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[54] **APPARATUS FOR CONVOLUTING WEBS OF PHOTOGRAPHIC MATERIAL OR THE LIKE**

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[51] **Int. Cl.** **G03b 1/04,** G11b 15/32
[58] **Field of Search** 242/76, 195–197, 242/74, 205–210; 226/90, 91; 352/157, 158

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Primary Examiner—Leonard D. Christian
Attorney, Agent, or Firm—Michael S. Striker

[57] **ABSTRACT**

A winding apparatus for webs of photosensitive material has a core provided with a transverse slot and rotatably mounted on a fixed shaft in the housing of a cassette. The cassette contains a pivotable guide whose discharge end can register with the inlet of the slot in a predetermined angular position of the core so as to feed the leader of a web into the slot. The core is surrounded by a removable sleeve which can be slid onto the core only when the latter assumes the predetermined angular position and when an opening of the sleeve registers with the inlet of the slot. When the leader extends into the slot, the core is rotated by a worm drive so that the web is convoluted onto the sleeve and can be removed with the sleeve for transfer to another processing station. The housing of the cassette has a removable cover which can be attached to the shaft for the core only when the core is properly oriented relative to the guide and when the sleeve is properly applied onto the core.

23 Claims, 5 Drawing Figures

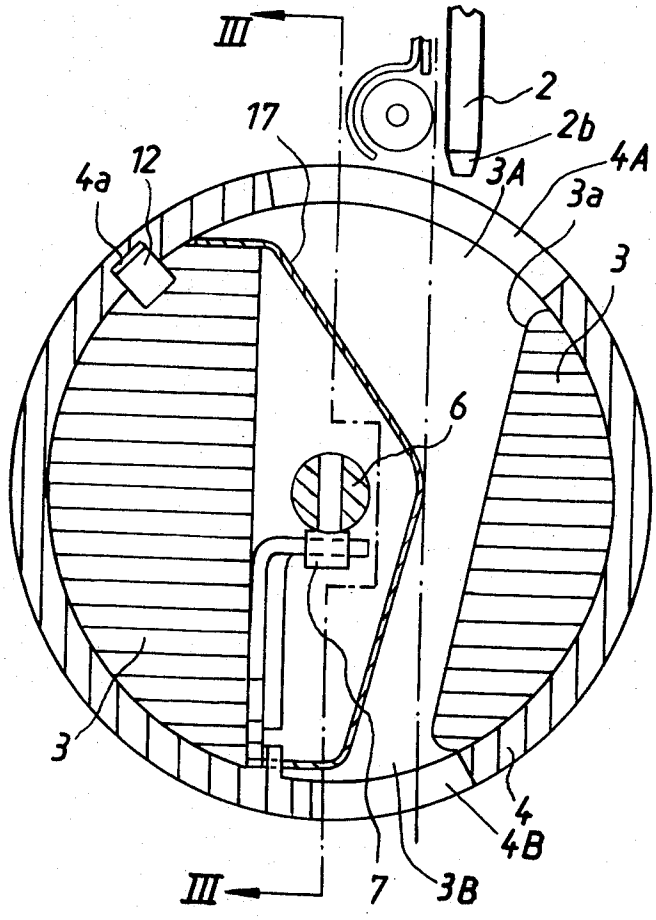
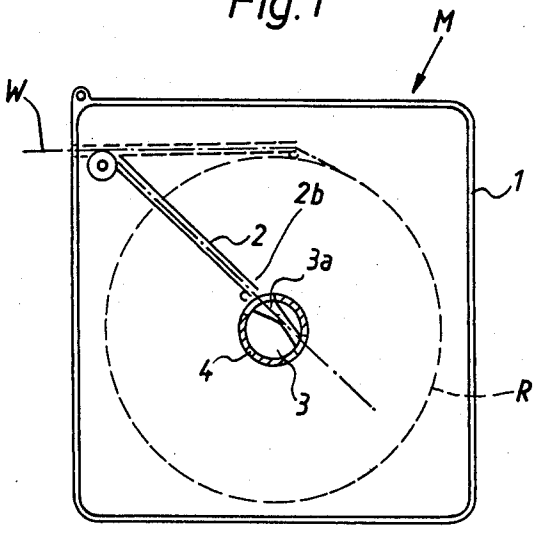


