May 1, 1962 F. C. WORTH 3,031,956

MARKING APPARATUS

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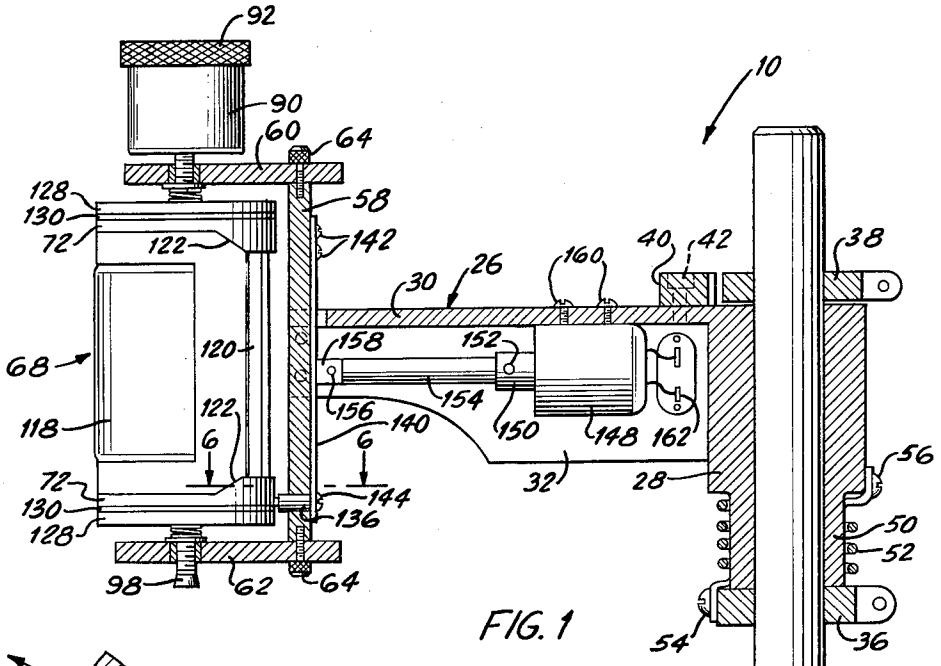


FIG. 1

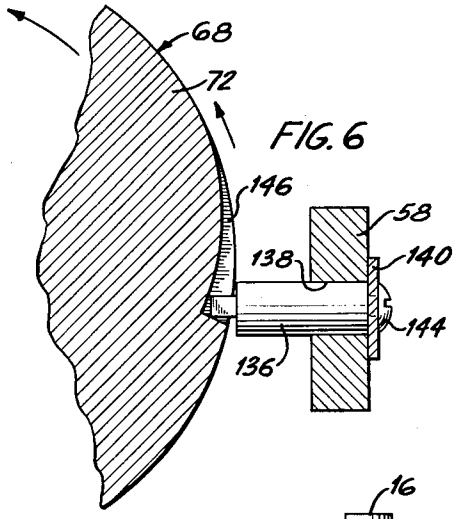
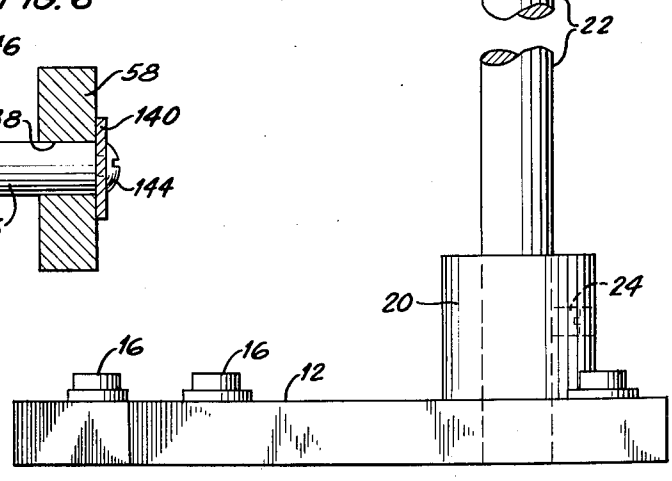


FIG. 6



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MARKING APPARATUS

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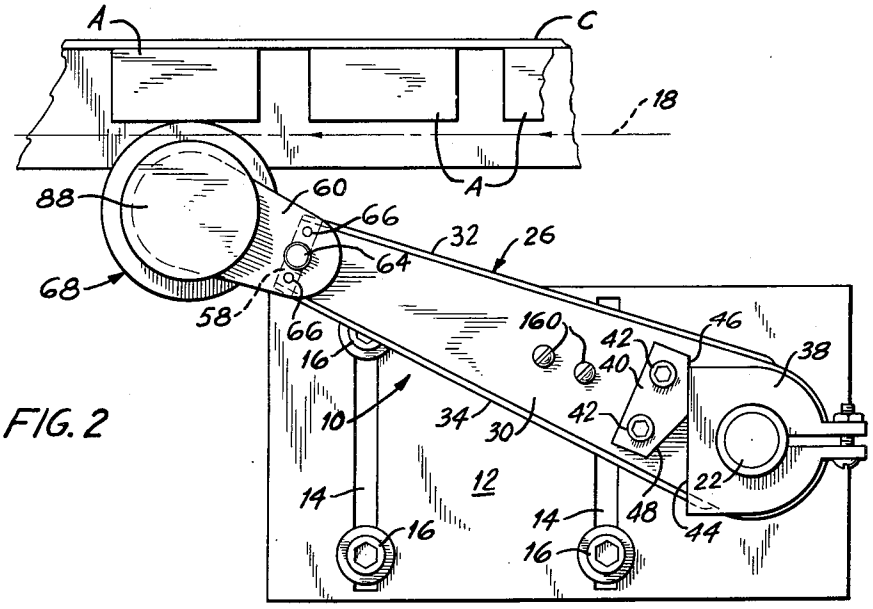


