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STRIP STAMP APPLICATOR

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This invention relates to a device for applying an elongated strip of flexible material over the top of an article having a generally cylindrical upper end. More particularly, the invention provides an apparatus for applying the elongated, government tax stamp to bottles containing liquor.

Heretofore there have been several devices provided for automatically applying the tax stamp to liquor bottles as the latter proceed along the bottling line after filling and capping. Such prior art devices have had various disadvantages, however, which impair their usefulness. For example, the speed of such devices has not been sufficient to keep up with modern fillers and capsers. Also, the registration between the stamp and the bottle to which it is applied has been poor so that the stamp does not extend vertically downward along the opposite sides of the bottle, or does not extend equal distances down the opposite sides. These inaccuracies result in a sloppy appearance of the finished bottle.

The main object of the present invention is therefore to generally improve the application of tax stamps to bottles so that the application step may be performed faster and with greater accuracy than has heretofore been possible.

Another object of the invention is to provide a stamp applicator that lends itself to use with strip stamps coated with heat-sensitive plastic adhesive.

Other objects and advantages will be apparent from the following specification and drawings.

FIG. 1 is a front elevation of a machine employing the invention;

FIG. 2 is a semi-schematic front elevation of a portion of the machine of FIG. 1 showing a modified form thereof;

FIG. 3 is an end elevation of the machine of FIG. 1;

FIG. 4 is a longitudinal section of a portion of the machine of FIG. 1 showing the pressure applying fingers in a retracted position;

FIG. 5 is a view similar to FIG. 4 but showing the fingers applying sealing pressure to the strip stamp on a bottle;

FIG. 6 is an enlarged cross section of a portion of the machine of FIG. 1 showing the same in strip sealing position;

FIG. 7 is an enlarged vertical section through a bottle showing the head and a finger in sealing position;

FIG. 8 is a view similar to FIG. 7 showing a modified form of sealing finger;

FIG. 9 is a greatly enlarged cross section through the slotted cylinder employed to form the pressure pad;

FIG. 10 is a bottom plan view of the strip stamp suction head;

FIG. 11 is a fragmentary view showing the suction head and the discharge end of the hopper in stamp transfer position;

FIG. 12 is a cross section through one of the pressure applying fingers; and

FIG. 13 is a side view of the discharge end of the hopper.

In detail, and first with reference to FIG. 1, the invention comprises a base structure generally designated 1 in which the driving apparatus may be housed. Mounted on base structure 1 is a conveyor support 2 (FIG. 1) on which a bottle conveyor 3 (FIG. 3) is supported. Positioned alongside conveyor 3 is a feed screw 4 which is driven by shaft 5 (FIG. 1) so that the speed of said screw is synchronized with the speed of the conveyor 3.

Details of the above noted apparatus are not described herein but are somewhat similar to those shown in U.S. Patent No. 2,860,468 wherein the same drive apparatus for the bottle conveyor is employed. With respect to feed screw 4, reference is made to U.S. application Serial No. 9,734, filed February 19, 1960.

By the above-identified apparatus, bottles are conveyed at a uniform speed and spacing to a position under a drive head 10 (FIG. 3) which includes a speed compensating head 11 (FIG. 6) designed to move, for at least a portion of its cycle, at a linear speed equal to the speed of the conveyor. In Patent No. 2,860,468, said drive head 10 and compensating head 11 are described in detail as used to drive a device for applying cellulose bands to bottle necks. Identically the same structure is employed in the present invention to drive a housing 15 (FIGS. 1, 3, 6) which supports the strip stamp applicator 20.

As best seen in FIG. 6 the housing 15 is attached to a pair of crank arms 16 which in turn are rotated by compensating head 11 so that the housing 15 undergoes a generally orbital movement, moving toward and away from conveyor 3 and forward and rearwardly relative to said conveyor. For the purpose of the instant disclosure, it is sufficient to note that the housing 15, when in its lower position, moves forwardly with, and at the same speed of, conveyor 3 so that for all practical purposes there is no relative movement between the housing and the conveyor except for the vertical movement of the housing relative to the conveyor.

The housing 15 includes a pair of front and rear plates 20, 21 respectively secured together in parallel spaced relation by a plurality of spacer plates 22 which may be secured to plates 20, 21 by machine screws. A box-like structure is thus formed permitting a plurality of strip stamp applicators to be carried by housing 15 in much the same manner as a plurality of banding devices are carried by the corresponding housing shown in Patent No. 2,860,468.

