

Feb. 11, 1930.

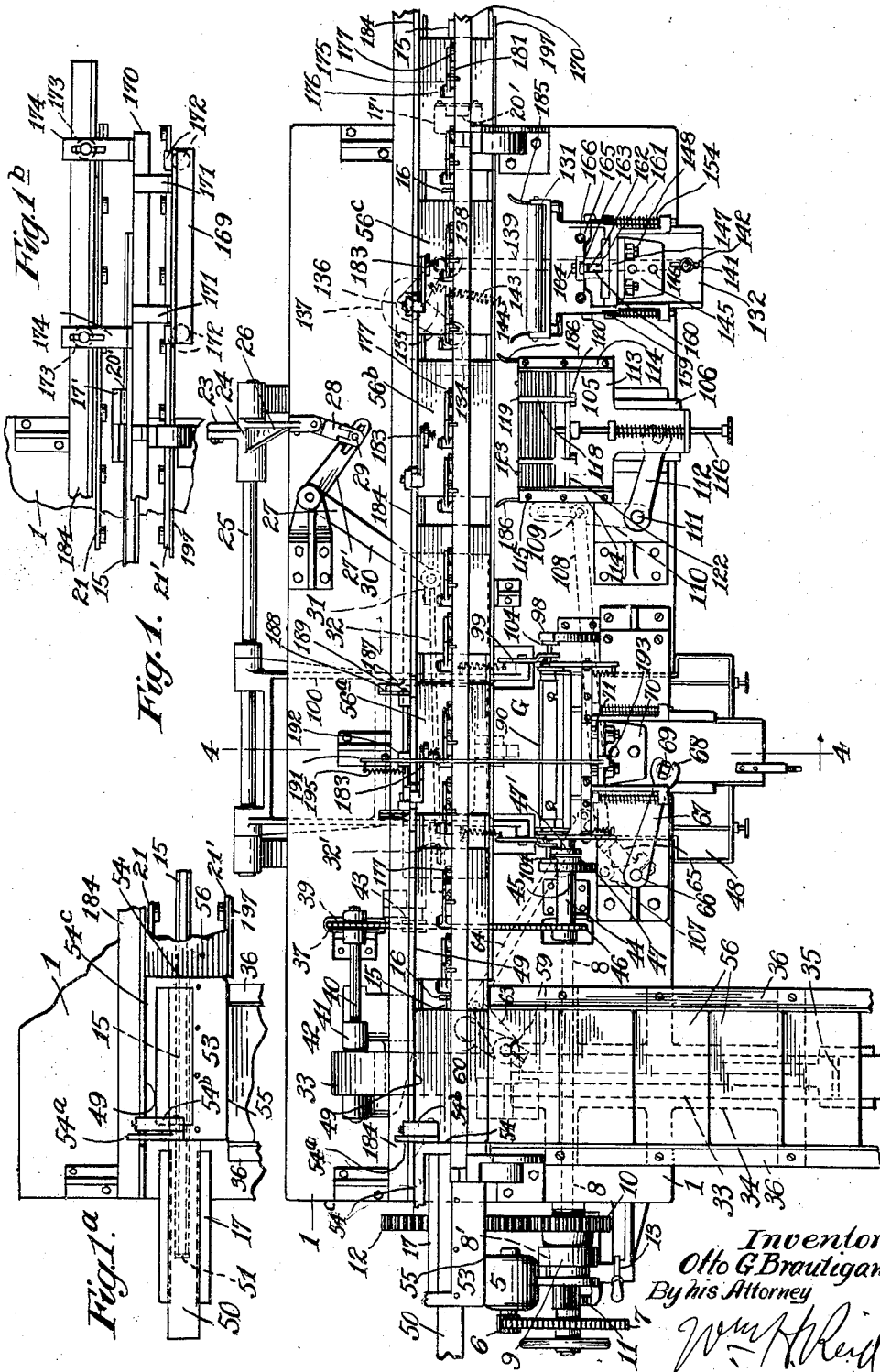
O. G. BRAUTIGAM

1,746,988

LABELING MACHINE

Filed April 8, 1927

5 Sheets-Sheet 1



Inventor
Otto G. Brautigam
By his Attorney

Wm. H. Reid

Feb. 11, 1930.

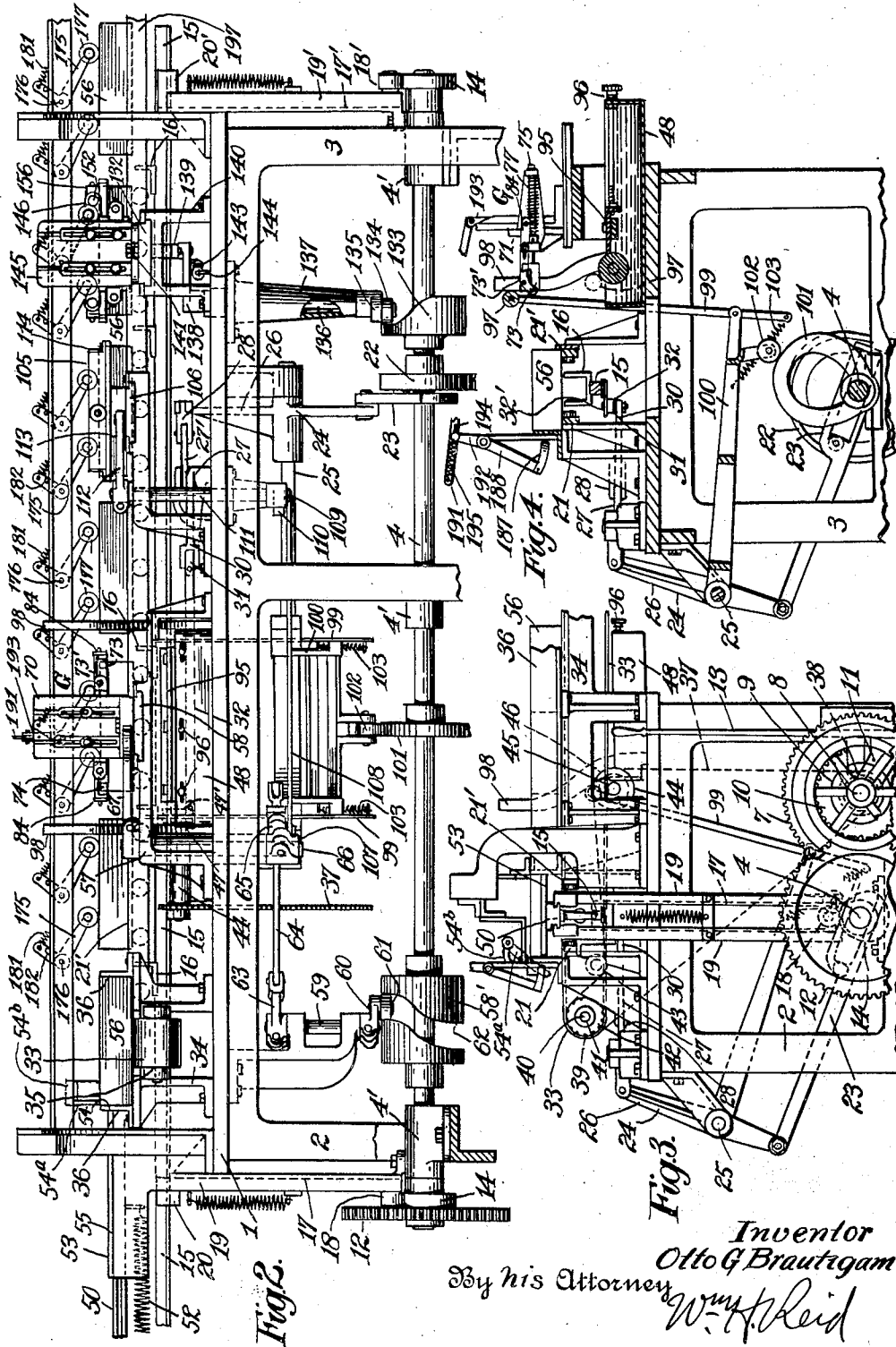
O. G. BRAUTIGAM

1,746,988

LABELING MACHINE

Filed April 8, 1927

5 Sheets-Sheet 2



Feb. 11, 1930.

