

March 5, 1946.

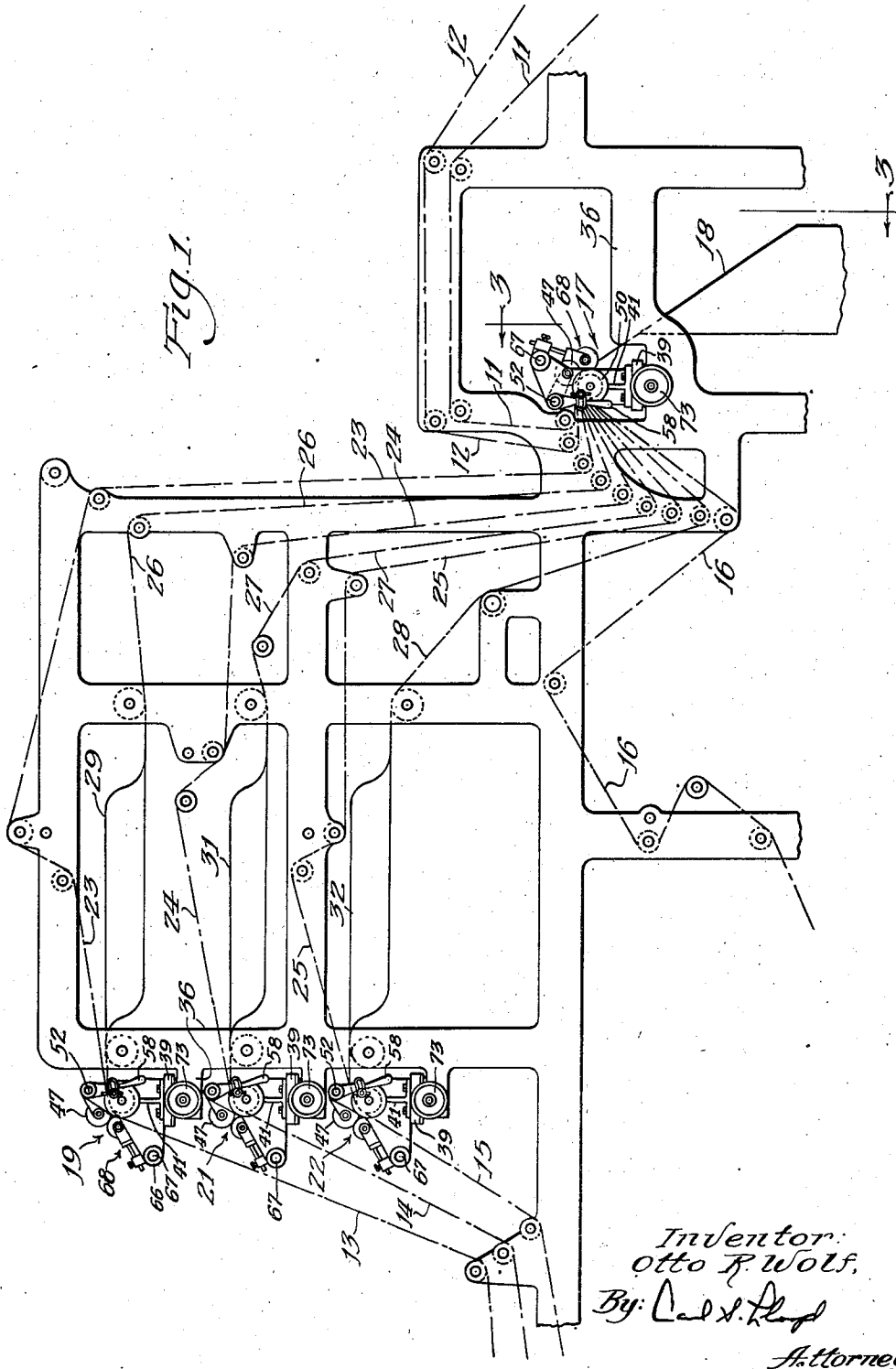
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SLITTER MECHANISM FOR PRINTING PRESSES

