

[54] APPARATUS FOR CUTTING AND
STACKING OF PHOTOGRAPHIC FILMS OR
THE LIKE

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[56] References Cited
UNITED STATES PATENTS

609,119	8/1898	Otto.....	83/86
2,999,409	9/1961	Gollwitzer.....	83/94 X
1,801,760	4/1931	Whiteman.....	271/64 X

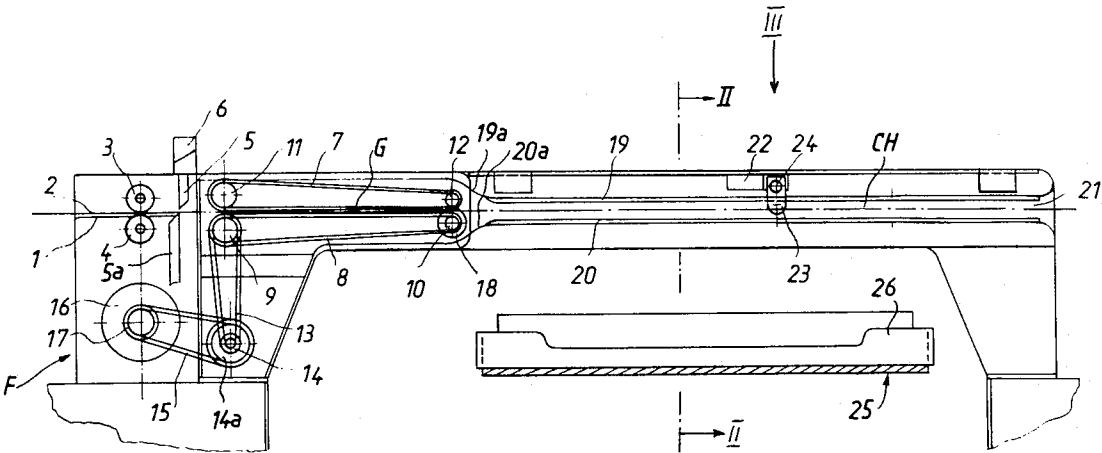
1,752,648	4/1930	Matthews.....	271/86
2,863,663	12/1958	Richards.....	271/76 X
2,880,998	4/1959	Middleton.....	271/45
1,545,912	7/1925	Maxson.....	271/76
1,941,484	1/1934	Nasmith.....	271/51
2,788,627	4/1957	Bellows.....	53/390

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[57] ABSTRACT

An apparatus for subdividing webs of interconnected exposed and developed photographic films into sections of desired length embodies a stacking device which is located downstream of the severing station and accumulates stacks of two or more superimposed film sections which can be removed by hand for insertion into customer envelopes. Pairs of upper and lower conveyor bands between the severing station and the stacking device serve to loosely grip the film sections and to advance them into a chamber provided in the stacking device and having an open side to facilitate withdrawal of stacks. A wheel at the discharge end of the gap between the upper and lower conveyor bands straightens out the leaders of successively formed film sections to counteract their tendency to curl during introduction into the chamber of the stacking device.

18 Claims, 3 Drawing Figures



APPARATUS FOR CUTTING AND STACKING OF PHOTOGRAPHIC FILMS OR THE LIKE

BACKGROUND OF THE INVENTION

The present invention relates to apparatus for manipulating elongated webs, particularly webs consisting of spliced-together photographic films. More particularly, the invention relates to apparatus for subdividing photographic films into sections of desired length and for thereupon arraying the resulting sections in a manner to facilitate their introduction into envelopes or analogous containers.

