

Aug. 29, 1961

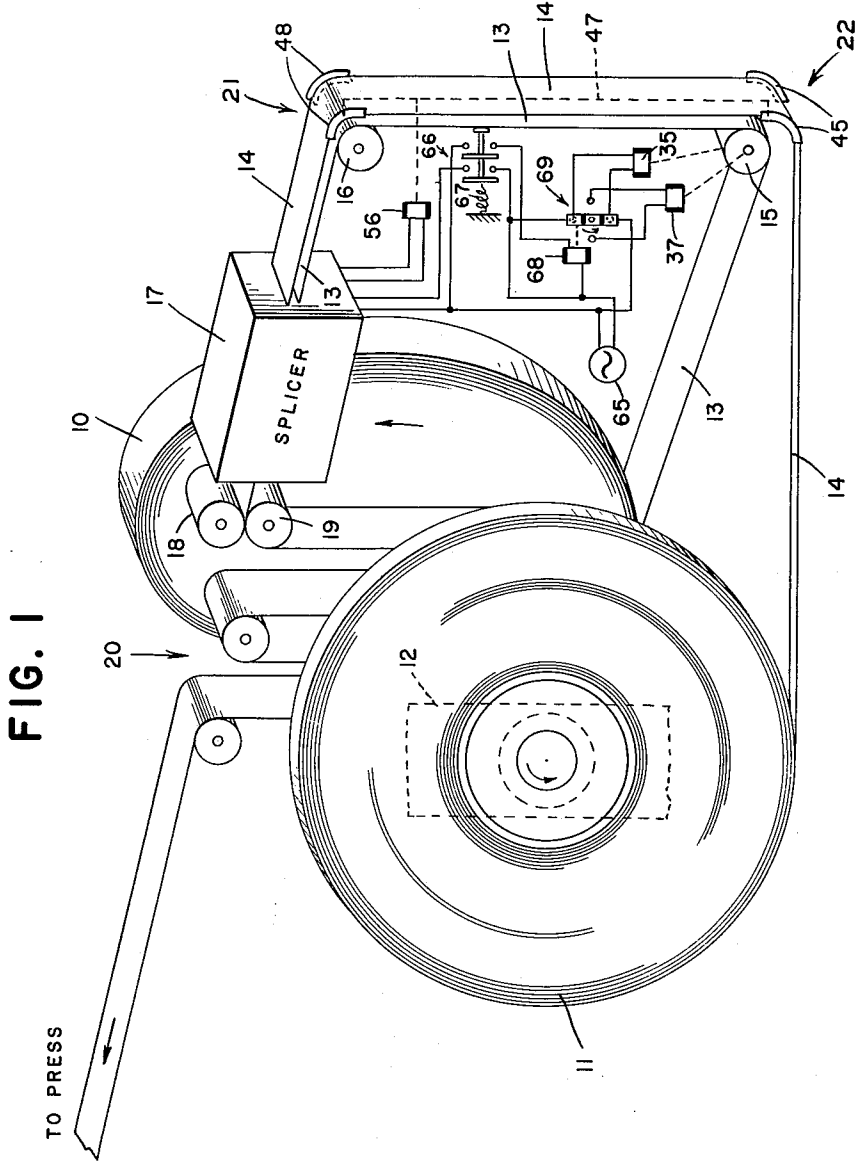
F. W. WALSH

2,998,204

CONTINUOUS WEB FEEDING SYSTEM

Filed June 30, 1958

3 Sheets-Sheet 1



Aug. 29, 1961

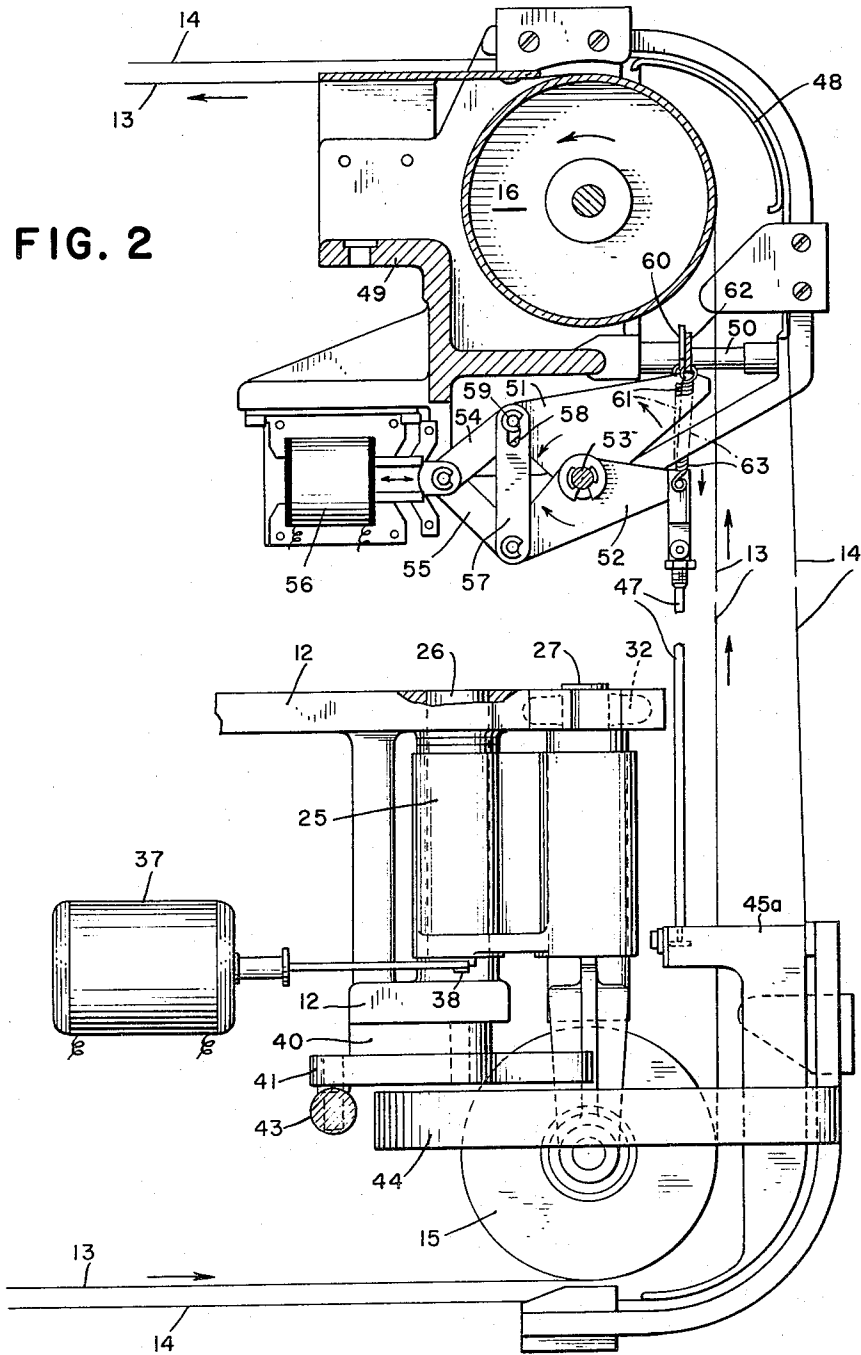
F. W. WALSH

2,998,204

CONTINUOUS WEB FEEDING SYSTEM

Filed June 30, 1958

3 Sheets-Sheet 2



Aug. 29, 1961

