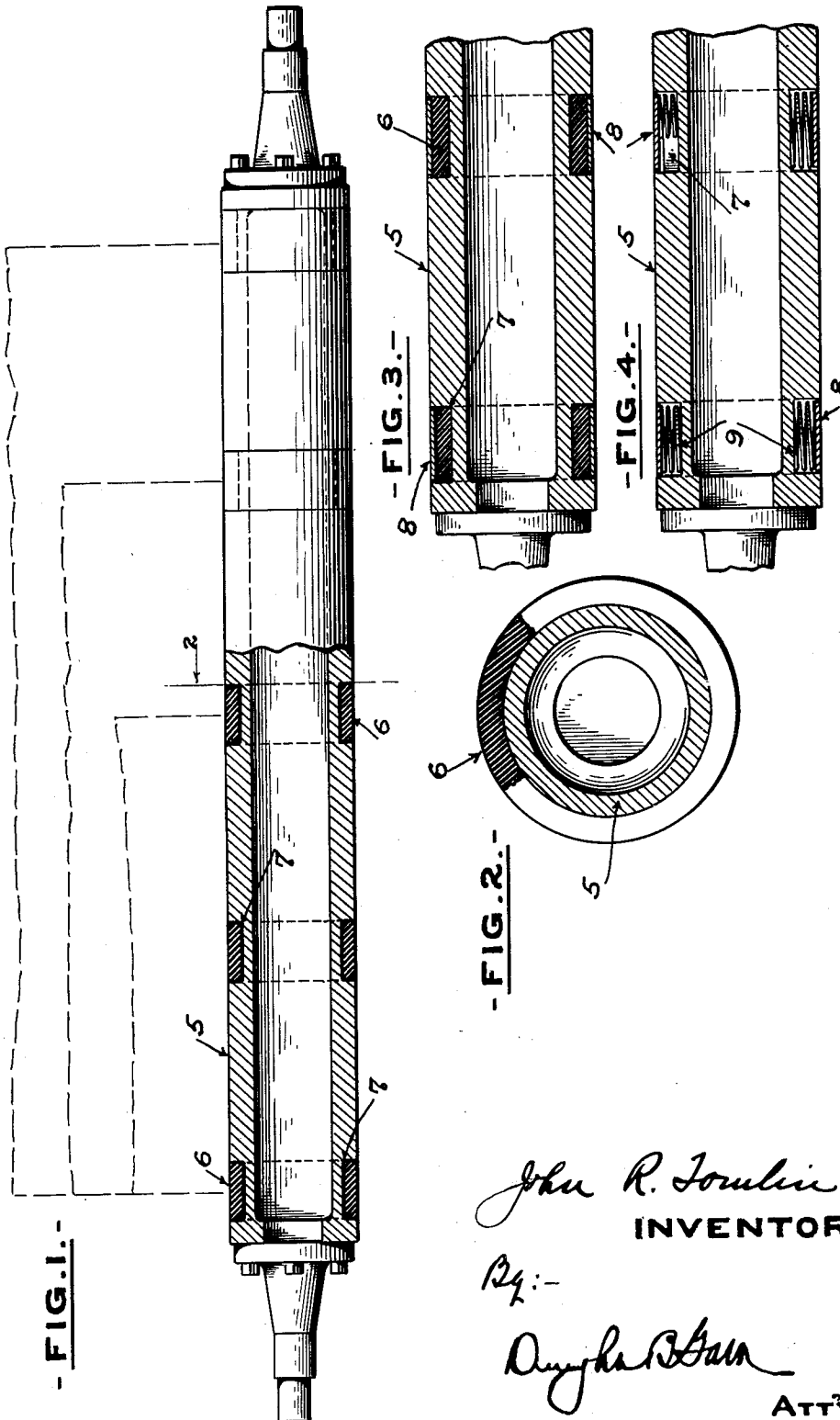
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J. R. TOMLIN

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WEB GUIDE FOR PRINTING MACHINES

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UNITED STATES PATENT OFFICE

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WEB GUIDE FOR PRINTING MACHINES

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5 Claims. (Cl. 271-2.1)

This invention relates to means for guiding and supporting the web in printing machinery, the principal object being to provide means whereby the danger of breakage of the web when the machine is in operation is greatly reduced. A further object is to provide a web guide of such character as to permit of the printing machine operating at greater speed with a minimum of opportunity or possibility of web breakage.