It is well known to splice several exposed photographic customer films end-to-end for transport through a developing, printing or copying machine. Such splicing of several films facilitates rational treatment of films during development and/or during the making of prints on paper or the like. The films are thereupon separated from each other, normally by severing, so that they can be returned to customers or reintroduced into a printing or copying machine for the making of additional prints. It is also customary to subdivide discrete customer films into sections of desired length which can be inserted into prefabricated envelopes or other types of containers for mailing to customers. In order to be severed, a film is advanced lengthwise in stepwise fashion and is cut during intervals between successive lengthwise movements. It is customary to provide the films with encoded information which is scanned by a suitable detector serving to produce signals which are used to interrupt the forward transport of the film whenever the film is to be severed to separate therefrom a section of desired length. A drawback of presently known severing apparatus of the just outlined character is that the film sections must be collected by hand and stacked in a manner to be insertable into a prefabricated envelope or the like. Such manual stacking takes up much time and normally necessitates a slowdown of the severing operation because an automatically controlled severing device is normally capable of severing the films at a frequency which is higher than permissible in view of manual stacking of the resulting film sections.

SUMMARY OF THE INVENTION

An object of the invention is to provide a novel and improved apparatus which is capable of automatically stacking sections of webs consisting of spliced-together photographic films or the like.

Another object of the invention is to provide an apparatus which can properly stack sections of photographic films in spite of the tendency of such films to curl or coil and which can stack film sections or the like in such a way that the resulting stacks can be readily reached and removed for insertion into customer envelopes or the like.

A further object of the invention is to provide an apparatus wherein film sections or the like can be stacked or otherwise arrayed at the same rate at which a web of interconnected films is being severed by an automatically controlled severing device.

An additional object of the invention is to provide an apparatus which can be rapidly converted for the formation and stacking or arraying of shorter or longer film sections, wherein the conversion takes up little time, and which can also serve to simply separate dis-

crete films of a series of interconnected films from each other without any subdivision of discrete films into two or more sections.

The invention is embodied in an apparatus for cutting or severing and arraying (especially stacking) sections of webs of photographic film or the like. The apparatus comprises a frame or support, advancing means mounted on the support and arranged to normally advance a succession of webs lengthwise in stepwise fashion along a predetermined path (preferably in a substantially horizontal plane), a severing or cutting device which is adjacent to the path for the web (preferably downstream of the advancing means) and is actuable to sever and to thus subdivide the webs into a series of sections during intervals between successive advances of a web, and a preferably U-shaped stacking device located downstream of the severing device and defining a chamber for accumulation of stacks of web sections. The chamber is preferably provided with at least one open side to allow for convenient removal of stacks from the stacking device.

It is normally preferred to further provide a conveyor which is mounted between the severing and stacking devices and serves to advance freshly severed web sections into the chamber of the stacking device. Such conveyor can be combined with means for temporarily counteracting the tendency of web sections to curl and to thus insure proper introduction of such sections into the chamber of the stacking device.

The novel features which are considered as characteristic of the invention are set forth in particular in the appended claims. The improved 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 a fragmentary front elevational view of an apparatus which embodies the invention;

FIG. 2 is a transverse vertical sectional view as seen in the direction of arrows from the line II—II of FIG. 1 and

FIG. 3 is a fragmentary plan view as seen in the direction of arrow III shown in FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring first to FIG. 1, there is shown an apparatus which serves to subdivide a web 2 into sections or strips 2a, 2b, . . . of predetermined length and to assemble such sections into stacks or arrays which can be readily introduced into envelopes or otherwise configured containers for shipment to customers.

The apparatus comprises a frame or support F having a horizontal guide surface 1 along which the leader of a web 2 can be introduced into the nip of two intermittently driven advancing rolls 3, 4 so that the web then advances along a predetermined path which, in the embodiment of FIG. 1, is located in a horizontal plane. The web 2 is assumed to consist of a series of exposed and developed photographic films which are spliced to each other end-to-end and which are to be subdivided into sections 2a, 2b, . . . of predetermined length. For example, each section may comprise four film frames

(24 by 36 millimeters) and may have a length not exceeding 180 millimeters.