F. W. WALSH

2,998,204

CONTINUOUS WEB FEEDING SYSTEM

Filed June 30, 1958

3 Sheets-Sheet 3

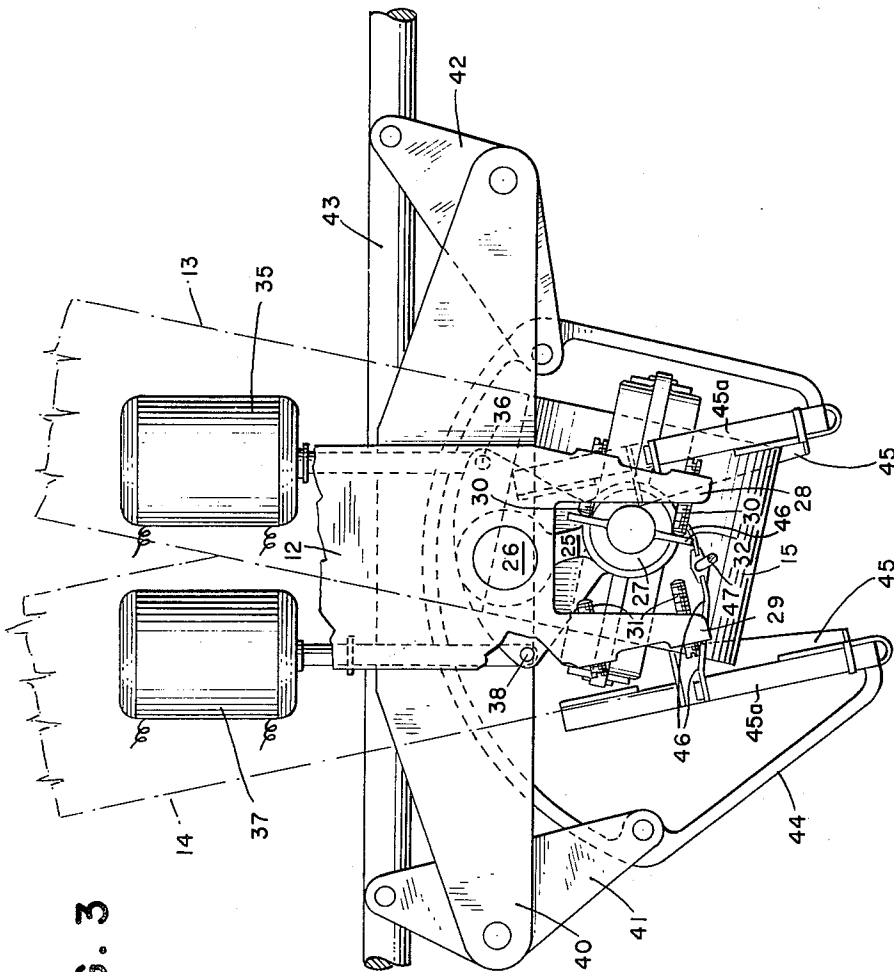


FIG. 3

1

2,998,204

CONTINUOUS WEB FEEDING SYSTEM

Francis W. Walsh, Susquehanna, Pa., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 30, 1958, Ser. No. 745,476