Filed April 22, 1942

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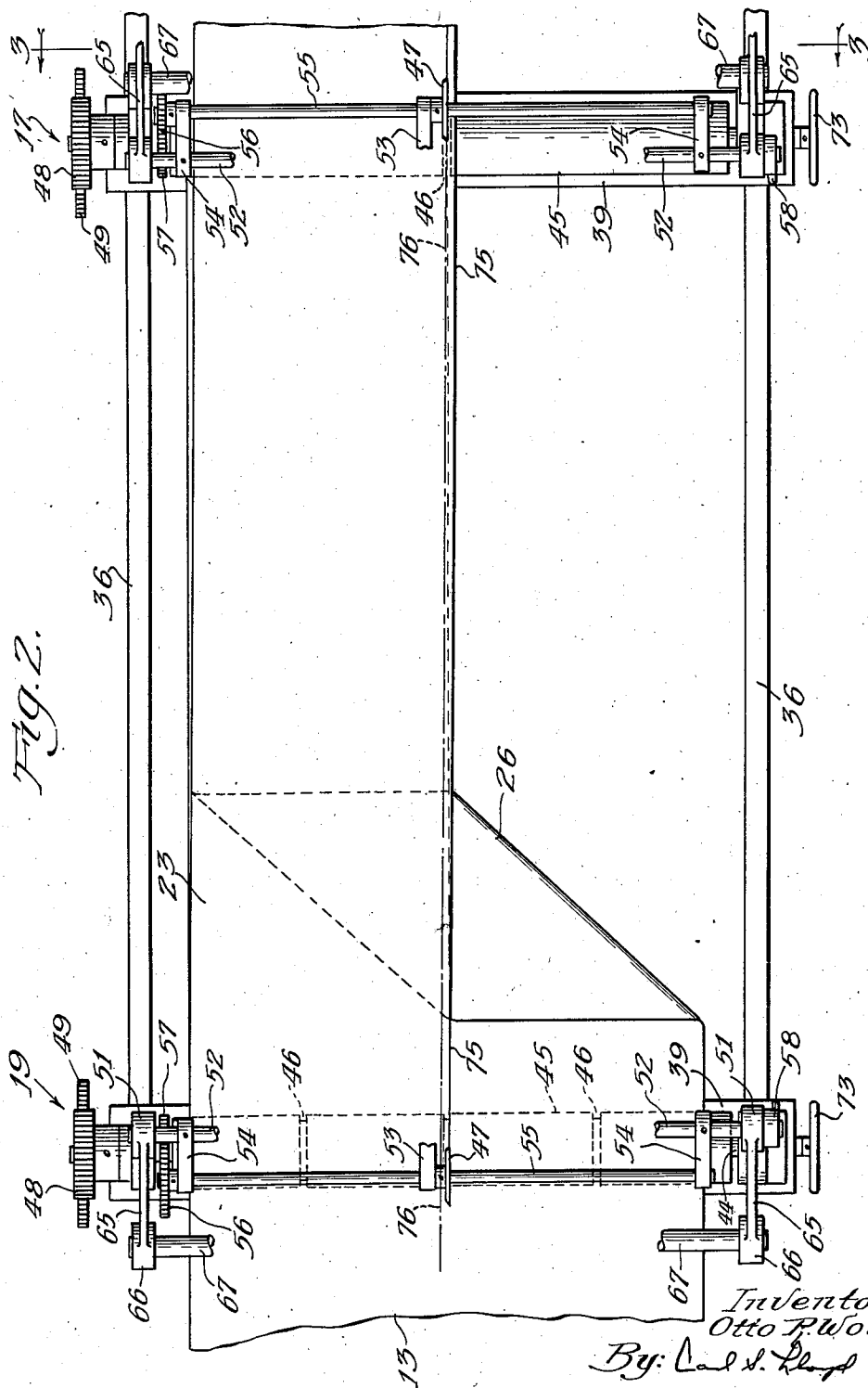
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SLITTER MECHANISM FOR PRINTING PRESSES

