June 25, 1935. P. D. PARSONS 2,005,846

ROLL LABELING MACHINE.

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Fig. 1.

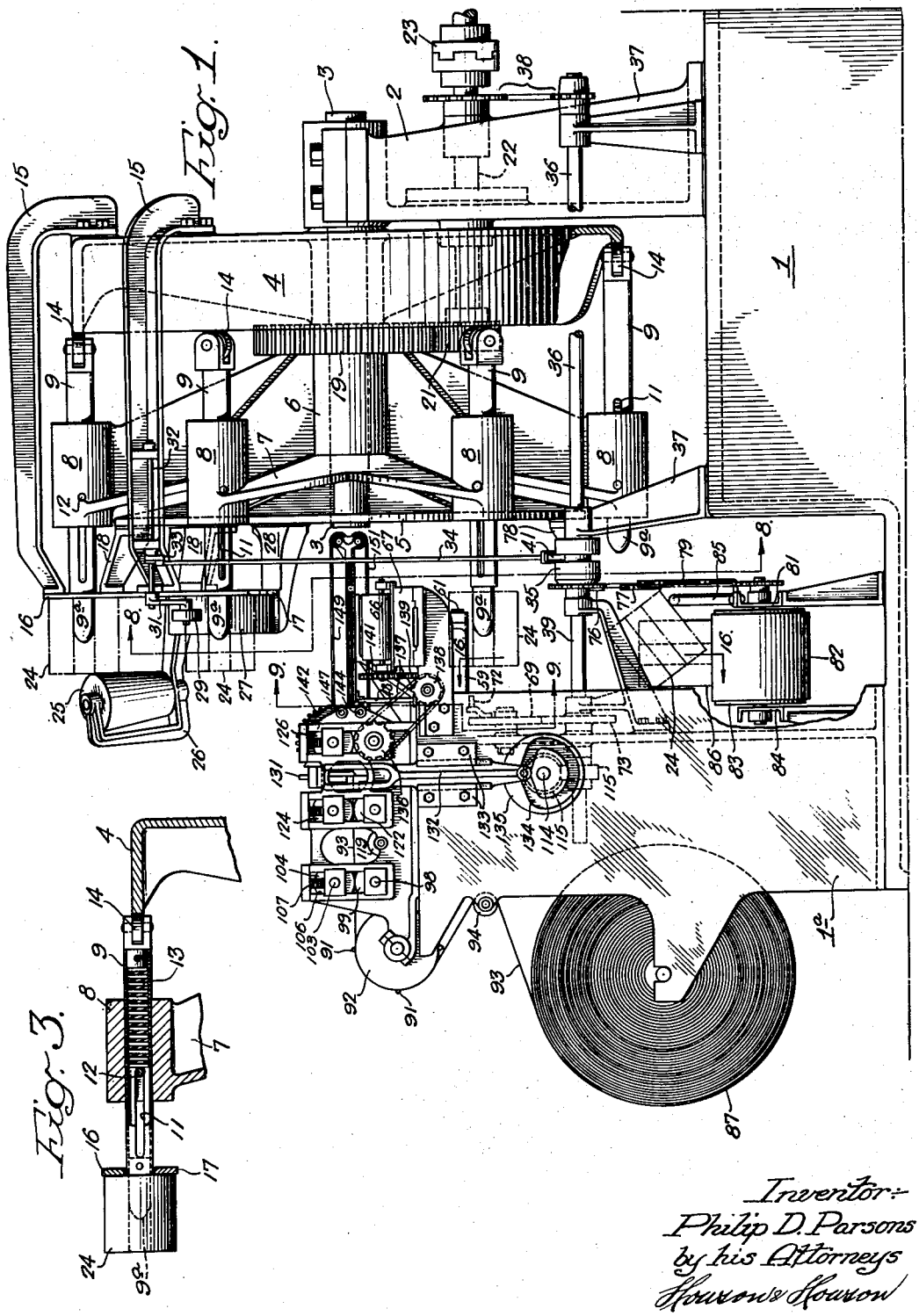


Fig. 3.

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ROLL LABELING MACHINE

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Fig. 2.

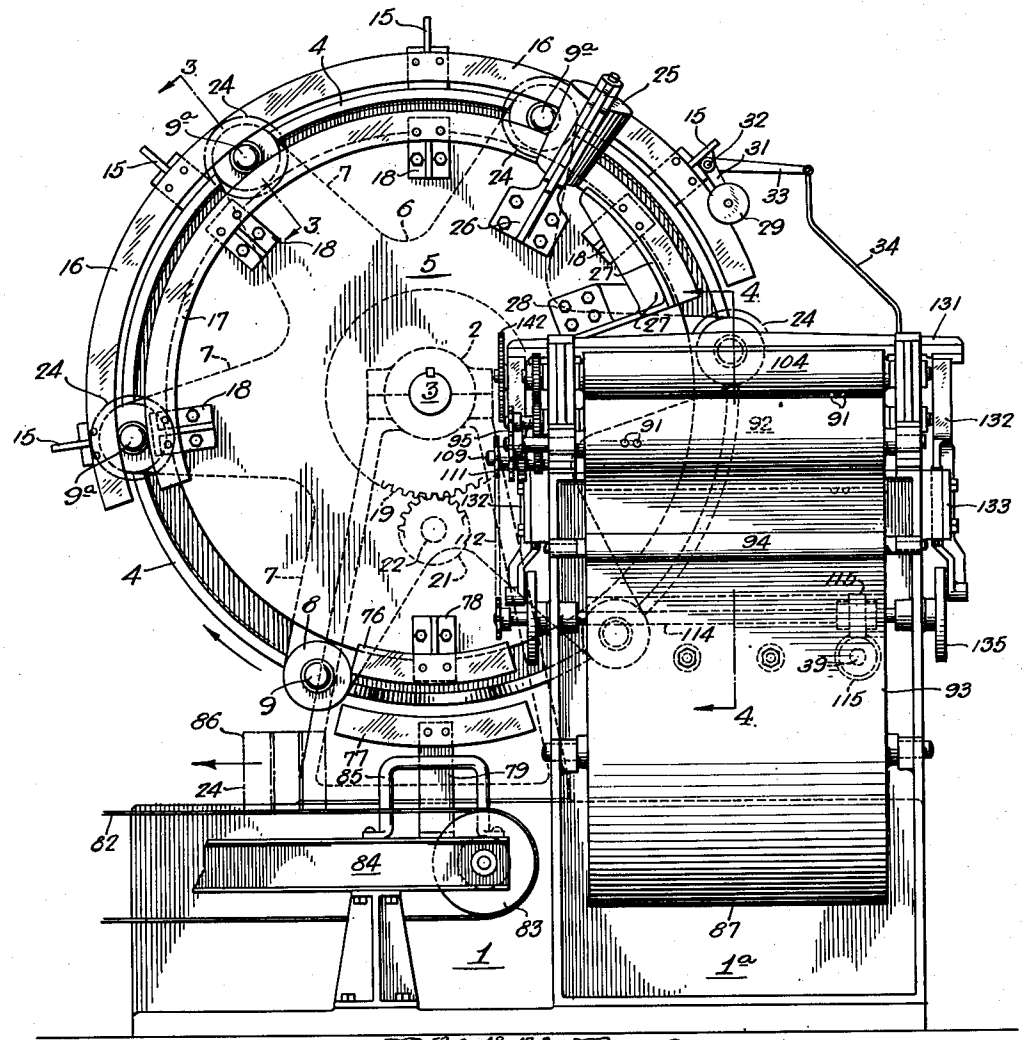
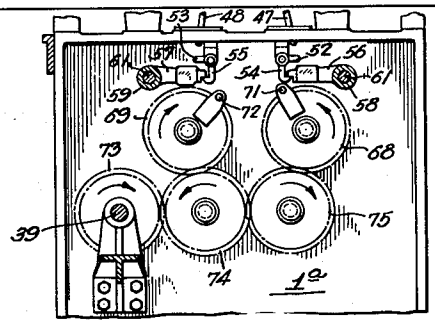


Fig. 16.