16 Claims. (Cl. 242—58.1)

This invention relates to a continuous web feeding system and more particularly to such a system adapted for continuously feeding a web to a high speed device such as a high speed printing press.

Various arrangements have hitherto been provided for maintaining a supply of web material in position to be fed at relatively high speed. Such web material is normally wound on a supply reel and in addition to the running reel from which the web supply is being drawn into the utilization device, one or more standby reels have been provided in an arrangement to facilitate the joining of the end of the running web to the leading end of the standby web, drawn from a standby reel, without interrupting the operation of the utilization device. The joining of the running and standby webs is effected by an automatic splicing device which is actuated as the running reel reaches depletion. Usually a reservoir of running web material is maintained on the utilization device side of the splicing mechanism so that operation of the device is not interrupted, sufficient reserve supply being maintained in the reservoir to permit the immobilization of the running web at the splicing mechanism while the joint is made.

Such running web systems have been developed to a relatively high state of efficiency. However, there have been instances where the use of these prior web supply systems has been considered impracticable or inconvenient. An objection which has been made to one type of prior system is the fact that ample space must be allowed for swinging the running and standby reels bodily around each other after a splice has been made in order that the standby web will always be on the same side (e.g., on top) of the running web when the next splice is to be made. It is not always feasible to provide space for this purpose in the operating area of a machine. To overcome this difficulty, it has been proposed to provide a web splicing mechanism which will operate just as effectively whether the standby web is positioned on one side or on the other side of the running web while the splice is being made. An improved web splicer of this kind is disclosed and claimed in the copending application of H. A. Hendrich and R. N. Eichorn, filed July 5, 1955, Serial No. 519,909, and assigned to the assignee of the present application. This improved construction entails the provision of dual web splicing mechanisms, which in some situations may not be considered feasible because they are more complex than single-sided web splicers. I have found that a substantially improved and simplified web supply system may be provided in accordance with the present invention by so arranging the web reels that the standby web always is brought into the splicer on the same side of the running web, without having bodily to interchange the positions of the two reels to accomplish this. This enables one to operate the web supply system in a limited space with web reels that need not be bodily interchanged between splices and without resorting to a dual web splicing mechanism.

Further advantages as well as objects of the present invention will be apparent from the following detailed description of a preferred embodiment thereof when read in conjunction with the accompanying drawing in which:

FIGURE 1 is a diagrammatic view of a preferred embodiment of a continuous feed system in accordance with the present invention;

2

FIGURE 2 is a side elevational view of the web stand-off means shown diagrammatically in FIGURE 1; and FIGURE 3 is a cross-sectional view through the line 3—3 of FIGURE 2.

As shown in FIGURE 1, two web reels 10 and 11 are rotatably mounted on opposite sides of the frame 12 of a utilization device which may be a high speed printing press (not shown). As indicated web 13 is being drawn from reel 10 over a swingably mounted aligning roll 15 and fixed roll 16 through splicer 17 by feed rolls 18 and 19. From the feed rolls 18 and 19 the running web 13 may pass through an accumulator or storage device indicated generally at 20 into the printing press. The storage means 20 may be constructed as set forth in my copending application filed jointly with H. A. Hendrich on January 2, 1958, Serial No. 706,670, now Patent No. 2,927,789 and assigned to the assignee of the present application. A length of web 14 extends from reel 11 and in spaced juxtaposed relation with web 13 past rolls 15 and 16 into splicer 17. With the apparatus in the condition shown in FIGURE 1, web 13 constitutes the running web which is being drawn from reel 10 and passes through the splicer 17. The free end of web 14 which now constitutes the standby web is engaged in splicer 17 and, as shown, the length of web 14 juxtaposed to web 13 is stood-off from the running web 13 by upper and lower stand-off mechanisms indicated diagrammatically at 21 and 22, respectively. The reels 10 and 11 are mounted so that the webs 13, 14 may converge toward aligning roll 15. As shown in FIGURE 1, the reels 10 and 11 are in fixed generally side-to-side spaced relation and extend in mutually convergent planes.