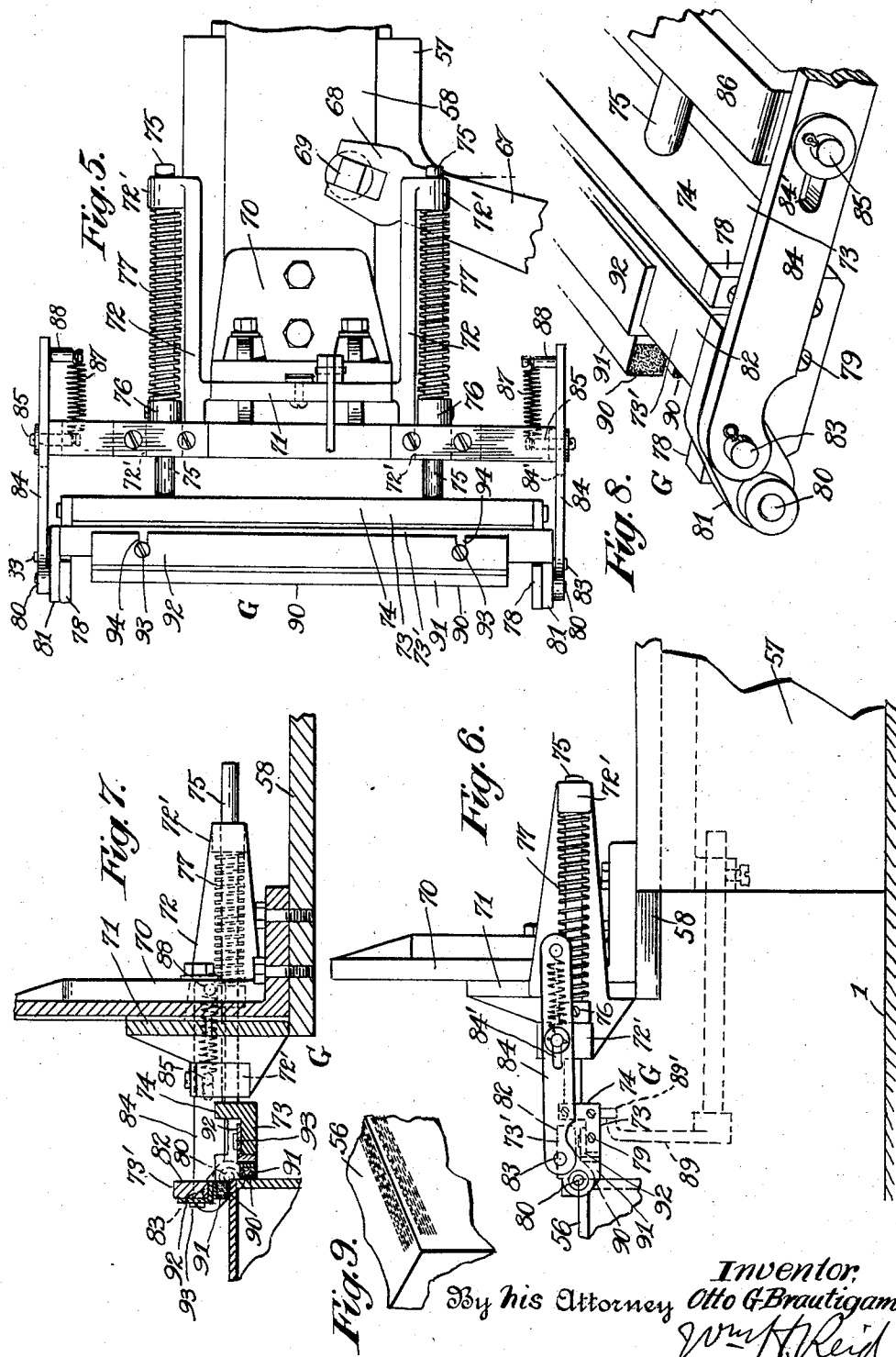
O. G. BRAUTIGAM

1,746,988

LABELING MACHINE

Filed April 8, 1927

5 Sheets-Sheet 3



Inventor:
By his Attorney Otto G. Brautigam
Wm. H. Reid

Feb. 11, 1930.

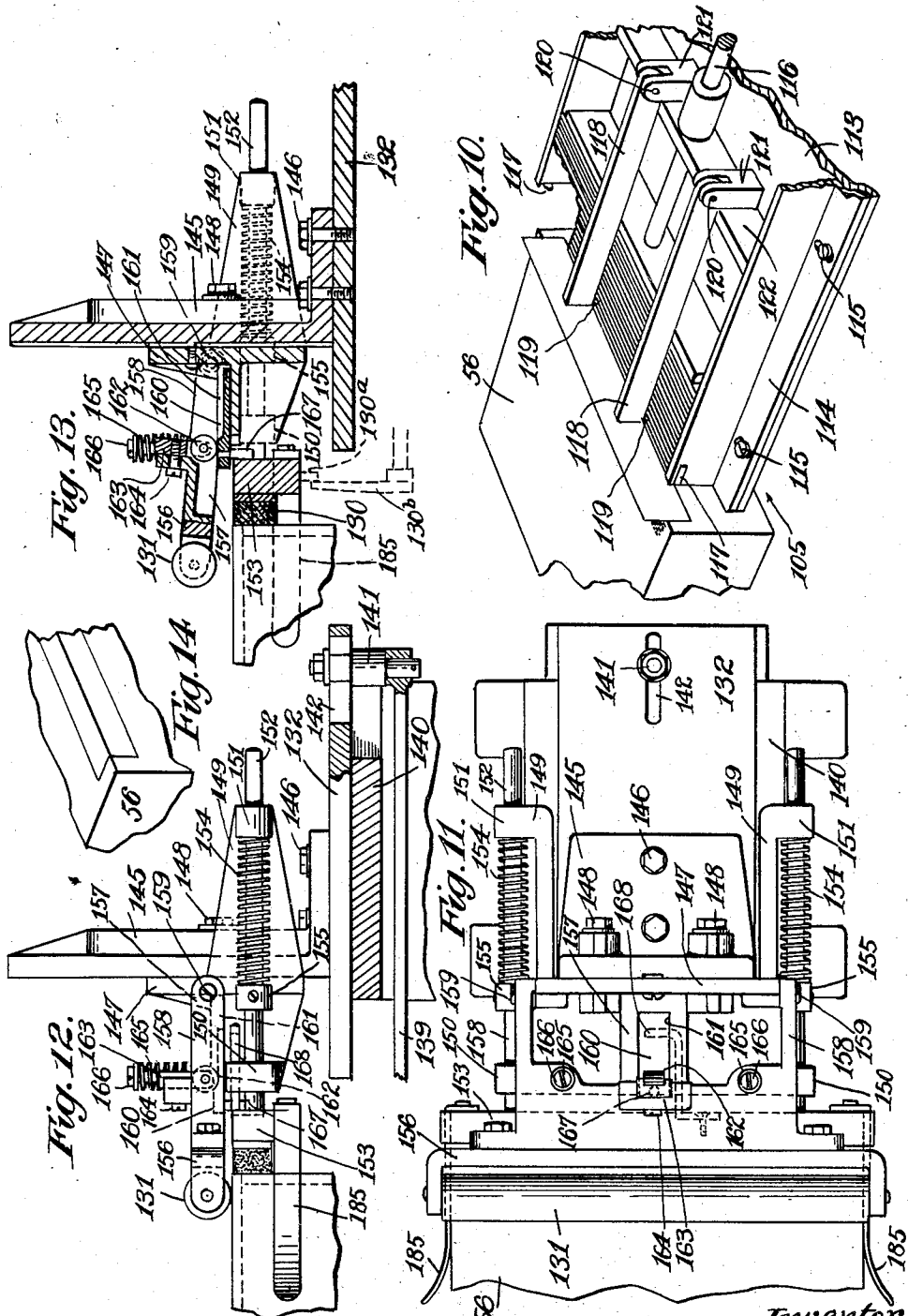
O. G. BRAUTIGAM

1,746,988

LABELING MACHINE

Filed April 8, 1927

5 Sheets-Sheet 4



Inventor
By his Attorney Otto G. Brautigam
Wm. H. Reid

Feb. 11, 1930.