In FIGS. 1, 2 three applicators are indicated in housing 15, but it will be apparent that more or less may be employed if desired. Since all are similar, only one will be described in detail.

Referring now to FIG. 5, each applicator is housed between a pair of spacer plates 22 and between front and rear plates 20, 21 of housing 15. Extending vertically within housing 15 is a rod 24 which is provided at its lower end with a strip stamp suction head 25 adapted to transfer the stamps from the hopper generally designated 26 (FIG. 6) to the top of the cap 30 of bottle 31.

The rod 24 is hollow and acts as a conduit for air and is connected at its upper end to a flexible tube 32 which in turn is connected to any suitable source of vacuum such as a vacuum pump indicated schematically at 33 in FIG. 5. The means by which the stamps are transferred from hopper 26 to head 25 will subsequently be described but at this point it may be pointed out that the head 25 is provided with a rectangular recess 35 (FIG. 6) adapted to receive the central portion of stamp 36 therein. Head 25 is provided with a central axial passageway 37 (FIG. 10) communicating with hollow rod 24. Said passageway terminates at the rectangular recess 35 and a rectangular grid is formed in the bottom of said recess by relatively shallow grooves 38 communicating with the end of passageway 37. By this structure the vacuum effect is spread evenly over a relatively large portion of the stamp so that the latter is held firmly against shifting during transfer from hopper 26 to the bottle 31.

Extending alongside front plate 20 of housing 15 is a horizontally extending fixed shaft 40 on which are swing-
ably supported the hoppers 26. Shaft 40 may be fixedly secured at its opposite ends to brackets 41 (FIG. 3) which in turn are secured to the stationary head 50 of the machine. Each hopper 26 comprises a pair of end plates 43 (FIG. 6) and a pair of side plates 44, 45. End plates 43 are spaced apart a distance about equal to the length of the elongated tax stamp to be applied, while side plates 44, 45 are spaced apart a distance slightly greater than the width of the tax stamps. The stamp receiving chamber 46 terminates in a discharge end 47 through which the stamps are removed and the stamping may be inserted in stacks from the opposite end 48. To facilitate insertion of the stamps, the side plate 44 may be cut away as shown in FIG. 1 to permit insertion therethrough of the fingers of the operator.

In the position of the hopper of FIG. 6 it will be seen that the side plates 44, 45 are curved adjacent to the discharge end to a radius of curvature having its center on the axis of support shaft 40. The arcuate chamber thus formed permits the stamps to be inserted in the hopper vertically and at the same time permits the rectangular discharge end to swing into a generally horizontal plane (FIG. 3) to transfer the end stamp therefrom to the suction head 25.

Fixedly secured to the housing 15 is a cam plate 50 (FIG. 6) having a camming edge 51 which cooperates with a roller 52 mounted on hopper 26. Extending from the center of housing 15 to roller 52 is fixedly secured to the hopper 26 is an extension spring 54 which urges the hopper 26 in a counterclockwise direction (FIG. 6) so that follower roller 52 is held in engagement with camming edge 51 of cam 50 at all times. Since hopper shaft 40 is stationary, it will be apparent that upward movement of housing 15 in the position of FIG. 6 will result in the hopper 26 oscillating in a counterclockwise direction as roller 52 follows the lower arcuate portion of camming edge 51. Such movement of hopper 26 brings the open end 47 of the stamp chamber into registration with the rectangular recess 85 of suction head 25 (FIG. 11) and permits the end stamp of the stack to be pulled out of the hopper by the suction on head 25.

When hopper 26 has swung from the position of FIG. 6 to the position of FIG. 3 with the discharge end 47 of the stamp chamber horizontal, the suction head 25 has been cleared by housing 15 to a position at which the discharge end of the hopper can swing into registration with the underside of the suction head 25. The means by which said suction head 25 is mounted for such movement will now be described.

A plate 80 is reciprocally mounted on vertically extending hollow rod 24 is a lazy tongs linkage generally designated 69 (FIGS. 4, 5) which includes upper and lower central pivot pins 61, 62 respectively and an intermediate central pivot 63. Upper links 64, 65 are pivotally connected together by upper central pivot pins 61 and are pivotally secured at their opposite ends as at 68, 69 to the upper ends of intermediate links 66, 67 which in turn are pivotally intermediate their ends to intermediate central pivot pins 63.