Referring now to FIGURES 2 and 3, a support member 25 in the form of a collar having two parallel bores formed therethrough is rotatably secured to the frame 12 by means of a pin 26, about the axis of which the second bore may be swung through an arc. Aligning roll 15 is rotatably secured to a shaft 27 which is rotatably supported in the second bore of support member 25. As is most clearly shown in FIGURE 3, the portion of the frame member 12, which extends adjacent to the upper end of shaft 27, is bifurcated to provide two arms 28, 29. Two stop screws 30 are threaded through arm 28 and have ends which are spaced from the ends of two other stop screws 31 which are threaded through arm 29. A flange 32 is fixed to the upper end of shaft 27 which protrudes somewhat above support member 25.

From a consideration of FIGURE 3, it is apparent that when support member 25 is rotated about the center of pin 26, shaft 27 is carried, from the position shown in FIGURE 3, along an arcuate path such that flange 32 is removed from engagement with stop screws 30 and is brought into engagement with stop screws 31. One end of flange 32 engages one of the stop screws 31 before the other end thereof engages its stop screw and continued displacement of shaft 27 with support member 25 results in shaft 27 being rotated about its axis until said other end of flange 32 bears against the second stop screw 31. This rotation of shaft 27 results in an equivalent rotation of aligning roll 15 from the position shown in FIGURE 3, where it is shown in alignment with web 13, into alignment with web 14.

A pair of solenoids 35, 37, fixed to frame 12, have their armatures pivotally connected to opposite sides of aligning roll support member 25, as indicated at 36 and 38, respectively. As shown in FIGURE 3, solenoid 35 is energized and has its armature attracted while solenoid 37 is deenergized.

Fixed to the frame 12, below support member 25, as shown in FIGURE 2, is a plate 40 to the ends of which are pivotally connected connecting arms 41 and 42. Corresponding ends of the connecting arms 41 and 42 are

pivotaly connected to a transfer rod 43 while the other ends thereof are pivotaly connected to a generally sector-shaped transfer carrier 44. Lower stand-off means 22 includes a pair of oppositely disposed shutter plates 45 rotatably secured at their upper ends 45a to transfer carrier 44 and interconnected by means of a pair of levers 46 which are in turn connected to an elongated operating rod 47. Shutter plates 45 are spaced apart such that, when positioned as shown in FIGURE 3, they may receive and retain the opposite edges of the standby web 14 so that it does not come into engagement with aligning roll 15.

The upper stand-off means 21 includes a pair of arcuate shutter plates 48, only one of which is shown in FIGURE 2, in which are rotatably secured the frame member 49 by means of a pin 50. Shutter plates 48 are juxtaposed to roller 16 in generally the same relationship that shutter plates 45 are positioned relative to aligning roll 15. A pair of plate-like levers 51 and 52 are rotatably mounted on a laterally extending pin 53 secured to the frame member in any convenient manner. One pair of corresponding ends of levers 51 and 52 are connected by links 54 and 55 to the armature of a solenoid 56 secured to the frame member. These ends of levers 51 and 52 are also mutually interconnected by means of a link 57 having a slot 58 formed therein in which pin 59, interconnecting lever 51 and link 54, is slideable.

The shutter plate 48 shown in FIGURE 2 has a laterally extending arm 60 which projects over the right hand end portion of lever 51 and to which one end of a spring 61 is connected. This arm 60 extends from the shutter plate pivot pin 50 towards the other one of the pair of upper shutter plates which is provided with a laterally extending arm indicated at 62 and to which the upper end of a spring 63 is connected. The lower ends of springs 61 and 63 are secured, together with the upper end of operating rod 47, to the right hand end of lever 52, as is most clearly shown in FIGURE 2.

The shutter plates 48 are disposed along opposite edges of the standby web 14 in spaced relation to the running web which is in contact with roll 16. When, as will be more fully pointed out, solenoid 56 is energized to attract its armature, links 54 and 55 are drawn to the left causing levers 51 and 52 to rotate about pin 53. The right hand end of lever 51 moves upwardly forcing shutter plate arms 60 and 62 upwardly about their respective pivots 50. At the same time the right hand end of lever 52 moves downwardly forcing operating rod 47 down which in turn pivots levers 46 connected to the lower shutter plates 45. Both the upper shutter plates 48 and the lower shutter plates 45 are rotated when solenoid 56 is energized and are carried away from the edges of the standby web which is now free to be drawn inward, or to the left as viewed in FIGURE 2, against the running web or rolls 15 and 16.

It is to be noted that the displacement of levers 51 and 52 under the influence of solenoid 56 and the concomitant displacement of shutter plate arms 60 and 62 and operating rod 47 causes expansion of springs 61 and 63. Consequently, when solenoid 56 is de-energized to release its armature, springs 61 and 63 are free to contract and restore the arms 60 and 62 to their lowered position and operating rod 47 to its raised position and levers 51 and 52 are then once again in the position shown in FIGURE 2.