O. G. BRAUTIGAM

1,746,988

LABELING MACHINE

Filed April 8, 1927

5 Sheets-Sheet 5

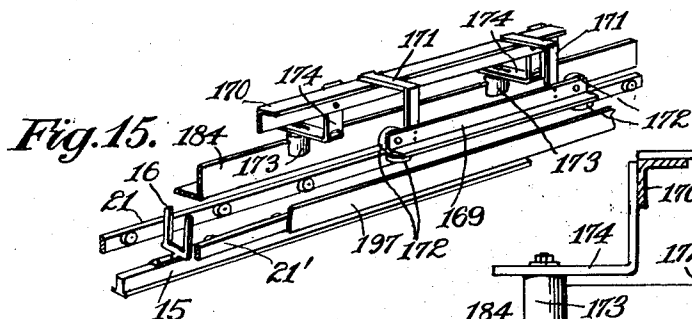


Fig. 15.

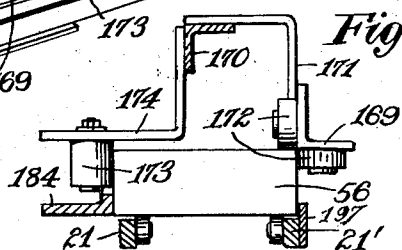


Fig. 16.

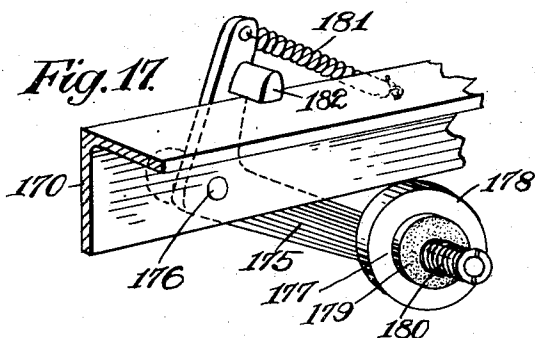


Fig. 17.

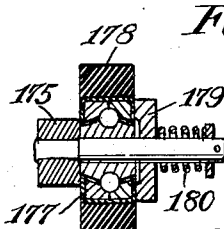


Fig. 18.

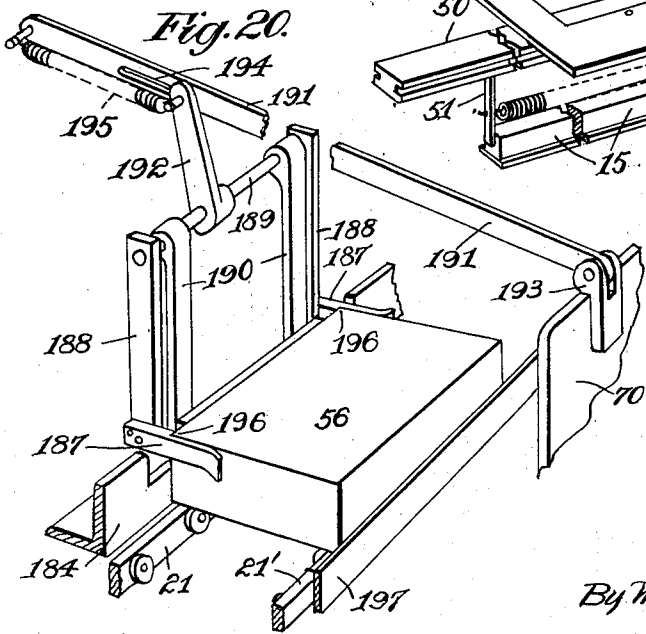


Fig. 20.

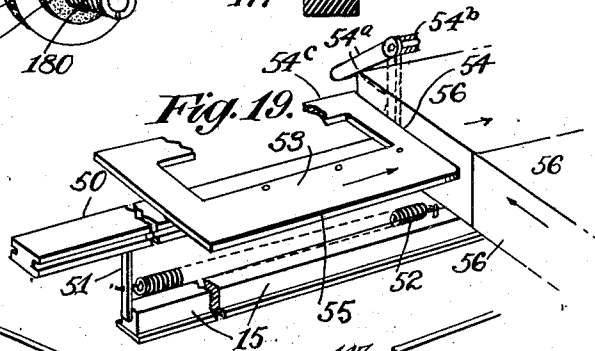


Fig. 19.

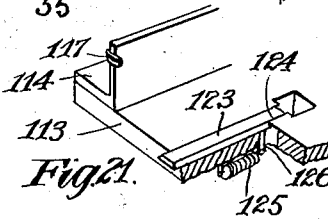


Fig. 21.

Inventor
Otto G. Brautigam
By his Attorney
Wm. H. Reid

UNITED STATES PATENT OFFICE

OTTO GEORGE BRAUTIGAM, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO McDONALD ENGINEERING CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

LABELING MACHINE

Application filed April 8, 1927. Serial No. 181,955.

This invention is a labeling machine designed with particular reference to the application and affixing of labels or strips of paper or cloth to one or more adjacent surfaces of an article where extraordinary precision is required and where the delicate nature of the article or its covering must not be damaged by ordinary machine handling.

The machine particularly described herein is designed specifically with reference to accurately applying and affixing a narrow strip of edging on adjacent sides of the article in such a way that the pattern or design on the labeling strip will match other strips on the adjacent sides and corners of the article and further to effect the transfer of the article from one operating station on the machine to another operating station without marking the article while in transit, but it is to be understood that the invention is not restricted to the application of one strip to two adjacent sides of the article for the reason that the invention may be used in applying and affixing strips or labels to two or more corners or adjacent sides simultaneously.

Briefly stated, the object of the invention is to provide a safe transfer of the article from the supply conveyor belt to the article transfer support by a new and useful device for preventing the flexible pusher from contacting with the article before it is in direct line with the article support, and to further protect the article in transit upon supports without friction upon the article, and at the same time prevent the article from advancing beyond the work performing stations along the line of travel of the article, and also to reposition the several articles before their respective work performing stations, which in turn are a gumming mechanism for applying adhesive to one or more surfaces of the article, a labeling mechanism for applying a label or strip of material upon all or a part of the gummed surface of the article, a label-wiping mechanism, and a label-affixing and smoothing down mechanism, all working in timed relation to each other but operated independently. Said gumming, label-applying, and label-wiping mechanisms are located adjacent to and parallel with the article sup-

port and are operated on reciprocating carrier slides placed at right angles to said support, and the label-affixing and smoothing down means lie in line of travel of the moving article which is advanced along the support by a four-way motion feed bar located between the members of the article support and provided with projections to engage the article to push it forward along the support.

The machine specifically disclosed in this application applies a label in the form of a strip to the corner or adjacent sides of a rectangular shaped article by first applying gum to one or more surfaces of the article by gumming mechanism, then the article is advanced in a step by step movement along a support to another position to receive a label or strip on one of said surfaces from a magazine containing a pack or stack of labels and thereafter proceeds with the strip adhering thereto, to another position to be folded over and affixed to both gummed surfaces and thereafter further smoothed down on the said surfaces by means such as rollers during the continued movement of the article along the support.

A particular feature of the invention comprises a plurality of gumming members for applying adhesive to a plurality of surfaces of an article which in their rearward position on the carrier slide assume an open flat plane position adaptable to receive an application of gum from a gum transfer member plying between them and a gum supply means and which in their forward position come in contact with an article to deposit gum on one or more sides of the article. The gumming members being pivotably hinged with relation to each other so that upon contact with the article to apply gum thereto, one member actuates the other member, or the hinged gumming member may be actuated by other and separate means upon contact with the article, and in either event the gumming members being so spring balanced that upon breaking contact with the article or such other contact means, the gumming members assume their normal flat plane position.

A further object is to provide a label re-

taining magazine from the open or delivery end of which the foremost label may be withdrawn without hinderance from retaining means and applied for its full length or width to an article upon contacting with the article as the magazine mounted upon a reciprocating slide advances toward the article.