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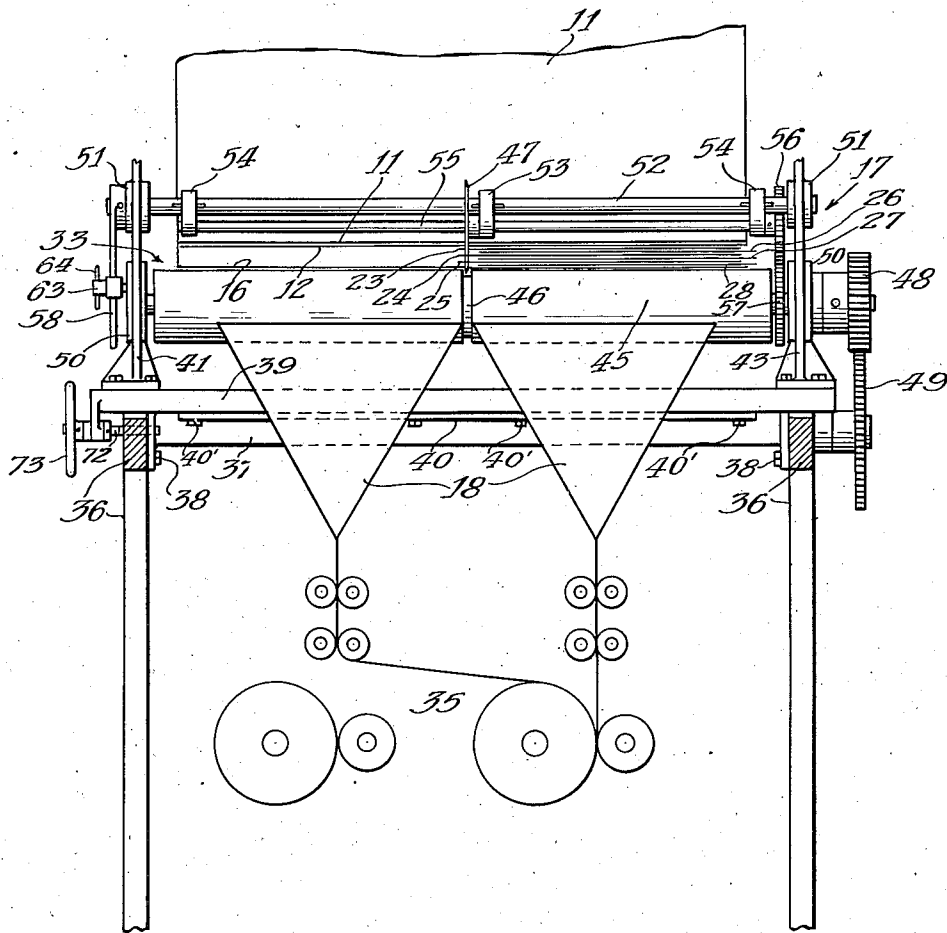
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SLITTER MECHANISM FOR PRINTING PRESSES

Filed April 22, 1942

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Fig. 3.