The control circuit of splicer 17 includes a suitable source 65 of electromotive power, the current from which to the splicer 17 is controlled by a switch 66. The switch 66 has an arm which is positioned, as indicated in FIGURE 1, so as to bear against the running web 13 between the rolls 15 and 16. When the supply of running web from a given reel 10 or 11 is depleted and the end of the web is free, switch 66 is free, under the influence of its spring 67, to close its contacts and complete the circuit from source 65 to the splicer 17 and, at the same

time, to energize a solenoid 68. The armature of solenoid 68 controls a stepping switch 69 which in turn controls the flow of current to the aligning roll control solenoids 35 and 37. Thus, upon closing of switch 66 when the end of the running web is detected, switch 69 is operated by solenoid 68 and de-energizes solenoid 35 and energizes solenoid 37. This results in rotation of the aligning roll support member 25 from the position shown in FIGURE 3 to its alternate position wherein flange 32 rests against stop screws 31. In this position the aligning roll 15 is ready to receive the web 14 from reel 11.

The construction and operation of splicer 17 does not form any part of the present invention and is, therefore, not shown in detail. As is well known, such splicers when energized momentarily arrest the movement of the running web therethrough and automatically join the leading end of the standby web 14 to the trailing end of the running web 13. Upon completion of the formation of the joint between the running and the standby web, the splicer releases the running web and contacts are closed which energize solenoid 56. As has been described hereinabove, energization of solenoid 56 causes the opening of upper and lower shutter plates 48 and 45 and releases the web 14 to permit the same to be drawn into engagement with rolls 15 and 16, roll 15 having been oriented towards reel 11.

A fresh reel of web material is then mounted in place of the depleted reel 10. Transfer rod 43 is manually shifted longitudinally to displace the transfer carrier 44 and place the lower shutter plates 45 into orientation with the fresh reel which now supplies the standby web.

The web from this reel is then threaded through lower shutter plates 45 and upper shutter plates 48 and engaged in the splicer mechanism thereby placing the apparatus in condition for a fresh cycle of operation when the reel 11 becomes depleted and the end of its web is detected by switch 66.

While reels 10 and 11 are preferably mounted on opposite sides of the frame of the utilization device it will be apparent that many of the advantages of the present invention may be achieved with other arrangements of the running and standby reels. Any suitable arrangement may be utilized which permits the running web to freely engage the aligning roll 15 and fixed roll 16 while permitting the standby web to be threaded always on the same side of the running web through the lower and upper shutter plates 45 and 48.

The terms and expressions which have been employed are used as terms of description and not of limitation, and there is no intention, in the use of such terms and expressions, of excluding any equivalents of the features shown and described or portions thereof, but it is recognized that various modifications are possible within the scope of the invention claimed.

I claim:

1. In a continuous web feeding system in which a running web is supplied to a utilization device, web splicing means, first and second web supply means including means for rotatably supporting two web reels in fixed spaced relation to each other and to said splicing means with the reels extending in mutually convergent planes, guide means adjacent to where said planes converge for leading running web from one of said supply means into said web splicing means along a predetermined path, web feeding means for drawing web from one of said supply means past said guide means and through said splicer means, said feeding means being adapted to maintain said web under tension and in engagement with said guide means, stand-off means for maintaining web from the other one of said supply means in standby position juxtaposed to but out of engagement with said guide means, said stand-off means defining a path for the web from said other web supply means to said splicer means on a predetermined side of said predetermined path, said stand-off means being

adapted upon actuation thereof to release the web from said other one of said supply means and leave the same free to engage said guide means, means responsive to depletion of the web from said one supply means and for actuating said splicer means, and means for actuating said stand-off means.

2. In a continuous web feeding system in which a running web is supplied to a utilization device, web splicing means, first and second web supply means, guide means for leading running web from one of said supply means into said web splicing means along a predetermined path, web feeding means for drawing web from said one of said supply means past said guide means and through said splicer means, said feeding means being adapted to maintain said web under tension and in engagement with said guide means, said guide means including a movable member displaceable between two extreme positions in one of which it is disposed towards one of said supply means and in the other of which it is disposed towards the other of said supply means, said supply means being adapted to supply web along paths which converge towards said movable member, stand-off means for maintaining web from the other one of said supply means in standby position juxtaposed to but out of engagement with said guide means including said movable member, said stand-off means defining a path for the web from said other web supply means to said splicer means on a predetermined side of said predetermined path, said stand-off means being adapted upon actuation thereof to release the web in standby position and leave the same free to engage said guide means, means responsive to depletion of the web from said one supply means for displacing said movable member to its position oriented towards the other one of said supply means and for actuating said splicer means, and means responsive to said splicer means for actuating said stand-off means.