The advancing rolls 3, 4 are driven intermittently so that the web 2 is moved lengthwise in stepwise fashion in such a way that a frame line between two adjoining film frames registers with the cutting edges of two knives 5, 5a which form part of a severing device whenever the web 2 is brought to a standstill. The severing device further comprises an electromagnet 6 which is energizable by a detector (not shown) to cause the movable knife 5 to perform a working stroke and to cooperate with the counterknife 5a in severing the web 2 across a frame line. As a rule, a web of spliced-together films is provided with encoded information in the form of graphite marks, perforations or marginal notches which are applied in the region of each film frame and can be scanned by a detector which energizes the electromagnet 6 upon detection of a selected number of encoded data. As mentioned above, the detector can arrest the advancing rolls 3, 4 and energize the electromagnet 6 upon detection of each fourth notch, perforation or the like to cause a full stoppage of the web 2 when a frame line between two adjoining film frames (e.g., film frames in the customary size of 24 by 36 millimeters) is in exact register with the cutting edges of the knives 5, 5a.

In accordance with an optional but highly advantageous feature of the present invention, the apparatus further comprises a conveyor which includes at least one but preferably two pairs of endless bands 7, 8, one pair for each marginal portion of the web 2. The bands 7 have lower stretches which can engage the respective marginal portions of the web 2 from above, and the bands 8 have upper stretches which can engage the respective marginal portions of the web 2 from below. This insures that the film frames are not scratched or otherwise damaged or defaced during transport downstream of the severing device. The bands 7 and 8 are respectively trained over pulleys or sheaves 11, 12 and 9, 10 in such a way that their respective lower and upper stretches define an elongated gap G having a width (e.g., 1 millimeter) which at least equals but preferably slightly exceeds the thickness of the web 2. The pulley 9 is driven by an endless chain or belt 13 and drives the pulley 11 by means of a further belt or a gear train, not shown. The belt 13 is trained over a small pulley 14 which is coaxial with a larger pulley 14a. The latter is driven by a belt 15 which is further trained over a pulley 17 on the output shaft of an electric motor 16, preferably a variable-speed motor. The arrangement is preferably such that the peripheral speed of the advancing rolls 3, 4 is less than the speed of the bands 7, 8; for example, the speed of the bands 7, 8 may exceed the speed of advancing rolls 3, 4 by 30-40 percent. The external surfaces of the bands 7, 8 are preferably provided on a material (such as rubber) having a high coefficient of friction to insure that the bands 7, 8 can advance the web 2 and its sections 2a, 2b, . . . lengthwise (in a direction to the right, as viewed in FIG. 1) even though the width of the gap G exceeds the thickness of the web. The web-engaging stretches of the bands 7, 8 flank a portion of the path for the web 2, such path extending from the nip of the rolls 3, 4, between the bands 7, 8 and into an elongated chamber CH of a stacking or arraying device which is located downstream of the conveyor including the bands 7 and 8.

An idler wheel 18 is mounted coaxially with the pulley 10 and/or 12 (in the illustrated embodiment, the idler wheel 18 is mounted on the shaft for the pulley 10), and its diameter is such that a portion of its periphery extends into the downstream end of the gap G, i.e., into that end of the gap which is remote from the severing device including the knives 5 and 5a. The illustrated idler wheel 18 can comprise two discrete disks each of which is in register with a different upper band 7 to bear against the respective marginal portion of the web 2 in the gap G. The wheel 18 is mounted on the shaft for the pulley 10 because the leader of the web 2 is assumed to exhibit the tendency to curl downwardly (i.e., around the right-hand portion of the pulley 10). If the leader of the web 2 tends to curl upwardly, the idler wheel or wheels 18 will be mounted on the shaft of the pulley 12. The purpose of the wheel or wheels 18 is to properly position the leaders of web sections 2a, 2b, . . . for convenient entry into the chamber CH of the stacking device.