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ROLL LABELING MACHINE

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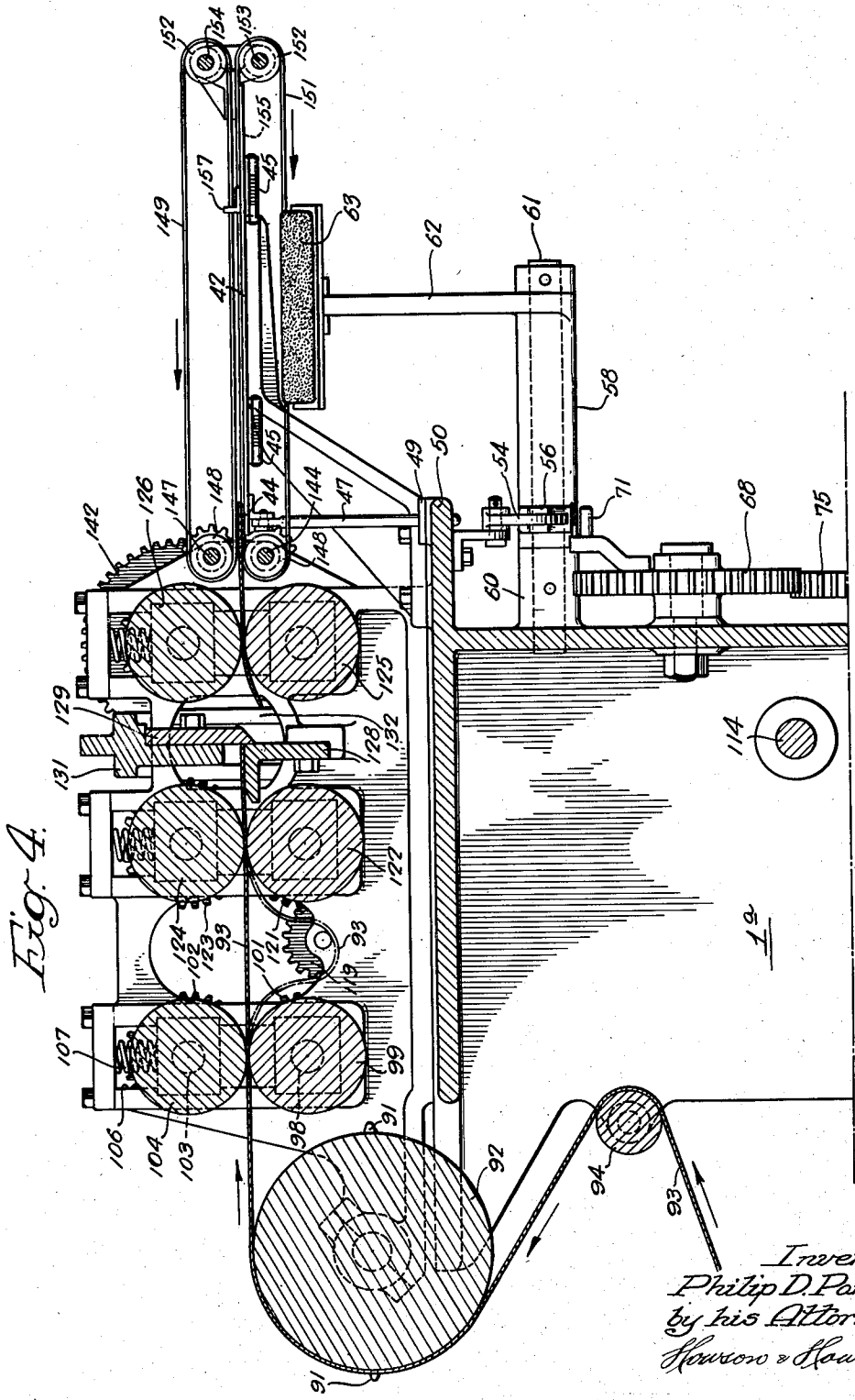


Fig. 4.

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ROLL LABELING MACHINE

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Fig. 6.

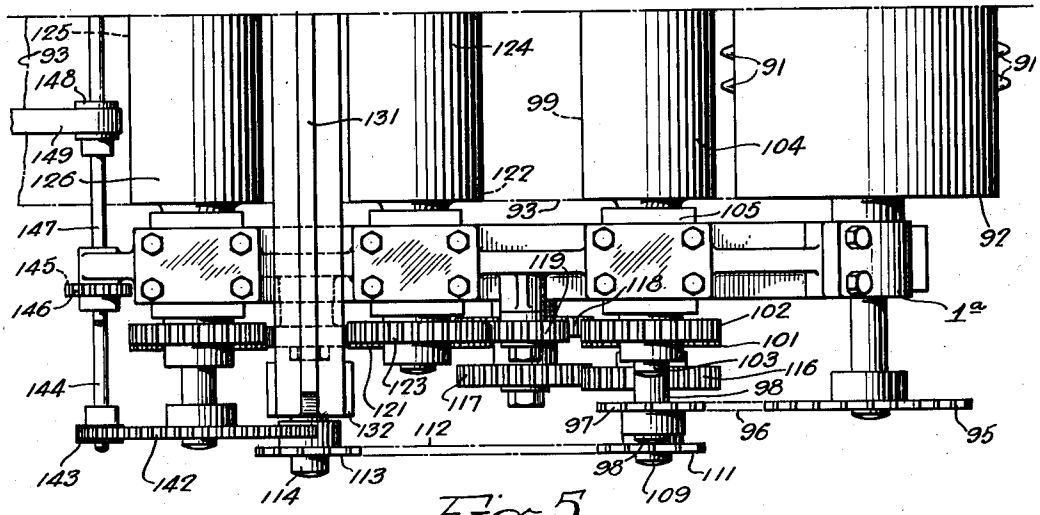
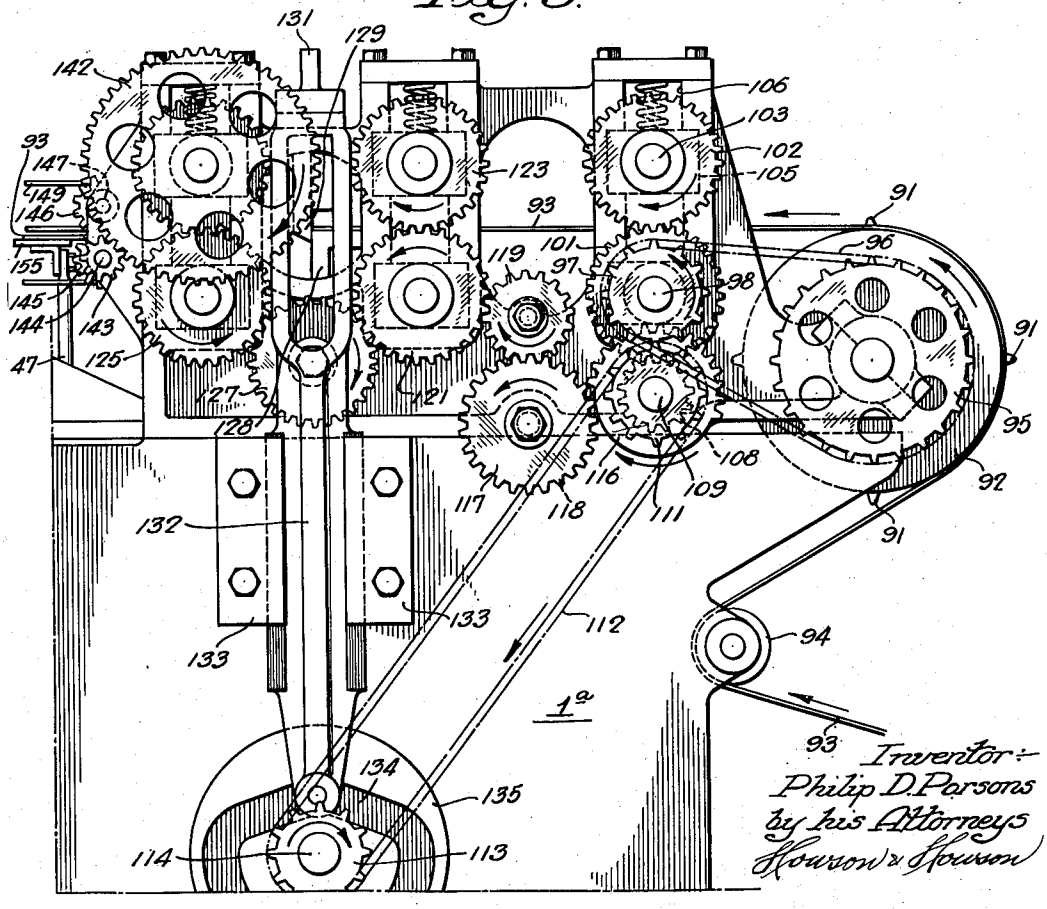