Fig. 1



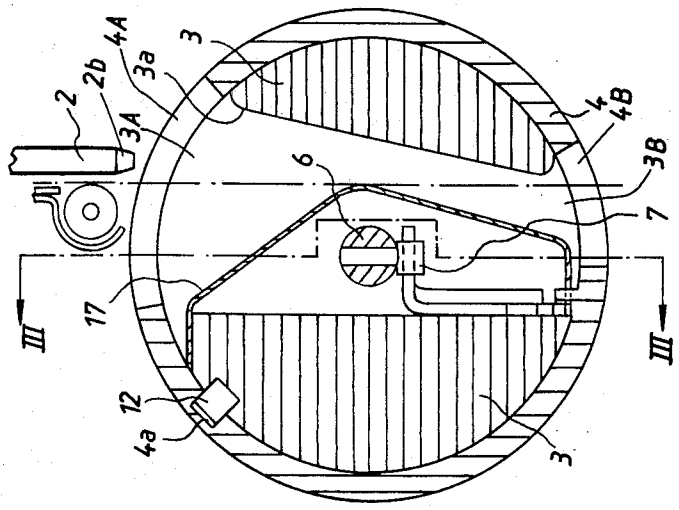

2
2b
4A
3a
3
3A
4
4B
3B
6
7
17
III
III
12
4a
3

Fig.2

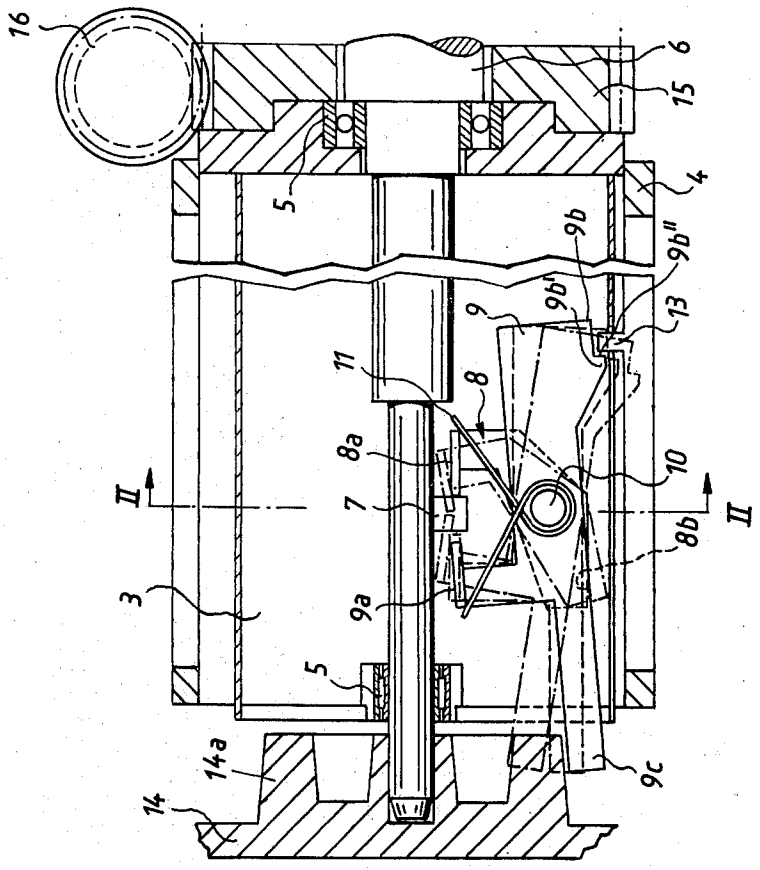

16
6
15
5
4
9b
9b''
9b'
13
9
11
8
8a
10
II
II
7
8b
3
9a
5
14a
9c
14

Fig.3

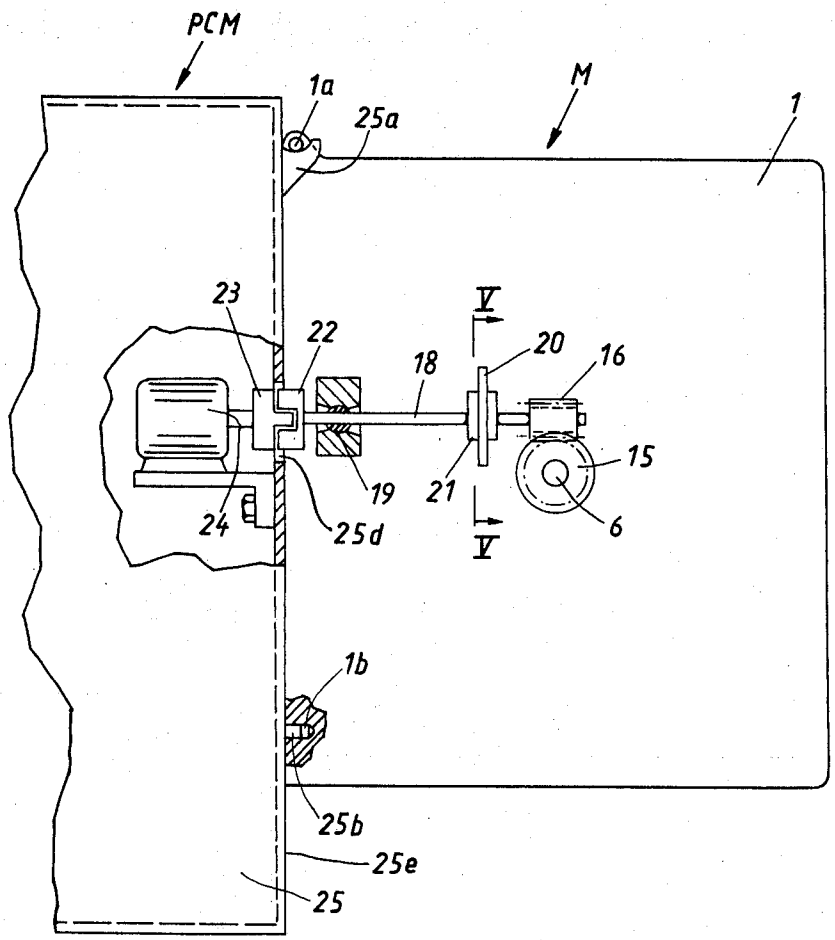

PCM
M
1
1a
25a
23
22
18
V
20
16
15
6
21
19
24
25d
V
1b
25b
25e
25

Fig. 4

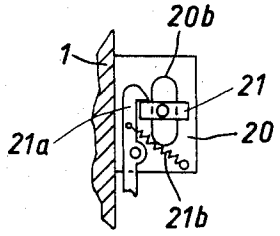

20b
1
21
21a
20
21b

Fig. 5

APPARATUS FOR CONVOLUTING WEBS OF PHOTOGRAPHIC MATERIAL OR THE LIKE

BACKGROUND OF THE INVENTION

The present invention relates to winding apparatus which can be used to convolute or roll webs or strips of photographic material or the like. More particularly, the invention relates to improvements in winding apparatus of the type wherein the leader of a web is introduced into a slot provided therefor in a rotary core which is thereupon set in motion to convolute the web therearound. Such winding apparatus are often used in or in combination with photographic printing or copying machines, for example, to collect a web of photographic roll film or a web of photosensitized paper which has been provided with a row of exposed images and is ready to be further processed and subdivided into discrete prints.

The presently known winding apparatus exhibit the drawback that the core cannot be readily oriented and thereupon held in an angular position in which the leader of a web, which has been fed forwardly by an automatic or semiautomatic feeding or threading mechanism, will invariably find its way into the slot. Thus, the operator must exercise considerable care to insure that the slot of the core will be maintained in a single accurately determined optimum position for introduction of the leader. Additional problems arise in connection with the removal of convoluted webs from the core. In many instances, the innermost convolutions of the web cannot be readily separated from the periphery of the core and the inner portion of the roll of convoluted web tends to clockspring so that the roll cannot be readily transferred onto another core.

SUMMARY OF THE INVENTION

An object of the invention is to provide a winding apparatus for webs of photosensitive material or the like wherein the roll of convoluted web can be readily separated from the core.

Another object of the invention is to provide novel drive means for the slotted core of a web winding apparatus.

A further object of the invention is to provide a novel magazine or cassette for storage of convoluted web.