Lower links 70, 71 are pivotally secured at their upper ends at 72, 73 to the lower ends of links 65, 67 and are pivotally connected together at lower central pivot pin 62. Pivotally supported on the free ends of lower links 70, 71 are strip engaging fingers or pressure pads 74, 75 which will be described in detail later on. Links 64, 65, 66, 67, 70, 71 are duplicated on the opposite side of rod 24; only one of each pair of links being referred to in the above description.

Central pivots 61, 62, 63 are respectively secured to sleeves 81, 82, 83 which in turn are slidably supported for vertical movement on rod 24. At this point it will be noted that the linkage 60 may be extended from the position of FIG. 4 to the position of FIG. 5 by applying opposite inwardly directed forces to pivot pins 68, 69. Central pivot pins 61, 62, 63 are received in vertically extending slots 85, 86 (FIG. 6) respectively formed in strips 88, 89 secured to front and rear plates 20, 21 of housing 15. The upper portions of slots 85, 86 may be formed with a shoulder 87 or otherwise blocked to limit downward movement of upper pivot pins 68 and therefore downward movement of linkage 60. Bottom stops 84 may be provided to engage pins 62.

Carried by housing 15 are a pair of cams 90, 91 (FIGS. 4, 5) which are adapted to engage rollers 92, 93 carried by pivot pins 68, 69 so that upon downward movement of the hopper the linkage 60 is extended to the position of FIG. 5.

Adjacent the upper end of rod 24 is a fitting 23 fixedly secured to said rod as by pin 95. Fitting 23 is provided with a pair of downwardly extending legs 96, 97 which receive the sleeve 81 therebetween. Integral with sleeve 81 is a rectangulate plate 98 which is adapted to slide on rod 24 with sleeve 81 and which is restrained from motion downwardly along rod 32 by a collar 99 fixedly secured to said rod. Interposed between fitting 23 and sleeve 81 is a relatively strong initially compressed spring 100 which normally urges sleeve 81 and plate 98 into engagement with stop collar 99 as shown in FIG. 4.

Plate 95 is provided with a pair of threaded holes 102, 103 through which are threaded a pair of vertically extending closely coiled extension springs 104, 105 which are fixed at their lower ends to pressure applying fingers 79, 75 which are freely spaced from the central pivot 63 by engaging with camming edge 61 of cam 50 upon downward movement of housing 15 the suction head 25 carrying the elongated strip stamp 36 engages the top 39 of bottle 31. When such engagement is made, further downward movement of housing 15 causes cams 90, 91 to urge the linkage 60 to its extended position of FIG. 5 thereby causing the stamp engaging fingers to move from the upper position of FIG. 4 to the gripping position of FIG. 5. In order to obtain sufficient pressure between the suction head 25 and the top of bottle 31, and at the same time prevent excessive pressure, yieldability is provided in the form of the spring 100 which permits a slight upward movement of pivot pins 61 after the predetermined force necessary to overcome the initial compression of spring 100 has been exerted. Such yieldability insures against damage to the apparatus and also to the bottle 31. It will be noted that fingers 74, 75 are spaced outwardly from cam 50 when suction head 25 engages bottle top 39 so that said fingers approach the bottle 31 in a horizontal direction. If their movement were downwardly tearing of the strip would result.

A similar type of yieldability is provided in cams 90, 91 so as to insure a minimum gripping force between fingers 74, 75. To this end the cam 90 is connected by a pair of parallel links 108, 109 to a mounting plate 110 and cam 91 is similarly connected by links 112, 113 to a mounting plate 114. Said mounting plates may be fixedly secured to adjacent spacer plates 22 of the housing 15 in any desired manner. Interposed between the mounting plates 110, 114 and the cams 90, 91 respectively are initially compressed helical springs 116, 117 which tend to extend cams 90, 91 to a position with links 108, 109, 112, 114 horizontal. However, said links are held in a slightly inclined position by set screws 118, 119 so that upon application of a force on cams 90, 91 in excess of the predetermined force corresponding to the initial compressive force of springs 116, 117 the cams are urged oppositely outwardly against the resiliency of the springs 116, 117.

Upon movement of the members of FIG. 5 to the position of FIG. 4 the lower central slide 82 slides downwardly along rod 24 until it engages the suction head 25. The upper end of the linkage, that is, sleeve 81 tends to move upwardly but is resisted by the spring 100 and no further movement is permitted until the force of FIG. 5 by applying opposite inwardly directed forces to pivot pins 68, 69.

To dampen the noise and shock of the linkage reaching its extended position of FIG. 5 a yieldable washer 121, preferably of
leather, is applied to the top of suction head 25 so as to absorb the shock of sleeve 82 striking the same.