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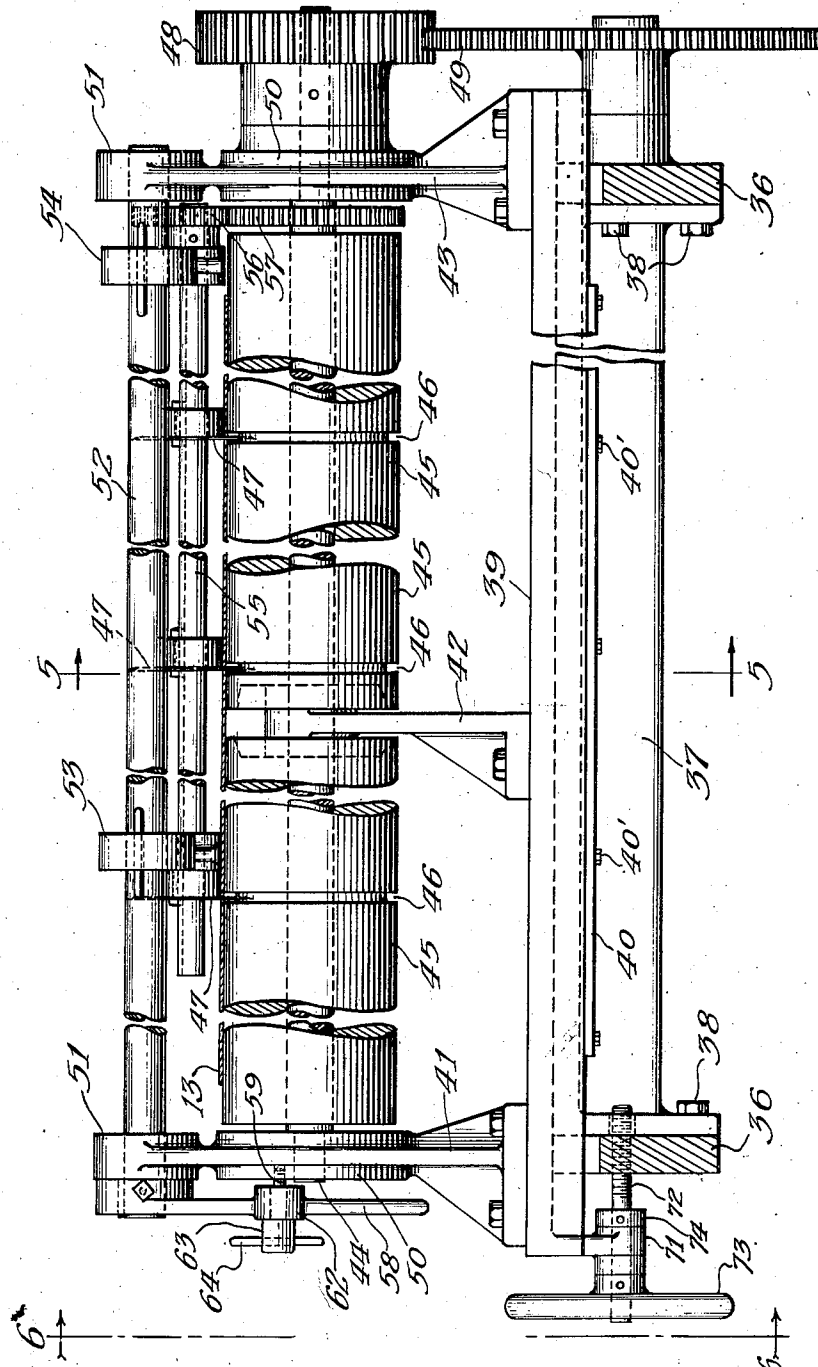
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SLITTER MECHANISM FOR PRINTING PRESSES

Filed April 22, 1942

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Fig. 4.



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2,395,950

SLITTER MECHANISM FOR PRINTING PRESSES

Filed April 22, 1942

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Fig. 6.