An additional object of the invention is to provide a winding apparatus with novel and improved means for indicating the angular position of the slotted core to thus insure that the core can be readily turned to a position in which the inlet of its slot registers with the discharge end of a web threading mechanism which serves to introduce the leaders of webs into the slot.

Still another object of the invention is to provide a novel and improved connection between the motor of a photographic copying machine and the means for rotating a slotted web winding core in a magazine for storage of rolls of convoluted photosensitive material.

A further object of the invention is to provide a web winding apparatus which can be manipulated by semiskilled and unskilled persons.

Another object of the invention is to provide a web winding apparatus with simple, inexpensive and practically foolproof means for insuring that the leader of a web can find its way into the slot of a core which is thereupon rotated to convolute the web.

The invention is embodied in an apparatus for convoluting webs of photosensitive or like material which comprises guide means defining a path for the leader of a web and having a discharge end, a core having a peripheral surface which is normally adjacent to the discharge end of the guide means and is provided with a transverse slot having an inlet in the peripheral surface, the core being turnable to and from a predetermined angular position in which the inlet of its slot registers with the discharge end of the guide means so that the leader of a web which is being fed along the path defined by the guide means can enter the slot, control means which serves to indicate the angular positions (or at least the predetermined angular position) of the core even if the core and the guide means are mounted in the housing of a cassette or another suitable magazine for convoluted material, a removable sleeve which surrounds the core and can be applied onto the core only in such angular position in which an opening of the sleeve registers with the inlet of the slot so that the sleeve allows the leader of a web to enter the slot in the aforementioned predetermined angular position of the core, and drive means for rotating the core with the sleeve to thereby convolute a web around the sleeve upon completed introduction of the leader of such web into the slot. The guide means is preferably pivotable about an axis which is remote from its discharge end so that the discharge end can move away from the core as the roll of convoluted web on the sleeve grows in response to rotation of the core. The roll can be removed together with the sleeve for transfer to another processing station.