FIG. 2

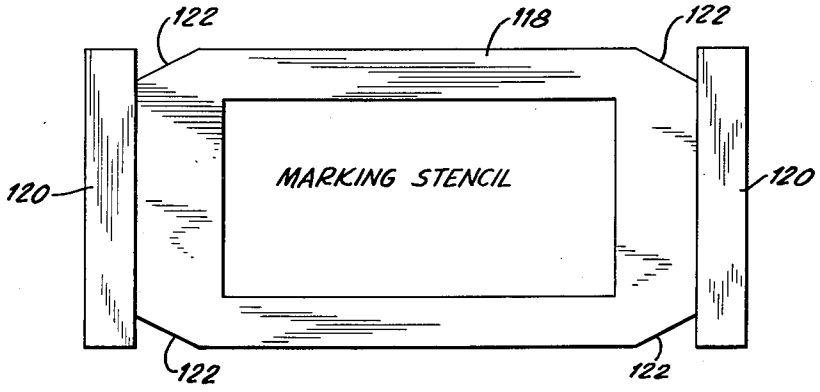


FIG. 7

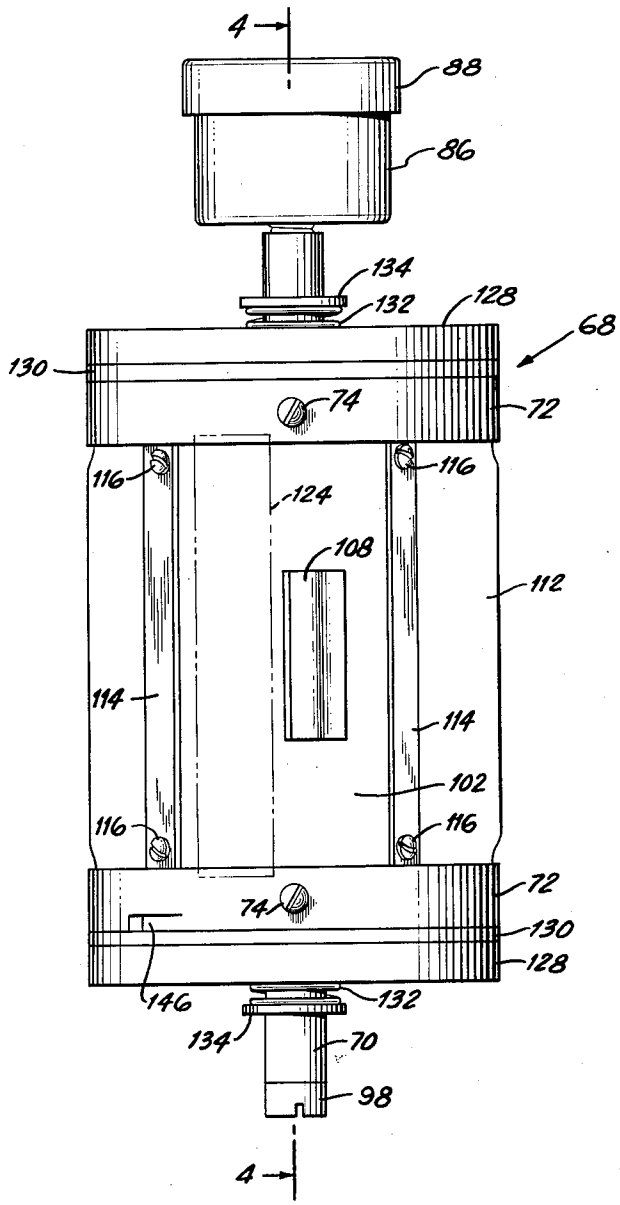
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MARKING APPARATUS

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FIG. 3



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MARKING APPARATUS

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FIG. 4

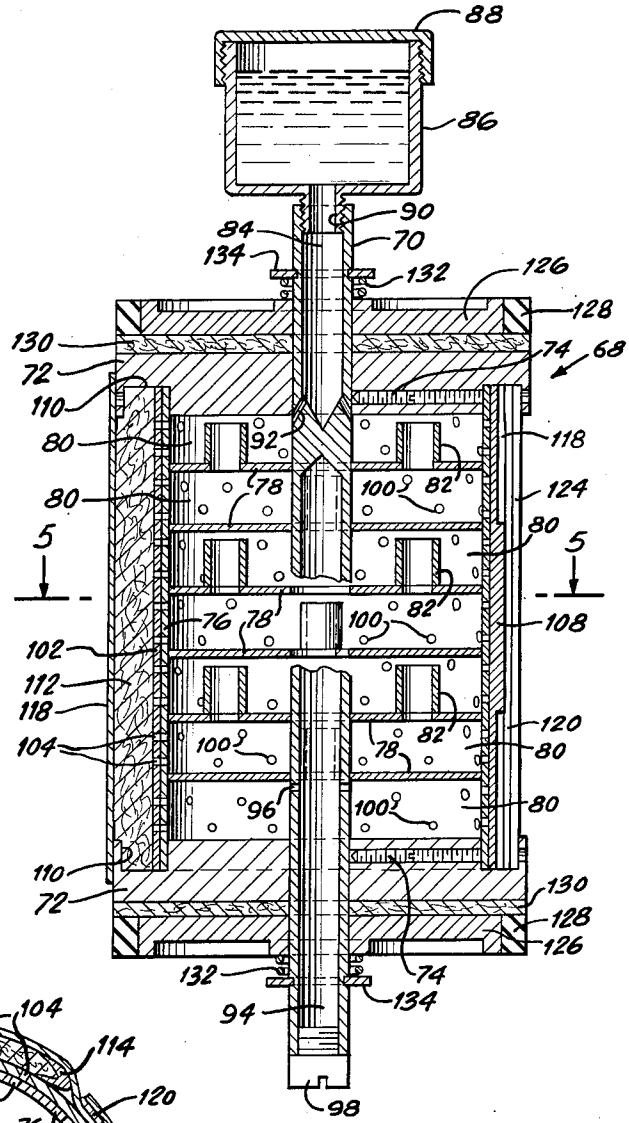
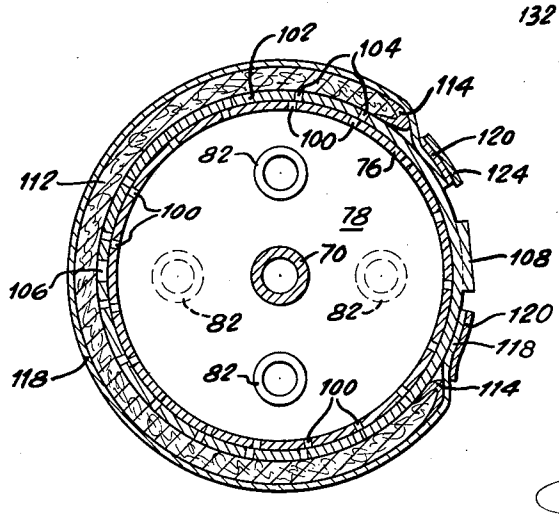


