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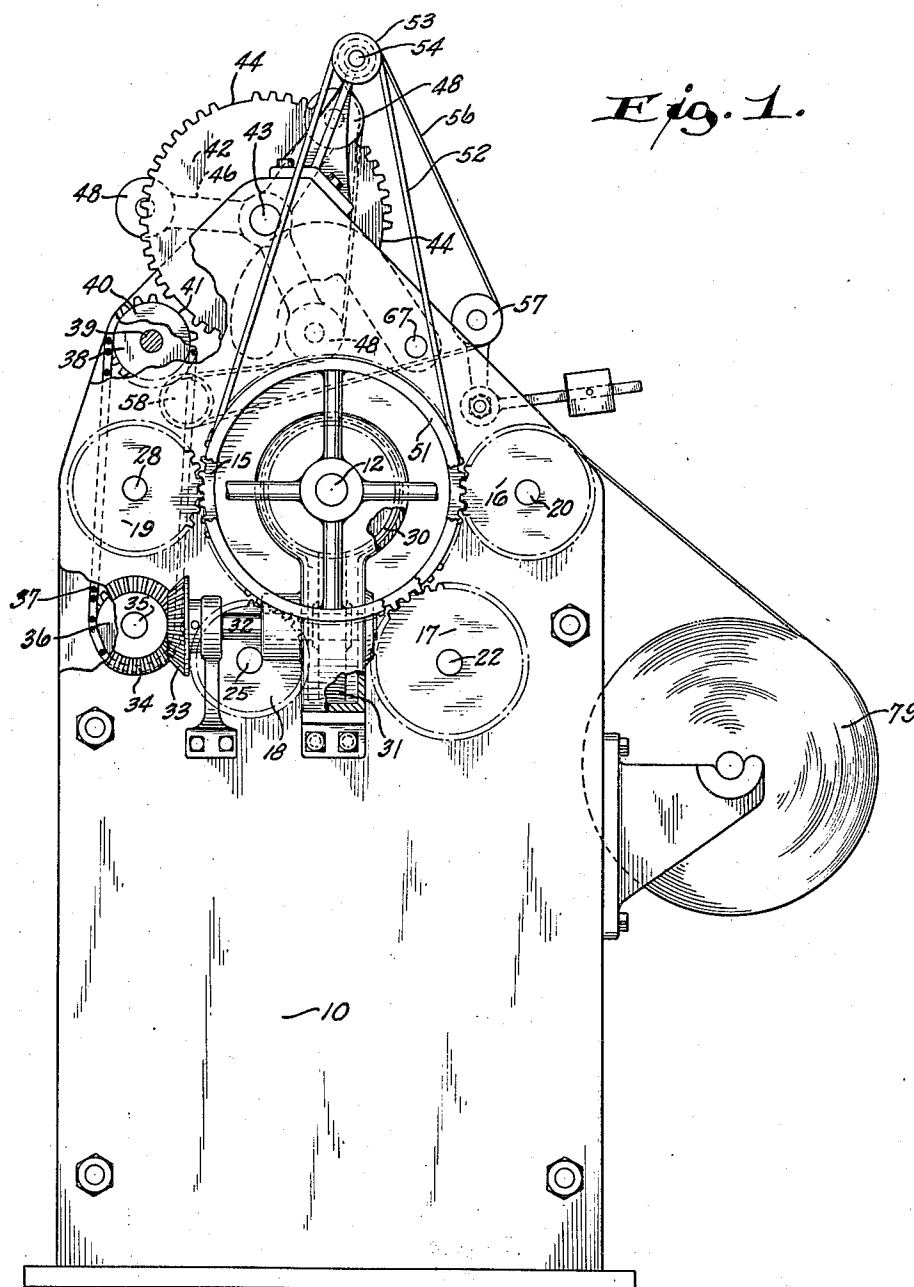
P. J. CHRISTMAN

2,361,264

REWINDING MACHINE

Filed March 6, 1944

4 Sheets-Sheet 1



INVENTOR.