The control means preferably includes a portion of a stationary shaft on which the core rotates and one or more control levers pivotably mounted in the core and cooperating with the projection and with the sleeve.

The novel features which are considered as characteristic of the invention are set forth in particular in the appended claims. The improved winding apparatus itself, however, both as to its construction and its mode of operation, together with additional features and advantages thereof, will be best understood upon perusal of the following detailed description of certain specific embodiments with reference to the accompanying drawing.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is an end elevational view of a magazine or cassette which contains a portion of the improved winding apparatus, the sleeve being shown in transverse section and the cover of the housing of the magazine being removed;

FIG. 2 is an enlarged transverse sectional view of the core, sleeve and web guide, as seen in the direction of arrows from the line II—II of FIG. 3;

FIG. 3 is a sectional view as seen in the direction of arrows from the line III—III OF FIG. 2, further showing a portion of the drive means for the core;

FIG. 4 is a fragmentary partly elevational and partly sectional view of a photographic copying machine and an end elevational view of the magazine which is attached to the housing of the copying machine; and

FIG. 5 is an enlarged fragmentary sectional view as seen in the direction of arrows from the line V—V of FIG. 4.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring first to FIG. 1, there is shown the housing 1 of a magazine or cassette M for storage of photosensitive material in the form of an elongated web or strip W. The housing 1 is mounted at the discharge end of a photographic roll copying machine PCM (see FIG. 4) and serves to collect the web W of photosensitive material which issues from the machine PCM and is thereupon ready for transfer to a further processing station where the web is subdivided into individual prints. The interior of the housing 1 contains a pivotable guide 2 which is mounted on a shaft 2*a* and is movable through an angle of approximately 45° between the solid-line and phantom-line positions. When the magazine or cassette M is to receive the leading end of a fresh web W, the guide 2 assumes the solid-line position of FIG. 1 so that it extends substantially radially of a rotary core 3 whose axis is parallel to the axis of the shaft 2. The discharge end 2*b* of the guide 2 then registers with the inlet 3A (see FIG. 2) of a transverse slot 3*a* which is provided in the core 3 to receive the foremost part of the leader of the web W before the core 3 is set in rotary motion so that the web is convoluted therearound. The guide 2 defines an elongated path along which the web W can be fed toward the core 3. In accordance with a feature of the invention, the core 3 is surrounded by a separable or removable sleeve 4 on which the web W is convoluted so that the roll R of convoluted material can be readily removed from the core for transfer to the next processing station. The sleeve 4 preferably consists of a suitable synthetic plastic material having the necessary toughness and rigidity. During the winding of a web W around the sleeve 4, the guide 2 pivots about the shaft 2*a* counterclockwise from the solid-line position of FIG. 1 and ultimately assumes the broken-line position when the diameter of the roll R increases to the illustrated size. The sleeve 4 has a slot or opening 4A which extends in parallelism with its axis and should register with the inlet 3A of the transverse slot 3a in the core 3. A further axially parallel slot or opening 4B of the sleeve 4 registers with the outlet 3B of the transverse slot 3*a* when the sleeve 4 is properly applied onto the core 3.

The threading mechanism of the copying machine PCM which serves to introduce the leader of the web W into the housing 1 of the cassette M is not shown in the drawing. Such mechanism introduces the web W in such a way that the leader enters the outer end of the path defined by the guide 2 and automatically advances toward and beyond the discharge end 2*b* to pass through the opening 4A of the sleeve 4 which is assumed to be applied over the core 3 in the angular position shown in FIG. 1 or 2. Once the leader of the web W has entered the slot 3*a* of the core 3, the core is set in rotary motion to rotate with the sleeve 4 in a clockwise direction, as viewed in FIG. 1, whereby the web W is convoluted around the periphery of the sleeve 4 and gradually grows into a roll R of the size shown in FIG. 1. The leader of the web W can be introduced through and beyond the slot 3*a* and opening 4B to make sure that it does not slip when the core 3 is set in rotary motion. Once the roll R has grown to or even beyond the illustrated size, the cover 14 (see FIG. 3) of the housing 1 is removed and the roll R is withdrawn together with the sleeve 4 which is slipped off the peripheral surface of the core 3.