A further object is to provide means for affixing or wiping the labels securely and smoothly upon one or more surfaces of the article comprising a plurality of yieldable wiping members mounted upon a reciprocating slide which in its forward position permits one wiping member to contact with and press the partially affixed label on one surface of the article thereby affixing it and at the same time hold it securely while another wiping member bends the label and applies it to another surface of the article; said first member being yieldably mounted to allow the second member to advance until suitable means lifts it from the label as the slide recedes from the article at the end of which stroke the said second wiping member is reset.

A still further object is to provide a finishing and smoothing down operation of the labels during the propelling of the articles from the label affixing station to the delivery of the articles from the support.

A still further object is the provision of means whereby the articles are repositioned on the support with respect to the operating slides to bring the articles to perfect alignment therewith when the slides are in the work performing positions.

A still further object is the provision of means to hold the articles under tension with relation to the support, after the feed bar has positioned the articles in the work performing positions.

It is a further object to provide a safety means between the article pusher member and feed bar, which pusher is carried and actuated by the feed bar, said pusher having a yielding connection therewith and pushes the articles forward on the article support to be there engaged by projections on the feed bar to propel the articles along the support. Should an article be improperly fed to the support by the supply feed belt, the pusher will yield with relation to the bar and prevent breaking of the moving parts and damage to the article and further to provide means to lock the pusher against movement with the feed bar when there is no article fed in front thereof or an article only partially moved before it.

A further object of the invention is to provide means whereby finished articles such as white boxes may be conveyed through the machine without damage from the supporting and hold-down members, and at the same time exert friction upon the articles to stop them at the different stations.

In the accompanying drawings:

Figure 1 is a plan view of a labeling machine embodying my invention.

Figure 1^a is a fragmentary view of an extended portion of the machine at the front end.

Figure 1^b is a fragmentary extended portion of the delivery end of the machine.

Figure 2 is a front elevation of the machine, the lower portion and some other parts broken away.

Figure 3 is a front end view of the machine.

Figure 4 is a cross sectional view on the line 4—4 of Figure 1 and shows the gum supply mechanism.

Figure 5 is a plan view, on an enlarged scale, of the gummer mechanism.

Figure 6 is a side view of the mechanism shown in Fig. 5.

Figure 7 is a similar view in central cross section of the parts shown in Fig. 6 in an advanced position of the mechanism.

Figure 8 is a perspective detail of the two part gumming member.

Figure 9 shows a portion of the article with the gum shown applied.

Figure 10 is a perspective view of the label magazine, showing the manner of attaching the label to the article.

Figure 11 is a plan view on an enlarged scale, of the label affixing and folding mechanism.

Figure 12 is a side view of the mechanism shown in Fig. 11.

Figure 13 is a similar view in section showing an advanced position of the mechanism.

Figure 14 is a view of the article with the label attached and folded over.

Figure 15 is a perspective view of a rolling and finishing means to smooth down the labels or corner strip.

Figure 16 is a cross sectional view of the support at the delivery end, showing the roller smoothing means.

Figure 17 is a perspective view of the means for holding the articles under tension on the support.

Figure 18 is a detail view in section of one of the tension rolls.

Figure 19 is a perspective view of the feed bar and the yieldable pusher member.

Figure 20 is a view of an article repositioning member carried by the frame work of the machine instead of on the slide members.

Figure 21 is a detail view of the label magazine.

As shown in the drawings the machine is provided with a table 1, supported on standards 2 and 3, above which a four way motion feed bar is located operable between the article supporting members extending lengthwise of the table and upon which the articles to be operated upon are advanced step by step by the feed bar from station to station located adjacent to and along one or both

on the feed belt 33 to lie against a stop face 49 of an article guide rail, in readiness to be moved forward by the feed bar, this being one rail of a pair of guide rails to guide the articles along the support rails 21—21', the rail forming at this point a stop member for the articles as they move to position on the support by the feed belt before entering the work stations along the support.

The coupling shaft 45, also running with this drive, will keep the gum supply reservoir in motion when the shaft 4 is stopped, preventing the drying of the gum coated parts during stopping periods.

The feed bar 15 at the front end of the machine, as best seen in Figures 1, 1^a, 2 and 19, is yieldingly connected with a supplemental slide member 50. Normally this slide is moved in unison with the feed bar 15 in the longitudinal direction but does not have the lifting and lowering movement as does the bar 15. This slide is carried in an extended part above the bar 15 of the slide frame provided for the slide 17. The slide 50 as stated, slides with the bar 15 and overhangs rearwardly the bar 15, a stop 51 reaching down from the slide 50 and engaging the end of the bar 15 and being held thereto by a spring 52 of considerable length, this spring being attached at one end to the stop 51 and at the other end to the bar.

Fastened to the top of the slide 50 is a pusher member 53 in the form of a right angle plate, one part of which as 54 engages with the end portion of an article as the pusher is brought forward with the feed bar, to push the article fed in front thereof from the feed belt 33 to a position forward on the support rails 21—21' where it will be engaged on the next forward stroke of the feed bar to move the article to the first work performing position or station on the support. While the pusher member 53 is forward delivering the article to this projection 16, a side portion 55 of the angle plate 53 and of such length to lie in front of the articles functions to prevent the feed forward of the articles as they feed forward on the belt 33, until the full return of the pusher with the feed bar, at which time the next article is moved in front of the plate, see Fig. 1^a.

Should, for any reason at this point, the feed of the articles be prevented to properly ride into the feeding forward position, and thereby obstruct the forward action of the pusher, the slide 50 by reason of the spring 52 will yield to the forward action of the bar 15 and thereby avoid the necessity of stopping the machine or the possibility of breaking the working parts of the mechanism, the article generally correcting itself into position by the feed belt at the next forward stroke of the bar.

A further safety means is provided to lock the pusher against its forward movement

with the feed bar 15, should there be no article fed in front thereof, or an article only partially fed in front. This is accomplished by a locking member in the form of a swinging pawl 54^a mounted to lie in the path of the articles, and in front of the face 54 of the pusher. Normally this pawl hangs downward from a bracket 54^b, held on the guide rail against which the articles stop, with its lower end to lie in front of the pusher so that the forward motion of the pusher is prevented unless the pawl is lifted. This is done by the article as it advances to the stop 49, the article lifting the pawl free of the front face 54 of the pusher at about the time the article is well in position in front thereof and nearing the stop 49, the pawl then riding in this lifted position as the pusher is moving forward and backward on the edge 54^c of the plate 53 until the full return of the pusher, when it will again drop in front to be again lifted by the article to face the pusher. (See Figs. 1, 1^a, 2, 3 and 19.)

By this construction of the pusher mechanism it will be seen, when the articles are not being fed the pusher is held against movement and when an article is jammed and not fully in front of the pusher the pawl will not have been lifted, and the pawl will hold the pusher, instead of the article taking this jammed strain of the pusher, and further when the article generally reaches the position in which the pawl is lifted the article is more often in its perfect travel position against the stop 49 to be pushed forward resulting in the pusher being checked by the pawl rather than the article in this restrained action of the pusher.

The articles, indicated in a general way by 56, are moved as just stated, by the feed bar and projections thereon, successively to the work performing stations along the support, the first stop being a station where an adhesive substance is applied to the article. For some classes of work other operations may be performed before applying adhesive to an article. The description as here outlined is merely an example of the class of work performed by the machine. The machine is to some extent adjustable to suit articles of different form, size, etc.

At this first station the article shown at 56^a is acted upon by a gumming mechanism designated by G, comprising a slide movable to and from the article at this station, mounted in a supporting bracket 57. The slide 58 is operated by a drum cam 58' on shaft 4 operating a rock shaft 59 by an arm 60 and roller 61 riding in a cam groove 62 of the cam. The shaft has an arm 63 and a link 64 forming a connection with an adjustable arm 65 by means of which the stroke of the slide may be regulated. The arm 65 is mounted on a shaft 66 in a bearing of the slide supporting frame 57. At the top of

sides of the article support. As herein shown the articles are fed from any suitable source of supply on a belt located at one end and transverse to the article support, bringing the articles into position in line with the support and moved forward onto the support by a pusher bar which is held inoperable by a lock until the article is fed in and against the stop, thus preventing damage to the article or the machine. The article is then acted upon for further advancement by the feed bar to locate it in position at the first work station where the centering or repositioning device places the article exactly in a line with the gumming mechanism for an application of adhesive in a predetermined spot or spots on one or more adjacent surfaces of the article and at one or both sides of the article support as may be required.