FIG. 5



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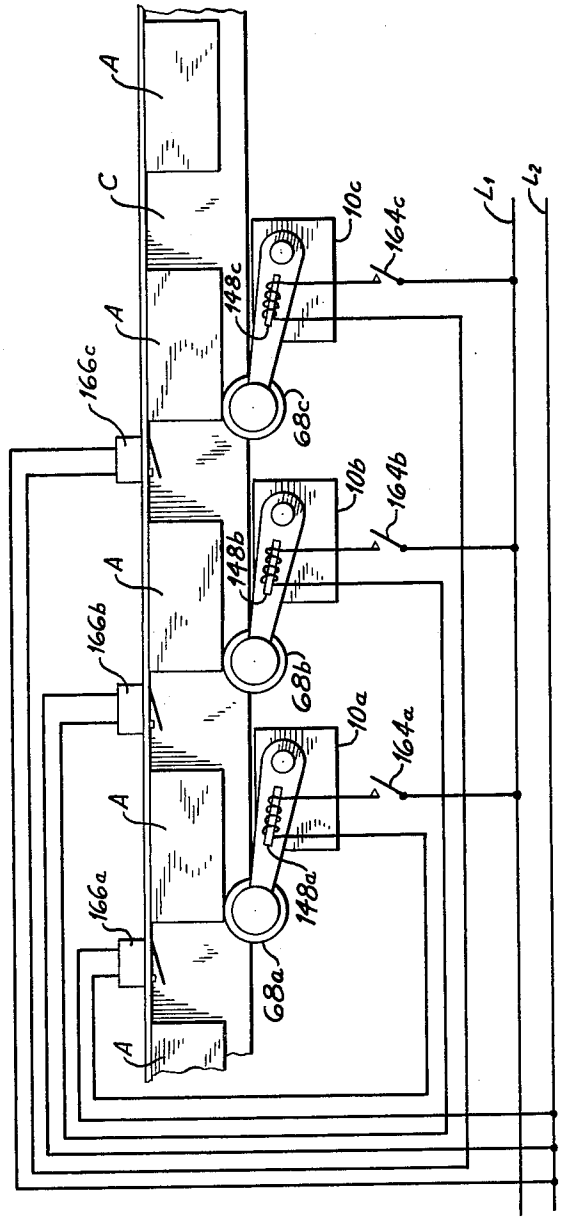


FIG. 8

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3,031,956

MARKING APPARATUS

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Filed July 6, 1960, Ser. No. 41,181
24 Claims. (Cl. 101—119)

This invention relates generally to marking apparatus, and more particularly is directed to improvements in marking apparatus of the kind applying inked markings or impressions through a stencil.

While the present invention has many applications in the art of applying inked markings or impressions to articles, it is particularly well adapted for stenciling addresses directly on a plurality of articles, such as cartons or packages conveyed successively past the apparatus, whereby the articles may be directed to an addressee without the necessity for first stenciling the address on a strip of paper and subsequently gluing the strip to the article or package.

It is an object of the present invention to provide apparatus of the described character with an improved marking roll or cylinder carrying the stencil on the surface thereof and adapted to effect the uniform distribution of ink to the stencil from within the marking roll or cylinder.

Another object is to provide an apparatus of the described character with improved means for securing the stencil on the surface of the marking roll or cylinder.

A further object is to provide an apparatus of the described character wherein the feeding of ink to the stencil from within the marking roll or cylinder can be adjustably controlled.

Still another object is to provide an apparatus of the described character with means for disposing the marking roll or cylinder at a predetermined rotational position at the conclusion of each marking operation, in order to ensure that the applied marking will appear at the same location on each of the articles conveyed past the marking apparatus.

Still another object of the invention is to provide an apparatus having a plurality of stencil carrying marking rolls or cylinders disposed at spaced apart locations along a conveyor carrying the articles to be marked, and having means for selecting which of the marking rolls will be operative to mark the successive conveyed articles.

A still further object is to provide an apparatus of the described character with means for conveniently adjusting the extent of the contact of the marking roll or cylinder with each of the conveyed articles and also for adjusting the pressure of such contact.

In accordance with an aspect of this invention, the marking roll or cylinder comprises a cylindrical shell or body having an axially spaced apart series of circular discs arranged therein to divide the interior of the shell into compartments communicating successively through overflow tubes which are spaced or offset from each other in successive discs so that, when ink is admitted to the interior of the body at one end of the latter, such ink fills the adjacent compartment and then overflows into the next adjacent compartment until all of the compartments are substantially filled in order, and the shell further has radial holes opening from each compartment to permit the escape of ink therethrough for impregnating an ink absorbent pad that extends around the body and underlies a stencil secured to the surface of the marking roll.

In accordance with another feature of the invention, the marking roll has a vertical axle extending centrally through the circular discs which are spaced apart within the cylindrical shell making up its body, and such axle has an upper hollow portion receiving ink from a reservoir secured to the upper end of the axle with openings extending from said upper hollow portion to feed ink to the uppermost compartment, while the lower portion of the axle is also hollow and has openings to receive ink from the lowermost compartment when the compartments have all been substantially filled in order, whereupon the lower end of the axle can be closed by a removable plug.

In accordance with another aspect of the invention, a sleeve extends around the shell or body of the marking roll and is circumferentially movable relative to the latter, and the sleeve has radial openings adapted to be more or less registered with the radial openings of the shell for adjustably controlling the feeding of ink to the absorbent pad.

In accordance with still another feature of the invention, the body of the marking roll has end members defining annular grooves opening axially toward each other to receive the opposite edges of the ink absorbent pad which extends over less than the full circumference of the body, and the stencil has stiffened end edge portions projecting beyond the ends of the absorbent pad and engaging in the annular grooves with one of the stiffened end edge portions of the stencil being frictionally held against the outer sleeve by a bowed spring strip having its ends removably engaged in the annular grooves.

Further, the body of the marking roll or cylinder is adapted to be driven by friction clutch members interposed between the body and independently rotatable bearer rims engageable by the conveyed article being marked, and a latch mechanism is provided for releasably holding the body against rotation in a predetermined rotational position so that, upon release of the latch mechanism, the engagement of a conveyed article with the bearer rims causes rotation of the body until the latter returns to the rotational position where the latch mechanism is again engaged to halt rotation of the body while the bearer rims continue to rotate so long as they are engaged by the conveyed article.

The above, and other objects, features and advantages of the invention, will be apparent in the following detailed description of an illustrative embodiment thereof which is to be read in connection with the accompanying drawings forming a part hereof, and wherein:

FIG. 1 is a side elevational view, partly broken away and in section, of a marking apparatus embodying the present invention;

FIG. 2 is a top plan view of the apparatus of FIG. 1;

FIG. 3 is an enlarged elevational view of the marking roll included in the apparatus of FIG. 1, but with the stencil removed therefrom;

FIG. 4 is an enlarged sectional view taken along the line 4—4 of FIG. 3, but with the stencil shown positioned on the marking roll;

FIG. 5 is a horizontal sectional view taken along the line 5—5 of FIG. 4;

FIG. 6 is a fragmentary enlarged sectional view taken along the line 6—6 of FIG. 1, and showing details of the latch arrangement for locating the marking roll in a predetermined rotational position;

FIG. 7 is a plan view of a stencil intended for use with the marking apparatus embodying the invention; and

FIG. 8 is a schematic plan view showing several of the marking apparatuses of FIG. 1 arranged next to an article conveyor for selectively marking the articles.