The details of the core 3 and sleeve 4, together with a portion of drive means for rotating the core 3 and with a portion of the removable cover 14 of the housing 1, are illustrated in FIGS. 2 and 3. FIG. 2 shows that the core 3 is a solid body which may be made of metallic or synthetic plastic material, and that its slot 3*a* has an average width which approximates one-third of the core diameter. The width of the slot 3*a* deminishes in a direction from the opening 4A toward the opening 4B of the surrounding sleeve 4. This insures that the leader of the web W (not shown in FIGS. 2 and 3) can readily find its way into the slot 3*a* even if the inlet 3A of this slot does not register exactly with the opening 4A of the surrounding sleeve 4 and even if the discharge end 2*b* of the guide 2 is not immediately adjacent to the inlet 3A.

The core 3 is rotatable on antifriction bearings 5 which are mounted on a stationary shaft 6. The shaft extends into and carries in the slot 3a a radial projection 7 resembling a short cylinder whose axis is normal to and crosses in space with the axis of the core 3. The core further supports two pivotable control levers 8 and 9 mounted on a pin 10 which is installed in the core 3 so that its axis is normal to and crosses in space with the axis of the shaft 6. The control levers 8 and 9 are biased by a torsion spring 11 so that they tend to turn in opposite directions and to maintain their arms 8*a*, 9*a* in abutment with opposite sides of the projection 7. The lever 8 tends to turn counterclockwise, and the lever 9 tends to turn clockwise, as viewed in FIG. 3. The arms 8*a*, 9*a* of the levers 8 and 9 are provided with plate-like end portions which abut against the opposite sides of the projection 7 when the core 3 is properly oriented relative to the shaft 6. The periphery of the core 3 carries a leaf spring 12 which enters an axially parallel internal groove 4*a* of the sleeve 4 when the latter is properly mounted on the core. One end of the groove 4*a* extends all the way into one end face of the sleeve 4 but the other end terminates about 10 mm short of the other axial end of the sleeve. The spring 13 constitutes a means for preventing the sleeve 4 from being applied onto the core 3 in any other but a single angular position in which the openings 4A and 4B respectively register with the inlet 3A and outlet 3B of the transverse slot 3*a*. Since the groove 4*a* terminates short of one axial end of the sleeve 4, this sleeve can be slipped onto the core 3 in a single direction, namely, so that the open end of the groove 4*a* is ready to receive the leaf spring 12.

The arm 8*b* of the control lever 8 allows the sleeve 4 to slide onto the core 3 only when the core assumes a predetermined angular position relative to the shaft 6, namely, when the arm 8*a* of the lever 8 abuts against the projection 7. The arm 8*b* is then moved out of the path of an internal projection or lug 13 of the sleeve 4. As the sleeve is being pushed onto the core 3, the lug 13 depresses the arm 9*b* of the control lever 9 whereupon an arresting projection or tooth 9*b'* of the arm 9b snaps behind the lug 13 under the action of the torsion spring 11 and releasably holds the sleeve 4 against axial movement. At the same time, a third arm 9*c* of the control lever 9 moves out of the path of the cover 14 which is then ready to be slipped onto the outer end portion of the shaft 6 to close the open end of the housing 1. Thus, the cover 14 can be applied only when the arms

9*a* and 8*a* of the control levers 8 and 9 engage the opposite sides of the projection 7 on the shaft 6 and when the sleeve 4 is mounted on the core 3 in such a way that the leaf spring 12 extends into the groove 4*a*. The cover 14 not only closes the open end of the housing 1 but also holds the sleeve 4 against axial movement relative to the core 3 when the winding apparatus is in use. As a rule, such axial movement of the sleeve 4 is prevented by the tooth 9*b'* on the arm 9*b* of the control lever 9.

That end portion of the core 3 which is adjacent to the rear wall of the housing 1 (opposite the cover 14) is connected with a worm wheel 15 meshing with a worm 16. The worm shaft 18 (see FIG. 4) is pivotable so as to move the worm 16 into and out of mesh with the worm wheel 15. When the worm 16 is disengaged from the wheel 15, the angular position of the core 3 can be changed by turning the core on the shaft 6.

The control lever 8 constitutes a blocking means which prevents the operator from applying the sleeve 4 onto the core 3 unless the latter assumes a predetermined angular position in which the projection 7 is engaged by the arm 8*a* under the action of the spring 11. This is a second position of the blocking means or lever 8. The latter assumes a first position (shown in FIG. 3 by phantom lines) when the core 3 is rotated to move the arm 8*a* away from the projection 7. This projection automatically returns the lever 8 to the first position (shown in FIG. 3 by solid lines) when the core 3 reassumes that angular position in which the inlet 3A of the slot 3*a* is adjacent to the discharge end of the guide 2.

The control lever 9 constitutes a stop for holding (with the flank or shoulder 9*b''* of the tooth 9*b'*) the sleeve 4 against axial movement from the illustrated position when the arm 9*a* engages the projection 7. This is the second position of the control lever or stop 9. The latter assumes a first position (indicated by phantom lines) under the action of the torsion spring 11 when the core 3 is rotated from the illustrated angular position. As the core 3 rotates back toward such angular position, the projection 7 engages the arm 9*a* and causes the control lever or stop 9 to reassume the second position which is shown by solid lines.