It will be noted that the action of fingers 74, 75 during their downward movement is to first bend the opposite ends of strip stamp 36 downwardly along the sides of bottle 31 and then to apply pressure to said ends to insure adhesion of the stamp to the bottle sides. As the cams 90, 91 apply said pressure they move oppositely outward against the yieldable resistance of springs 116, 117 if the forces on the cams, and therefore the gripping fingers, exceed said predetermined amount. It will be noted that the springs 116, 117 in addition to acting as a safety device in the event of the failure of the gripping fingers, also assist in the floating action of the lazy tongs linkage.

An important feature of the above described structure resides in the fact that the lazy tongs linkage is floatingly mounted and is not fixedly secured to the housing 15 at any point. Not only does such a mounting provide a desirable yieldability but it also permits the linkage to be removed quickly and easily. Accuracy in registering the suction head with the bottle and with the hopper 26 is insured by pins 61, 62, 63 and the associated tracks or grooves 85, 86. Cams 90, 91 may readily be adjusted to the exact position required to obtain the correct pressure on fingers 74, 75.

Since the linkage mechanism and the rod 24 are floatingly mounted the position and the oscillation of hopper 26 may be predetermined so that the stack of stamps exerts a slight upwardly directed force on the underside of suction head 25 at each transfer cycle. This causes the stack to be pushed inwardly into the magazine and insures that the outer stamp is free for release from the remainder of the stack.

It will be noted that extension springs 104, 105 perform the dual functions of urging the fingers 74, 75 upwardly to bring the linkage to the up position of FIG. 4 and at the same time act as conduits for receiving therein electrical leads 124, 125 which are connected to heating elements 126 of fingers 74, 75 (FIG. 7). The springs 104, 105 may terminate a short distance above plate 98 through which they are threaded and leads 124, 125 may then be connected to a slack loop to the fixed head 10 of the machine (FIG. 3). In tapping the plate 98 to provide the threaded holes 102, 103 through which the springs 104, 105 extend an effective attachment is provided, and the tension in springs 104, 105 may be readily adjusted by rotating the springs in the threaded holes 102, 103 before securement of their lower ends to fingers 74, 75.

As has been noted above, the present invention lends itself to use with tax stamps and like strips that are coated on one side with a plastic which melts at an elevated temperature. The use of such a heat sensitive plastic adhesive is preferable to water soluble adhesives since there is no possibility of adjacent strips of a stack adhering together before they are to be used. By the present invention sufficient heat may be applied to the stamp 36 in a short enough interval of time to insure perfect adhesion between the stamp and the bottle.

As best seen in FIG. 7, wherein finger 75 is shown in detail, each finger includes a central steel core 130 provided with a bore 131 for receiving the heating element 126 therein; said element being connected by leads 124 or 125 to a suitable source of current (not shown). A pin 132 which is connected to the lower end of the linkage 60 swingingly supports the finger 75 so that it is free to accommodate its position to the side of the bottle which it engages. A heat shield such as indicated at 133 may be secured to the core 130 to reduce the amount of heat radiated from the stamp to the bottle.

As best seen in FIG. 12, the core 130 is formed to provide an arcuate face 135 on which is received the bottle engaging pad generally designated 136. This pad is of a unique construction in that it is made of very fine metal gauze or cloth. The pad is formed from a generally rectangular sheet of such metal cloth and is bent at its central portion to provide an arcuate section complementary in shape to the arcuate face 135 of core 130. The marginal portions of the cloth extend alongside the core 130 and are secured thereto by means of screws 137. The length of the fingers 74, 75 is predetermined and the metal cloth pad 136 is positioned thereon so that the pad is in engagement along the length of the strip portion that is to be bonded to the bottle.

To provide a desirable yieldability in pad 136 and at the same time insure optimum heat transfer from the pad to the stamp, the cloth from which the pad 136 is formed is provided with a plurality of folds 140 as best seen in FIG. 9. It will be noted that the cloth of pad 136 is folded on itself along lines extending transversely of the associated finger so that the spacing between the folds is greater than the width of the overlapped portions. Each section of the pad 136 defined by adjacent folded portions is thus backed up by yieldable bent portions of the cloth which in effect constitute springs. In other words, the resiliency of the metal cloth from which the pad is formed creates a plurality of spring urged stamp engaging sections which insure positive though yieldable heat transfer elements in engagement with the stamp.