The stacking device is mounted on the frame F and comprises an upper horizontal rail or wall 19, a lower horizontal wall or rail 20 and a side wall or rail 21. Thus, the stacking device has a substantially U-shaped cross-sectional outline. The walls 19, 20 flank the chamber CH from above and from below and the front side of the chamber CH (namely, that side which faces the observer of FIG. 1) is open to allow for convenient removal of stacked web sections from the chamber. As shown in FIG. 2, the width of the web sections 2a, 2b exceeds the width of the walls 19, 20 so that the right-hand marginal portions of such sections extend from the chamber CH and can be readily grasped by fingers for introduction of an entire stack of sections into an envelope or another suitable container wherein the web sections are shipped to customers.

Instead of using walls 19, 20 whose width is less than the width of the web 2, the stacking device can employ upper and lower walls whose width at least equals the width of the sections 2a, 2b. At least one of these walls is then provided with one or more cutouts or notches (see the notches 19d of FIG. 3) which are overlapped by the web sections in the chamber CH to thus facilitate convenient removal of stacked sections for the purpose of introduction into customer envelopes or the like. Those surfaces of the walls 19, 20 which face the chamber CH are preferably provided with layers of rubber or other friction generating material to insure a satisfactory braking action upon the web sections which move beyond the gap G and enter the chamber CH. The inlet portions 19a, 20a of the walls 19, 20 are respectively inclined upwardly and downwardly toward the conveyor including the bands 7, 8 to facilitate entry of the leaders of web sections into the chamber CH. The surfaces of the inlet portions 19a, 20a are preferably free of rubber coats and smooth (polished) to reduce friction between the wall 19 or 20 and the leader of a web section during entry of such leader into the left-hand end portion of the chamber CH.

The stacking device further comprises an abutment 23 which is pivotable on a horizontal shaft 24 provided on a mounting means here shown as a permanent magnet 22 capable of adhering to a selected portion of the upper wall 19. The abutment 23 normally dwells in the illustrated upright position (in which it extends across the chamber CH) under the action of gravity and/or under the action of one or more springs, not shown. Its

purpose is to arrest the forward progress of web sections to thus insure that successively introduced sections are accurately stacked on top of each other. The distance between the inlet portions 19a, 20a of the walls 19, 20 and the abutment 23 will be chosen in dependency on the selected length of the web sections.

FIGS. 1 and 2 further show a conveyor 25 which is mounted at a level below the stacking device and includes one or more receptacles 26 for customer envelopes or analogous containers. The person in charge of removing stacks of web sections from the chamber CH can immediately insert such stacks into discrete containers for shipment to customers. The containers are preferably stored in the receptacle 26 in such a way that they can be rapidly withdrawn and are in an optimum position for reception of stacks. For example, if the containers in the receptacle 26 are envelopes, such envelopes are normally provided with a higher rear panel and a lower front panel. The stack of web sections is inserted into the pocket between the front and rear panels and the latter can be thereupon folded over the front panel.

The operation:

The leader of a fresh web 2 is caused to advance along the guide surface 1 of the frame F and is introduced into the nip of the advancing rolls 3, 4. The leader is then advanced through the clearance between the knives 5, 5a of the severing device and enters the gap G between the upper and lower conveyor bands 7, 8. The speed of forward progress of the web 2 is determined by the advancing rolls 3, 4 because these rolls bear against the respective sides of the web 2 whereas the width of the gap G preferably exceeds the thickness of the web. Nevertheless, the friction generating surfaces of the bands 7, 8 are capable of advancing successively severed web sections 2a, 2b, etc. through and beyond the gap G as soon as such sections are separated from the remaining portion of the web 2, i.e., as soon as a severed section is not positively advanced by the rolls 3 and 4. The forward speed of a discrete section in the gap G will normally exceed the forward speed of the web 2 when the rolls 3, 4 are driven because of the aforementioned difference between the peripheral speed of the rolls 3, 4 and the speed of the bands 7, 8.