As herein shown one side only is used for the class of work illustrated, but a duplicate gumming mechanism may be positioned in opposing relation for applying adhesive simultaneously to two sides of the article and their adjacent sides.

Upon further advancement of the gummed article by the feed bar to the label-applying mechanism, a label or strip is applied to the one gummed surface after the repositioning or centering device has positioned the article for receiving the label or strip in correct relation to the gummed surface of the article for the purpose of obtaining correct registration, and upon further movement of the partially labeled article to the next station or label-wiping mechanism, and after again repositioning the article by the fingers, the label or strip is entirely applied to the article by the advancing wiping members. A further advancement of the article by the feed bar forces the labeled article under and between opposing and adjacent rolls comprising the label affixing and smoothing down means.

A cam shaft 4, running lengthwise of the machine and suitably supported in bearings 4' under the table, and is driven by a motor 5, having a pinion 6, on its shaft meshing with a spur gear 7, fast on a short shaft 8, a clutch sleeve 8' also fixed to the shaft having a slidable part being one member of a clutch 9, for engagement with a companion clutch member, the latter an extension of a gear 10, loose on the short shaft 8. This shaft is supported in front of and in line with shaft 4, for rotation in bearing 11, the gear 10 meshes with a gear 12 on the shaft 4; by this means the shaft 4 is driven. A hand lever 13, having operating connections with the clutch 9 functions to stop and start the machine. The main shaft 4 has a cam 14 at each end of the shaft that controls the lifting and lowering of the article feed bar 15, which bar has projections 16 spaced apart to suit the length of the articles being fed along supporting rails. The bar 15 is supported

at each end of the table on slide members 17—17', the lower ends of which are provided with cam rolls 18—18' to coast with the cams 14. The slides 17 and 17' are mounted in vertically disposed guides 19—19' attached to the table at the top ends, and at the lower ends to the bearings 4'—4'. The top ends of the slides are provided with headed ends 20—20' and fitted with open end T-slots for the feed bar to slide in, for longitudinal movement of the bar, and thereby provide a four-way movement to the bar by means of which the articles are moved along the support rails 21—21'. The longitudinal movement is given the feed bar by a cam 22 on shaft 4, by a cam rod 23, one end having a connection with the cam, and the other end to a double end rock arm 24 fast on a rock shaft 25. The upper arm 26 of the rocker is connected to a bell crank lever 27 by a universal link connection 28 to an adjustable stud 29 in a slotted part of the arm 27' of the bell crank. The other arm 30 also has a universal link connection 31 with a link 32 which is adjustably pivoted to the feed bar 15 at 32'. By means of the universal connections and the cam 14 the feed bar is free to move in all directions to provide the four-way action of the same. The support rails 21 and 21' which extend the entire length of the table, are cut out at the article receiving end to make room for a transverse feed belt 33, the top of which is of a height to be approximately in line with the top of the support rails. This belt is mounted on a suitable supporting frame 34, having at its outer end an idler take-up pulley 35 in an adjustable bracket to tighten the belt. The supporting frame is also provided with guide rails 36 to guide the articles on the belt to the rail supports. The belt is driven by a sprocket chain 37 by a sprocket 38 on the short shaft 8, the sprocket chain passing up to the rear of the machine over a sprocket 39 on a shaft 40 in a bracket 41 on which is also the driving pulley 42 of the belt 33, the sprocket chain continuing on under an idler pulley 43 to bring this part of the chain lower at this point to clear the support rails and pass along to a bracket 44, in which is mounted a coupling shaft 45 with a sprocket 46 at one end over which the chain passes and again joins with the drive sprocket 38. The coupling shaft 45 has a coupling 47 by means of which connection is made with a gum supply reservoir 48 hereinafter described.

By this means it will be seen, when the motor is started, the feed belt 33 will also run together with the coupling shaft 45, but the shaft 4 will run only when the lever 13 is moved to cause the clutch 9 to engage with the loose gear 10, which becomes fixed to the shaft 8 and thereby drives the gear 12 of the shaft 4. It being the purpose of this drive to keep the articles crowding forward

the shaft 66 an arm 67 having a bifurcated end 68, and slidably connected with a square headed rotatable pivot member 69 by means of which the slide is actuated.

5 Mounted on an upright bracket 70 for up and down adjustment on the side is a bracket 71 having extended portions 72 at each side thereof to slidably and yieldingly support a pair of gummer sections 73 and 73', the section 73 in the form of a cross bar 74 having fixed thereto slide rods 75 adjacent to each end thereof to slide in the extended side portions 72 of the bracket 71 in bearings 72' at the front and rear ends of these extensions. 10 Between the bearings 72', collars 76 are fastened on the shafts and by springs 77 the cross bar is held forward, the collars 76 serving as stops when engaging the front bearings. This is clearly shown in Figs. 5 to 9. 15 The section 73' which is the upper section, is movable relative to the lower section 73 by a sort of hinge connection enabling this section to be tilted over as in Fig. 7.

One fixed part of this hinge as 78, and 25 shown in duplicate together with its companion parts, is attached one at each end to the cross bar by screws 79. This hinge part has studs 80 reaching outward, the axis of which coincides with the corner of the article acted upon when contact is made therewith. These studs enter apertures in extended end members 81 fast on a similar cross bar 82 of the section 73'. The parts 81 reach upward from the studs to provide a point of connection acting as a crank arm and have at this point studs 83 for one end of spring controlled links 84 attachable to the studs 83. 35 The links are slotted and slidably carried at a point about midway of the link on studs 85 that are fixed to arms 86 supported on the bracket 71. These studs 85 extend outward to support the links, and inward to form a hook to hold the ends of springs 87. The other ends of the springs are likewise attached to studs 88 carried on the extreme ends of the links 84. By these springs the links are held forward as will be noted and would tend to turn over the section 73' on its pivot. 40 This however is prevented by the end of the slotted portion 84' of the links. This is true when the sections are withdrawn from the contact position with the article as seen in Fig. 5. The lower section 73 being fully forward against the stop collars 76, draws the links to the end of the slots 84' due to the springs 77 being more powerful than the springs 87, thereby holding the sections 73' folded back, bringing the both faces 90 of the sections in an open flat plane position. 45 These faces 90 are the contact faces of rubber pads 91 of the sections 73 and 73'. Preferably the rubber pads 91 are attached to be readily removable together with metal angle strips 92. These angle strips and pads are 50 adjustable on the cross bars of the sections

by screws 93 in open end slots 94 in the angle strips.

From the foregoing it will be seen that the slide, together with the gummer sections, is reciprocated by the rock arm to and away 70 from the article at this station, carrying the sections 73 and 73' in one stroke thereof into contact with the article. As seen in Fig. 6, the section 73 has just reached the article on the forward stroke and further forward motion of the slide will move the section 73 75 rearward on the bracket 71 against the spring pressure of the spring 77 as in Fig. 7. The links 84 are now free to move forward by the springs 87 since the pressure is relieved on the links 84, and permit the springs 87 to turn the section 73' over to assume the right angle position with its face 90 contacting with the top of the article. By this construction the contact against the article by both sections 85 is a direct one, and not a sliding motion over the surface of the article to apply the adhesive thereto.

As will be seen in Fig. 6, in broken lines, a separate means may be employed to take the 90 greater part of the pressure when the pads are contacting with the article, by providing an adjustable contact arm 89 to co-act with a projection 89' on the cross bar 74, so positioned to simultaneously engage with the 95 pads, to prevent the spring of the article, in case the article is of a flexible material.