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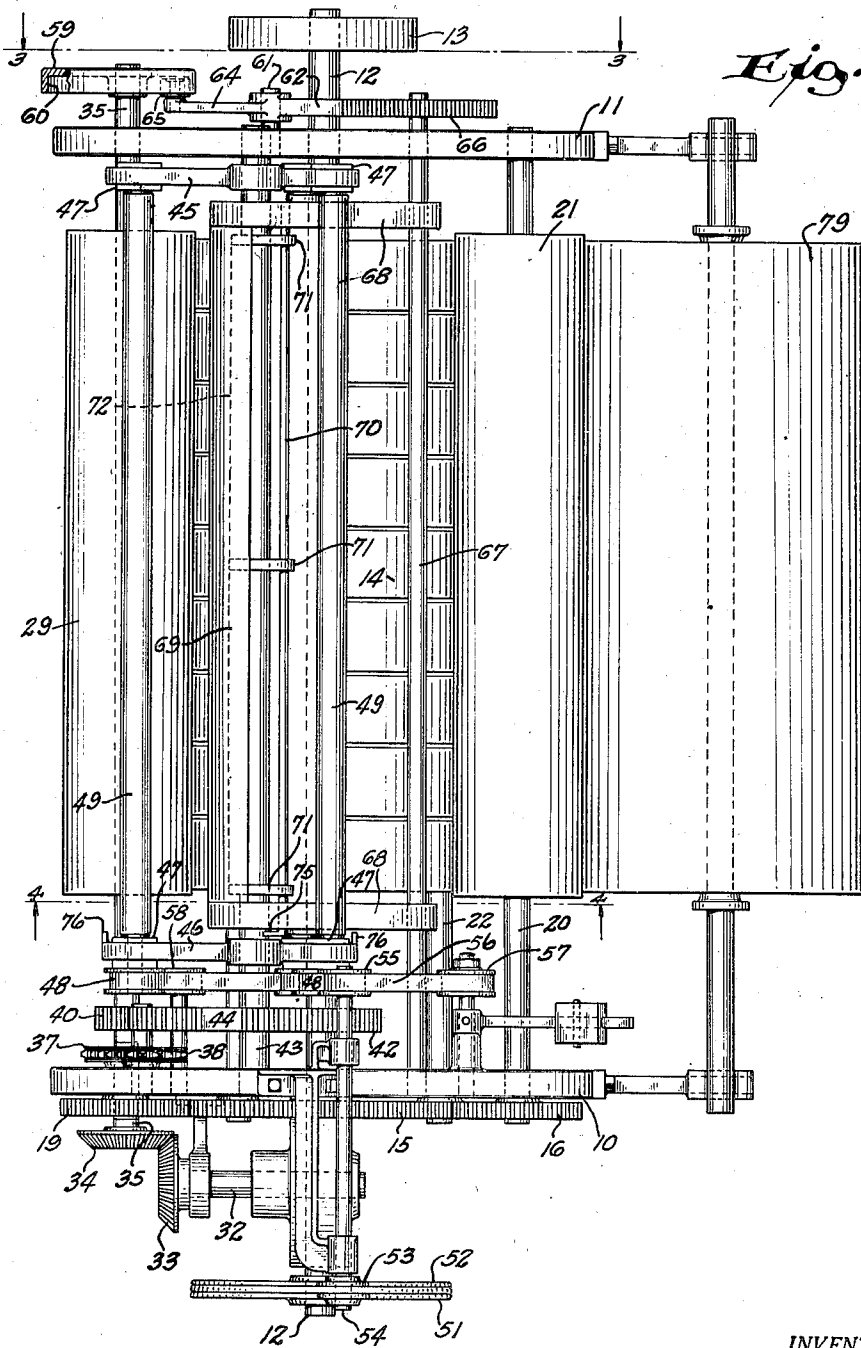
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4 Sheets-Sheet 2



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4 Sheets-Sheet 3

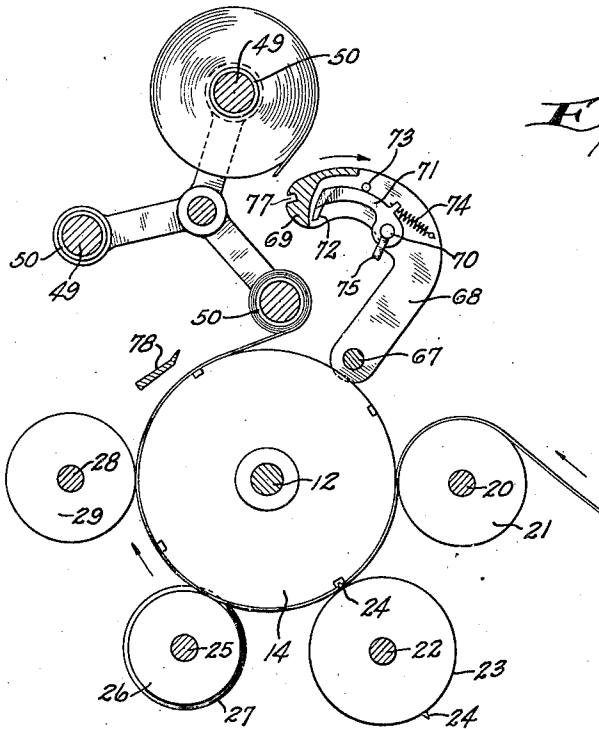


Fig. 7.

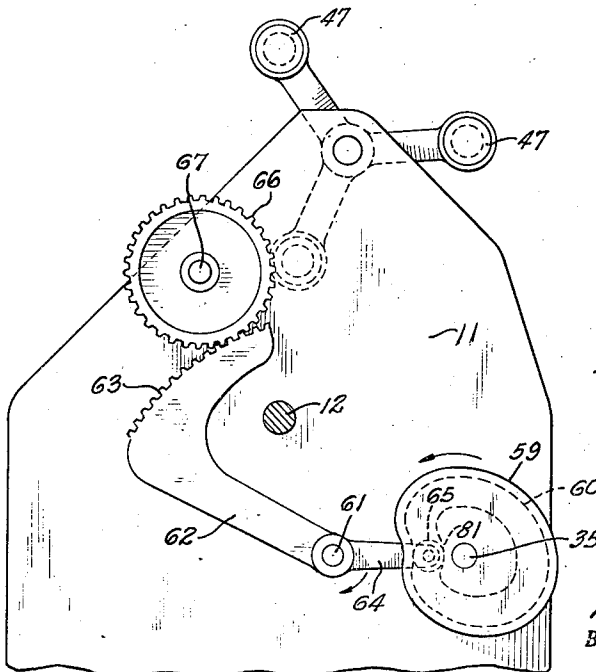


Fig. 3.