Not only does the pad 136 provide an efficient means for transferring heat to the heat sensitive plastic of the stamp but the pad itself is practically indestructible and can undergo millions of cycles without impairment of its strength or its heat transfer characteristics. The deflection of the metal threads which form the cloth of the pad is never great enough to cause permanent deformation and can therefore be flexed an indefinite number of times without loosing its resiliency.

The above-described structure incorporates accuracy promoting features to insure that each stamp is secured to its associated bottle in exactly the same position. Additional accuracy promoting features will now be described.

Since rod 24 is not fixedly secured to the surrounding structure, it is important that suction head 25, secured to the lower end of said rod, be in exactly the same angular position relative to the discharge end of the hopper 26 each time the stamp is transferred from the latter to said suction head. This is accomplished by drilling hole 142 in fitting 23 (FIG. 5) and hole 143 in sleeve 81 and inserting the opposite ends of spring 100 in said holes. By impressing an initial torsion on spring 100 before insertion of the ends of the same in holes 142, 143, the head 25 and the associated linkage structure will always be urged in the same angular direction to the clearances in the various parts of the linkage. In this manner the head 25 is always in the same angular position relative to its longitudinal axis when a stamp is received thereon from hopper 26. This insures that the stamp is placed on the bottle with its central longitudinally extending axis coinciding with the vertical plane of the bottle.

In order to insure that each stamp discharged from hopper 26 is in exactly the same position relative to the hopper, means is provided for insuring that each stamp when discharged is in engagement with the plate 44 which forms the outer side of the hopper. Such means comprises a tamping plate 145 (FIGS. 6, 13) which extends substantially between end plates 43 and, in effect, constitutes a movable end of fixed side plate 45 of the hopper.

Tamping plate 145 is provided with extensions 146 which are received in complementary formed openings in end plates 43 so that said tamping plate engages the adjacent edges of the stamps 36 in hopper chamber 46 and, by gravity, urges said stamps against arcuate side plate 44. Since the hopper is constantly undergoing a change in direction, it will be apparent that plate 145 is subjected to changing forces due to acceleration and the result is that said stamps are subject to a tamping action by plate 145. Each stamp is thereby exactly positioned with reference to side wall 44 and the result is that each discharged stamp is transferred to suction head 25 and
hold thereon in exactly the same position relative to said head so that it is subsequently applied to the bottle with its longitudinal axis coinciding with the vertical central plane of the bottle.

As best seen in FIGS. 6, 13, a pair of pins 148 extend from endwalls 43 of the hopper into engagement with the discharge end of the stack of stamps and engage the outer stamp at the opposite ends of the latter. These pins prevent discharge of the stamps when the hopper swings to its outer position in which the stack is urged toward the discharge end of hopper by gravity.

Tamping plate 145 is carried at its opposite ends as shown in FIG. 13 to avoid interference with pins 148. It will be noted that the shape of cam 50 (FIG. 6) is such that the return movement of the hopper to the position of FIG. 6 is with a rapid acceleration so that the inertia of the stack of stamps urges the stack toward the discharge end so that the end stamp is always available at the discharge end of the hopper for transfer to the suction head.

Any tendency of the stamps in hopper 26 to stick together is obviated by the arcuate shape of the discharge end which results in relative sliding movement of the stamps as they proceed along the arcuate path to discharge. Also, as noted above, the stack shifts within the hopper during each cycle.

The high speed with which the above-described structure can apply stamps to bottles is attributable in part to the fact that a plurality of devices may be actuated at the same head. This, of course, permits any applicator to be run at a reasonable speed.

The above-described apparatus may be employed with conventional glued stamps in which a liquid soluble adhesive is employed. In such a case, the heating elements 126 in fingers 74, 75 are, of course, omitted and a wetting device such as illustrated in FIG. 2 may be employed to wet the top portions of the bottles so that the stamps will adhere thereto.

The modified structure of FIG. 2 includes an extension 151 of housing 15 and which extension is provided with a plurality of steering heads 152 which are adapted to fit over the bottles 31 as the latter pass along the conveyor toward the sealing head so that a light condensate is applied to the tops for adhering the stamp.

In some instances, it may be desirable not to secure the tax stamp to the closure itself, but merely to the sides of the bottle below the closure. In such a case, when the closure is removed the upper portion of the tax stamp falls away from the container and only the terminal portions of the strip are left secured to the bottle sides. This improves the appearance of the bottle after it is opened since no unsightly torn stamp remains on the closure. However, the end portions of the stamp, remaining as they do secured to the bottle, evidence the fact that the stamp had been applied to the bottle which is desirable.