Fig. 5.



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ROLL LABELING MACHINE

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Fig. 7.

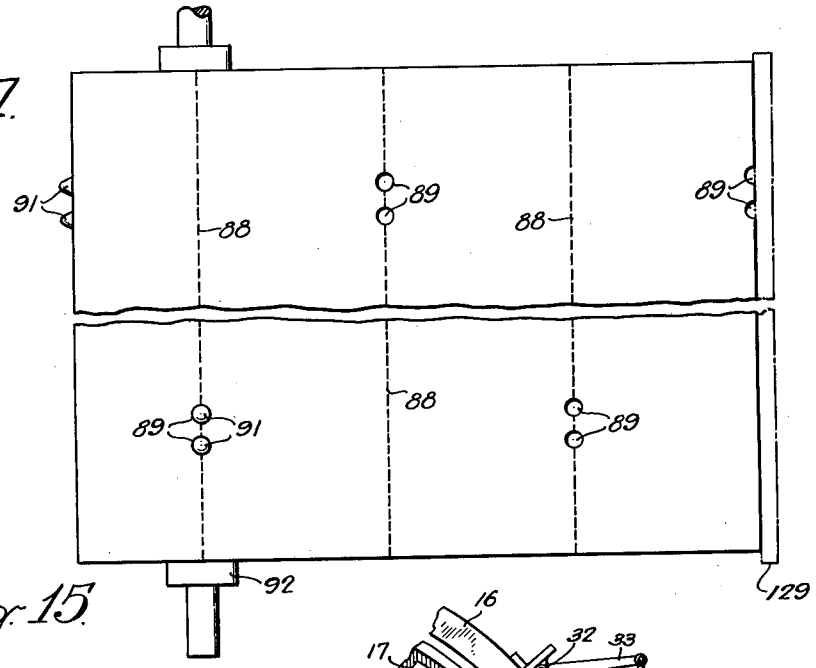


Fig. 15.

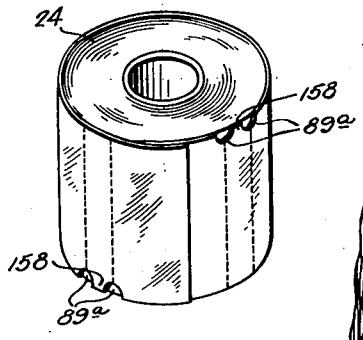
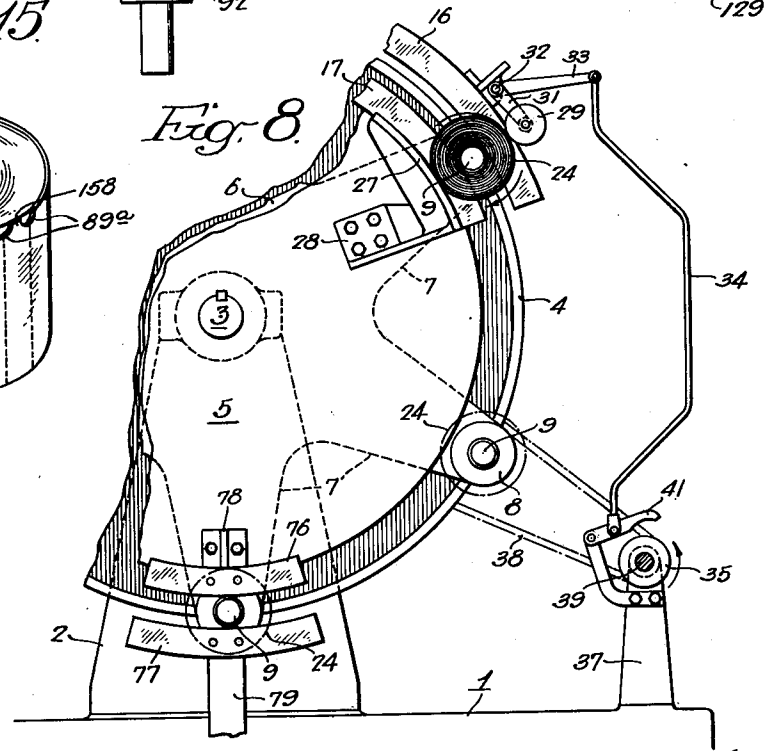


Fig. 8.



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ROLL LABELING MACHINE

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Fig. 9.