3. In a continuous web feeding system in which a running web is supplied to a utilization device, web splicing means, first and second web supply means, guide means for leading running web from one of said supply means into said web splicing means along a predetermined path, web feeding means for drawing web from said one of said supply means past said guide means and through said splicer means, said feeding means being adapted to maintain said web under tension and in engagement with said guide means, said guide means including a movable member displaceable between two extreme positions in one of which it is disposed towards one of said supply means and in the other of which it is disposed towards the other of said supply means, said supply means being adapted to supply web along paths which converge towards said movable member, stand-off means for maintaining web from the other one of said supply means in standby position juxtaposed to but out of engagement with said guide means including said movable member, said stand-off means defining a path for the web from said other web supply means to said splicer means on a predetermined side of said predetermined path, said stand-off means including a pair of spaced shutter members movably mounted on said one side of said predetermined path, means normally maintaining said shutter members in position to engage the web in standby position, means responsive to depletion of the web from said one supply means for displacing said movable member to its position oriented towards the other one of said supply means and for actuating said splicer means, and means responsive to said splicer means for actuating said stand-off means and displace said shutter members to release the same from engagement with the web in standby position.

4. In a continuous web feeding system in which a running web is supplied to a utilization device, web splicing means, first and second web supply means, guide means for leading running web from one of said supply means into said web splicing means along a predetermined path, web feeding means for drawing web from said one of said

supply means past said guide means and through said splicer means, said feeding means being adapted to maintain said web under tension and in engagement with said guide means, said guide means including a support member displaceable between two extreme positions, a shaft rotatably supported on said support member and movable therewith, an aligning roll carried by said shaft, means responsive to displacement of said support member from one of its said positions to the other for rotating said shaft and thereby positioning said aligning roll so that it is disposed to receive web from one of said supply means when said support member is in one of its positions and from the other of said supply means when said support member is in its other position, said supply means being adapted to supply web along paths which converge towards said aligning roll, stand-off means for maintaining web from said other one of said supply means in standby position juxtaposed to but out of engagement with said guide means including said aligning roll, said stand-off means defining a path for the web from said other web supply means to said splicer means on a predetermined side of said predetermined path, said stand-off means being adapted upon actuation thereof to release the web in standby position and leave the same free to engage said aligning roll, means responsive to depletion of the web from said one supply means for displacing said support member to its other position and for actuating said splicer means, and means responsive to said splicer means for actuating said stand-off means.

5. In a continuous web feeding system in which a running web is supplied to a utilization device, web splicing means, first and second web supply means, guide means for leading running web from one of said supply means into said web splicing means along a predetermined path, web feeding means for drawing web from said one of said supply means past said guide means and through said splicer means, said feeding means being adapted to maintain said web under tension and in engagement with said guide means, said guide means including a support member displaceable between two extreme positions, a shaft rotatably supported on said support member and movable therewith, an aligning roll carried by said shaft, means responsive to displacement of said support member from one of its said positions to the other for rotating said shaft and thereby positioning said aligning roll so that it is disposed to receive web from one of said supply means when said support member is in one of its positions and from the other of said supply means when said support member is in its other position, said supply means being adapted to supply web along paths which converge towards said aligning roll, stand-off means for maintaining web from the other one of said supply means in standby position juxtaposed to but out of engagement with said guide means including said aligning roll, said stand-off means defining a path for the web from said other web supply means to said splicer means on a predetermined side of said predetermined path, said stand-off means including a pair of spaced shutter members movably mounted on said one side of said predetermined path, means normally maintaining said shutter members in position to engage the web in standby position, means responsive to depletion of the web from said one supply means for displacing said aligning roll to its position oriented towards the other one of said supply means and for actuating said splicer means, and means for actuating said stand-off means.

6. In a continuous web feeding system in which a running web is supplied to a utilization device, web splicing means, first and second web supply means, guide means for leading running web from one of said supply means into said web splicing means along a predetermined path, web feeding means for drawing web from one of said supply means past said guide means and through said splicer means, said feeding means being adapted to maintain said web under tension and in engagement with said

7

guide means, stand-off means for maintaining web from the other one of said supply means in standby position juxtaposed to but out of engagement with said guide means, said stand-off means being movable between two extreme positions in each of which it defines a path for standby web from one of said web supply means to said splicer means spaced from and on a predetermined side of said predetermined path, said stand-off means being adapted upon actuation thereof in each of its two positions to release the standby web and leave the same free to engage said guide means, means responsive to depletion of the web from said one supply means and for actuating said splicer means, and means for actuating said stand-off means in each of its two positions.

7. In a continuous web feeding system in which a running web is supplied to a utilization device, web splicing means, first and second web supply means, guide means for leading running web from one of said supply means into said web splicing means along a predetermined path, web feeding means for drawing web from said one of said supply means past said guide means and through said splicer means, said feeding means being adapted to maintain said web under tension and in engagement with said guide means, said guide means including a movable member displaceable between two extreme positions in one of which it is disposed towards one of said supply means and in the other of which it is disposed towards the other of said supply means, said supply means being adapted to supply web along paths which converge towards said movable member, stand-off means for maintaining web from the other one of said supply means in standby position juxtaposed to but out of engagement with said guide means including said movable member, said stand-off means being movable between two extreme positions in each of which it defines a path for standby web from one of said web supply means to said splicer means on a predetermined side of said predetermined path, said stand-off means being adapted upon actuation thereof to release the web in standby position and leave the same free to engage said guide means, means responsive to depletion of the web from said one supply means for displacing said movable member to its position oriented towards the other one of said supply means and for actuating said splicer means, means responsive to said splicer means for actuating said stand-off means and means for moving said stand-off means from one of its positions to the other.