Referring to the drawings in detail, and initially to FIGS. 1 and 2 thereof, it will be seen that a marking apparatus embodying the present invention which is there generally identified by the reference numeral 10 includes a base 12 having slots 14 therein (FIG. 2) through which screws 16 can extend for adjustably securing the base to suitable supporting structure at one side of a conveyor C

(FIG. 2) adapted to move successive articles A past the marking apparatus in the direction indicated by the arrow 18 on FIG. 2.

The base has a hollow boss 20 in which the lower end of a vertical rod or post 22 is secured, for example, by a set screw 24.

A support arm generally identified by the reference numeral 26 includes a sleeve 28 at one end which is slidable on post 22 and which has a radial, elongated extension 30 at the top forming a top wall of the support arm, and side walls 32 and 34 which depend from the opposite side edges of top wall 30 and cooperate with the latter to provide an inverted U-shaped cross section for the support arm 26.

The bearing sleeve 28 of support arm 26 is adjustably positioned along post 22 by means of a lower split clamp 36 gripping post 22 below sleeve 28 and supporting the latter, and a split clamp 38 which grips post 22 above the bearing sleeve and functions both to prevent upward movement of the support arm and as a stop for limiting angular displacement of the support arm about the axle of post 22 by cooperating with an abutment 40 secured to the top wall 30 of support arm 26 by means of screws 42. As shown in FIG. 2, the split clamp 38 has a flat surface 44 at one side which is engageable selectively with converging surfaces 46 and 48 formed on the abutment 40 in order to limit the angular movement of support arm 26 in opposite directions with respect to the post 22.

As shown in FIG. 1, the bearing sleeve 28 of support arm 26 has a lower portion 50 with a reduced outer diameter, and a helical spring 52 extends around that lower portion 50 and has its opposite ends secured to the clamp 36 and the sleeve 28, as by screws 54 and 56, respectively. The spring 52 is arranged to yieldably urge arm 26 to move about the axis of post 22 in the direction displacing the free end of arm 26 toward the adjacent side of the conveyor carrying the articles to be marked. Thus, in the arrangement illustrated in FIG. 2, the helical spring 52 urges arm 26 in the clockwise direction relative to post 22, while the mutual engagement of the surfaces 44 and 46 on stop 38 and abutment 40 limits the spring urged movement. It will be apparent that the limited position of arm 26 can be easily adjusted merely by loosening the split clamp forming the stop 38 and turning such stop about the axis of post 22 to an adjusted position where the clamp is again tightened. It is also to be noted that the force exerted by the spring 52 in urging the free end of arm 26 toward the conveyor can be adjusted by loosening the clamp 36 and turning the latter about post 22 prior to tightening the clamp in its adjusted position.

An elongated plate or bar 58 is secured between the free ends of side walls 32 and 34 and extends parallel to the axis of post 22, and horizontally extending upper and lower end plates 60 anad 62, respectively, project outwardly from the upper and lower ends of elongated plate 58 and are secured to the latter, for example, by knurled screws 64 and locating pins 66 (FIG. 2).

A marking roll or cylinder generally identified by the reference numeral 68 is mounted between end plates 60 and 62 for rotation about an axis parallel to the axis of post 22. Referring in detail to FIGS. 3, 4 and 5, it will be seen that the marking roll 68 of the illustrated embodiment of the invention includes an axle 70 carrying a cylindrical body made up of circular end members 72 secured on axle 70 at axially spaced apart locations, for example, by means of set screws 74 (FIG. 4), a cylindrical shell 76 extending between end members 72 coaxially with axle 70 and spaced radially from the latter, and a series of axially spaced discs 78 having central openings through which the axle 70 extends and being fixed to the latter, for example, by having a pressed fit thereon, so as to divide the interior of the cylindrical body into a series of compartments 80. Projecting upwardly from each of the discs 72 are a plurality of open ended overflow tubes 82 which have an axial length slightly smaller than the axial dimension of the related compartment 80. The successive discs 78 are angularly displaced relative to each other about the axle 70 so that the overflow tubes 82 of adjacent discs 78 will be spaced or offset relative to each other, as is apparent in FIGS. 4 and 5.

In order to supply ink to the interior of the above described cylindrical body, the axle 70 is formed with an axial bore 84 in its upper portion and opening at the top end of the axle to receive ink from a reservoir or tank 86 having a screw cap or cover 88 and a threaded neck 90 engaging internal threads formed near the top of bore 84. Openings 92 extend radially from the lower end of bore 84 and open into the uppermost compartment 80. Thus, ink supplied to the bore 84 from the reservoir 86 will initially substantially fill the uppermost compartment 80 until the level of the ink in that compartment reaches the upper ends of the related overflow tubes 82. Further ink supplied to the uppermost compartment 80 will overflow through the related tubes 82 into the next lower compartment 80 until the ink in the latter reaches the level of the upper ends of the related overflow tubes 82.

It will be apparent that the compartments 80 of the marking roll 68 will be successively substantially filled in a descending order. In order to permit one to determine when the lowermost compartment 80 has been substantially filled, the axle 70 is further formed with a downwardly opening axial bore 94 extending at least through its lower portion and being isolated from the axial bore 84. Radial openings 96 open from the axial bore 94 into the lowermost compartment 80 adjacent the top of the latter so that, when the lowermost compartment is substantially filled, ink from such compartment will flow through the radial openings 96 into axial bore 94 for discharge from the lower end of the axle 70. After ink has begun to be discharged from the lower end of axle 70, a threaded plug 98 is inserted into the lower end of axial bore 94 so as to close the interior of marking roll 68 during normal operation.

In order to permit the controlled escape of ink from each of the compartments 80, the cylindrical shell 76 is formed with circumferentially staggered rows of radial openings 100 communicating with each of compartments 80, and the shell 76 is substantially surrounded by a longitudinally split cylindrical sleeve 102 which is turnable relative to shell 76 and which is formed with corresponding rows of radial openings 104 over a major portion of the circumference of the sleeve 102. A minor circumferential portion of sleeve 102 is imperforate and is preferably diametrically opposed to the longitudinal split 106 (FIG. 5) of the sleeve, and this imperforate portion of sleeve 102 is preferably provided with a projection 108 on its outer surface by which sleeve 102 may be manually grasped for effecting rotation thereof relative to shell 76. It will be apparent that, by turning sleeve 102 relative to the underlying shell 76, the degree of registration of the radial openings 100 and 104 can be varied, thereby to control the rate at which ink is permitted to escape radially outward from the several compartments 80.