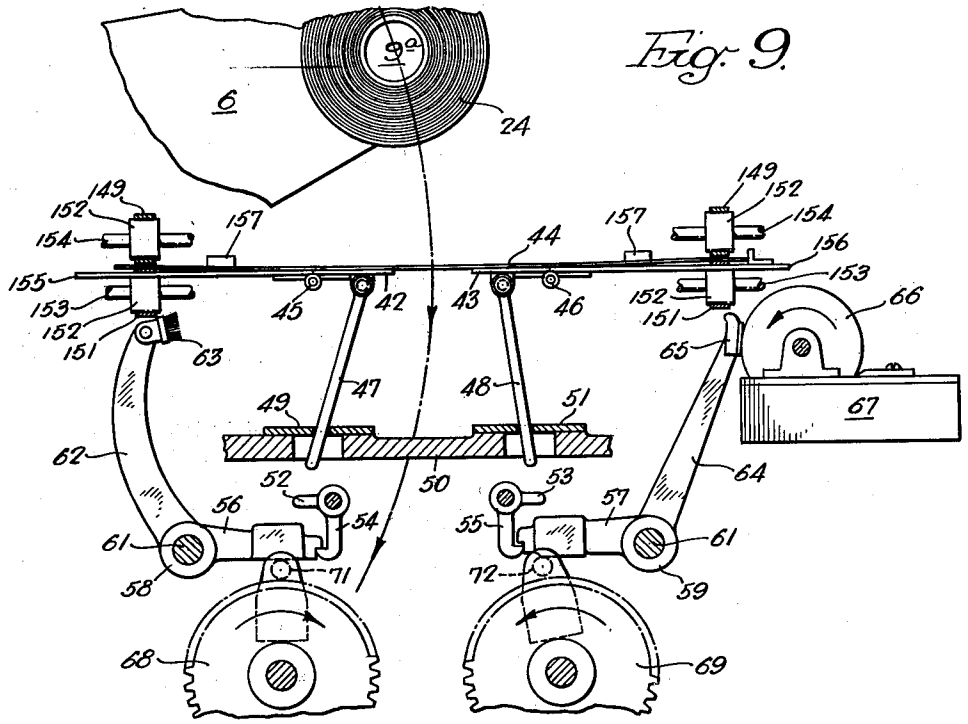
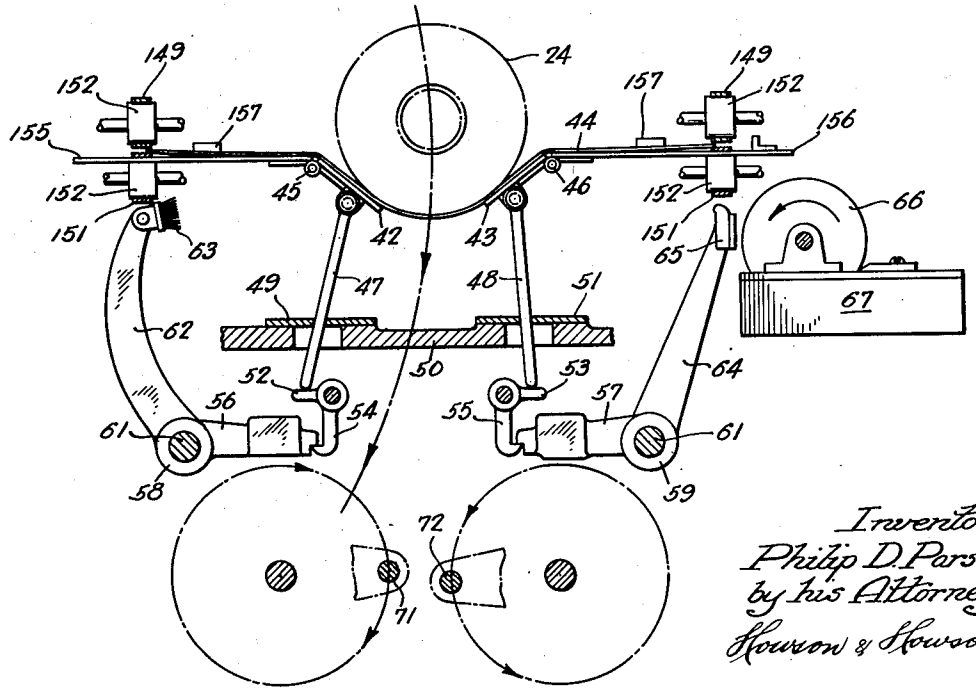


Fig. 10.



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ROLL LABELING MACHINE

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Fig. 11.

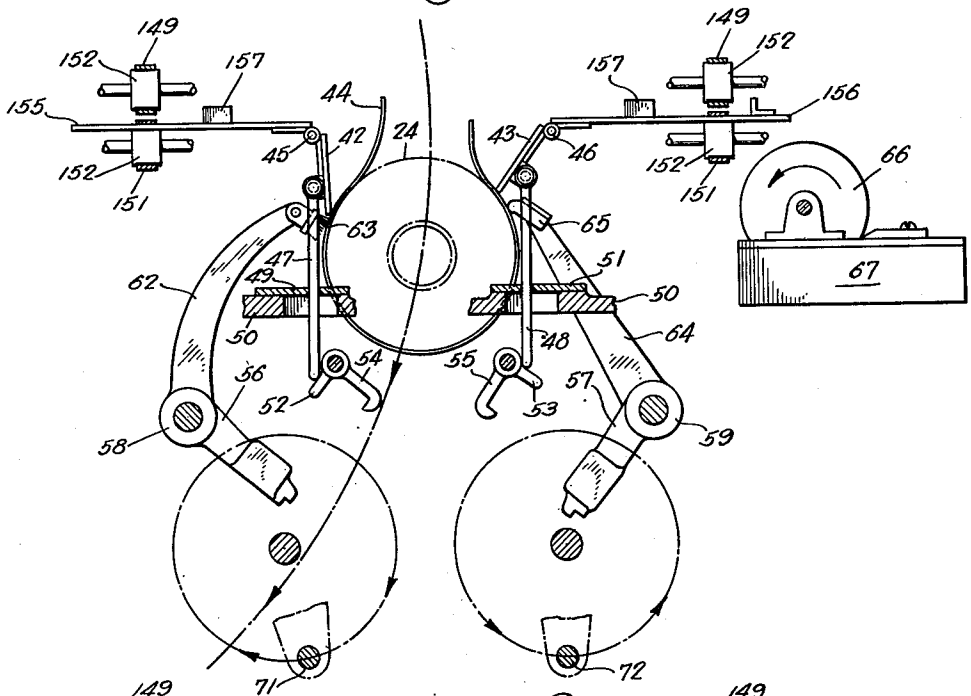
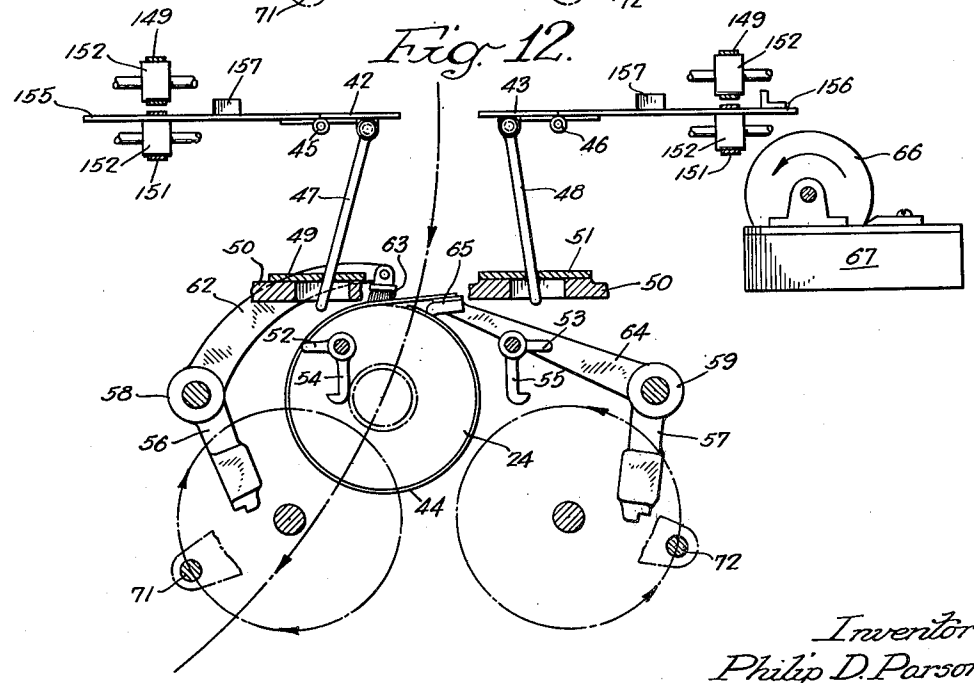


Fig. 12.