8. In a continuous web feeding system in which a running web is supplied to a utilization device, web splicing means, first and second web supply means, guide means for leading running web from one of said supply means into said web splicing means along a predetermined path, web feeding means for drawing web from said one of said supply means past said guide means and through said splicer means, said feeding means being adapted to maintain said web under tension and in engagement with said guide means, said guide means including a support member displaceable between two extreme positions, a shaft rotatably supported on said support member and movable therewith, an aligning roll carried by said shaft, means responsive to displacement of said support member from one of its said positions to the other for rotating said shaft and thereby positioning said aligning roll so that it is disposed to receive web from one of said supply means when said support member is in one of its positions and from the other of said supply means when said support member is in its other position, said supply means being adapted to supply web along paths which converge towards said aligning roll, stand-off means for maintaining web from the other one of said supply means in standby position juxtaposed to but out of engagement with said guide means, said stand-off means including a pair of spaced shutter members movably mounted on a predetermined side of said predetermined path and movable between two extreme positions in each of which they

8

define a path for standby web from one of said supply means to said splicer means on said predetermined side of said predetermined path, means normally maintaining said shutter members in position to engage the web in standby position, means responsive to depletion of the web from said one supply means for displacing said aligning roll to its position oriented towards the other one of said supply means and for actuating said splicer means, and means for actuating said stand-off means to release the standby web, and means for shifting said shutter plates from one to another of their said positions.

9. In a continuous web feeding system in which a running web is supplied to a utilization device, web splicing means, first and second web supply means, guide means for leading running web from one of said supply means into said web splicing means along a predetermined path, web feeding means for drawing web from said one of said supply means past said guide means and through said splicer means, said feeding means being adapted to maintain said web under tension and in engagement with said guide means, said guide means including a support member displaceable between two extreme positions, a shaft rotatably supported on said support member and movable therewith, an aligning roll carried by said shaft, a flange fixed to said shaft, means for displacing said flange and thereby rotating said shaft as said support member is displaced between its two positions, said shaft upon displacement of said support member from one to another of its positions being rotated through an arc and thereby rotating said aligning roll so that it is disposed to receive web from one of said supply means when said support member is in one of its positions and from the other of said supply means when said support member is in its other position, said supply means being adapted to supply web along paths which converge towards said aligning roll, stand-off means for maintaining web from the other one of said supply means in standby position juxtaposed to but out of engagement with said guide means including said aligning roll, said stand-off means including a pair of spaced shutter members movably mounted on a predetermined side of said predetermined path and movable between two extreme positions in each of which they define a path for standby web from one of said supply means to said splicer means on said predetermined side of said predetermined path, means normally maintaining said shutter members in position to engage the web in standby position, means responsive to depletion of the web from said one supply means for displacing said aligning roll to its position oriented towards the other one of said supply means and for actuating said splicer means, and means for actuating said stand-off means to release the standby web, and means for shifting said shutter plates from one to another of their said positions.

10. In a continuous web feeding system in which a running web is supplied to a utilization device, web splicing means, first and second web supply means, guide means for leading running web from one of said supply means into said web splicing means along a predetermined path, web feeding means for drawing web from one of said supply means past said guide means and through said splicer means, said feeding means being adapted to maintain said web under tension and in engagement with said guide means, stand-off means for maintaining web from the other one of said supply means in standby position juxtaposed to but out of engagement with said guide means, said stand-off means defining a second path for the web from said other web supply means to said splicer means spaced from and on a predetermined side of said predetermined path, said stand-off means being adapted upon actuation thereof to release the web which extends from said other one of said supply means and leave the same free to move from said second path to said predetermined path to en-

engage said guide means, means responsive to depletion of the web from said one supply means and for actuating said splicer means, and means for actuating said stand-off means.

11. In a continuous web feeding system in which a running web is supplied to a utilization device, web splicing means, first and second web supply means, guide means for leading running web from one of said supply means into said web splicing means along a predetermined path, web feeding means for drawing web from one of said supply means past said guide means and through said splicer means, said feeding means being adapted to maintain said web under tension and in engagement with said guide means, standoff means for maintaining web from the other one of said supply means in standby position juxtaposed to but out of engagement with said guide means, said standoff means defining a second path for the web from said other web supply means to said splicer means spaced from and on a predetermined side of said predetermined path, said standoff means extending intermediate said paths and being adapted upon actuation thereof to release the web which extends from said other one of said supply means and leave the same free to move from said second path to said predetermined path to engage said guide means, means responsive to depletion of the web from said one supply means and for actuating said splicer means, and means for actuating said standoff means and for withdrawing the same from intermediate said paths.