As shown particularly in FIG. 4, the circular end members 72 project radially beyond shell 76 and sleeve 102 and are formed with annular grooves 110 opening axially toward each other to receive the upper and lower edges of an ink absorbent pad 112 formed of felt or the like. The pad 112 extends around the major portion of sleeve 102 having the openings or perforations 104, as is apparent in FIG. 5, and the opposite end edges of pad 112 are bound by metal clamping strips 114 (FIGS. 3 and 5) which, at their opposite ends, extend into grooves 110 and are secured, as by screws 116, to the sleeve 102 so that the latter and the pad 112 can be turned, as a unit, relative to shell 76.

It will be apparent that, as the total quantity of ink within marking roll 68 is diminished, the quantity of ink

within the individual compartments 80 will remain uniform, thereby to ensure the uniform feeding of ink to the pad 112 along the entire axial length of the latter. Further, by turning sleeve 102 and pad 112 as a unit relative to shell 76, the effective sizes of the openings through which ink is fed from compartments 80 to pad 112 may be varied, thereby to adjust the rate of feeding of ink to the absorbent pad 112.

The marking roll or cylinder 68 is intended to support, and apply ink to a stencil 118 which, as shown in FIG. 7, is generally rectangular and formed of paper or other suitably flexible sheet material. The opposite end edges of stencil 118 have stiffened portions 120 extending across the full width of the stencil which is greater than the axial distance between the circular end members 72 of the cylindrical body of the marking roll. The opposite longitudinal edges of stencil 118 are notched or cut out, as at 122, immediately adjacent the stiffened end edge portions 120 so that, when the stencil 118 is wrapped around the ink absorbent pad 112 of the marking roll, the longitudinal edges of the stencil overlie the end members 72, while the notches or cutouts 122 permit the opposite ends of the stiffened edge portions 120 of the stencil to be engaged in the annular grooves 110 of end members 72 at locations lying in the circumferential gap between the opposite end edges of pad 112 (FIG. 5).

The stencil 118 is longitudinally dimensioned so that, when one of the stiffened edge portions 120 is pulled along the grooves 110 of end members 72 to seat tightly against one of the edge clamps 114 of the inking pad 112, the opposite stiffened edge portion 120 of the stencil will also be disposed adjacent the raised portion or projection 108 of sleeve 102, and will be frictionally gripped against the sleeve to hold the stencil 118 taut on the inking pad, by means of a normally inwardly bowed spring metal strip 124 which has its opposite ends removably received in the annular grooves 110 of end members 72, as indicated in broken lines on FIG. 3.

It is intended that the cylindrical body of marking roll or cylinder 68 be rotated by frictional engagement with each of the successive articles conveyed past the marking apparatus along the path 18 so that each article effects rotation of the marking roll and is, in turn, marked by the stencil 118 carried by the marking roll. In order to effect such rotation of the marking roll, the latter further includes bearer discs 126 which are rotatable on the axle 70 adjacent the upper and lower end members 72 and have rubber rims 128 adapted to be frictionally engaged by the successive conveyed articles. Friction clutch discs 130 are axially interposed between the bearer discs 130 are axially interposed between the bearer discs 126 and the adjacent end members 72, and helical compression springs 132 are axially interposed between the bearer discs 126 and abutment rings 134 received in suitable annular grooves formed in the outer surface of axle 70 in order to urge the bearer discs axially toward the adjacent end members 72 so that, when the bearer discs are rotated by frictional engagement of a conveyed article with their rims 128, the friction clutch discs 130 tend to cause rotation of the body of the marking roll with the bearer discs.

However, by reason of the frictional connection between the cylindrical body of the marking roll and the bearer discs 126, it is apparent that the latter can continue to be rotated by engagement with a conveyed article while the cylindrical body is forcibly held against rotation.

In order to hold the body of marking roll 68 in a predetermined rotational position, the marking apparatus 10 further includes a latch member 136 (FIGS. 1 and 6) which extends slidably through a bore 138 formed in the lower portion of the elongated plate 58. Latch member 136 is urged against the periphery of the lower end member 72 of the marking roll by an elongated leaf spring 140 which lies against the back surface of elongated plate 58 and is secured, at its upper and lower ends, to plate 58 and latch member 136, respectively, as by screws 142 and 144. The outer peripheral surface of the lower end member 72 of marking roll 68 is formed with a keeper notch or recess 146 (FIGS. 3 and 6) which is adapted to receive the spring urged latch member 136 when the body of the marking roll is in a predetermined rotational position, thereby to prevent rotation of the body of the marking roll in the counterclockwise direction, as viewed in FIG. 6, from that rotational position.

As shown in FIG. 1, the latch member 136 is adapted to be withdrawn from the notch or recess 146 by means of a solenoid 148 having its armature 150 pivotally connected, as at 152, to one end of a link 154 which has its opposite end pivotally connected, as at 156, to a lug 158 secured to leaf spring 140 intermediate the ends thereof so that, when solenoid 148 is suitably energized and retracts its armature 150, spring 140 is flexed away from elongated plate 58 and thereby withdraws latch member 136 away from the periphery of the lower end member 72. The solenoid 148 may be disposed within support arm 26, as shown, and supported by screws 160 extending through the top wall 30 of the support arm, and electric current for energizing the solenoid may be supplied by way of an electrical receptacle 162 mounted in a side wall 32 of the support arm and having its terminals connected to the solenoid by way of suitable wires.

The electrical circuit for energizing solenoid 148 may be momentarily closed by a suitable switch controlled by the conveyed article to be marked, or otherwise, so that, after a conveyed article has moved into engagement with the bearer rims 128 to effect rotation thereof, the latch member 136 is momentarily disengaged from the recess 146 to permit rotation of the stencil carrying body with the bearer discs. Since the solenoid 148 is only momentarily energized during each marking cycle, the latch member 136 is urged by the spring 140 to ride against the periphery of the lower end member 72 during the completion of the revolution of the body of the marking roll and, when the latter returns to the rotational position where the notch or recess 146 again registers with the latch member 136, the latter enters the recess or notch to prevent further rotation of the body of the marking roll, while the bearer discs continue to rotate so long as the rims thereof are frictionally engaged by the conveyed article which has been marked.

It will be apparent that, during the rotation of the body of the marking roll 68, as described above, the stencil 118 carried by the periphery of the marking roll will enter into rolling and marking engagement with the conveyed article causing rotation and thereby apply an inked marking to the article. By reason of the division of the interior of the marking roll into compartments 80 which communicate with each other by way of overflow tubes 82, ink is distributed to the pad 112 under a hydrostatic pressure that is substantially uniform at the upper and lower ends of the pad, thereby to ensure the uniform feeding of ink to the pad and the uniform intensity of the entire marking applied to the article by the stencil 118.