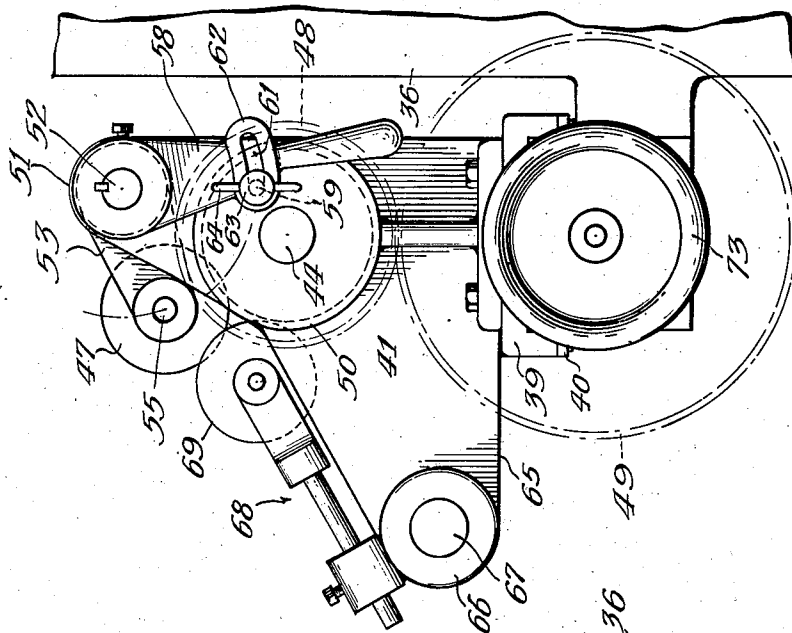
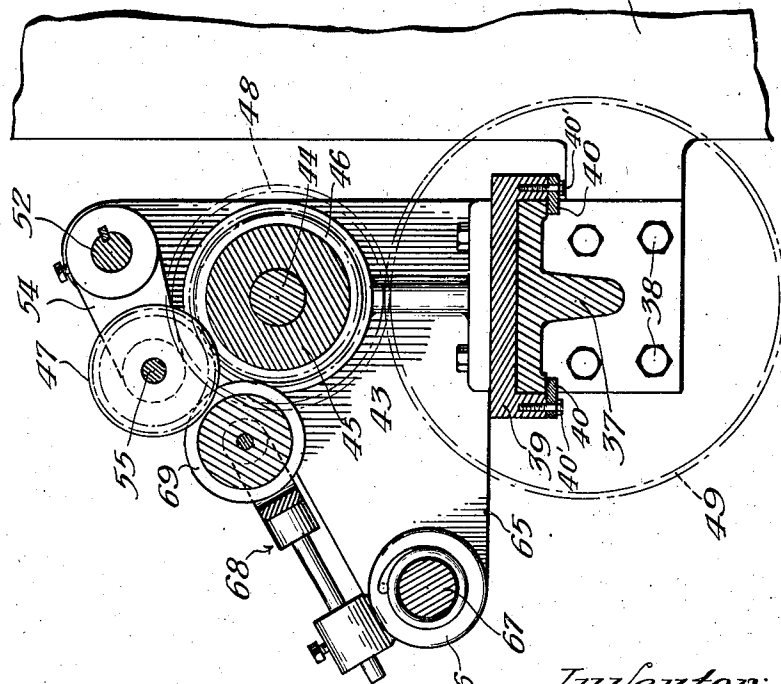


Fig. 5.



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UNITED STATES PATENT OFFICE

2,395,950

SLITTER MECHANISM FOR PRINTING PRESSES

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Application April 22, 1942, Serial No. 439,965

8 Claims. (Cl. 164—61)

This invention relates to rotary printing presses such as are used for printing newspapers, and particularly to the slitter mechanism used in connection with such presses.

In newspaper printing, when papers consisting of more than one section are to be printed some of the printed webs are led to the folder mechanism before being slit and some are slit before reaching the folder mechanism. All of said webs are collected and pass over a roller on top of triangular formers constituting part of the folder mechanism. A slitter is provided in association with said roller for slitting the full-width webs. It often happens that the latter webs do not properly align on this roller and that the webs which have previously been slit, and which are arranged one upon the other, do not line up properly with the full-width webs or with each other. This improper alignment may be due to unevenly wound rolls, improper alignment of guide rollers or other causes, even though the several slitter mechanisms may be properly aligned with respect to each other.