12. In a continuous web feeding system in which a running web is supplied to a utilization device, web splicing means, first and second web supply means, guide means for leading running web from one of said supply means into said web splicing means along a predetermined path, web feeding means for drawing web from one of said supply means past said guide means and through said splicer means, said feeding means being adapted to maintain said web under tension and in engagement with said guide means, standoff means for maintaining web from the other one of said supply means in standby position juxtaposed to but out of engagement with said guide means, said standoff means being movable between two extreme positions in each of which it defines a path for standby web from one of said web supply means to said splicer means spaced from and on a predetermined side of said predetermined path, said standoff means extending intermediate said paths and being adapted upon actuation thereof to release the standby web and leave the same free to engage said guide means, means responsive to depletion of the web from said one supply means and for actuating said splicer means, and means for actuating said standoff means and for withdrawing the same from intermediate said paths.

13. In a continuous web feeding system in which a running web is supplied to a utilization device, web splicing means, first and second web supply means, guide means for leading running web from one of said supply means into said web splicing means along a predetermined path, web feeding means for drawing web from said one of said supply means past said guide means and through said splicer means, said guide means including a movable member displaceable between two extreme positions in one of which it is disposed towards one of said supply means and in the other of which it is disposed towards the other of said supply means, said supply means being adapted to supply web along paths which converge towards said movable member, standoff means for maintaining web from the other one of said supply means in standby position juxtaposed to but out of engagement with said guide means including said movable member, said standoff means defining a path for the web from said other web supply means to said splicer means on a predetermined side of said predetermined path, said standoff means being adapted upon actuation thereof to release the standby web for running engagement with said guide

means, means responsive to depletion of the web from said one supply means for displacing said movable member to its position oriented towards the other one of said supply means and for actuating said splicer means, and means for actuating said standoff means.

14. In a continuous web feeding system in which a running web is supplied to a utilization device, web splicing means, first and second web supply means, guide means for leading running web from one of said supply means into said web splicing means along a predetermined path, web feeding means for drawing web from said one of said supply means past said guide means and through said splicer means, said guide means including a movable member displaceable between two extreme positions in one of which it is disposed towards one of said supply means and in the other of which it is disposed towards the other of said supply means, said supply means being adapted to supply web along paths which converge towards said movable member, standoff means for maintaining web from the other one of said supply means in standby position juxtaposed to but out of engagement with said guide means including said movable member, said standoff means being movable between two extreme positions in each of which it defines a path for standby web from one of said web supply means to said splicer means on a predetermined side of said predetermined path, said standoff means being adapted upon actuation thereof to release the standby web for running engagement with said guide means, means responsive to depletion of the web from said one supply means for displacing said movable member to its position oriented towards the other one of said supply means and for actuating said splicer means, means for actuating said standoff means and for moving said standoff means from one of its positions to the other.

15. In a continuous web feeding system in which a running web is supplied to a utilization device, web splicing means, first and second web supply means, guide means for leading running web from one of said supply means into said web splicing means along a predetermined path, web feeding means for drawing web from said one of said supply means past said guide means and through said splicer means, said guide means including a movable member displaceable between two extreme positions in one of which it is disposed towards one of said supply means and in the other of which it is disposed towards the other of said supply means, said supply means including means for rotatably supporting two web reels in fixed spaced relation to each other and to said splicing means with the reels extending in mutually convergent planes for supplying web along paths which converge towards said movable member, standoff means for maintaining web from the other one of said supply means in standby position juxtaposed to but out of engagement with said guide means including said movable member, said standoff means defining a path for the web from said other web supply means to said splicer means on a predetermined side of said predetermined path, said standoff means being adapted upon actuation thereof to release the standby web for running engagement with said guide means, means responsive to depletion of the web from said one supply means for displacing said movable member to its position oriented towards the other one of said supply means and for actuating said splicer means, and means for actuating said standoff means.

16. In a continuous web feeding system in which a running web is supplied to a utilization device, web splicing means, first and second web supply means, guide means for leading running web from one of said supply means into said web splicing means along a predetermined path, web feeding means for drawing web from said one of said supply means past said guide means and through said splicer means, said guide means including a movable member displaceable between two extreme positions in one of which it is disposed towards one of said supply means and in the other of which it is disposed to-

11

wards the other of said supply means, said supply means including means for rotatably supporting two web reels in fixed spaced relation to each other and to said splicing means with the reels extending in mutually convergent planes for supplying web along paths which converge towards said movable member, standoff means for maintaining web from the other one of said supply means in standby position juxtaposed to but out of engagement with said guide means including said movable member, said standoff means being movable between two extreme positions in each of which it defines a path for standby web from one of said web supply means to said splicer means on a predetermined side of said predetermined path, said standoff means being adapted upon actuation

12

thereof to release the standby web for running engagement with said guide means, means responsive to depletion of the web from said one supply means for displacing said movable member to its position oriented towards the other one of said supply means and for actuating said splicer means, means for actuating said standoff means and for moving said standoff means from one of its positions to the other.

References Cited in the file of this patent

UNITED STATES PATENTS

2,613,042	Dice -----	Oct. 7, 1952
2,752,984	Casey -----	July 3, 1956