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Fig. 13.

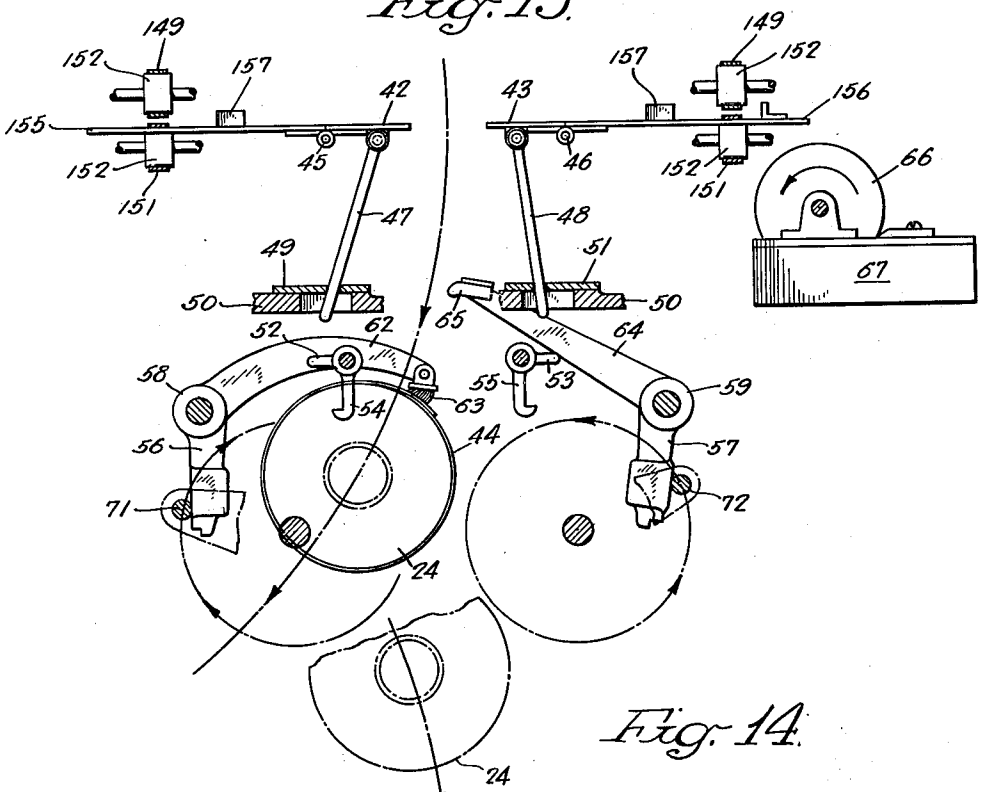
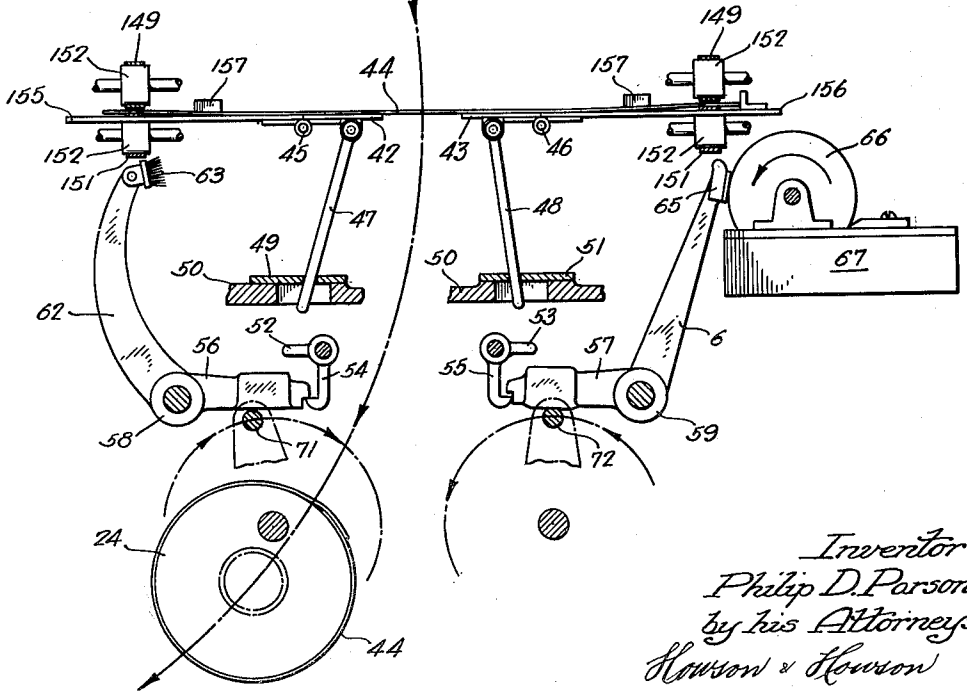


Fig. 14.



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Patented June 25, 1935 2,005,846

UNITED STATES PATENT OFFICE

2,005,846

ROLL LABELING MACHINE

Philip D. Parsons, Swarthmore, Pa., assignor to Scott Paper Company, Chester, Pa., a corporation of Pennsylvania

Application February 17, 1934, Serial No. 711,744

13 Claims. (Cl. 216—25)

This invention relates to improvements in machines for wrapping or labeling rolls such as toilet paper, and the principal object of the invention is to provide a machine of this character of generally improved characteristics.

Another major object is to provide an improved machine for applying wrappers or labels to rolls without use of "pick-up" glue applied to the roll itself.

The construction and operation of the machine and the various specific objects sought to be attained will be more readily understood from the attached drawings, in which:

Figure 1 is a side elevational view of a machine constituting a preferred embodiment of the invention;

Fig. 2 is a front elevational view of the machine;

Fig. 3 is a section on the line 3—3, Fig. 2;

Fig. 4 is an enlarged fragmentary sectional view on the line 4—4, Fig. 2;

Fig. 5 is a side elevational view of a portion of the mechanism shown in Fig. 4;

Fig. 6 is a fragmentary plan view of the mechanism shown in Fig. 5;

Fig. 7 is a fragmentary plan view illustrating a portion of the label feeding and synchronizing mechanism;

Fig. 8 is a fragmentary sectional elevational view on the line 8—8, Fig. 1, illustrating details of the roll-feeding mechanism;

Figs. 9 to 14, inclusive, are diagrammatic sectional views taken on the line 9—9, Fig. 1, showing successive steps in the labeling operation;

Fig. 15 is a view in perspective of the finished roll, and

Fig. 16 is a section on the line 16—16, Fig. 1.