In case some of the webs which have already been slit before they reach said roller on top of the formers do not properly align with the slitter knife operating in conjunction with said roller, narrow ribbons will be cut from the edges of such webs. These narrow ribbons tend to pile up on the moving parts of the folder and often result in serious breakdowns. It frequently becomes necessary to stop the press to remove the accumulated paper ribbons, which causes serious delays in view of the speed necessary in producing large metropolitan newspapers.

With prior constructions it has been necessary, in order to avoid the cutting of these narrow ribbons, to move quite a number of parts of the slitter mechanism, which also involves considerable loss of time and presents mechanical difficulties.

The principal object of the present invention is to provide slitter mechanisms which can be adjusted to overcome the difficulties above mentioned without stopping the press. Use of the improved mechanism saves considerable time and avoids breakdowns in the folder, thus contributing very substantially to the efficiency of operation of newspaper presses.

Other objects and advantages of the invention will be apparent from the following description taken in connection with the accompanying drawings, in which:

Fig. 1 is a side elevation of a typical slitter and

angle bar arrangement for newspaper presses, equipped with the improvement of my invention;

Fig. 2 is a top plan view thereof;

Fig. 3 is an end elevation and sectional view taken substantially on the line 2—3 of Figs. 1 and 2;

Fig. 4 is an elevational view, partly broken away, of one of the slitter mechanisms;

Fig. 5 is a sectional view taken substantially on the section line 5—5 of Fig. 4; and

Fig. 6 is an end elevation of said slitter mechanism taken on the line 6—6 of Fig. 4.

I have shown in said drawings six full-width paper webs identified by the reference numerals 11, 12, 13, 14, 15 and 16. Webs 11, 12 and 16 are shown as traveling from the press units to a slitter mechanism 17 above formers 18 of the folder mechanism as full-width webs, and webs 13, 14 and 15 are shown as running to slitter mechanism 19, 21 and 22, respectively, where they are each cut into two half webs. Three of these half webs, identified by the numerals 23, 24 and 25, respectively, are led in a straight line to the folder, whereas the other three half webs, identified by the numerals 26, 27 and 28, respectively, are shown as led over angle bars, diagrammatically indicated at 29, 31 and 32, respectively, and thence to the folder mechanism. Said webs are directed over standard guide rollers in a manner which will be well understood by those familiar with presses of this character.

In Fig. 2 the slitter mechanisms 17 and 19 are shown, as are the full-width web 13 and the two half webs 23 and 26 into which said full web is cut.

In Fig. 3 the webs are shown as they are collected on a roller 33 of the slitter mechanism 17 on top of the formers 18. Said webs comprise the three full webs 11, 12 and 16, and the six half webs 23, 26, 24, 27, 25 and 28. The straight leads 23, 24 and 25 are shown protruding beyond the slitter knife 41 of said slitter mechanism 17, due to the fact that these webs are not properly aligned. This misalignment results in the protruding edges of said webs 23, 24 and 25 being cut off by said knife and forming narrow ribbons which fall into the folder mechanism and thereby interfere with the operation of the folder, as hereinbefore described.

The folder mechanism, generally indicated at 35 is not shown or described in detail, since it is well understood and forms no part of the present invention.

Referring now to Figs. 4, 5 and 6, illustrating one of the slitter mechanisms, which may be

taken as the one identified by the numeral 19 (although the construction of all of the mechanisms 17, 19, 21 and 22 may be substantially the same), the reference numeral 36 indicates parts of the side frames of the slitter arrangement. A brace 37 extends transversely between said frame parts 36 and is rigidly secured thereto by means of bolts 38. On the cross-brace 37 there is slidably mounted a slitter mechanism support 39 held upon said brace by retaining strips 40 secured to said support by screws 40'. Said support 39 carries three uprights or brackets 41, 42 and 43 providing bearings 50 for a slitter roller shaft 44.

On said slitter roller shaft 44 are pulleys 45 provided with grooves 46 in which the slitter knives 47 operate. The cutting of the webs, one of which is indicated in Fig. 4 by the reference numeral 13, is accomplished by coaction of said roller with one or more of said knives. It will be understood that any desired number of knives may be employed, and that in the arrangement shown in Fig. 3 there will be only one knife and one groove 46.