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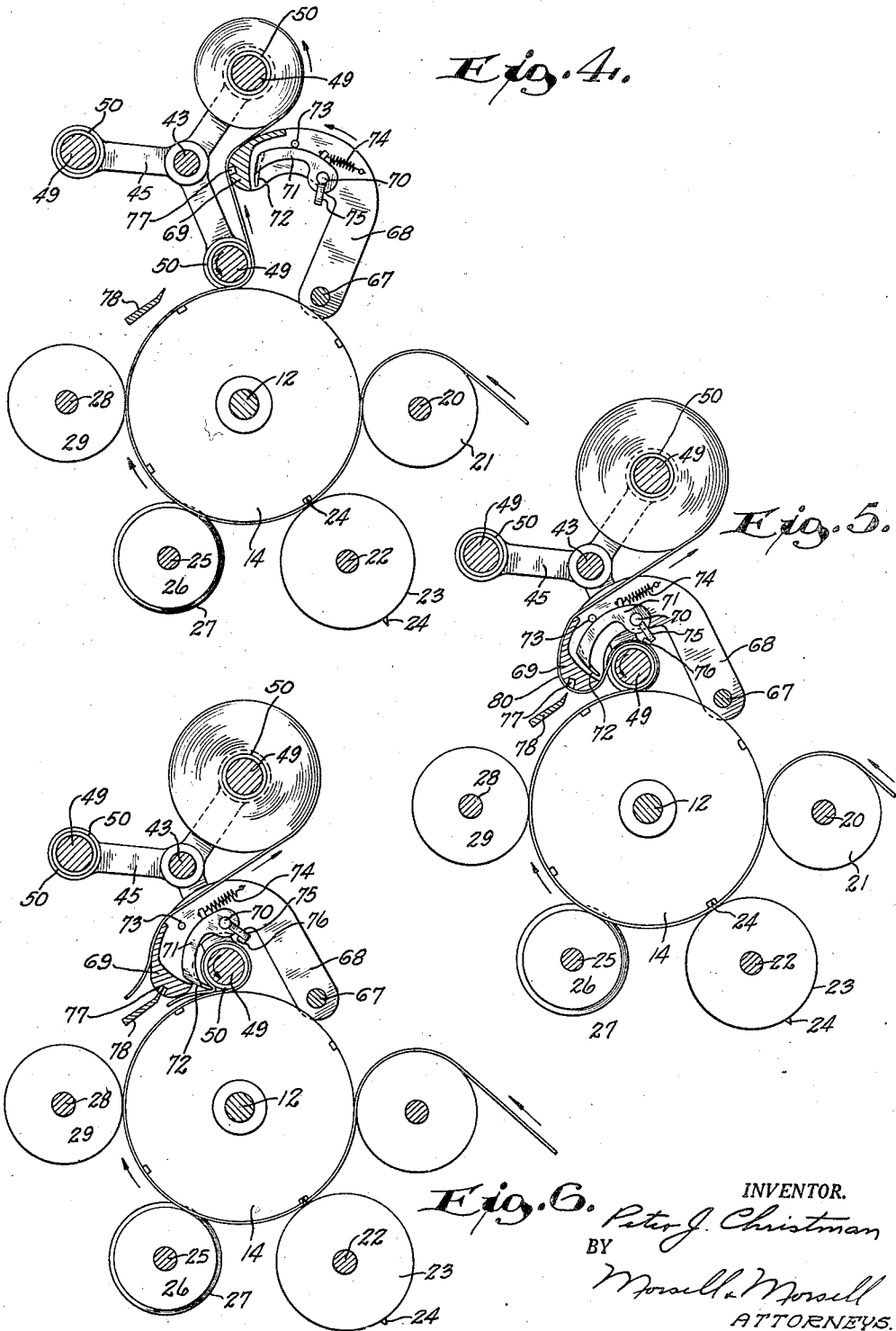
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REWINDING MACHINE

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4 Sheets-Sheet 4



UNITED STATES PATENT OFFICE

2,361,264

REWINDING MACHINE

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Paper Converting Machine Co., Inc., Green Bay,
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Application March 6, 1944, Serial No. 525,156

17 Claims. (Cl. 242—56)

This invention relates to improvements in re-winding machines, and more particularly to a machine for continuously converting a web of sheet material into relatively small rolls to be marketed as toilet paper, toweling, wax paper, or the like.

A general object of the invention is to provide a rewinding machine having novel means for effecting a transfer of the web from the wound rolls on one mandrel to the empty cores on a succeeding mandrel while the apparatus is operating at full speed.