The adhesive is applied to the faces of the rubber pads when the slide is in its full retracted position, at which time the faces 100 of the pads are in their flat open position, as before described. The usual well known means are provided to apply the adhesive to these faces; as shown the gum reservoir 48 located on the table 1 and under the open 105 housing of the gummer slide, for ready removal of the same, for cleaning or other purposes and is for this reason connected to the drive coupling member 47 of the shaft 45 to a companion coupling 47' on the end 110 of the gum supply roll, which roll is provided with an adjustable blade 95 controlled by adjusting screws 96 to regulate the supply of gum to be transferred to the faces of the sections by a transfer roller 97 guided approximately vertical against guide bars 98 115 adjusted to bring the periphery of the coated roller on the upstroke to bear properly against the open faces of the gummer pads, and return to the roll of the reservoir to receive a fresh supply of the gum, as will be understood. The transfer roller 97 is carried 120 on a pair of arms in the form of links 99, having bearings at the top ends to support the shaft ends for rotation therein of the transfer roller. The links are pivotally carried by a bifurcated carrier arm 100, one end fulcrumed on the shaft 25 and lying over the cam shaft 4 to engage a cam 101 125 to lift the carrier by a roll 102 at the center 130

portion of the carrier, the front ends carrying the links 99 which are held to a forward tension by springs 103 against the guide bars to guide the transfer roller which is provided at each end with a flanged collar to guide the links endwise as well as to control the roller in this endwise manner, to ride up and down on the tracklike guide bars 98.

Having just described the manner in which the gum is supplied to the several surfaces of the article at this gummer station, the article is ready to be moved forward by the feed bar to the next station. Before reaching this station however, an intermediate stop is made to provide the room for the mechanism of the gummer and the next work station. At this next station the article is shown at 56^b to be supplied with a label from a label magazine 105. The label magazine is mounted on a slide 106 for reciprocation to and from the article, and the slide is controlled in this movement by a link connection to the rocker shaft 66, of the gummer mechanism, from which shaft an arm 107, offset from the adjustable arm 65, connects with this link 108, and is pivoted to this arm at one end and making an adjustable connection with its other end with a stud 109 movable in a slot of an arm 110 on a rock shaft 111, located in bearings, one in the magazine slide frame and one under the table. At the top of the shaft 111 is an arm 112 connectd in a similar manner to that of the arm 67 which moves the slide and the magazine therewith. As stated, the slotted portion of the arm 110 will allow the slide stroke adjustment by moving the stud 109 along the slot and by this means regulate the slide stroke and the front end of the magazine may be brought to engage the article with more or less compression.

The magazine, the front portion of which is shown in Figs. 10 and 21, is provided with a base plate 113 which may be attached to the top of the slide 106 in any suitable manner. Fastened to this plate are adjustable side members 114, in the form of angle strips, having slotted portions for screws 115 passing through the slots into the base plate. Between these side members the labels are positioned, to be urged forward by a spring pressed plunger bar 116 in the usual manner, moving the labels to the open end of the magazine. The side members are provided with stops 117 near the upper ends only, to engage to top ends of the labels. This is for the purpose of making contact with the article by the label free of any stop members with the full length of the label, the lower portion of the label making contact with the upper portion of the article, about one half of the height of the label being applied to the gummed surface, this being the lower portion of the label as clearly seen in Fig. 10. In this view the magazine is shown as being retracted just after havinig applied the label

to the gummed surface. The labels are held down to the plate 113 by a pair of pivoted swinging members 118 to exert a slight pressure to the top of the labels, but permitting free forward action, and thereby prevent the shifting of the same out of alignment. The front ends of these bars are each provided with a stop 119. When refilling the magazine with labels the bars are tilted back on the pivots 120 in slotted blocks 121 fast on a cross bar 122, a bearing in which also guides the plunger rod 116. To prevent the labels dropping downward from the front end of the plate 113 on which the labels rest, a pair of overhanging sliding supports are provided. These slides are best seen in Fig. 21 and comprise dovetail slides 123 fitted to slide in dovetail recesses 124 in the base plate. Springs 125 hold the slides forward to a stop 126 so the slides extend beyond the pack of labels a short distance and in this manner support them. When the magazine contacts with the article the slide members will move rearward to allow a perfect contact of the label with the article. It will be noted by this construction the label is not obstructed by any holding or stop members at this contact portion and free to be attached to the previously gummed surface of the article.

The article is now moved to the next station with the overhanging label attached, to be firmly affixed to the side of the article by a presser pad 130 and the label folded over on an adjacent side of the article by an advancing roller action to likewise affix the label to said adjacent side, the roller 131 being brought into action by the yielding movement of the pad and a means is provided to lift the roller free of the label and article after the completion of the label rolling action and withdrawn from the article in this lifted position. The article indicated at 56^c at this station (see Figs. 1 and 2) is acted upon by a mechanism carrying the pad and roller which is mounted on a slide 132 to be actuated to and from the article in timed relation by a cam 133 on the shaft 4 through a cam roll 134 on an arm 135 fixed to a vertical rock shaft 136 housed in a suitable bearing 137 depending from the table. At the top of this bearing and the shaft end above the table is an arm 138. A link 139 pivoted to the arm which reaches forward, passing under the frame 140 of the slide 132 to connect with an adjustable stud 141 in a slotted portion 142 at the rear of the slide. By this means the slide is actuated, the cam roll is held to the cam by a spring 143 attached to the arm 138 and a pin 144 on the table.

The slide 132 carries an upright bracket 145 held thereon by bolts 146 which provides a supoprt for a bracket 147 which may be adjusted up and down on the upright bracket and held in such position by bolts 148. This bracket has extended side portions 149 simi-

lar to that previously described for the bracket 71, and each side portion has bearings 150 at the front and 151 at the rear for slide rods 152, the front ends of which are fixed to a cross bar 153 to which the label affixing pad 130 before referred to, is attached and when contact with the article is made by this pad 130 the cross bar 153 will be pressed rearward against springs 154 positioned on the rods between a collar 155 and the bearings 151. As this pad moves rearward under this spring pressure the roller 131 will ride over the top of the article as seen in Fig. 12.

The roller 131 is carried on a bar 156 with bearings extending forward therefrom to support the roller for rotation on the shaft ends of the roller and the bar is fixed to the front end of a swinging frame 157, the other end of the frame terminating in arms 158 having a pivotal connection with pivots 159 in the bracket 147. The roller by this construction may be lifted and lowered, being controlled by a cam slide 160 riding in a recess 161 in the center of the bracket 147 about midway of and under the swinging frame 157 at which point the slide engages a cam roll 162 carried in an adjustable block 163 held in a slotted extension by a bolt 164 for the desired adjustment. The slide has a raised and a low portion and is shiftable forward and backward. The frame 157 is held down by a pair of springs 165 located between headed studs 166 and the top of the frame 157, the studs passing through loose apertures in the frame and the lower ends of the studs threaded in the bracket 147. By this spring means the cam slide is normally under tension and likewise the roller 131 when in position on the article as in Fig. 12. As before stated the pad 130 and the cross bar both forced rearward, will ride the roller 131 over the label on the article, this being due to the forward motion of the slide 132. The continued forward motion of the slide will bring the inner face of the cross bar 153 in contact with a pin 167 depending from the cam slide 160 carrying this slide rearward and by reason of the raised portion thereof lift the swinging frame 157 together with the roller 131 free of the label.

The slide 132 will now be retracted from the article, bringing back the cam slide 160, and at about the time the cross bar 153 under its spring pressure reaches its normal position, which is when the collars 154 reach the bearings 150, the pin 167 of the cam slide will engage the bent end of a cam slide resetting member 168, (see Fig. 11), and lower the roll 131. The operation at this station has affixed the label to a side and an adjacent side of the article as indicated in Fig. 14.

As stated in connection with the gummer mechanism, the contact of the members 130 and 131 may be relieved against the article

by separate contact parts 130^a and 130^b, as seen in Fig. 13.

The articles with the labels attached as just stated, now move along the support rails 21 and 21' from this station, to be further acted upon by a smoothing and rolling action, by top and side rollers, mounted on a bracket 169, on a rail 170 forming a part of the frame work at the top of the machine and extending from end to end thereof. This bracket 169, best seen in Figs. 15 and 16, is here shown as a short length of angle bar supported at each end by bent members 171 fixed to the top of the rail 170 and by depending portions support the angle bracket in such a position to bring the faces of a pair of rollers 172, a pair at each end of the angle bracket, so the faces thereof at right angles to each other will exert a pressure to the top and side respectively of the label, as the article is moved along the support rails to be discharged from the machine opposite each pair of the rollers 172 to provide a roller bearing surface for the articles as they pass the rollers 172 at this point to prevent friction as well as marking the articles by sliding contact with the guide rails, a roller 173, one for each pair of rolls 172 and directly opposite said rolls and preferably adjustably mounted on a support 174 on movable spindles held in slotted portions of the support by a nut and washer, whereby the rollers may be adjusted to make a suitable pressure of the article against the face of the side roll of each pair, and the angle bracket 169 may be adjusted in a similar manner on the supports 171 to apply a top pressure to the article against the rolls on the rail 21' on which the article is supported.