The parts 7, 8 and 9 together constitute a control means which indicates (by the angular positions of levers 8 and 9) whether or not the core 3 dwells in that predetermined angular position in which the inlet 3A of the slot 3*a* registers with the discharge end 2*b* of the guide 2. As mentioned before, the control lever or stop 9 performs the additional function of permitting the attachment of cover 14 to the shaft 6 only when the core 3 dwells in the predetermined angular position.

The operation is as follows.

The cover 14 is removed in a first step. The worm 16 is thereupon pivoted out of mesh with the worm wheel 15 so that the core 3 can be turned on the stationary shaft 6. Such turning is carried out by hand until the core 3 assumes the predetermined angular position shown in FIGS. 1 and 2 so that the inlet 3A of its slot 3*a* is in register with discharge end 2*b* of the guide 2. The guide 2 then assumes the angular position which is shown in FIG. 1 by solid lines. In the next step, the worm 16 is returned into mesh with the worm wheel 15 so that the core 3 is held against angular movement relative to the shaft 3 unless the worm begins to rotate. It will be noted that the width of the discharge end 2*b* of the guide 2 is much less than the width of the inlet 3A of the slot 3*a* so that the exact angular positioning of the guide 2 relative to the core 3 is not essential, as long as the discharge end 2*b* of the guide 2 is in substantial alignment with the inlet 3A of the slot 3*a*. The arms 8*a* nd 9*a* of the control levers 8 and 9 are assumed to abut against the opposite sides of the projection 7 on the shaft 6.

The sleeve 4 is thereupon slipped onto the core 3 in such a way that the leaf spring 12 enters the open end of the groove 4*a*. As the sleeve 4 continues to slide toward the worm wheel 15, the tooth 9*b'* of the control lever 9 is first pushed into the interior of the slot 3*a* and thereupon moves outwardly to engage and hold the lug 13 which extends inwardly from the internal surface of the sleeve 4. This insures that the sleeve 4 cannot be removed unless the arm 9*c* of the control lever 9 is pivoted so as to disengage the tooth 9*b'* from the lug 13. The radially extending flank 9*b''* of the tooth 9*b'* need not be inclined in a manner as shown in FIG. 3. For example, the inclination of the flank 9*b''* can be selected in such a way that the lug 13 can pivot the lever 9 against the opposition of the spring 11 in response to a reasonably strong pull which as exerted upon the sleeve 4 in a direction to the left, as viewed in FIG. 3. Once the sleeve 4 has been to the axial position shown in FIG. 3, the operator can attach the cover 14 to the outer end portion of the shaft 6 because the arm 9*c* has been moved out of the way of the annular portion 14*a*.

The copying machine PCM thereupon begins to advance the web W lengthwise so that the leader of the web travels along the path defined by the guide member 2 and enters the slot 3*a* to move through this slot and possibly beyond the opening 4B. The width of the central portion of the slot 3*a* is reduced by a shroud 17 which may consist of sheet metal and shields the shaft 6 from the leading end of the oncoming web W. The shaft 18 of the worm 16 is then set in rotary motion in a manner to be described in connection with FIG. 4 whereby the worm wheel 15 rotates the core 3 together with the sleeve 4 and the web W is being convoluted around the peripheral surface of the sleeve. The dimensions of the housing 1 are preferably selected in such a way that its interior can accommodate a complete roll R of web W. As the diameter of the roll R grows, the discharge end 2*b* of the guide 2 moves substantially radially of and away from the sleeve 4 and core 3.

When the winding of the web W is completed, the motor 24 (FIG. 4) which drives the shaft 18 for the worm 16 is arrested and the operator detaches the cover 14 from the shaft 6. The arm 9*c* is thereupon pivoted by hand to disengage the flank 9*b''* of the tooth 9*b'* from the lug 13 so that the sleeve 4 can be slipped off the core 3 together with the roll R. As mentioned before, the inclination of the flank 9*b''* can be selected in such a way that the arm 9*c* need not be depressed because the lug 13 can depress the tooth 9*b'* in response to a reasonably strong pull which is exerted upon the sleeve 4 in a direction to the left, as viewed in FIG. 3.

The levers 8 and 9 can be replaced by a single control lever which performs all functions of the illustrated control levers. For example, a single control lever assumes its second position when one of its arms, corresponding to the arm 8*a* of the lever 8, abuts against the projection 7.