To secure the stamp to the body of the container only the upper portion of the pad 56 of FIG. 4 that registers with closure 30 may be omitted, or shorter fingers 155 may be provided as indicated in FIG. 8. In the latter case, the pad 156 of finger 155 does not engage the portion of the stamp in contact with the closure 30. Therefore, the closure does not become adhered to the stamp.

It will be understood, of course, that the particular example shown in which a conventional tax stamp is applied to a liquor bottle is only one embodiment of the invention contemplated herein. Strips of various kinds may be applied to a great many different kinds of containers to provide a pilfer-proof seal which must be broken to open the container.

It will be noted that the extension springs 104, 105 provide positive conduits for the electrical leads 124. This is important in that there is no chance of the leads becoming fouled with the closely adjacent moving portions of the linkage. It will be understood, of course, that sufficient excess length is provided in leads 124 so as to permit the elongation and contraction that occurs.

An additional feature providing accuracy of registration resides in the fact that the drive head 10, described in Patent No. 2,860,468, includes a quick return mechanism so that the stack of stamps in the hopper is urged toward the discharge end of the hopper by a spring engagement at the head 10 in a reverse direction relative to the movement of the conveyor. This insures that the forward end of each stamp is always in exactly the same position relative to the bottle so that each stamp extends downwardly along the length of the neck for a predetermined distance.

The above very specific description of the preferred embodiment of the invention is not to be taken as restrictive thereof as it is obvious that various modifications in design will occur to those skilled in the art without departing from the following claims. For example, although the invention has been described in detail in connection with the application of strip stamp it will be apparent that many of the features disclosed herein will be applicable to other types of labels.

We claim:

1. In a device for applying a flexible elongated strip over the top of an article having a generally cylindrical upper end, a magazine containing a stack of such strips, a strip transfer head positioned over said stack and mounted for reciprocating vertical movement into and out of engagement therewith, means for moving said stack into and out of registration with said head, and means for engaging said stack when transferred to said head, said magazine being supported for swinging about a horizontal axis and provided with an open end through which said stripped strip is removed from said magazine and transferred to said head.

2. In a strip stamp applying device for applying an elongated strip stamp over the top of an article having a generally cylindrical upper end, a strip stamp transfer head supported for movement along a generally vertically extending path of travel into and out of engagement with said upper end, a strip stamp hopper supported for swinging about a horizontal axis alongside said path, said strip stamp hopper being provided with a chamber for receiving a stack of strip stamps therein and including an open discharge end through which strip stamps are successively dispensed for transfer to said head, and means for swinging said strip hopper to bring said end into registration with said head when the latter is out of engagement with said article.

3. In a strip stamp applying device for applying an elongated strip stamp over the top of an article having a generally cylindrical upper end, a strip stamp transfer head supported for movement along a generally vertically extending path of travel into and out of engagement with said upper end, a strip stamp hopper supported for swinging about a horizontal axis alongside said path, said strip stamp hopper being provided with a chamber for receiving a stack of strip stamps therein and including an open discharge end through which strip stamps are successively dispensed for transfer to said head, and means for swinging said strip hopper to bring said end into registration with said head when the latter is out of engagement with said article.

4. In a strip stamp applying device for applying an elongated strip stamp over the top of an article having a generally cylindrical upper end, a strip stamp transfer head supported for movement along a generally vertically extending path of travel into and out of engagement with said upper end, a strip stamp hopper supported for swinging about a horizontal axis alongside said path, said hopper being provided with a chamber for receiving a stack of strip stamps therein and including an open discharge end through which strip stamps are successively dispensed for transfer to said head, and means for swinging said strip hopper to bring said end into registration with said head when the latter is out of engagement with said article.

5. In a strip stamp applying device for applying an elongated strip stamp over the top of an article having a generally cylindrical upper end, a strip stamp transfer head supported for movement along a generally vertically extending path of travel into and out of engagement with said upper end, a strip stamp hopper supported for swinging about a horizontal axis alongside said path, said strip stamp hopper being provided with a chamber for receiving a stack of strip stamps therein and including an open discharge end through which strip stamps are successively dispensed for transfer to said head, and means for swinging said strip hopper to bring said end into registration with said head when the latter is out of engagement with said article.