A further object of the invention is to provide an apparatus having novel mechanism arranged to deflect and form a loop in a portion of the moving web which is intermediate one mandrel being wound and a next succeeding mandrel so that said web portion is advantageously positioned for subsequent cutting and for tucking of the web into the nip between the cores of the succeeding mandrel and an engaging roller.

A more specific object of the invention is to provide a device of the class described having transfer mechanism which is arranged to wrap a substantial portion of the length of the web on the cores of a succeeding mandrel while an advanced mandrel is still being wrapped, together with means for thereafter effecting a complete overlapped tuck on the succeeding core substantially simultaneously with the severing of the web.

A further, more specific object of the invention is to provide a device of the class described wherein there is an oscillatory transfer bar and wherein there is a tucking member movable with said transfer bar and mounted thereon for independent swinging movement at a predetermined time in the cycle of operation.

A further object of the invention is to provide a novel transfer member which is cam controlled in timed relationship with other cooperating parts of the machine.

A further object of the invention is to provide a rewinding machine wherein the necessity of using moisture or an adhesive for applying a severed end of the web to a new set of cores is eliminated.

A further object of the invention is to provide a rewinding machine having a rotatable mandrel holder wherein means is provided for causing a periodic dwell during the rotation of the mandrel holder so that the transfer operation may be more efficiently performed.

Other objects of the invention are to provide a rewinding machine which is strong and durable, which is speedy in operation, which will accurately produce a roll of desired size, and which is otherwise well adapted for the purposes described.

With the above and other objects in view the invention consists of the improved rewinding machine and all its parts and combinations as set forth in the claims and all equivalents thereof.

In the accompanying drawings illustrating one complete embodiment of the preferred form of the invention,

Fig. 1 is an elevational view of one end of the machine;

Fig. 2 is a top plan view thereof;

Fig. 3 is a fragmentary view showing the opposite end of the machine from Fig. 1 and taken approximately on the line 3—3 of Fig. 2;

Fig. 4 is a vertical sectional view taken approximately on the line 4—4 of Fig. 2 and showing the position of the parts as the transfer bar is moving forward to deflect the web;

Fig. 5 is a view similar to Fig. 4 showing the position of the transfer bar just before the web is transferred to the empty cores;

Fig. 6 is a similar view showing the position of the parts at the time of actual transfer and just after the web has been severed; and

Fig. 7 is a similar view showing the transfer bar moving back out of the path of the mandrel holder.

Referring more particularly to the drawings the machine includes a suitable supporting frame having spaced side members 10 and 11. A main shaft 12 is suitably journaled in the machine and is driven from an outside source through the pulley 13. The shaft 12 rigidly supports a bed roll 14 so that as the shaft is driven the bed roll rotates. Referring to Fig. 1 the bed roll shaft 12 carries a bed roll gear 15 which in turn drives gears 16, 17, 18 and 19. The gear 16 is rigidly mounted on a shaft 20 for a pull roll 21. The gear 17 is rigidly mounted on a shaft 22 for a perforating roll 23. The perforating roll is formed with one or more longitudinal rows of perforating projections 24 which cooperate with suitably located recesses in the bed roll to cause perforating of sheet material which passes between the bed roll and the perforating roll.

The gear 18 is rigidly mounted on a shaft 25 which drives a slitter roll 26. The slitter roll is formed with suitably spaced circumferential

knives 27 which cooperate with circumferential grooves in the bed roll to cause slitting of the web to a predetermined number of widths. The gear 19 is rigidly mounted on a shaft 28 which drives a second pull roll 29.

Also rigidly connected to the bed roll shaft 12 is a worm 30 which drives a worm wheel 31. The worm wheel 31 is rigidly mounted on a horizontal shaft 32 and the shaft 32 carries a bevel gear 33 rigidly on its outer end. The bevel gear 33 in turn drives a bevel gear 34 mounted rigidly on a cam shaft 35 which extends through the frame. The shaft 35 also carries a rigidly mounted sprocket wheel 36 which is connected by a sprocket chain 37 with a sprocket wheel 38 mounted rigidly on a short shaft 39 near the top of the side member 10 (see Fig. 1).

The short shaft 39 carries a rigidly mounted gear 40 and this gear is preferably formed with a toothless gap 41. The gear 40 in turn cooperates with an intermittent gear 42 rigidly mounted on a mandrel holder shaft 43. The intermittent gear 42 is formed with three toothless gaps 44.

The shaft 43 carries spaced mandrel holding members 45 and 46 (see Fig. 2). Each of these members consists of three arms extending radially from a hub portion. The outer end of each arm forms a suitable bearing for a rotatable holder 47. Each of the rotatable holders 47 at one side of the machine is equipped with a drive pulley 48. Mandrels 49 are removably insertable, in any well-known manner, between the mandrel holders 45 and 46 in such a manner that when the drive pulley 48 for a particular mandrel holder is rotated that the attached mandrel 49 will be likewise rotated. Each of the mandrels 49 is adapted to receive a plurality of cardboard cores 50 in such a manner as to cause rotation of the cores when they are in position on the mandrel.