The feed bar, when the machine is operated under a high speed, and especially when articles of considerable length and weight are propelled along the support, are caused to override their true stopping position along the work stations. Means are provided to obviate this difficulty by providing friction rollers, that is, rollers mounted under a frictional tension, as seen in Figs. 2, 17 and 18. On the rail 170 preferably two such rollers are provided for each article at the stopping positions along the support and are rotatively carried on right angle levers 175 that are pivotably supported on the rail, as at 176 with one arm of the lever extending downward and carrying a roll 177 having a rubber faced portion 178 suitably fastened to the outer part of a ball bearing member for smooth rotation of the roller, and by the rubber facing provide a resilient contact with the article, the roller is held under a frictional tension by a washer 179 and spring 180 holding the roller against the side of the hub of the lever 175 against free rotation. The levers are held by a spring 181 attached to an upstanding arm of the lever to a hook on the rail holding the lever to a stop 182 against the top of the

rail, which places the roller; in such a position to be lifted free of the stop when the article is under the roller as seen in Fig. 2, as the articles are advanced step by step passing under these rollers which are bearing downward by the spring 181, and when the articles come to the stopping position are prevented from over-riding this position by the rollers 177 that are under tension by the spring 180.

By this means the articles are brought successively to comparatively uniform stopped locations at the work stations.

To further aid the rollers 177 an additional roller 183, mounted on a guide rail 184, is of a similar construction to the roll 177, one provided for each work station and located central of the article to bear on the top thereof and to the rear of the rollers 177. These rolls also serve to hold the articles down on the support rail 21 and prevent the lifting or tilting of the article while the work performing mechanisms of the work slides are brought forward to engage the articles as shown in Fig. 1.

Before the work slides begin their respective operations on the articles, means are provided to reposition the articles on the support, should the articles be stopped out of true alignment with the work slides. As shown, the slides 106 and 132 are both provided with guide members. On the slide 132, these members are in the form of curved side arms 185 and are fastened in any desirable manner to travel with the slide. They are here shown attached to the cross bar 153 one at each end to extend forward therefrom to be advanced ahead of the work members of the slide to engage the sides of the article by their flaring curved ends to permit the entrance of the article to be repositioned between these members before the slide has reached its work performing position. The slide 106 is similarly provided with repositioning members as shown at 186, Fig. 1. In this case they are attached to the base 113.

The gumming mechanism carried by the slide 58 has the article repositioning means arranged reversely to that of the slides 106 and 132 to position the article by a pair of side members 187 that swing into position from the opposite side of the article, which side members are carried on arms 188 depending from a rock shaft 189 supported in uprights 190 to be rocked into position with the article by a link connection 191 with an arm 192 on the rock shaft and with a block 193 on the bracket 70. The link is slotted at 194 and held by a spring 195 to permit a yielding action after complete contact with the article by the side members has been made, and to thereby reposition the article.

Before the slide has made its full forward stroke, the side members 187 have engaged the article for their full length and until the shoulders 196 on the inner side of said mem-

bers have contacted with the article to press it firmly against the front guide rail 197 thereby aligning it with the slide before the gumming pads apply adhesive to the article. The further forward movement of the slide is permitted by the elongated slot 194 in the link 191. This is best seen in Fig. 20.

The friction or tension rolls 178 and all other rolls along the work support, along which the articles are shifted, prevent the marking of the articles since such articles previously supplied with printed labels would transfer the inked surfaces along the guide members to be again transmitted to the articles. By this rolling action this is obviated.

It will be understood the invention is not limited to an article of box form presenting a right angle to which the label is affixed. Such article may have angular surfaces, such as hexagonal, octagonal or other shapes; also more than two sections for applying the adhesive to the article may be employed.

The particular work performed as here set forth, is to apply this strip or label over a hinge member of a cigar box, and as will be noted the label may serve as the hinge member, or the hinge member may be first applied by this machine and the articles run through the machine a second time to apply the label over the hinge. The label may be provided with a cloth facing to provide a double purpose of a durable hinge member as well as a label.

What I claim is:

1. A labeling machine comprising a feed member for moving articles along a support, rollers on the support for articles to ride on, means to hold the articles against the supporting rollers to provide a roller contact with the article and means to prevent free action of the rollers to cause a brake effect to thereby hold the articles from over riding the feed stroke of the feed member, a reservoir for adhesive, a regulatable supply means therefor, and a transfer member to receive adhesive from the supply, a foldable paster operative to make contact with a plurality of surfaces of the article, means to reposition and hold the article to be pasted, said paster to assume an open flat plane position when withdrawn from said article, means to move the transfer member alternately from the supply and over the paster when said paster is in its flat plane position.

2. A labeling machine comprising means to hold under tension and support articles including supporting rollers for the articles to ride on, and presser rollers frictionally controlled to bear on the articles, means to move the articles step by step along the support, means for applying adhesive to a plurality of surfaces of the articles, from one side of the support including a multiple part contact member adapted to assume an open flat plane position when adhesive is applied to said

contact members from a distributing means, and means for shifting the contact members to apply the adhesive to a plurality of surfaces of the article, means to reposition the article to bring said article into alignment with adhesive applying means and means for applying an overhanging label to one of said surfaces of the article from a magazine and means to fold and apply the overhanging label upon an adjacent side of the article and means to press the label snugly to the article during the advancement of the article along the support.

3. In a labeling machine comprising means for feeding articles step by step along a support, means for applying adhesive to a plurality of surfaces of the article including a single carrier slide and yieldably mounted adhesive pads thereon to apply adhesive to the surfaces upon contacting therewith, means for advancing and retracting the carrier slide to and away from the article, means for contacting with the adhesive pad members to stop their advance toward the article upon contact therewith and means whereby one of said pads is pivotably hinged to the other pad to swing it to apply adhesive upon an adjacent side upon further movement of the slide toward the article.

4. In a labeling machine comprising article feeding means, supporting means, means for applying adhesive to a plurality of surfaces of an article, means for applying labels to the adhesive coated surfaces of an article at an advanced position on the support, including a label magazine carried on a reciprocating slide, a plunger to feed the labels to the open end of the magazine from which the foremost label is withdrawn and partially applied to one of said coated surfaces of the article upon the forward stroke of the slide toward the article, stops located at the top and sides of the magazine to hold the labels from freely passing out and a pair of yieldable supports carried by the label supporting frame, said supports adapted to extend rearwardly by contact with the article, and means for affixing the label to said surface and for folding the free part of the label to apply it to an adjacent surface, at another advanced position of the article upon the support.

5. A labeling machine comprising means to feed and support, articles, work slides located along the support and means to actuate the slides to and from the articles thereon, means carried by the slides to perform operations on the article and reposition the same on the support to bring said articles into alignment therewith to perform the work thereon in their successive order, applying adhesive, applying an overhanging label, folding the label, and means to smooth down the labels after passing the slide operations.

6. A labeling machine comprising means to feed and support articles, a magazine for labels having an open end to expose a portion of the foremost label to an article previously supplied with adhesive, means to move the magazine to contact with the article whereby a portion of the label will be attached to the article and means at the outlet of the magazine to support and prevent free passage of the foremost label therefrom, comprising a pair of yieldable supports at the bottom of the labels, and top and side stops with overhanging catches to prevent the removal of more than one label, and means to fold the free portion of the label to an adjacent side of the article.

7. A labeling machine comprising means to support and feed articles, a magazine for labels having an open end from which the labels are withdrawn, stop members co-acting with the labels, a spring pressed feed bar to feed the labels to the stops, said stops including a pair of fixed stops engaging the upper side portions of the labels, and stops to engage the top portion of the label, said latter stops carried by swinging bars to engage the labels across the top.