6. In a strip stamp applying device for applying an elongated strip stamp over the top of an article having a generally cylindrical upper end, a strip stamp transfer head supported for movement along a generally vertically extending path of travel into and out of engagement with said upper end, a strip stamp hopper supported for swinging about a horizontal axis alongside said path, said strip stamp hopper being provided with a chamber for receiving a stack of strip stamps therein and including an open discharge end through which strip stamps are successively dispensed for transfer to said head, and means for swinging said strip hopper to bring said end into registration with said head when the latter is out of engagement with said article.

7. In a strip stamp applying device for applying an elongated strip stamp over the top of an article having a generally cylindrical upper end, a strip stamp transfer head supported for movement along a generally vertically extending path of travel into and out of engagement with said upper end, a strip stamp hopper supported for swinging about a horizontal axis alongside said path, said hopper being provided with a chamber for receiving a stack...
of strip stamps therein and including an open discharge end through which strip stamps are successively dispensed for transfer to said head, and means for swinging said hopper to move said end upwardly into registration with said head when the latter is out of engagement with said article, and for swinging said hopper away from said head to move said end downwardly whereby said stack moves toward said open end by gravity.

5. In a strip stamp applying device for applying an elongated strip stamp over the top of an article having a generally cylindrical upper end, a strip stamp transfer head adapted for movement along a generally vertical extending path of travel into and out of engagement with said upper end, a strip stamp hopper supported for swinging about a horizontal axis alongside said path, said hopper being provided with a chamber for receiving a stack of strip stamps therein, and including an open discharge end through which strip stamps are successively dispensed for transfer to said head, means for swinging said hopper to bring said end into registration with said head when the latter is out of engagement with said article, and means for swinging said hopper away from said head to move said end downwardly whereby said stack moves toward said open end by gravity, and a weight in said hopper cooperating with the stamps adjacent said open end for tamping the same against the side of said chamber that is remote from said axis.

6. In a device for applying a flexible elongated strip over the top of an article having a generally cylindrical vertically disposed upper end, a pair of pressure applying fingers supported for movement into and out of engagement with the opposite ends of said strip respectively for urging said ends against the opposite sides of said cylindrical upper end and for pressing said ends against said sides, said fingers including strip engaging pads formed of metal cloth, said cloth being formed to provide an arcuate strip engaging portion complementarily formed relative to the cylindrical upper end of said article and bent along vertically extending lines to provide a pair of sides adapted to be secured to opposite sides of said fingers.

7. In a device for applying a flexible elongated strip over the top of an article having a generally cylindrical vertically disposed upper end, a pair of pressure applying fingers supported for movement into and out of engagement with the opposite ends of said strip respectively for urging said ends against the opposite sides of said cylindrical upper end and for pressing said ends against said sides, said fingers including strip engaging pads formed of metal cloth, said cloth being formed to provide an arcuate strip engaging portion complementarily formed relative to the cylindrical upper end of said article and bent along vertically extending lines to provide a pair of sides adapted to be secured to opposite sides of said fingers, said cloth being folded on itself to provide a plurality of horizontally extending, vertically spaced folds providing resilient strip engaging elements adapted to flex as said fingers engage said opposite sides.

8. In a device for applying a flexible elongated strip over the top of an article having a generally cylindrical vertically disposed upper end and provided with a pair of fingers adapted to be moved into and out of engagement with the opposite ends respectively of said strip and for pressing said ends against the opposite sides of said upper end, means for so moving said fingers comprising: a vertically extending lazy tong linkage supporting said fingers at its lower ends, means for engaging said linkage for urging said lower ends and said fingers toward each other for so pressing said ends of said strip against said opposite sides, said linkage comprising a plurality of pairs of links with each pair being provided with a common pivot, means mounting said pivots in vertical alignment for relative movement relative to each other as said linkage is elongated and compressed, means for moving said linkage and said pivot mounting means along a generally vertical path of travel toward and away from said top, a top engaging member on said pivot mounting means for arresting downward movement of said mounting means when said member is in engagement with said top, and cam means carried by said housing means for engaging said linkage so elongating the same upon continued downward movement of said housing means.

9. In a device for applying a flexible elongated strip over the top of an article having a generally cylindrical vertically disposed upper end comprising: a housing, means for moving said housing in a vertical plane toward and away from said top, a vertically extending rod floatingly mounted in said housing, a strip transfer head secured to the lower end of said rod and adapted to receive a strip thereon for transfer to said top during said vertical movement of said housing, a vertically extending linkage carried by said housing and provided at its lower end with a pair of strip engaging fingers adapted to engage the opposite ends of said strip for pressing said ends against the opposite sides of said upper end of said article, said linkage including a plurality of pairs of links with each pair being provided with a common pivot slidably supported on said rod to permit relative movement of said pivots as said linkage is successively elongated and compressed, cam means carried by said housing and engageable with said linkage when said head is in engagement with said top for so elongating said linkage and pressing said fingers against said opposite sides with said strip interposed between said sides and said fingers.