Referring to Fig. 1, on the outer end of the bed roll shaft there is also mounted a friction drive pulley 51 which is connected by an endless belt 52 with a smaller pulley 53 at the top of the frame. The pulley 53 is mounted on a shaft 54 and said shaft carries on its inner end a pulley 55 (see Fig. 2). The pulley 55 drives an endless drive belt 56 which is also threaded around a belt tightener pulley 57 and an idler pulley 58. That portion of the length of the friction drive belt 56 which extends between the pulley 55 and the idler pulley 58 is always deflected, in the manner shown in Fig. 1, by engagement of certain of the mandrel driving pulleys 48 therewith. Thus, movement of the endless drive belt 56 causes rotation of those mandrels whose drive pulleys are in engagement with the drive belt 56 at a particular time in the cycle of operation.

On the end of the cam shaft 35 opposite to the end which carries the bevel gear 34 is an internal cam 59 (see Figs. 2 and 3) having a cam groove 60. Mounted for oscillation on a stud 61 is an arm 62 formed with a gear segment 63 at its upper end. Connected to the arm 62 and extending toward the internal cam is a shorter arm 64 equipped with a cam follower 65 which rides in the cam groove 60. The gear segment 63 cooperates with a gear 66 rigidly mounted on a transfer arm shaft 67. Referring now to Figs. 2 and Figs. 4 to 7 inclusive, the transfer arm shaft 67 has rigidly mounted thereon, in spaced position, transfer arms 68. The free ends of these arms are connected by a transfer bar 69 which has the cross-sectional shape shown in

Figs. 4 to 7. A tucker pivot shaft 70 connects the transfer arms 68 and has its ends pivoted in said arms. The tucker pivot shaft has rigidly connected thereto, in spaced position, a plurality of tucker arms 71 and these tucker arms are connected at their free ends by a tucker bar 72. The tucker bar 72 is normally maintained in an inactive position against a stop 73 by means of a coil spring 74. The tucker arm shaft 70 is equipped with a projecting actuating lug 75. This lug is adapted to be engaged by one of the fixed studs 76 projecting from each mandrel holder arm, and this engagement causes movement of the tucker arms 71 and tucker bar 72 to the position of Fig. 6 when the transfer bar is in the position of said figure.

The transfer bar is formed with a longitudinal groove 77 which is cooperable with a knife 78 when the transfer bar is in the position of Fig. 6. The knife 78 is fixedly supported between the sides of the frame and extends the full length of the transfer bar.

Operation

When the bed roll shaft 12 is driven it will simultaneously cause driving of the pull rolls 16 and 19 and of the perforating roll 17 and slitter roll 18. The bevel gears 33 and 34 will cause driving of the cam shaft 35 and through the sprocket wheels 36 and 40 driving of the intermittent gear 42 for the mandrel holder. In addition the endless belt connection 52 with the top pulley 53 will cause driving of the friction drive belt 56.

A web of toilet tissue, paper toweling or other sheet material, which is fed from a jumbo roll 79, passes over the top of the pull roll 16 and then downwardly around the bed roll 14 between the latter and the rolls 17, 18 and 19. The web then extends upwardly around the bed roll and beneath one of the mandrels to the uppermost mandrel whose cores 50 are being wound. As the internal cam 59 rotates, it will, through the action of the cam follower 65 and arms 64 and 62, gear segment 63 and gear 66, cause rocking of the transfer arm shaft 67 to cause movement of the transfer arms in the direction indicated by the arrow in Fig. 4. This causes deflection of that portion of the web which is between the mandrel being wound and the next succeeding mandrel. The rolls of paper on the uppermost mandrel of Fig. 4 are nearly wound. Through the action of the cam 59 the transfer bar 69 continues its movement from the position of Fig. 4 to the position of Fig. 5, making a loop 80 in the web and wrapping it nearly around the empty cores on the mandrel which is adjacent the bed roll. All of this time the drive pulleys 48 for the mandrel which is being wound and for the next succeeding mandrel are in engagement with the drive belt 56, as shown in Fig. 1, and the mandrels and cores thereon are being rotated. The third mandrel is not being rotated and is in the position shown in Fig. 1 where the mandrel may be disconnected, the wound rolls removed and a new set of cardboard cores 50 inserted. Following the position of Fig. 5 the cam follower 65 (see Fig. 3) drops into a quick cam drop portion 81 of the cam groove to cause a quick forcing of the transfer bar from the position of Fig. 5 to the position of Fig. 6. During this period one of the blank spots 44 of the intermittent mandrel holder drive gear is opposite the blank section 41 of the gear 40. This causes a momentary dwell in the rotation

of the mandrel holder on the shaft 43. As the transfer bar 69 moves to the position of Fig. 6, the tucker actuating lug 75 engages the stud 76 to cause swinging of the tucker arms 71 and tucker bar 72 from the position of Fig. 5 to the position of Fig. 6 against the tension of the spring 73. This causes the edge of the tucker bar 72 to tuck the looped web into the nip between the bed roll and the cores on the lowermost mandrel. Obviously this effects a complete surrounding of the empty cores by the web and an overlapping of the tucked portion so that upon continued rotation of the paper cores the web will begin to wind and build up thereon. Simultaneously with the tucking operation the transfer bar engages the fixed knife 78 in the manner shown in Fig. 6 to cause severing of the web.