Referring to FIGS. 4 and 5, the shaft 6 is mounted in the housing 1 of the cassette M in cantilever fashion. The worm wheel 15 is connected with the core 3 (not shown in FIG. 4) in the same way as shown in FIGS. 2 and 3, and normally meshes with the worm 16 on the shaft 18 which is mounted in a swivel bearing 19 on the housing 1. That portion of the worm shaft 18 which extends between the swivel bearing 19 and the worm 16 passes through an elongated slot 20*b* provided in a stationary guide member 20 secured to the housing 1. The shaft 18 carries a follower 21 which is slidable along the guide member 20. A pivotable detent lever 21*a* can engage the follower 21 to hold the shaft 18 in a position in which the worm 16 meshes with the worm wheel 15. The lever 21a is biased by a spring 21*b*. The slot 30*b* prevents the shaft 18 from moving sideways, i.e., the worm 16 is movable only radially of the shaft 6. The purpose of the detent lever 21*a* is to prevent accidental disengagement of the worm 16 from the worm wheel 15.

The other end of the worm shaft 18 carries one element 22 of a claw clutch the other element 23 of which is provided in the housing or support 25 of the copying machine PCM. The clutch element 23 is mounted on the output shaft of the motor 24 which can be started to rotate the shaft 18 and to thereby rotate the core 3 with the sleeve 4 when the clutch element 22 engages the clutch element 23. The housing 25 has an opening 25*d* through which a portion of the clutch element 23 extends. The wall 25e of the housing 25 further carries a hook-shaped coupling bracket 25*a* and a coupling pin 25*b*. The bracket 25*a* can be engaged by a coupling pin 1a of the housing 1 and the coupling pin 25*b* can enter a complementary blind bore 1*b* of the housing 1 to thereby properly locate the housing 1 with reference to the copying machine PCM. The inclination of the thread on the worm 16 preferably does not exceed 10° to thus insure that the worm wheel 15 engages the worm 16 with a self-locking action. This prevents unintentional angular displacement of the core 3 when the worm 16 is pivoted to the position shown in FIG. 4.

The operation is as follows.

Prior to selection of the angular position of the core 3 relative to the shaft 6, the worm 16 is pivoted away from mesh with the worm wheel 15 so that the latter can rotate with the core. Once the angular position of the core 3 has been selected in the manner as described in connection with FIGS. 2 and 3, the worm 16 is returned to the position of FIG. 4 by pivoting with the shaft 18 relative to the swivel bearing 19. The shaft 18 can pivot as soon as the detent lever 21*a* is disengaged from the follower 21. This lever 21 snaps to the position shown in FIG. 5 as soon as the worm 16 returns into mesh with the worm wheel 15. The housing 1 of the cassette M is thereupon attached to the housing 25 of the copying machine PCM in the manner as shown in FIG. 4 so that the coupling pin 1a engages the bracket 25*a* and the coupling pin 25*b* enters the bore 1*b*. This automatically places the clutch element 22 into engagement with the complementary clutch element 23 on the output shaft of the motor 24. The parts 1*a*, 1*b*, 25*a*, 25*b* allow for accurate alignment of the clutch elements 22 and 23 in spite of the fact that the parts 25*a* and 25*b* extend only slightly beyond the outer side of the wall 25*e*. The leader of the web W is then introduced into the guide 2 of FIG. 1 and into the slot 3*a* of the core 3, and the motor 24 is started to rotate the core 3 with the sleeve 4 thereon whereby the web W is convoluted on the sleeve to form the roll R shown in FIG. 1. When the winding operation is completed, the motor 24 is arrested and the housing 1 is detached from the housing 25. The self-locking action between the worm 16 and worm wheel 15 insures that the shaft 18 comes to a standstill as soon as the motor 24 is arrested and that the angular position of the core 3 cannot change thereafter unless the worm 16 is pivoted out of mesh with the worm wheel 15. This guarantees that the trailing end of the web W may extend from the housing 1 and can be readily reached to permit withdrawal of the web from this housing at the next processing station. Alternatively, the cover 14 may be detached and the entire roll R removed with the sleeve 4.

It is clear that the improved winding apparatus is susceptible of many additional modifications. For example, the swivel bearing 19 of FIG. 4 can be replaced by a rigid bearing if the shaft 18 is provided with a joint so that one portion of this shaft can pivot relative to the other portion thereof. Also the shaft 18 may include a universal joint which permits the shaft portion carrying the worm 16 to pivot in any desired direction. In such constructions, the guide member 20 and the follower 21 are desirable to confine the worm 16 to movements in the radial direction of the worm wheel 15 and shaft 6.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can, by applying current knowledge, readily adapt it for various applications without omitting features which fairly constitute essential characteristics of the generic and specific aspects of out contribution to the art and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the claims.