On the end of the shaft 44 there is mounted a relatively wide gear 48 which is in mesh with a gear 49 forming a part of the slitter drive mechanism the remainder of which is not shown since such a drive is well-known in the art. The width of the gear 48 is such that it will remain in mesh with the gear 49 in the different positions of adjustment of the slitter assembly.

The brackets 41 and 43 extend beyond the slitter roller and provide bearings 51 for a slitter lever shaft 52. On this shaft are mounted levers 53 and 54 which provide bearings for a slitter shaft 55 on which the slitter knives 47 are mounted. The slitter shaft is driven from the slitter roller shaft by means of gears 56 and 57 mounted on said shafts, respectively.

On one end of the slitter shaft there is provided a hand lever 58 by which said shaft may be turned to move the slitter knives in and out of operative relation with the slitter roller, said lever being arranged to be locked in the desired position by means of a wing screw 59 extending through a slot 61 in a boss 62 formed on said lever, said screw extending into a tapped hole in the upright 41, as shown in Fig. 4. A head 63 on said screw bears against the boss 62 and a thumb-piece 64 carried thereon facilitates turning of the screw. By means of this lever the slitter knives can be moved away from the roller when the web of paper does not need to be slit.

As shown in Figs. 5 and 6, the brackets 41 and 43 have a horizontal extension 65 which provides bearings 66 for a shaft 67. On this shaft are mounted trolley lever assemblies 68 each including a roller 69 used for propelling the paper over the slitter roller 45. The arrangement of the trolley assembly for the slitter 17, as shown in Fig. 1, is somewhat different from the arrangement for the slitters 19, 21 and 22, being for convenience mounted on the opposite side of the slitter roller, but the operation is the same. These trolley devices need not always be used, but it will be seen that when they are used they form a part of the assembly of parts mounted on the movable support 39.

Said movable support 39 is provided with a depending lug 71 which forms a bearing for an adjusting screw 72. A handwheel 73 is attached to the outer end of the screw and a collar 74 which is fastened to the screw holds it in fixed relation to the lug 71 and slide 39. The frame part

36 has a tapped hole in which the screw operates, so that by turning the handwheel the slide 39 and all the mechanism mounted thereon can be easily moved sidewise as a unit.

Referring again to Fig. 2, it will be observed that if the slitter knife 47 of slitter 19 should be cutting the web 13 along the full line 75, the edge portion of the half web 23 will be cut off by the knife 47 of slitter 17, resulting in the difficulty hereinabove described. By adjusting the movable assembly of slitter 19 in the manner above stated the knife 47 of the latter may be moved to a position in which the web will be cut along the broken line 76 which is in such relation to the knife 47 of the slitter 17 that the edge of the half web 23 will pass by the latter without being cut, thus correcting the condition which has caused so much trouble in the past. Such adjustment can be effected in either direction at any time without stopping the press, and it will be evident that either slitter mechanism may be adjusted as conditions may require to obtain and maintain the proper relationship between the slitter knives and the webs.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, but the appended claims should be construed as broadly as permissible in view of the prior art.

I claim:

1. A plurality of slitter mechanisms for slitting webs in newspaper or like printing presses, said mechanisms being arranged one after the other in the course of travel of the webs proceeding from the press and at least one thereof comprising a stationary supporting member; a slitter support slidably mounted on said member; a slitter assembly mounted on said support and including uprights on opposite sides of the web position; and means for moving said slidable support on said stationary member, thereby adjusting the position of said slitter assembly as a unit with respect to the other slitter mechanism.