The mandrel holder will again start to rotate after its momentary dwell and at the same time the cam control for the transfer bar will cause withdrawal movement of the bar in the direction indicated by the arrow in Fig. 7 and ultimately to a position clear of the rotating mandrels. As the newly started rolls on the lower mandrel move upwardly they are being continually wound, as indicated in Fig. 7, and by the time they reach the top position they are nearly fully wound. At the same time the fully wound rolls are being moved to the removal position by the mandrel holder.

It is apparent from the above that the winding operation is continuous even while the transfer of the web from one mandrel to another is being started. It is also clear that the novel transfer bar arrangement is such as to cause a very advantageous positioning of the web just prior to cutting and tucking. The final quick action of the transfer bar accompanied by a quick action of the tucker bar completes the operation and causes a completely overlapped tuck to be made on the succeeding cores simultaneously with the cutting operation. The present invention makes it possible to transfer the web automatically at full winding speed after a predetermined number of sheets or footage has been wound on the top mandrel. Due to the complete tuck-in and overlap illustrated in Fig. 6 there is no necessity for applying moisture or an adhesive to the web or empty cores in order to start winding.

While it is preferred to use the intermittent drive for the mandrel holder, in order to obtain more efficient operation of the transfer mechanism, nevertheless the invention may be utilized in connection with a continually rotating mandrel holder.

Various other changes and modifications may be made without departing from the spirit of the invention and all of such changes are contemplated as may come within the scope of the claims.

What I claim is:

1. In a rewinding machine for continuously winding a traveling web into rolls, a rotary mandrel holder, circumferentially spaced rotatable mandrels supported in said mandrel holder, means for rotating each mandrel during part of its cycle of movement to wind the web thereon, means for rotating the mandrel holder to advance a succeeding mandrel into the path of the web which is being wound on an advanced mandrel, transfer means for deflecting a portion of the web between said two mandrels to a position partially around said succeeding mandrel while

said web is still being wound on the advanced mandrel, and mechanism for thereafter breaking the web and causing winding on said succeeding mandrel.

2. In a rewinding machine for continuously winding a traveling web into rolls, a rotary mandrel holder, circumferentially spaced rotatable mandrels supported in said mandrel holder, means for rotating each mandrel during part of its cycle of movement to wind the web thereon, means for rotating the mandrel holder to advance a succeeding mandrel into the path of the web which is being wound on an advanced mandrel, transfer means for deflecting and looping a portion of the web between said two mandrels to a position partially around said succeeding mandrel while said web is still being wound on the advanced mandrel, means for tucking said looped portion into a position where it is overlapped by the web on said succeeding mandrel, and means for causing breaking of the web between said two mandrels.

3. In a rewinding machine for continuously winding a traveling web into rolls, a rotary mandrel holder, circumferentially spaced rotatable mandrels supported in said mandrel holder, means for rotating each mandrel during part of its cycle of movement to wind the web thereon, means for rotating the mandrel holder to advance a succeeding mandrel into the path of the web which is being wound on an advanced mandrel, transfer means for deflecting and looping a portion of the web between said two mandrels to a position partially around said succeeding mandrel while said web is still being wound on the advanced mandrel, means for tucking said looped portion into a position where it is overlapped by the web on said succeeding mandrel, and means for simultaneously causing breaking of the web between said two mandrels.

4. In a rewinding machine for continuously winding a traveling web into rolls, a rotary mandrel holder, circumferentially spaced rotatable mandrels supported in said mandrel holder, means for rotating each mandrel during part of its cycle of movement to wind the web thereon, means for rotating the mandrel holder to advance a succeeding mandrel into the path of the web which is being wound on an advanced mandrel, transfer means for deflecting a portion of the web between said two mandrels to a position partially around said succeeding mandrel while said web is still being wound on the advanced mandrel, mechanism for thereafter breaking the web and causing winding on said succeeding mandrel, and a cam control for said transfer means.

5. In a rewinding machine for continuously winding a traveling web into rolls, a rotary mandrel holder, circumferentially spaced rotatable mandrels supported in said mandrel holder, means for rotating each mandrel during part of its cycle of movement to wind the web thereon, means for rotating the mandrel holder to advance a succeeding mandrel into the path of the web which is being wound on an advanced mandrel, transfer means for deflecting and looping a portion of the web between said two mandrels to a position partially around said succeeding mandrel while said web is still being wound on the advanced mandrel, means for tucking said looped portion into a position where it is overlapped by the web on said succeeding mandrel, and means for causing breaking of the web between

said two mandrels, and a cam control for said transfer means and tucking means.