These objects are accomplished by constructing the web guide in such manner as to minimize the strain at the edges or margins thereof; the invention being carried out by means of structures such as disclosed in the accompanying drawing and following specifications.

In the drawing:—

Fig. 1 is a side elevation, parts broken away, of a web guide or roller constructed in accordance with the invention.

Fig. 2 is an enlarged transverse section taken substantially upon line 2—2 of Fig. 1.

Fig. 3 is a fragmentary sectional view taken through an end portion of a guide or roller and illustrating the modified form of the invention,

and

Fig. 4 is a similar view illustrating a further modified form.

In printing on web presses, particularly upon those involved in the printing of newspapers, delay often occurs by reason of the breakage of the paper web, and frequently such breakage results in serious damage to the printing machine. These breaks usually start at an edge of the web, and then the whole sheet gives way. This is caused by the fact that the edges of the web are calendered harder than the inner portions thereof, or the ends or edges of the web dry out and shrink to a greater extent than the inner portions, whereupon the stress on the web as it passes through the machine is greater at the edges than upon the middle portions. These tears or breaks are further facilitated by reason of rough handling of the paper rolls, as frequently it occurs that in such handling the edges become slightly broken or torn, which results in web breakage starting at such edges when the web passes through the machine and is subjected to the stress incident to such travel.

It is my object to overcome or to minimize the opportunity for breakage or tearing at the web edges by constructing the guides in such manner as to reduce the stress upon the web at its edges, while at the same time adequately supporting such edges during their course of travel over the guides.

The web guide or roller is indicated generally at 5, and may be of any approved length or diameter, and may take the form of a roller or a stationary bar. The guide is provided at proper intervals upon its web supporting surface with yieldable or depressible elements or bearing surfaces indicated at 6; such elements or surfaces being so located upon the guide as to support the edge portions of the paper web as it moves over with the guide. These members, therefore, may be spaced at proper intervals upon the guide in order to accommodate webs varying in widths.

In practically carrying forth the invention, the guide is provided with annular channels represented at 7, and the yieldable or compressible elements 6 contained therein may take the form of sponge rubber, gum or other material formed of a homogeneous mass and secured by any suitable means within the channel, having its outer surface flush with the periphery or bearing surface of the guide.

In Fig. 3, the yieldable material 6 has its outer surface terminating inwardly from the periphery of the bearing surface of the guide, and yieldably supports a collar or ring 8 of metal snugly fitting within the channel and normally having its outer face disposed flush with the circumference of the web guide.

In Fig. 4 of the drawing there is a further modification wherein the composition or compressible material is dispensed with and springs 9 are substituted therefor. In this embodiment of the invention, the springs 9 constitute a yieldable support for the collar, band or ring 8, normally having its outer surface disposed flush with the circumference of the roller.

By constructing the guide in the manner described, it is apparent that the edges of the web will be yieldably supported in the passage of the web through the machine, whereupon the stress will be distributed more evenly throughout the entire area of the web or possibly will be borne to a greater extent by the stronger central or middle portions thereof. In this manner the tendency of tearing starting from the edges is greatly reduced, if not entirely prevented.

The drawing discloses a conventional type of web roller, however, it will be understood that the inventive idea may with equal facility and benefit be carried out in stationary guides disposed in proper operating relationship to the path of the web.

Having thus described my invention, I claim:

1. In a device of the class described, a web guide, and yieldable tension relieving surfaces on

said guide, said surfaces normally contacted by the edges of said web in its travel.

2. In a printing machine, a web guide, said guide having recesses in its surface over which the edges of the web travel, and yieldable members arranged in said recesses and normally disposed flush with the guide surface engaged by the web.

3. In a printing machine, a web guide comprising a cylindrical member over which the web travels, and bands of tension relieving resilient material arranged in said member, said material normally contacted by the edges of said web in its travel.

4. In a printing machine, a web guide having channels disposed in the path of travel of the web edges, and resilient material disposed in said channels and disposed normally flush with the bearing surface of the guide.

5. In a printing machine, a web guide having channels disposed in the path of travel of the web edges, and bands yieldably supported in said channels with their peripheries normally disposed flush with the supporting surface of said guide.

JOHN R. TOMLIN.

15	90
20	95
25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150