With reference to Figs. 1 and 2 of the drawings, the illustrated machine comprises a base 1, at the rear end of which is supported a pedestal 2, in the upper end of which is fixed a stub shaft 3. Immediately adjacent the pedestal 2 the shaft 3 carries a fixed cam 4; and fixed to the forward end of the shaft 3 is a plate 5, the function of the aforesaid cam and of the plate 5 being hereinafter set forth. Mounted for rotation on the shaft 3 intermediate the cam 4 and the plate 5 is a spider 6 having at its forward end radially projecting arms 7, each of the arms having at its outer end a bearing 8 in which is slidably supported a pin 9. As illustrated in Fig. 3, the pins 9 are slotted longitudinally at 11 for reception of a retaining pin 12 in the bearing 8, which pin limits the extent of the sliding movement of the pin 9 in the bearing. The pins 9 are hollow for reception of a spring 13 which by reaction with the pin 12 and the pin 9 holds the latter resiliently in contact with the forward working edge of the cam 4, and each of the pins 9 carries at its rear end a cam roller 14 for anti-friction contact with the cam. The cam 4 carries at the top a plurality of forwardly projecting arms 15 which constitute supports for a segmental plate 16, this plate being secured to the forward ends of the arms; and a corresponding segmental plate 17, see Figs. 1 and 2, is supported in alignment with the plate 16 on arms 18 which project forwardly from the upper side of the plate 5. As illustrated, the plates 16 and 17 are located at opposite sides of the path of the pins 9, and the outer ends of the pins project normally beyond the outer faces of the said plates.

Rotation of the member 6 is effected by means of a gear 19 which meshes with a pinion 21 on a shaft 22, which shaft is journaled in the pedestal 2 and projects forwardly through the interior of the cam 4. The rear end of the shaft 22 may be connected through the medium of a clutch 23 with a suitable source of power (not shown).

In the operation of the machine for wrapping or labeling rolls of tissue paper, as hereinafter set forth in detail, the rolls are placed individually on the projecting ends 9a of the pins 9, see Figs. 1 and 3, and are carried by rotation of the member 6 through a series of operations in which the labels or wrappers are applied, after which the rolls are removed automatically from the pins and deposited in a suitable container on a conveyer.

With reference to Fig. 2 of the drawings, the member 6 in the normal operation of the machine rotates in the direction of the arrow, and the rolls shown in broken lines and indicated by the reference numeral 24, are placed on the pins 9 as they progressively advance to a position between the plates 16 and 17, the inner ends of the rolls engaging the outer faces of the plates 16 and 17 as shown in Figs. 1 and 3. As the pins advance the rolls 24, the outer faces of the rolls are brought into engagement with a roller 25 mounted on a bracket 26 projecting from the outer face of the plate 5, the roller 25 being so positioned with respect to the plates 16 and 17 that the rolls are compressed sufficiently to insure a proper normal positioning of the convolutions of paper between the end faces of the roll. The rolls are then brought into contact with the curved surface of a plate 27 supported on a bracket 28 also secured to the outer face of the plate 5, this contact of the roll with the plate 27 effecting a rotation of the roll on the pin 9 which

has the effect of winding up in the roll any loose end of the tissue paper. At this point also the roll engages a roller 29, at the outer end of an arm 31 on a rock shaft 32 journaled in one of the arms 15, which shaft carries a second arm 33 which is operatively connected through a rod 34 with a clutch 35, this clutch being operatively associated with a shaft 36 journaled in brackets 37 on the base 1 and having a driving connection through a chain and sprocket assembly 38 with the shaft 22. The clutch 35, which is of the one-revolution type, functions to connect the shaft 36 with an aligned shaft 39. The clutch is normally disengaged and is held in disengagement through the medium of a lever 41, see Fig. 8. When as previously described one of the rolls 24 engages the roller 29 and thereby rocks the shaft 32, the lever 41 is elevated, as shown in Fig. 8, permitting the clutch 35 to engage and to thereby connect the shaft 39 with the shaft 36. As the roll 24 passes from under the roller 29, the latter with its lever 31 is permitted to drop to its original position, which returns the lever 41 to its operative position wherein following one full revolution of the shafts 36 and 39, it again functions to disengage the clutch 35, which interrupts the rotation of the shaft 39. Clutches of this type are well known in the art and form no part of the present invention. It will be apparent from the foregoing that as each roll in its movement on the member 6 passes the position of the roller 29, the shaft 39 is set in motion for one full revolution, and is again brought to rest.

Positioned in the path of the rolls 24 at a point below the roller 29 and the plate 27 are a pair of oppositely arranged hinged plates 42 and 43, see Figs. 9 to 14, inclusive, which constitute supports for the mid section of a wrapper or label 44 and which are adapted to be depressed on their hinges 45 and 46 by the downwardly moving roll. In Fig. 9, the roll 24 is shown approaching the plates 42 and 43, and the manner in which these plates are depressed by the roll is shown in Figs. 10 and 11. Depending from the plates 42 and 43 are hinged pins, 47 and 48 respectively, which pass through openings in guide plates 49 and 51 on the fixed structure 50 of the machine. As the pins 47 and 48 are depressed with the plates 42 and 43 and as illustrated in Fig. 10, they are adapted to engage the projecting arms 52 and 53 of a pair of locking hooks 54 and 55 pivotally mounted in the machine, which normally respectively engage and support the weighted arms 56 and 57 of pivoted bell crank levers 58 and 59, as shown in Fig. 4, which illustrates the mounting of the lever 58. These levers are mounted on stub shafts 61 which are supported in bosses 60 on the base extension 1a. The other normally upstanding arm 62 of the lever 58 carries at its upper end a brush 63, while the corresponding arm 64 of the lever 59 carries a pad 65. Adjacent the upper end of the arm 64 and in position to be engaged by the pad 65 is a roller 66, the lower portion of which is immersed in a bath of a suitable adhesive in a container 67. The manner in which the pad 65 is brought into contact with the roller 66 will be described hereinafter.

Following release of the retaining hooks 54 and 55 as described above, the weighted arms 56 and 57 on the levers 58 and 59 drop downwardly by gravity, as shown in Fig. 11, which brings the brush 63 and the upper end of the arm 64 against the sides of the paper roll 24, which roll has moved downwardly toward the position in which it is shown in Fig. 11. As the roll 24 moves downwardly between the plates 42 and 43, it carries with it the label 44 which partially enfolds the roll as illustrated, and the brush 63 and the extremity of the arm 64 by engagement with the outer face of the label tend to wipe the free ends of the label downwardly against the surface of the roll until as the latter assumes the position shown in Fig. 12 the label substantially completely embraces the roll. By reason of a predetermined positioning of the label 44 on the plates 42 and 43, as hereinafter set forth, that end of the label at the side engaged by the brush 63 is eventually moved by the brush, as shown in Fig. 12, into contact with the adhesive-loaded pad 65, so that the inner face of the label at that end is provided with sufficient adhesive to hold the label in place on the roll when the movement of the latter and the action of the brush 63 have brought the adhesive-receiving end of the label into overlapping contact with the other end of the label, as shown in Fig. 13. It will be noted that in this series of operations the end of the label engaged by the arm 64 is held by that arm against the face of the roll until the other end of the label has been brought down by the action of the brush 63 into close proximity to or into contact with the opposite end of the label, so that there is no tendency for the wrapper to leave or loosen upon the roll before the adhesive takes effect. The overlapped joint of the label is wiped and compressed by the brush 63, as illustrated in Fig. 13.