6. In a rewinding machine for continuously winding a traveling web into rolls, a rotary mandrel holder, circumferentially spaced rotatable mandrels supported in said mandrel holder, means for rotating each mandrel during part of its cycle of movement to wind the web thereon, means for rotating the mandrel holder to advance a succeeding mandrel into the path of the web which is being wound on an advanced mandrel, transfer means for deflecting and looping a portion of the web between said two mandrels to a position partially around said succeeding mandrel while said web is still being wound on the advanced mandrel, means for tucking said looped portion into a position where it is overlapped by the web on said succeeding mandrel, means for causing breaking of the web between said two mandrels, and a cam control for said transfer means and tucking means, said cam control having means for first causing relatively slow movement of said transfer means followed by relatively quick action thereof, and means operable during said relatively quick action for initiating movement of said tucking means.

7. In a rewinding machine for continuously winding a traveling web into rolls, a rotary mandrel holder, circumferentially spaced rotatable mandrels supported in said mandrel holder, means for rotating each mandrel during part of its cycle of movement to wind the web thereon, means for rotating the mandrel holder to advance a succeeding mandrel into the path of the web which is being wound on an advanced mandrel, a roll around which the web is guided positioned to be engaged by said succeeding mandrel, transfer means for deflecting and looping a portion of the web between said two mandrels to a position partially around said succeeding mandrel while said web is still being wound on the advanced mandrel, means for tucking said looped portion of the web into the nip between said succeeding mandrel and web guiding roll when the latter are engaged, and means for breaking the web between said two mandrels.

8. In a rewinding machine for continuously winding a traveling web into rolls, a rotary mandrel holder, circumferentially spaced rotatable mandrels supported in said mandrel holder, means for rotating each mandrel during part of its cycle of movement to wind the web thereon, means for rotating the mandrel holder to advance a succeeding mandrel into the path of the web which is being wound on an advanced mandrel, a roll around which the web is guided positioned to be engaged by said succeeding mandrel, transfer means for deflecting and looping a portion of the web between said two mandrels to a position partially around said succeeding mandrel while said web is still being wound on the advanced mandrel, means for tucking said looped portion of the web into the nip between said succeeding mandrel and web guiding roll when the latter are engaged, and a knife engageable with the web simultaneously with said tucking operation for cutting the web between said two mandrels.

9. In a rewinding machine for continuously winding a traveling web into rolls, a rotary mandrel holder, circumferentially spaced rotatable mandrels supported in said mandrel holder, means for rotating each mandrel during part of its cycle of movement to wind the web thereon, means for rotating the mandrel holder to ad-

vance a succeeding mandrel into the path of the web which is being wound on an advanced mandrel, a stationary knife, movable web engaging mechanism for deflecting a portion of the web between said two mandrels to a position of windable engagement on said succeeding mandrel and for causing a portion of the web between said two mandrels to be moved against said fixed knife to sever the web.

10. In a rewinding machine for continuously winding a traveling web into rolls, a rotary mandrel holder, circumferentially spaced rotatable mandrels supported in said mandrel holder, means for rotating each mandrel during part of its cycle of movement to wind the web thereon, means for rotating the mandrel holder to advance a succeeding mandrel into the path of the web which is being wound on an advanced mandrel, a stationary knife, web engaging mechanism including a movable transfer bar having a longitudinally grooved part engageable with the web with said groove positioned to receive the fixed knife when the transfer bar is in a predetermined position, said web engaging mechanism being movable to deflect a portion of the web between said two mandrels to a position of windable engagement on said succeeding mandrel and to cause the web to be severed when the transfer bar engages said fixed knife.

11. In a rewinding machine for continuously winding a traveling web into rolls, a rotary mandrel holder, circumferentially spaced rotatable mandrels supported in said mandrel holder, means for rotating each mandrel during part of its cycle of movement to wind the web thereon, means for rotating the mandrel holder to advance a succeeding mandrel into the path of the web which is being wound on an advanced mandrel, a movably supported transfer bar movable into engagement with a portion of the web which is traveling between said two mandrels to cause looping of said web portion and to move said looped portion to a position partially around said succeeding mandrel while said web is still being wound on the advanced mandrel, a tucker bar movable with said transfer bar and mounted for independent movement with respect to the transfer bar, and means operable after the transfer bar has deflected the web a predetermined distance for actuating said tucker bar, said tucker bar being positioned to tuck said looped web portion into a position where it is overlapped by the web on said succeeding mandrel, and means for causing breaking of the web between said two mandrels.

12. In a rewinding machine for continuously winding a traveling web into rolls, a rotary mandrel holder, circumferentially spaced rotatable mandrels supported in said mandrel holder, means for rotating each mandrel during part of its cycle of movement to wind the web thereon, means for rotating the mandrel holder to advance a succeeding mandrel into the path of the web which is being wound on an advanced mandrel, a movably supported transfer bar movable into engagement with a portion of the web which is traveling between said two mandrels to cause looping of said web portion and to move said looped portion to a position partially around said succeeding mandrel while said web is still being wound on the advanced mandrel, a tucker bar movable with said transfer bar and mounted for independent swinging movement with respect to the tucker bar and having an actuating lug, and a fixed stud engaged by said actuating lug when

the transfer bar has deflected the web a predetermined distance for actuating said tucker bar, said tucker bar being positioned to tuck said looped web portion into a position where it is overlapped by the web on said succeeding mandrel, and means for causing breaking of the web between said two mandrels.