8. A labeling machine comprising means to support and feed articles, adhesive supply means having a regulator for the supply, a transfer member adapted to take from the supply and apply to an article contact member operative to advance and apply the adhesive to a plurality of surfaces of the article, means to move the transfer member after receiving adhesive from the supply across the contact member and means to move the contact member to and away from the article and means operated thereby to reposition and hold the article in alignment with the contact member.

9. A labeling machine, means to support and feed articles, means to apply adhesive to the articles, means to apply labels to the articles from a magazine, and means to affix the labels comprising a slide having a movement to and from the article, a plurality of contact members carried by the slide, one of said members having a yielding action relative to the slide and upon contact with the article to permit the other contact member or members to advance whereby the label is folded and affixed to the adjacent side or sides of the article upon the further movement of the slide.

10. A labeling machine comprising means to support and feed articles, means to apply adhesive to the articles, means to attach an overhanging label to the article, and means to affix the label to a plurality of surfaces of the article, comprising a slide movable to and from the article, multiple presser members carried by the slide, one part to contact with the article at the side thereof and yieldable while the slide is still in its forward

movement to advance the other part of the presser members whereby the label is folded and affixed to the adjacent side or sides of the article, and means to lift the latter presser part free from the label at the advancing end of the slide movement and means to hold said part in its lifted position to return over the folded label until on the latter part of the return movement of the slide.

11. In a labeling machine comprising adhesive distributing means for applying adhesive to one or more surfaces of an article, means for positioning the article to an exact predetermined position on the support, means for retaining labels within a magazine from which the foremost label may be withdrawn and applied to an article for its full width without hinderance from retaining means between the label and the article, means for positioning the article on the support in order to apply the label in a predetermined position relative to the gummed surface of the article, means for applying and affixing the label and means for smoothing down the label including a plurality of parallel and adjacent rollers to contact with surface of the article as it is fed along the support.

12. In a labeling machine, article supporting and feeding means, a label retaining magazine mounted upon a carrier slide to be advanced to and retracted from the article, including side members and a base to guide the labels to the delivery end of the magazine, means yieldably supported to engage the under side of the pack of labels and to normally extend beyond the foremost label to prevent the dropping of the labels from the end of the magazine, said yieldable means being operable upon contacting with the article as the magazine approaches the article to apply the foremost label from the pack.

13. In a labeling machine, the combination of a support for articles, a reciprocating feed bar to move the articles step by step along the support, means to hold the articles against movement when the articles are at rest, work performing instrumentalities carried by slides to make contact with and retract from the article, means carried by said slides to reposition the articles to hold said articles in alignment with the slide and work performing instrumentalities.

14. In a labeling machine, the combination of a support for articles, a reciprocating feed bar to move the articles step by step along the support, means to hold the articles against movement when the articles are at rest, work performing instrumentalities carried by slides to make contact with and retract from the article, and means to reposition the articles actuated by the slides.

15. In a labeling machine, the combination of a support for articles, a reciprocating feed bar to move the articles step by step along the support, means to hold the articles against

movement when the articles are at rest, work performing instrumentalities carried by slides to make contact with and retract from the article, and means to reposition the articles during the rest period of the article.

16. A gumming mechanism comprising a plurality of movable sections adjustably mounted on a carrier, whereby the sections are brought into folded contact position with a plurality of surfaces of an article moved along a support and stopped in alignment with the carrier by positioning means actuated by the carrier to be acted upon by said sections, and means for returning the sections to an open flat plane position and remain in said position when the carrier is retracted from the article, means for applying an adhesive substance to the sections when in said open flat position, to be transferred to the said surfaces of the article when contact is made therewith.

17. A gumming mechanism comprising a plurality of movable sections adjustably mounted on a carrier to bring the sections into and out of contact with a plurality of surfaces of an article moved along a support and stopped in alignment with the carrier, means for holding the sections in an open flat plane position, to receive adhesive from a transfer roller of an adhesive distributing means.

18. In a gumming device comprising a plurality of adhesive applying pads yieldably mounted on a carrier slide and movable relative to one another being so hinged together that their faces normally lie in the same plane to receive adhesive, said pads being adjustably arranged on the carrier for different heights of articles whereby upon advancing the slide to bring one pad in contact at a face adjacent another article face angular thereto, said other pad upon further advance of the slide will swing to an angular position relative to the other pad to bring its gumming face to engage the adjacent face of the article at the angle and apply gum thereto.

19. In a gumming device comprising a plurality of adhesive applying pads adjustable and yieldably mounted on a carrier slide and movable relative to one another being so hinged together that their faces normally lie in the same plane to receive adhesive, a gumming roll arranged to move in a substantially straight path across the faces of a plurality of adhesive applying pads when aligned, to apply adhesive thereto, the said pads being arranged on the carrier whereby upon advancing the slide to bring one pad in contact at a face adjacent another article face angular thereto, said other pad upon further advance of the slide will swing to an angular position relative to the other pad to bring its gumming face to engage the adjacent face of the article at the angle and apply gum thereto.

20. A labeling machine, having in combination means to hold under tension and support articles, comprising stationary support rails having rollers along their length for articles to roll and rest on, a top rail carrying spring pressed rollers to hold the articles under tension against the rollers on the support rails, means to move the articles, step by step, along the support, means for applying adhesive to a plurality of surfaces of the articles, from one side of the support including a multiple part contact member adapted to assume an open flat plane position when adhesive is applied to said contact members to apply the adhesive to a plurality of surfaces of the article.

21. A gumming mechanism comprising a plurality of movable sections mounted on a carrier slide having movement to and away from an article to be gummed, means whereby the sections are caused to normally assume an open flat plane position including a yieldable head slidably carried by and in a plane with the carrier slide, a gumming pad adjustably attached to the head, spring pressed means to hold the head in an extended forward position against a regulatable stop, a supplemental head also carrying an adjustable gumming pad, said supplemental head being pivoted to the yielding head to form a hinge connection therewith, a spring pressed link connection between the heads to normally hold the heads with the gumming pad faces in an open flat plane position when the carrier slide is retracted, and when in contact with an article and pressure applied by the carrier slide, the yielding head is forced rearward away from the stop, to release the supplemental head with the spring actuated link to fold said head on its hinged pivot to lie at an angle and in contact with an adjacent face of an article.

22. A labeling machine having means to support and feed articles, an open end magazine for labels, adapted to have movement to and from an article to be labeled, comprising a bottom or label supporting member, side walls and a cover portion, said side walls and cover members having fixed stops thereon extending over the edges of the labels at the open end to prevent the labels from freely passing out, and means to urge and hold the labels against the stops, and spring pressed supporting members extending slightly beyond the open end of the magazine carried by the supporting member and yieldable on contact with the article.

23. A labeling machine comprising means to support and feed articles, a magazine for labels having an open end to expose the labels to the articles, means in the form of stops for the labels, including fixed stops at the upper sides of the open end, and stops to engage the top end of the labels carried on swinging bars arranged to be

swung away from the top to enable the magazine to be refilled, and a plurality of yieldable extension stops, located on the label supporting base and under the labels, mounted on one or more shiftable members that engage the bottom edge of the labels.

24. In a gumming device for applying adhesive to adjacent sides of an article including a plurality of adhesive applying pads, a carrier mounted to slide, members yieldably mounted on said carrier and to which the pads are adjustably secured, said pads being so arranged that the face of one pad will always remain in its fixed plane position on its yielding member, and to which member a pad or plurality of pads are pivotably hinged whereby their faces lie in the same plane and parallel with the face of the fixed pad while in their normal position to receive adhesive, and upon being advanced toward the article the fixed pad contacts with the article and upon further movement of the carrier slide the hinged pad or pads swing to an angular position relative to the fixed pad to bring the gumming face or faces thereof to engage the adjacent face or faces of the article to which adhesive is applied.

25. A labeling machine provided with intermittent feed means to propel articles along a support step by step, means to hold the articles against shifting during the period said articles are at rest on the support, advancing and retracting slides operating transversely to and located adjacent to and along the support having work performing instrumentalities and means on the slides to reposition the articles into alignment with the slides.

Signed at New York city, N. Y., on April 7th, 1927.

OTTO GEORGE BRAUTIGAM.