Immediately below the levers 58 and 59 are a pair of gear wheels 68 and 69, each of which carries a transversely projecting pin, 71 and 72 respectively, and the weighted arms 56 and 57 are located in the path of the pins 71 and 72 as they move in a circular path with the gears 68 and 69, as indicated by the arrows. As shown in Figs. 1 and 4, the gears 68 and 69 are journaled on studs secured in the base extension 1a. These gears are driven intermittently from the shaft 39, which shaft as shown in Fig. 1 carries a gear 73 which meshes with a gear 74, see Fig. 16, the gear 74 in turning meshing with the gear 69. The gear 74 also meshes with a gear 75, and this gear meshes with the gear 68. Both of the gears 74 and 75 are journaled, like the gears 68 and 69, on studs projecting from the inner side of the base extension 1a. The movement of the gears 68 and 69 is synchronized with the movement of the rolls 24 so that the levers 58 and 59 after completing the cycle of operations set forth above are picked up by the pins 71 and 72 and are returned to their original positions, as shown in Fig. 9. Prior to the elevation by the pins 71 and 72 of the arms 56 and 57 to their normal elevated positions, the plates 42 and 43 are cleared by the roll 24 passing therebetween and are therefore permitted to return to their normal elevated positions, this return movement of the plates being effected through the medium of suitable springs (not shown) associated preferably with the plate hinges 45 and 46. This elevation of the plates 42 and 43 permits the hook elements 54 and 55 to return to their operative positions with respect to the arms 56 and 57, so that as these arms are elevated by the pins 71 and 72 as set forth, they are again engaged by the retaining hooks 54 and 55.

It will be noted by reference to Fig. 13 that the arm 57 of the lever 59 is engaged by the pin 72 in advance of the engagement of the pin 71 with the arm 56 of the lever 58, so that the lever 59

is swung upwardly away from the roll while the brush 63 of the lever 58 is completing the operation of bringing the adhesive coated end of the label into the overlapping relation with the other end thereof. It will be noted further that in the upward movement of the pin 72 in engagement with the arm 57, the movement of the lever 59 is sufficient to bring the pad 65 into contact with the face of the adhesive roller 66, whereby following each cycle of operations as described, this pad is provided with a new supply of the adhesive. Fig. 9 shows the position of rest of the parts described above following each cycle of operations.

During the cycle of operations described above, the paper roll supporting pins 9 of the rotating head 6 engage the high part of the cam 4 and are thereby held in the advanced or roll-supporting position. Following completion of the label-applying operation, the cam rollers 14 of the pins pass into the low portion of the cam 4, as shown at the bottom of Fig. 1, which permits the springs 13 to retract the pins 9 sufficiently to release the labeled rolls. At the point of withdrawal of the pins 9, the rolls have progressed to a point in which the inner face of the roll lies in contact with a pair of segmental plates 76 and 77, see Fig. 2, which are supported on brackets 78 and 79 respectively secured to the face plate 5 and to a structural member 81 supported on the base 1. When, therefore, the pin 9 is retracted as set forth, the roll supported thereby is stripped from the pin by the plates 76 and 77, which permits the roll to drop downwardly upon a conveyer 82, which is shown in the present instance as operating at one end on a roller 83 journaled in the structural member 81 and at the opposite end in a corresponding structural member 84 supported on the base 1. In dropping downwardly toward the conveyer, the end of the roll which has been in engagement with the plates 76 and 77 comes in contact with a bar 85, which causes the roll to assume an upright position on the conveyer 82, as indicated at 86 in Figs. 1 and 2. The labeled rolls are conducted successively by the conveyer 82 to a packing station or to any desired point of discharge.

The mechanism by which the labels are fed into position above the plates 42 and 43 is illustrated in Figs. 1, 2, and 4 to 7, inclusive. Provision is made on the base extension 1*a* for rotatively supporting a roll 87 of printed labels forming a continuous strip. The character of this strip is illustrated in Fig. 7, wherein the dividing lines between successive labels are indicated by the broken lines 88. Formed in this strip and on each dividing line 88 is a pair of adjacent apertures 89, which pairs of apertures are staggered with respect to the longitudinal edges of the strip as shown. These apertures are adapted for reception of pins 91 projecting from the periphery of a feed roll 92 journaled in the base extension 1*a*, to which roll the labeled strip 93 is guided by an idler pulley 94. The shaft of the roll 92 carries a sprocket 95, see Fig. 5 which is connected by a suitable chain 96 with a sprocket 97 at one end of a shaft 98 journaled at the top of the frame extension 1*a*, which shaft carries a roller 99, Fig. 4, over which the labeled strip 93 passes. The shaft 98 also carries a gear 101 which meshes with a gear 102 on the shaft 103 of a superimposed roller 104 between which and the roller 99 the paper web 93 is confined as shown in Fig. 4. The roller 104 is journaled in bearings 105, Fig. 5, which are slidable in vertical guides 106 at the top of the base extension 1*a*, and springs 107 act on these bearings to force the roller 104 downwardly upon the web 93 and toward the roller 99 at a predetermined pressure. The gear 101 also meshes with a pinion 108 on a shaft 109 journaled in the base extension 1*a*, and this shaft also carries a sprocket 111 which is connected through a chain 112 with a sprocket 113 on a transverse shaft 114. The shaft 114, as shown in Figs. 1 and 2, is connected through helical gears 115 with the shaft 39, which as previously set forth is intermittently operated. It will be noted, however, that by reason of the aforedescribed connection between the shaft 39 and the shaft 98, and between this latter shaft and the roll 92, both the said roll 92 and the roller 99 are actuated during such times as the shaft 39 is in operation.

The shaft 109 which carries the pinion 108 and the sprocket 111 carries also an interrupted gear 116, which in rotation meshes intermittently with a gear 117 journaled on a stud on the base extension 1*a*, see Fig. 5. This gear 117 has fixed thereto a gear 118 which meshes with a pinion 119 also journaled on a stud in the base frame, and this pinion meshes in turn with a gear 121 on the projecting end of the shaft of a roller 122. The gear 121 also meshes with a gear 123 on the shaft of a roller 124, the rollers 122 and 124 bearing the same relation to the labeled strip 93 as the rollers 99 and 104 and being similarly mounted in the base frame. It will be noted, however, that by reason of the interrupted gear 116 the actuation of the roller 122 is intermittent as regards the operation of the roller 99. As the strip 93, therefore, passes between these rollers and during the periods of inoperation of the roller 122, a free loop will be formed in the strip 93 between the sets of rollers, as illustrated in broken lines in Fig. 4.