The idler roller or wheel 18 counteracts the tendency of the leader of the web 2 to curl downwardly and insures that such leader enters the space between the inclined inlet portions 19a, 20a of the walls 19, 20. Once the leader has been compelled to enter the chamber CH, it advances in such chamber under the action of the bands 7 and 8.

When the aforementioned detector arrests the drive for the advancing rolls 3, 4, the web 2 is brought to a standstill even if the drive means for the bands 7, 8 (motor 16) is not arrested simultaneously with the drive for the advancing rolls. The bands 7, 8 then slip with reference to the web portion in the gap G. The advancing rolls 3, 4 are arrested at such intervals that a frame line registers with the cutting edges of the knives 5, 5a when the web 2 is at a standstill. The electromagnet 6 is energized and causes the knife 5 to move downwardly and to sever the web 2 across the adjacent frame line so that the severing device separates from the web a section (e.g., 2a) of predetermined length. The freshly severed section is immediately entrained by the bands 7, 8 and is conveyed into the chamber CH so that its leader engages and is arrested by the abutment

23. The friction generating surfaces of the walls 19, 20 assist the abutment 23 in arresting the web sections in desired axial positions. As a rule, the abutment 23 will be positioned in such a way that it is engaged by the leader of a web section (e.g., 2a) whose trailing end has moved at least slightly beyond the idler wheel 18 at the discharge or outlet end of the gap G. Depending on the direction in which the web 2 tends to curl, the trailing end of a section in the chamber CH will abut against the upper wall 19 or the lower wall 20 in the region of the inlet portion 19a or 20a. Since the idler wheel 18 temporarily prevents curling or coiling of the leader of an oncoming web section, such leader can readily bypass the trailing portion of the previously introduced web section and finds its way toward the abutment 23 so as to be arrested in a position in which it overlies or is overlapped by the previously introduced section or sections. For example, if the leading and trailing ends of the section 2a (which is assumed to be located in the chamber CH) tend to coil or curl downwardly, they will abut against the upper surface of the lower wall 20. The wheel 18 causes the leading portion of the oncoming web section 2b to bypass the trailing portion of the section 2a in the chamber CH so that the section 2b can advance toward the abutment 23 under the action of the bands 7 and 8. The abutment 23 prevents further lengthwise displacement of sections in the chamber CH under the action of the next-following sections. The thus accumulated sections form in the chamber CH a stack or array of two or more sections which can be readily withdrawn because one marginal portion of each section extends beyond the open side of the chamber and allows for removal of the entire stack. The same holds true if the wall 19 and/or 20 is provided with the aforementioned cutouts or notches (see the notches 19d of FIG. 3) which are overlapped by web sections in the chamber CH and are accessible from without.

The web 2 is preferably provided with additional encoded information which is scanned by a detector serving to arrest the advancing rolls 3, 4 upon completion of subdivision of an entire film. The operator then removes the stack of web sections and inserts the stack into an envelope or an analogous container. The envelopes can be stacked in the receptacle 26 in such a way that a stack of web sections can be removed from the chamber CH by using both hands and thereupon inserted into the pocket of the foremost or rear-most envelope. The empty envelopes can be stacked in the receptacle 26 either side by side or on top of each other.

It will be seen that the inlet of the gap G is at least substantially in line with that portion of the path for the web 2 which extends between the knives 5, 5a of the severing device whereas the outlet of the gap is offset with reference to the inlet due to the provision of the idler wheel or wheels 18.