2. A plurality of slitter mechanisms for slitting webs in newspaper or like printing presses, said mechanisms being arranged one after the other in the course of travel of the webs proceeding from the press and at least one thereof comprising a stationary supporting member; a slitter support slidably mounted on said member; a slitter assembly mounted on said support and including uprights on opposite sides of the web position and including a web-supporting roller and a slitter knife; and means for moving said slidable support on said stationary member, thereby adjusting the position of said slitter assembly as a unit with respect to the other slitter mechanism.

3. A plurality of slitter mechanisms for slitting webs in newspaper or like printing presses, said mechanisms being arranged one after the other in the course of travel of the webs proceeding from the press and at least one thereof comprising a stationary supporting member; a slitter support slidably mounted on said member; a slitter assembly mounted on said support and including uprights on opposite sides of the web position and including a web-supporting roller extending substantially the full width of the web, a slitter knife, and means for operating the knife to cause the same to slit the web; and means for moving said slidable support on said stationary member, thereby adjusting the position of said slitter

assembly as a unit with respect to the other slitter mechanism.

4. A plurality of slitter mechanisms for slitting webs in newspaper or like printing presses, said mechanisms being arranged one after the other in the course of travel of the webs proceeding from the press and at least one thereof comprising a stationary supporting member; a slitter support slidably mounted on said member; a slitter assembly mounted on said support and including uprights on opposite sides of the web position and including a web-supporting roller extending substantially the full width of the web; a slitter knife, means for moving said knife into and out of operative position and means for operating the knife to cause the same to slit the web; and means for moving said slidable support on said stationary member, thereby adjusting the position of said slitter assembly as a unit with respect to the other slitter mechanism.

5. A plurality of slitter mechanisms for slitting webs in newspaper or like printing presses, said mechanisms being arranged one after the other in the course of travel of the webs proceeding from the press and at least one thereof comprising a stationary supporting member; a slitter support slidably mounted on said member; a slitter assembly mounted on said support and including uprights on opposite sides of the web position and including a web-supporting roller extending substantially the full width of the web, a roller shaft, a slitter knife, means for moving said knife into and out of operative position and means driven from said roller shaft for operating the knife to cause the same to slit the web; and means for moving said slidable support on said stationary member, thereby adjusting the position of said slitter assembly as a unit with respect to the other slitter mechanism.

6. A plurality of slitter mechanisms for slitting webs in newspaper or like printing presses; said mechanisms being arranged one after the other in the course of travel of the webs proceeding from the press and at least one thereof comprising a stationary supporting member; a slitter support slidably mounted on said member; a slitter assembly mounted on said support and including uprights on opposite sides of the web

position and including a web-supporting roller extending substantially the full width of the web, a roller shaft, a slitter knife, means for moving said knife into and out of operative position and means driven from said roller shaft for operating the knife to cause the same to slit the web, and means for driving said roller shaft including a slip connection permitting operation of said driving means in different adjusted positions of said slitter assembly; and means for moving said slidable support on said stationary member, thereby adjusting the position of said slitter assembly as a unit with respect to the other slitter mechanism.

7. A plurality of slitter mechanisms for slitting webs in newspaper or like printing presses, said mechanisms being arranged one after the other in the course of travel of the webs proceeding from the press and at least one thereof comprising a stationary supporting member; a slitter support slidably mounted on said member; a slitter assembly mounted on said support and including uprights on opposite sides of the web position; means for moving said slidable support on said stationary member, thereby adjusting the position of said slitter assembly as a unit with respect to the other slitter mechanism; and means for causing operation of the slitter mechanism in different adjusted positions of said assembly.

8. A plurality of slitter mechanisms for slitting webs in newspaper or like printing presses, said mechanisms being arranged one after the other in the course of travel of the webs proceeding from the press and at least one thereof comprising a plurality of spaced slitter units in succession through each of which particular webs of paper pass in the formation of a newspaper, each of said units comprising a stationary supporting member; a slitter support slidably mounted on said member; a slitter assembly mounted on said support; and means for moving said slidable support on said stationary member, thereby adjusting the position of said slitter assembly as a unit with respect to the other slitter mechanism.

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