It will also be apparent from the foregoing description of the illustrative embodiment of the invention that in employing the disclosed apparatus for addressing articles or packages, the address is applied directly to the articles or packages exactly at the same location on each article, which not only results in the address being applied without smudging, but also results in the saving of labor and material in the elimination of the usual procedure of providing paper strips on which the address is first applied and then subsequently gluing the same on the article or package, which procedure often results in the strips being applied at different locations on each article, smudging of the inked impressions on the strips due to handling, and accidental removal of the strips before or during shipment due to improper adhesion of the strips to the articles or package.

Referring now to FIG. 8 of the drawings, it will be seen

that two or more marking apparatuses, for example, the marking apparatuses 10*a*, 10*b* and 10*c*, can be mounted at spaced apart locations along the conveyor C, with each marking apparatus which is only schematically illustrated in FIG. 8 being similar to the apparatus 10 embodying the present invention, as previously described in detail. Thus, the marking apparatuses 10*a*, 10*b* and 10*c* include marking rolls or cylinders 68*a*, 68*b* and 68*c* which may carry different stencils for addressing the articles or packages to be shipped to different addressees.

As in the embodiment of the invention previously described in detail, each of the marking rolls 68*a*, 68*b* and 68*c* is normally held against rotation in a predetermined rotational position by a latch mechanism which is momentarily released upon energization of a related solenoid 148*a*, 148*b* or 148*c*. Thus, as the successive articles A are carried past the marking apparatuses 10*a*, 10*b* and 10*c* by the conveyor C, each article is only marked by that marking apparatus which is then conditioned to have its solenoid energized to release the related marking roll for rotation by the article. FIG. 8 illustrates a suitable electric circuit by which one of the marking apparatuses may be selected for marking of the successive conveyed articles. In the illustrated electric circuit, the solenoids 148*a*, 148*b* and 148*c* are connected to the usual electric supply lines L_1 and L_2 by suitable conductors having manually controllable switches 164*a*, 164*b* and 164*c*, respectively, and microswitches 166*a*, 166*b* and 166*c*, respectively, interposed therein in series with the related solenoids so that each solenoid can be energized only when the related manually controlled switch and microswitch are simultaneously closed. The microswitches 166*a*, 166*b* and 166*c* are suitably positioned adjacent the path of the conveyor C so as to be closed by engagement with a conveyed article when the latter reaches a predetermined position with respect to the related marking apparatus. Thus, as the articles A are conveyed past each marking apparatus, the related microswitch is closed to condition the electric circuit for energization of the solenoid 148*a*, 148*b* or 148*c*, provided that the related manual switch is then in closed position.

It will be apparent that, with the arrangement illustrated in FIG. 8, a battery or plurality of marking apparatuses embodying the present invention can be employed for differently addressing the successive conveyed articles.

Although particular embodiments of the invention have been described in detail herein with reference to the accompanying drawings, it is to be understood that the invention is not limited to the precise structural arrangements of such embodiments, and that various changes and modifications may be effected therein without departing from the spirit or scope of the invention, except as defined in the appended claims.

What is claimed is:

1. In a marking apparatus; a marking roll comprising a hollow cylindrical body arranged with its axis extending substantially vertically and having vertically spaced apart partitions extending across its interior to divide the latter into a plurality of compartments, means for supplying ink to the uppermost one of said compartments, overflow means establishing communication between each of said compartments and the next lower compartment so that the compartments are substantially filled with ink in successively descending order by ink supplied to said uppermost compartment, said cylindrical body having radial openings communicating with each of said compartments, and an inking pad extending around said body to receive ink flowing out of said radial openings from said compartments.

2. In a marking apparatus; a marking roll comprising a hollow cylindrical body arranged with its axis extending substantially vertically and having vertically spaced apart partitions extending across its interior to divide the latter into a plurality of compartments, means for supplying ink to the uppermost one of said compartments, overflow means establishing communication between each of said compartments and the next lower compartment so that the compartments are substantially filled with ink in successively descending order by ink supplied to said uppermost compartment, said cylindrical body having radial openings communicating with each of said compartments, means for varying the effective size of said radial openings, thereby to control the rate of flow of ink out of said compartments through said openings, and an inking pad extending around said body to receive the ink flowing out of said radial openings.

3. In a marking apparatus; a marking roll comprising a hollow cylindrical body arranged with its axis extending substantially vertically and having vertically spaced apart partitions extending across its interior to divide the latter into a plurality of compartments, means for supplying ink to the uppermost one of said compartments, overflow means establishing communication between each of said compartments and the next lower compartment so that the compartments are substantially filled with ink in successively descending order by ink supplied to said uppermost compartment, said cylindrical body having radial openings communicating with each of said compartments, a sleeve extending rotatably around said cylindrical body and having radial openings for selective registration with said radial openings of the cylindrical body in order to control the discharge of ink from said compartments, and an inking pad in covering relationship to said sleeve to receive the ink flowing through the registered radial openings of said body and sleeve.

4. In a marking apparatus; a marking roll comprising a hollow cylindrical body arranged with its axis extending vertically and having vertically spaced apart partitions extending across its interior to divide the latter into a plurality of compartments, means for supplying ink to the uppermost one of said compartments, each of said partitions having open-ended overflow tubes projecting upwardly therefrom and being spaced laterally with respect to the overflow tubes of adjacent partitions so that said compartments will be successively filled in descending order up to the tops of said overflow tubes by ink supplied to said uppermost compartment, said cylindrical body having radial openings extending from each of said compartments to permit the discharge of ink from the latter, and an inking pad extending around said body to receive the ink discharged from said compartments.

5. In a marking apparatus; a marking roll comprising a hollow cylindrical body arranged with its axis extending vertically and having vertically spaced apart partitions extending across its interior to divide the latter into a plurality of compartments, means for supplying ink to the uppermost one of said compartments, each of said partitions having open-ended overflow tubes projecting upwardly therefrom and being spaced laterally with respect to the overflow tubes of adjacent partitions so that said compartments will be successively filled in descending order up to the tops of said overflow tubes by ink supplied to said uppermost compartment, said cylindrical body having radial openings extending from each of said compartments to permit the discharge of ink from the latter, a sleeve extending rotatably around said cylindrical body and having radial openings for selective registration with said radial openings of the body in order to control the rate of discharge of ink from said compartments, and an inking pad in covering relationship to said sleeve to receive the ink discharged through the registered radial openings of said body and sleeve.

6. In a marking apparatus; a marking roll comprising a hollow cylindrical body arranged with its axis extending substantially vertically and having vertically spaced apart partitions extending across its interior to dived the latter into a plurality of compartments, means for supplying ink to the uppermost one of said compartments, overflow means establishing communication between each of said compartments and the next lower compartment

so that the compartments are substantially filled with ink in successively descending order by ink supplied to said uppermost compartment, said cylindrical body having radial openings communicating with each of said compartments, an inking pad extending around said body to receive ink flowing out of said openings from said compartments, and means for securing a stencil on said body in covering relation to said pad.