10. In a device for applying a flexible elongated strip over the top of an article having a generally cylindrical vertically disposed upper end comprising: a housing, means for moving said housing in a vertical plane toward and away from said top, a vertically extending rod floatingly mounted in said housing, a strip transfer head secured to the lower end of said rod and adapted to receive a strip thereon for transfer to said top during said vertical movement of said housing, a vertically extending linkage carried by said housing and provided at its lower end with a pair of strip engaging fingers adapted to engage the opposite ends of said strip for pressing said ends against the opposite sides of said upper end of said article, said linkage including a plurality of pairs of links with each pair being provided with a common pivot slidably supported on said rod to permit relative movement of said pivots as said linkage is successively elongated and compressed, cam means carried by said housing and engageable with said linkage when said head is in engagement with said top for so elongating said linkage and pressing said fingers against said opposite sides with said strip interposed between said sides and said fingers.

11. In a device for applying a flexible elongated strip over the top of an article having a generally cylindrical vertically disposed upper end comprising: a housing, means for moving said housing in a vertical plane toward and away from said top, a vertically extending rod floatingly mounted in said housing, a strip transfer head secured to the lower end of said rod and adapted to receive a strip thereon for transfer to said top during said vertical movement of said housing, a vertically extending linkage carried by said housing and provided at its lower end with a pair of strip engaging fingers adapted to engage the opposite ends of said strip for pressing said ends against the opposite sides of said upper end of said article, said linkage including a plurality of pairs of links with each pair being provided with a common pivot slidably supported on said rod to permit relative movement of said pivots as said linkage is successively elongated and compressed, cam means carried by said housing and engageable with said linkage when said head is in engagement with said top for so elongating said linkage and pressing said fingers against said opposite sides with said strip interposed between said sides and said fingers.

12. In a device for applying a flexible elongated strip over the top of an article having a generally cylindrical vertically disposed upper end comprising: a housing, means for moving said housing in a vertical plane toward and away from said top, a vertically extending rod floatingly mounted in said housing, a strip transfer head secured to the lower end of said rod and adapted to receive a strip thereon for transfer to said top during said
vertical movement of said housing, a vertically extending linkage carried by said housing and provided at its lower end with a pair of strip engaging fingers adapted to engage the opposite ends of said strip for pressing said ends against the opposite sides of said upper end of said article, said linkage including a plurality of pairs of links with each pair being provided with a common pivot slidably supported on said rod to permit relative movement of said pivots as said linkage is successively elongated and compressed, cam means carried by said housing and engageable with said linkage when said head is in engagement with said top for so elongating said linkage and pressing said fingers against said opposite sides with said strip interposed between said sides and said fingers, and spring means between said cam means and said housing to permit said cam to shift slightly when the force between said fingers and said article exceeds a predetermined amount.

In a device for applying a flexible elongated strip over the top of an article having a generally cylindrical, vertically disposed upper end and provided with a pair of fingers adapted to be moved into and out of engagement with the opposite ends respectively of said strip and for pressing said ends against the opposite sides of said upper end, means for so moving said fingers comprising: a vertically extending lazy tong linkage supporting said fingers at its lower ends, means for elongating said linkage for urging said lower ends and said fingers toward each other for so pressing said ends of said strip against said opposite sides, said linkage being floatingly supported for vertical movement.

In a device for applying a flexible elongated strip over the top of an article having a generally cylindrical, vertically disposed upper end and provided with a pair of fingers adapted to be moved into and out of engagement with the opposite ends respectively of said strip and for pressing said ends against the opposite sides of said upper end, means for so moving said fingers comprising: a vertically extending lazy tong linkage supporting said fingers at its lower ends, means for elongating said linkage for urging said lower ends and said fingers toward each other for so pressing said ends of said strip against said opposite sides, and a pair of extension springs connecting the opposite ends of said linkage for urging said fingers to a position spaced from said article at all times, and electrical leads received within said springs and connected to said fingers and adapted to be connected to heating elements within said fingers.

In a device for applying a label to an article, a pressure applying pad adapted to press said label against said article, said pad being formed of metal cloth of fine mesh, said cloth being folded on itself to form a plurality of spaced folds providing resilient label engaging elements adapted to flex as said pad engages said article.

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