In certain instances, the exposed and developed films should be returned to customers or otherwise processed without being subdivided into sections of predetermined length. For example, a film is not to be severed if it is to be reintroduced into a printing or copying machine for the making of a second set of prints. The severing device is then inactivated and the advancing rolls 3, 4 transport an entire film without interruptions whereby the leader of the film engages and pivots the abutment 23 out of the way so that the film can pass beyond the right-hand end of the chamber CH, as viewed

in FIG. 1. The film is automatically arrested when its trailing end moves beyond the bands 7, 8 and the abutment 23 rests on an intermediate portion of such film to hold it in a position of readiness for removal from the stacking device. The bias upon and/or the weight of the abutment 23 is preferably selected in such a way that the abutment can readily yield to the leader of a film which is being transported by the rolls 3, 4 and/or bands 7, 8 and thereupon rests on such film with a slight but sufficient clamping action.

As mentioned before, the conveyor including the bands 7, 8 constitutes a desirable optional feature of the improved apparatus. In the absence of such bands, the tendency of web sections to move sideways during severing by the knives 5, 5a might result in lateral displacement of one or more sections in the chamber CH, i.e., the operator must watch the stacking operation to prevent one or more web sections from falling out of the chamber.

If the conveyor including the bands 7, 8 is omitted, the advancing rolls 3, 4 will transport the web sections all the way into engagement with the abutment 23 or close to such abutment. A next-following web section is then in a position to entrain the preceding section into full engagement with the abutment 23 while such next-following section still adheres to the major portion of the web 2 so that it is positively advanced by the rolls 3 and 4.

The length of the gap G may be less than or it may exceed the length of a web section. If the length of the gap G is less, a web section can advance into the left-hand portion of the chamber CH (as viewed in FIG. 1) prior to being separated from the remaining portion of the respective web 2. This facilitates entry of web sections into a partially filled chamber. If the gap G is longer than a web section, the leader of each section will enter the chamber CH under the action of the bands 7 and 8.

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 our 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. Apparatus for cutting and arraying sections of webs of photographic film or the like which have a predetermined width and exhibit a tendency to curl upwardly or downwardly when located in a horizontal plane, comprising a support; advancing means mounted in said support and arranged to normally transport a succession of webs lengthwise in stepwise fashion along a predetermined path; a severing device adjacent to said path and being actuable to sever and to thus subdivide the webs into a series of sections during intervals between successive advances of the webs; and a stacking device located downstream of said severing device and defining an elongated chamber for accumulation of stacks of superimposed sections therein, said chamber having an elongated open side extending lengthwise thereof to allow for withdrawal of stacks therefrom and said stacking device including means for confining the sections in said chamber from below as

well as from above to thereby counteract the tendency of sections in said chamber to curl, at least a portion of said confining means having a width which is less than said predetermined width so that a stack in said chamber extends laterally beyond said portion of said confining means in the region of said open side of said chamber.

2. Apparatus as defined in claim 1, wherein said means for confining comprises top and bottom walls respectively flanking said chamber from above and from below and respectively having upwardly and downwardly flaring inlet portions for convenient entry of successively severed web sections into said chamber.

3. Apparatus as defined in claim 2, wherein said inlet portions have smooth web-guiding surfaces.

4. Apparatus as defined in claim 1, further comprising yieldable abutment means extending into said chamber to normally arrest the forward progress of web sections in said stacking device.

5. Apparatus as defined in claim 4, further comprising mounting means adjustably securing said abutment means to said stacking device so that the position of said abutment means can be changed lengthwise of the path of web sections in said chamber.

6. Apparatus as defined in claim 1, further comprising conveyor means interposed between said devices and arranged to transport successively severed web sections into said chamber.

7. Apparatus as defined in claim 6, wherein said conveyor means comprises at least one pair of driven endless bands having section-engaging stretches flanking the opposite sides of a portion of said path, said stretches defining a gap having a width which at least equals the thickness of a web.

8. Apparatus as defined in claim 7, wherein said stretches have surfaces with a high coefficient of friction.

9. Apparatus as defined in claim 6, wherein the speed of said conveyor means exceeds the speed of said advancing means.

10. Apparatus as defined in claim 9, wherein said advancing means is located upstream of said severing device and the speed of said conveyor means exceeds the speed of said advancing means by 30-40 percent.