7. In a marking apparatus; a marking roll comprising a vertical axle having hollow upper and lower portions, a cylindrical body mounted on said axle and having vertically spaced partitions extending across the interior of the body to divide said interior into a plurality of compartments, said axle having radial passages opening from said hollow upper portion into the uppermost one of said compartments so that ink can be supplied to said uppermost compartment through said hollow upper portion of the axle, said partitions having open-ended overflow tubes projecting upwardly therefrom and being spaced laterally with respect to the overflow tubes of adjacent partitions so that ink supplied to said uppermost compartment can flow downwardly to the successively lower compartments after filling each compartment to the top of the related overflow tubes, said axle further having radial passages opening into said hollow lower portion at locations adjacent the top of the lowermost of said compartments so that ink can drain from said hollow lower portion to indicate substantial filling of all of said compartments, means normally closing said hollow lower portion of the axle, said cylindrical body having radial openings extending from each of said compartments to permit the discharge of ink from the latter, and an inking pad extending around said body to receive the ink discharged from said compartments.

8. In a marking apparatus; a marking roll comprising a vertical axle having hollow upper and lower portions, a cylindrical body mounted on said axle and having vertically spaced partitions extending across the interior of the body to divide said interior into a plurality of compartments, said axle having radial passages opening from said hollow upper portion into the uppermost one of said compartments so that ink can be supplied to said uppermost compartment through said hollow upper portion of the axle, said partitions having open-ended overflow tubes projecting upwardly therefrom and being spaced laterally with respect to the overflow tubes of adjacent partitions so that ink supplied to said uppermost compartment can flow downwardly to the successively lower compartments after filling each compartment to the top of the related overflow tubes, said axle further having radial passages opening into said hollow lower portion at locations adjacent the top of the lowermost of said compartments so that ink can drain from said hollow lower portion to indicate substantial filling of all of said compartments, means normally closing said hollow lower portion of the axle, said cylindrical body having radial openings extending from each of said compartments to permit the discharge of ink from the latter, a sleeve rotatable on said cylindrical body and having radial openings for selective registration with said radial openings of the body, thereby to control the rate of discharge of ink from said compartments, and an inking pad in covering relation to said sleeve to be impregnated with the ink discharged through the registered radial openings of said body and sleeve.

9. In a marking apparatus; a marking roll as in claim 8, further comprising an ink storage tank mounted on the upper end of said axle and opening into said hollow upper portion of the latter.

10. In a marking apparatus; a marking roll comprising a vertical cylindrical shell, circular end members closing the upper and lower ends of said shell and extending radially outward beyond the latter, vertically spaced apart partitions extending laterally across the interior of said shell between said end members to divide said interior into a plurality of compartments, means for supplying ink to the uppermost of said compartments, open-ended overflow tubes projecting upwardly from each of said partitions so that ink supplied to said uppermost compartment can flow downwardly to the successively lower compartments after filling each compartment to the tops of the overflow tubes therein, said shell having radial openings extending from each of said compartments to permit the discharge of ink from the latter, said end members having annular grooves opening axially toward each other at the outside of said shell, an inking pad engaging in said grooves and extending around only a portion of the circumference of said shell so as to leave a gap between the ends of said pad, a stencil covering said pad and having stiffened edge portions extending into said gap and engaging, at their opposite ends, in said grooves, and means engaging one of said stiffened edge portions of the stencil for maintaining the latter in taut condition around the pad.

11. In a marking apparatus; a marking roll comprising a vertical cylindrical shell, circular end members closing the upper and lower ends of said shell and extending radially outward beyond the latter, vertically spaced apart partitions extending laterally across the interior of said shell between said end members to divide said interior into a plurality of compartments, means for supplying ink to the uppermost of said compartments, open-ended overflow tubes projecting upwardly from each of said partitions so that ink supplied to said uppermost compartment can flow downwardly to the successively lower compartments after filling each compartment to the tops of the overflow tubes therein, said shell having radial openings extending from each of said compartments to permit the discharge of ink from the latter, said end members having annular grooves opening axially toward each other at the outside of said shell, a sleeve rotatable on said shell and having radial openings only in a major circumferential portion thereof for selective registration with said radial openings of the shell so as to control the rate of discharge of ink from said compartments, the remaining minor circumferential portion of said sleeve being imperforate, an inking pad engaging in said grooves and extending around only said major portion of the sleeve so as to leave a gap between the ends of the pad at said imperforate portion of the sleeve, a stencil covering said pad and having stiffened edge portions extending into said gap and engaging, at their ends, in said grooves, and means engaging one of said stiffened edge portions of the stencil for maintaining the latter in taut condition around the pad.

12. In a marking apparatus; a marking roll as in claim 11, wherein said sleeve has a radial projection extending from said imperforate portion in said gap to permit manual grasping of said projection for turning said sleeve relative to said shell.

13. In a marking apparatus; a marking roll as in claim 11, wherein said menas engaging one stiffened edge portion of the stencil includes a spring strip which is normally bowed inwardly at the center and has its opposite ends engaged in said grooves with said center of the strip bearing upon said one stiffened edge portion to clamp the latter against said sleeve.

14. In a marking apparatus; the combination of a marking roll comprising a vertical axle having hollow upper and lower portions, a cylindrical body mounted on said axle and having vertically spaced partitions extending across the interior of the body to divide said interior into a plurality of compartments, said axle having radial passages opening from said hollow upper portion into the uppermost one of said compartments so that ink can be supplied to said uppermost compartment through said hollow upper portion of the axle, said partitions having open-ended overflow tubes projecting upwardly therefrom and being spaced laterally with respect to the overflow tubes of adjacent partitions so that ink supplied to said uppermost compartment can flow

downwardly to the successively lower compartments after filling each compartment to the top of the related overflow tubes, said body having radial openings extending from each of said compartments to permit the discharge of ink from the latter, an inking pad extending around said body to receive the ink discharged from said compartments, means for securing a stencil over said pad, bearer discs rotatable on said axle above and below said body and adapted to be frictionally engaged and rotated by a conveyed article to be marked, clutch discs between said bearer discs and the adjacent ends of said cylindrical body for urging the latter to rotate with said bearer discs, and latch means operative to hold said body against rotation in a predetermined rotational position.

15. In a marking apparatus; the combination as in claim 14, wherein said cylindrical body has a radially opening recess adjacent one of said ends thereof, and said latch means includes a latch member spring urged against said body adjacent said one end to enter said recess and hold said body against rotation, and electro-magnetically operated means for withdrawing said latch member from said recess, thereby to free said body for rotation with said bearer discs.