What is claimed as new and desired to be protected by Letters Patent is set forth in the appended claims:

1. In an apparatus for convoluting webs of photosensitive material or the like, a combination comprising guide means defining a path for the leader of a web and having a discharge end; a core having a peripheral surface normally adjacent to said discharge end and provided with a slot having an inlet in said peripheral surface, said core being turnable to and from a predetermined angular position in which said inlet of said slot registers with said discharge end so that the leader of a web which is being fed along said path can enter said slot; control means for indicating said predetermined angular position of said core; a removable sleeve surrounding said core and having an opening in register with said inlet so that said opening allows the leader of a web to enter said slot in said predetermined angular position of said core; and drive means for rotating said core with said sleeve to thereby convolute a web around said sleeve upon completed introduction of the leader of such web into said slot.

2. A combination as defined in claim 1, wherein said guide means is pivotable about an axis which is remote from said discharge end and is substantially parallel to the axis of said core so that said discharge end can move substantially radially of and away from said sleeve in response to growing outer diameter of convoluted web on said sleeve.

3. A combination as defined in claim 1, wherein said control means includes stop means for releasably hold-

ing said sleeve against axial movement relative to said core.

4. A combination as defined in claim 1, wherein said control means includes a blocking member which, when said sleeve is removed from said core, is movable from a second to a first position in response to turning of said core from said predetermined angular position to thereby prevent the application of said sleeve onto said core.

5. A combination as defined in claim 4, further comprising a fixed shaft coaxial with and rotatably supporting said core said control means further comprising a projection provided on said shaft and being engaged by said blocking member in said second position of said blocking member.

6. A combination as defined in claim 5, wherein said blocking member is a lever which is pivotably mounted in said core and said control means further comprises means for biasing said blocking member to said first position, said projection being arranged to pivot said blocking member to said second position against the opposition of said biasing means in response to turning of said core to said predetermined angular position.

7. A combination as defined in claim 6, wherein said projection is a cylinder having an axis normal to and crossing in space with the common axis of said shaft and said core.

8. A combination as defined in claim 1, wherein said sleeve has an internal surface, one of said surfaces being provided with a projection and the other of said surfaces having a groove receiving said projection only in such angular position of said sleeve relative to said core in which said opening registers with said inlet.

9. A combination as defined in claim 8, wherein said groove is provided in said internal surface and has an open end at one axial end of said sleeve and a closed end adjacent to the other axial end of said sleeve so that said sleeve can be slipped onto said core only by introducing said projection into the open end of said groove.

10. A combination as defined in claim 1, further comprising a fixed shaft rotatably supporting and coaxial with said core, said control means comprising a projection provided on said shaft and stop means movably mounted on said core and movable by said sleeve from a first to a second position in response to application of said sleeve onto said core in such angular position that said opening registers with said inlet, and further comprising cover means separably connectable with said shaft in said second position of said stop means.

11. A combination as defined in claim 10, wherein said stop means comprises a lever pivotably mounted in said core and said control means further comprises means for biasing said lever to said first position so that said lever blocks the application of said cover means in automatic response to removal of said sleeve.

12. A combination as defined in claim 10, wherein said stop means comprises arresting means for holding said sleeve against axial movement relative to said core in said second position of said stop means.

13. A combination as defined in claim 12, wherein said sleeve comprises an internal projection and said stop means is a lever which is pivotably mounted in said core, said control means further comprising means for biasing said lever to said first position, said arresting means comprising a projection engaging said internal projection in said second position of said lever.

14. A combination as defined in claim 1, wherein said drive means comprises a worm drive.

15. A combination as defined in claim 14, wherein said worm drive comprises a worm wheel rigid with said core and a driven worm movable into and from mesh with said worm wheel.

16. A combination as defined in claim 15, wherein said worm and said worm wheel have self-locking mating threads.

17. A combination as defined in claim 16, wherein the inclination of said threads is less than 10°.

18. A combination as defined in claim 15, wherein said drive means further comprises a shaft for said worm and a swivel bearing for said shaft so as to permit said worm to move into and from mesh with said worm wheel.

19. A combination as defined in claim 15, wherein said drive means further comprises a shaft for said worm, said shaft having a joint to permit movement of said worm into and from mesh with said worm wheel.

20. A combination as defined in claim 15, wherein said drive means further comprises a motor having a rotary output member provided with a first clutch element, and a shaft for said worm wheel, said shaft having a complementary second clutch element movable into and from torque-receiving engagement with said first clutch element.

21. A combination as defined in claim 20, further comprising a housing supporting said worm wheel and said shaft with said worm, a support, and first and second coupling means respectively provided on said support and on said housing, said complementary clutch element engaging with said first clutch element in response to engagement of said first coupling means with said second coupling means.

22. A combination as defined in claim 21, wherein said support forms part of a photographic copying machine.

23. A combination as defined in claim 21, wherein said housing forms part of a cassette and said guide means is mounted in said cassette.

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