13. In a rewinding machine for continuously winding a traveling web into rolls, a rotary mandrel holder, circumferentially spaced rotatable mandrels supported in said mandrel holder, means for rotating each mandrel during part of its cycle of movement to wind the web thereon, means for rotating the mandrel holder to advance a succeeding mandrel into the path of the web which is being wound on an advanced mandrel, a swingably mounted transfer bar swingable into engagement with a portion of the web which is traveling between said two mandrels to cause looping of said web portion and to move said looped portion to a position partially around said succeeding mandrel while said web is still being wound on the advanced mandrel, a cam control for causing forward and backward swinging movement of said transfer bar, a tucker bar movable with said transfer bar and mounted for independent movement with respect to the transfer bar, and means operable after the transfer bar has deflected the web a predetermined distance for actuating said tucker bar, said tucker bar being positioned to tuck said looped web portion into a position where it is overlapped by the web on said succeeding mandrel, and means for causing breaking of the web between said two mandrels.

14. In a rewinding machine for continuously winding a traveling web into rolls, a rotary mandrel holder, circumferentially spaced rotatable mandrels supported in said mandrel holder, means for rotating each mandrel during part of its cycle of movement to wind the web thereon, means for rotating the mandrel holder to advance a succeeding mandrel into the path of the web which is being wound on an advanced mandrel, a rock shaft journaled in said machine, cam mechanism for causing rocking of said shaft, spaced transfer bar arms secured to said rock shaft, a transfer bar connecting said arms and movable upon rocking of the shaft in a predetermined direction to engage with a portion of the web which is traveling between said two mandrels to cause looping of said web portion and to move said looped portion to a position partially around said succeeding mandrel while said web is still being wound on the advanced mandrel, a tucker bar movable with said transfer bar and mounted for independent movement with respect to the transfer bar, and means operable after the transfer bar has deflected the web a predetermined distance for actuating said tucker bar, said tucker bar being positioned to tuck said looped web portion into a position where it is overlapped by the web on said succeeding mandrel, and means for causing breaking of the web between said two mandrels.

15. In a rewinding machine for continuously winding a traveling web into rolls, a rotary mandrel holder, circumferentially spaced rotatable mandrels supported in said mandrel holder, means for rotating each mandrel during part of its cycle of movement to wind the web thereon, means for rotating the mandrel holder to advance a succeeding mandrel into the path of the web

which is being wound on an advanced mandrel, a rock shaft journaled in said machine, cam mechanism for causing rocking of said shaft, spaced transfer bar arms secured to said rock shaft, a transfer bar connecting said arms and movable upon rocking of the shaft in a predetermined direction to engage with a portion of the web which is traveling between said two mandrels to cause looping of said web portion and to move said looped portion to a position partially around said succeeding mandrel while said web is still being wound on the advanced mandrel, a tucker bar shaft connecting said transfer bar arms, tucker arms secured to said shaft, a tucker bar connecting said tucker arms, and means operable after the transfer bar has deflected the web a predetermined distance for actuating said tucker bar, said tucker being positioned to tuck said looped web portion into a position where it is overlapped by the web on said succeeding mandrel, and means for causing breaking of the web between said two mandrels.

16. In a rewinding machine for continuously winding a traveling web into rolls, a rotary mandrel holder, circumferentially spaced rotatable mandrels supported in said mandrel holder, means for rotating each mandrel during part of its cycle of movement to wind the web thereon, means for rotating the mandrel holder to advance a succeeding mandrel into the path of the web which is being wound on an advanced mandrel, a rock shaft journaled in said machine, cam mechanism for causing rocking of said shaft, spaced transfer bar arms secured to said rock shaft, a transfer bar connecting said arms and movable upon rocking of the shaft in a predetermined direction to engage with a portion of the web which is traveling between said two mandrels to cause looping of said web portion and to move said looped portion to a position partially around said succeeding mandrel while said web is still being wound on the advanced mandrel, a tucker bar shaft connecting said transfer bar arms, tucker arms secured to said shaft, a tucker bar connecting said tucker arms, yielding means normally maintaining said tucker bar in inoperative position, and means operable after the transfer bar has deflected the web a predetermined distance for actuating said tucker bar, said tucker being positioned to tuck said looped web portion into a position where it is overlapped by the web on said succeeding mandrel, and means for causing breaking of the web between said two mandrels.

17. In a rewinding machine for continuously winding a traveling web into rolls, a rotary mandrel holder, circumferentially spaced rotatable mandrels supported in said mandrel holder, means for rotating each mandrel during part of its cycle of movement to wind the web thereon, means for rotating the mandrel holder to advance a succeeding mandrel into the path of the web which is being wound on an advanced mandrel, transfer means for deflecting a portion of the web between said two mandrels to a position partially around said succeeding mandrel while said web is still being wound on the advanced mandrel, mechanism for thereafter breaking the web and causing winding on said succeeding mandrel, and means for causing a momentary pause in the rotation of the mandrel holder while the transfer of the web is being effected.

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