16. A marking apparatus comprising a base adapted to be mounted adjacent one side of the path of successive conveyed articles to be marked and having an upstanding post, a support arm extending radially from said post and being slidably mounted on the latter, upper and lower clamps releasably gripping said post above and below said arm, respectively, for adjustably locating said arm along said post, a marking roll including a cylindrical body on an axle extending therethrough and having means for securing marking means on the periphery of said body, bearer discs rotatable on said axle at the opposite ends of the body and adapted for peripheral engagement and rotation by the successive conveyed articles, friction clutch discs betwen said bearer discs and said body tending to cause the latter to rotate with said bearer discs and releasable latch means for holding said body in a predetermined rotational position, means mounting said roll on the free end of said arm for rotation relative to the latter about an axis parallel to said post, a helical coil spring on said post and connected at its opposite ends to said arm and to one of said clamps for urging said arm to swing relative to said post in the direction moving said marking roll toward the path of the conveyed articles where said bearer discs are frictionally driven by the latter to cause rotation of said body upon release of said latch means, and cooperating means on said arm and the other of said clamps for adjustably limiting the swing movement of said arm under the urging of said spring.

17. A marking apparatus as in claim 16; wherein said means mounting said marking roll on the free end of the support arm includes an elongated plate secured to said free end of the arm and extending parallel to said post, and end plates extending perpendicular to said elongated plate at the opposite ends of the latter and having said axle journalled therein; and wherein said body has a radially opening recess, and said latch means includes a latch member extending slidably through said elongated plate to engage in said recess, a leaf spring secured at one end to said elongated plate and connected to said latch member to urge the latter toward said body of the marking roll, a solenoid carried by said support arm, and means connecting said solenoid to said leaf spring to withdraw said latch member from said recess upon energization of said solenoid.

18. A marking apparatus as in claim 17; wherein said body of the marking roll includes a cylindrical shell having end members closing the upper and lower ends of the shell and vertically spaced apart partitions extending across the interior of said shell to divide said interior into a plurality of compartments, means for introducing ink to the uppermost of said compartments through the upper end of said axle, each of said partitions having overflow means to permit the compartments to fill successively to levels determined by said overflow means, said shell having radial openings for the discharge of ink from each of said compartments, and an inking pad extending around said shell to receive the ink discharged from said compartments and to apply the ink to marking means in the form of a stencil convering said pad.

19. In a marking apparatus, an inking roll receiving ink from a source of supply, circular end members at opposite ends of said roll and having annnular grooves opening axially toward each other at the periphery of said roll, an inking pad extending around a portion of the periphery of said roll, a stencil covering said pad, said stencil having longitudinal edge portions resting on the peripheries of said end members and formed with notches adjacent the opposite ends of the stencil, said ends of the stencil having laterally extending edge portions projecting, at their opposite ends, beyond said notches and engaging in said grooves for holding said ends of the stencil on said roll, and means maintaining the stencil in taut condition around the pad.

20. In a marking apparatus, an inking roll receiving ink from a source of supply, circular end members at opposite ends of said roll and having annular grooves opening axially toward each other at the periphery of said roll, an inking pad engaging in said grooves and extending around a portion of the periphery of said roll so as to leave a gap between the ends of the pad, a stencil covering said pad and having laterally extending edge portions extending into said gap, said stencil having longitudinal edge portions resting on the peripheries of said end members and formed with notches adjacent said laterally extending edge portions so that the ends of the latter project beyond said notches, said laterally extending edge portions being stiffened and engaging at their opposite ends, in said grooves, and means engaging one of said stiffened edge portions of the stencil for maintaining the latter in taut condition around the pad.

21. In a marking apparatus, a marking roll comprising a perforated cylindrical shell, circular end members closing the ends of the shell and extending radially outward beyond the latter, means for supplying ink to the interior of said shell, said end members having annular grooves opening axially inward toward each other, an inking pad engaging in said grooves and extending around a portion of the circumference of said shell so as to leave a gap between the ends of the pad, a stencil covering said pad and having stiffened laterally extending edge portions projecting into said gap, said stencil having longitudinal edge portions resting on the peripheries of said end members and formed with notches adjacent said laterally extending edge portions so that the ends of said laterally extending edge portions project beyond said notches, said ends of the longitudinally extending edge portions engaging in said grooves, and means engaging one of said stiffened edge portions of the stencil for maintaining the latter in taut condition around the pad.

22. In a marking apparatus, a marking roll comprising a perforated cylindrical shell, circular end members closing the ends of the shell and extending radially outward beyond the latter, means for supplying ink to the interior of said shell, said end members having annular grooves opening axially inward toward each other, an inking pad engaging in said grooves and extending around a portion of the circumference of said shell so as to leave a gap between the ends of the pad, a stencil covering said pad and having stiffened laterally extending edge portions projecting into said gap, said stencil having longitudinal edge portions resting on the peripheries of said end members and formed with notches adjacent said laterally extending edge portions so that the ends of the latter project beyond said notches and are engaged in said grooves, one of said stiffened edge portions engaging a related transverse edge of said pad to hold said one edge portion against circumferential displacement relative to said shell, and a spring strip normally bowed in-

wardly at its center and having its opposite ends engaged in said grooves with said center bearing upon the other of said stiffened edge portions of the stencil for maintaining the latter in taut condition around the pad.

23. The combination of a conveyor carrying successive articles to be marked; a plurality of marking devices disposed at spaced apart locations alongside said conveyor, each of said marking devices including a marking roll having a rotatable body carrying marking means and being rotatable by each of the successive articles passing the related marking device, latch means for holding the body against rotation in a predetermined rotational position, means for releasing said latch means so as to free said body for rotation; and an electric control circuit for said releasing means of each of said marking devices including article actuated switch means located along said conveyor so as to be engaged by each article as the latter reaches a predetermnied position with respect to the related marking device, and a selector switch, said article actuated switch and selector switch of each circuit being connected in series with the related releasing means so that the latter is operated only upon simultaneous closing of both switches, whereby the conveyed articles can be marked by the marking means of a selected one of said marking devices by actuating the related selector switch.

24. The combination of a conveyor carrying successive articles to be marked; a plurality of marking devices disposed at spaced apart locations alongside said conveyor, each of said marking devices including a marking roll having a rotatable body carrying marking means, bearer discs engageable and rotatable by each of the successive articles passing the related marking device, clutch means tending to rotate the body with the related bearer discs, releasable latch means for holding the body against rotation in a predetermined rotational position, and electro-magnetically operated means for releasing said latch means so as to free said body for rotation with the related bearer discs; and an electric control circuit for said electro-magnetically operated releasing means of each of said marking devices including article actuated switch means located along said conveyor so as to be engaged by each article as the latter reaches a predetermined position with respect to the related marking device and a selector switch, said article actuated switch and selector switch of each circuit being connected in series with the related electro-magnetically operated releasing means so that the latter is operated only upon simultaneous closing of both switches, whereby the conveyed articles can be marked by the marking means of a selected one of said marking devices by actuating the related selector switch.

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