11. Apparatus as defined in claim 6, wherein said conveyor means comprises at least one pair of endless bands having web-engaging stretches which define an elongated gap, said gap having an inlet portion in register with said path and an outlet portion which is offset with reference to said inlet portion.

12. Apparatus as defined in claim 6, wherein said conveyor means comprises at least one pair of narrow endless bands disposed at the opposite sides of a portion of said path and arranged to engage a marginal portion of each of a series of successively severed web sections.

13. Apparatus as defined in claim 1, further comprising a receptacle for a supply of stack-receiving containers, said receptacle being adjacent to said open side of said chamber.

14. Apparatus as defined in claim 13, wherein said receptacle forms part of a conveyor.

15. Apparatus as defined in claim 1, wherein said means for confining comprises top and bottom walls respectively flanking said chamber from above and from below, at least one of said walls having at least one cutout which is overlapped by the sections in said

chamber to thus afford access to the stack in said chamber, that portion of said one wall which is provided with said cutout constituting said portion of said confining means.

16. Apparatus for cutting and arraying section of webs of photographic film or the like which have a predetermined width and exhibit a tendency to curl upwardly or downwardly when located in a horizontal plane, comprising a support; advancing means mounted on said support and arranged to transport a succession of webs lengthwise in stepwise fashion along a predetermined path; a severing device adjacent to said path and being actuatable to sever and to thus subdivide the webs into a series of sections during intervals between successive advances of the webs; and a stacking device located downstream of said severing device and defining an elongated chamber for accumulation of stacks of superimposed sections therein, said chamber having an open first side extending lengthwise thereof to allow for withdrawal of stacks from said chamber and a second side located opposite said open first side, said stacking device having walls for confining the sections in said chamber from below and from above to thereby counteract the tendency of sections in said chamber to curl and means for confining the sections along said second side of said chamber, at least a portion of at least one of said walls having a width which is less than said predetermined width so that a portion of a stack of sections in said chamber is exposed for convenient withdrawal of the stack through said open side of said chamber.

17. Apparatus for cutting and arraying sections of webs of photographic film or the like which exhibit a tendency to curl upwardly or downwardly when located in a horizontal plane, comprising a support; advancing means mounted on said support and arranged to normally transport a succession of webs lengthwise in stepwise fashion along a predetermined path; a severing device adjacent to said path and being actuatable to sever and to thus subdivide the webs into a series of sections during intervals between successive advances of the webs; and a stacking device located downstream

of said severing device and defining an elongated chamber for accumulation of stacks of superimposed sections therein, said chamber having an open side extending lengthwise thereof to allow for withdrawal of stacks therefrom and said stacking device including means for confining the sections in said chamber from below as well as from above to thereby counteract the tendency of sections in said chamber to curl, said means for confining comprising top and bottom walls respectively flanking said chamber from above and from below and said walls having surfaces facing said chamber and provided with layers of friction generating material.

18. Apparatus for cutting and arraying sections of webs of photographic film or the like which exhibit a tendency to curl, comprising a support; advancing means mounted on said support and arranged to normally transport a succession of webs lengthwise in stepwise fashion along a predetermined path; a severing device adjacent to said path and being actuatable to sever and to thus subdivide the webs into a series of sections during intervals between successive advances of the webs; a stacking device located downstream of said severing device and defining an elongated chamber having an open side extending lengthwise thereof to allow for withdrawal of stacks therefrom and said stacking device including means for confining the sections in said chamber from below as well as from above to thereby counteract the tendency of sections in said chamber to curl; conveyor means located between said severing device and said stacking device to transport successively severed web sections into said chamber, said conveyor means comprising a pair of endless bands having web-engaging stretches which define an elongated gap for the passage of successively severed web sections between said bands and into said chamber; and an idler wheel extending into that end of said gap which is remote from said severing device to influence the positions of the leaders of web sections during entry into said chamber.

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