Journaled in the frame 1*a* in alignment with the sets of rollers 99—104 and 122—124 is a third set of rollers 125 and 126, the roller 125 being operatively connected with the roller 122 through an idler gear 127 journaled on a stud in the frame, so that the movement of the rollers 125 and 126 is synchronized with that of the rollers 122 and 124. Intermediate the last-named sets of rollers and in the path of the strip 93 is a strip-severing device, this device in the present instance consisting of a fixed shear blade 128 and a movable blade 129, Fig. 4, this movable blade being carried at the top of a yoke 131 which extends transversely across the base extension 1*a* and has at each side a depending portion 132 slidably supported in guides 133 and each having at its lower end a roller which engages in the groove 134 of a cam 135, these cams 135 as shown in Figs. 1 and 5 being carried by the transverse shaft 114. Rotation of the shaft 114 and of the cams 135 effects a reciprocation of the yoke 131 and of the shear blade 129. This action of the shear severing the strip 93 is synchronized with the movement of the strip-feeding elements so that the severing operation takes place during the period when by reason of the interrupted gear 116 the feed rolls 122 and 125 are stationary.

It will be noted also with reference to Fig. 1 that the shaft of the roller 125 has fixed thereto at one end a sprocket 136 which is connected through a chain 137 with a sprocket 138. This sprocket is operatively connected through a suitable gear train, including gears 139 and 141, with the adhesive-applying roller 66 previously described. By this means the roller is given an intermittent operation synchronized with the move-

ments of the other associated parts of the mechanism.

Secured to one end of the shaft of the roller 126 is a gear 142, and this gear meshes with a pinion 143 on a shaft 144 suitably journaled in the base frame 1a. This shaft also carries a pinion 145 which meshes with a pinion 146 on a shaft 147 journaled in the base frame above and in parallel relation with the shaft 144. The shafts 144 and 147 carry spaced sets of pulleys 148, the pulleys of one shaft directly overlying respectively the pulleys of the other shaft. Operating on these pulleys are belts 149 and 151, the outer ends of these belts passing around pulleys 152 which are journaled on transverse shafts 153 and 154 which correspond with the shafts 144 and 147 which carry the pulleys 148. As shown in Fig. 9, the two upper belts 149 occupy positions entirely above the normal horizontal plane of the hinge plates 42 and 43 and of the table plates 155 and 156 to which the said plates 42 and 43 are respectively connected. The two belts 151 are so arranged that their upper runs pass over the tops of the table plates 155 and 156, while their lower runs occupy a position below these plates. The upper run of the belts 151 and the lower run of the belts 149 are spaced apart so that the opposite edges of the severed labels 44 are loosely confined therebetween, and so that as the individual labels are cut from the strip they are passed by the rollers 125 and 126 between the belts 149 and 151, which function to advance the labels to a position overlying the plates 42 and 43 and centrally of the path of the rolls 24 as they pass downwardly towards these plates. As the labels are advanced into position by the belts 149 and 151, they engage stops 157 on the plates 155 and 156 which position the label properly with respect to the downwardly moving rolls 24, and the looseness of the belts permits the label to lie in this position undisturbed. This looseness also permits the ends of the labels to be withdrawn from between the belts transversely, as shown in Fig. 10, as the roll 24 moves downwardly as previously described.

With reference to Fig. 7, it will be noted that in the operations as previously set forth, the individual labels are severed accurately on the lines 88, so that the openings 89 on these lines are bisected. In the finished roll, as shown in Fig. 15, the bisected apertures 89 form at opposite edges of the label spaced recesses 89a which define therebetween a free tab 158 which may be readily grasped by the fingers for removing the label from the roll when the latter is to be placed in use. These labels preferably are made in accordance with the principles set forth in my copending application Serial Number 687,355, filed August 29, 1933.

The operation of the machine will be readily understood from the foregoing description, and it will be understood that there may be some modification in the structural details of the machine without departure from the invention as defined in the appended claims. While the illustrations have been confined to application to rolls of labels not exceeding in width the length of rolls, it will be apparent that a machine of the character described may be used to apply wrappers of greater width, the projecting ends of which are subsequently folded or tucked in against the ends of the roll.

I claim:

1. In a machine for wrapping paper rolls, the combination with roll-conveying means, of means for supporting a wrapper element in the path of said roll, and means operative on opposite ends of said wrapper to cause the latter to embrace the roll with the ends thereof in overlapped relation, said means comprising an element operative to retain the underlapped end of the wrapper in position against the roll until said end is engaged by the overlapped portion.

2. In a machine for wrapping paper rolls, the combination with a carrier for said rolls, of means for supporting a wrapper in the path of said rolls, means associated with said support to adjust the wrapper to partially encircle said roll, and means positioned at opposite sides of the path of travel of said roll and operative on the ends of said wrapper as it leaves the support to adjust said ends into engagement with the roll and in relatively overlapped relation, said means comprising an element operative to retain the underlapped end of the wrapper in position against the roll until said end is engaged by the overlapped portion.

3. In a machine for wrapping paper rolls, the combination with a movable carrier for said rolls, of means for supporting a wrapper in the path of said rolls, said support including pivoted elements normally projecting from opposite directions into the path of said roll, means for resiliently supporting said elements in said normal position and permitting adjustment of said elements from the said path by the rolls as they are advanced on the carrier, elements operative on the free ends of said wrapper to bring said ends into a complete roll-encircling and overlapped position, said means being actuated by the movement of said pivoted support elements from the path of said roll.

4. In a machine for wrapping paper rolls, the combination with a movable carrier for said rolls, of a support for a wrapping element comprising elements projecting from opposite sides into the path of said rolls and displaceable from said path by engagement of the roll with the carrier, means releasable by displacement of said elements from the path of the roll for engaging opposite sides of the roll, means for feeding wrappers periodically to said support, said last-named elements being adapted to engage the ends of said wrapper as it is carried away from the support by the roll to cause the said ends to completely embrace the roll and to lie in overlapped position.

5. In a wrapping machine for paper rolls, the combination with a carrier for said rolls, of means for supporting a wrapper element in the path of said rolls, said support including movable elements normally projecting into the path of said roll and movable to permit passage of said roll through the support, said elements being effective to cause the wrapper to partially embrace said roll, a pair of weighted arms pivotally mounted at opposite sides of the path of said roll and movable by said weights into engagement with the ends of said wrapper as it leaves the support to thereby complete the wrapping operation and to cause said ends to engage the roll in relatively overlapped relation, means for normally supporting said pivoted arms in positions removed from the path of said roll and for returning said arms to said normal positions following completion of each wrapping operation, and means actuated by movement of said movable wrapper support elements to release said arms from the normal positions.

6. In a wrapping machine for paper rolls, the

combination with a carrier for said rolls, of means for supporting a wrapper element in the path of said rolls, said support including movable elements normally projecting into the path of said roll and movable to permit passage of said roll through the support, said elements being effective to cause the wrapper to partially embrace said roll, a pair of weighted arms pivotally mounted at opposite sides of the path of said roll and movable by said weights into engagement with the ends of said wrapper as it leaves the support to thereby complete the wrapping operation and to cause said ends to engage the roll in relatively overlapped relation, means for normally supporting said pivoted arms in positions removed from the path of said roll and for returning said arms to said normal positions following completion of each wrapping operation, means actuated by movement of said movable wrapper support elements to release said arms from the normal positions, and means for feeding wrappers periodically to said support in timed relation with the movement of said roll carrier.

7. In a wrapping machine for paper rolls, the combination with a rotary member, of a plurality of pins mounted for sliding movement in said rotary member axially of the latter, a fixed cam operatively associated with said rotary member, resilient means for maintaining operative engagement between the cam and said pins, said cam being constructed and arranged to retain the pins in an advanced position during a portion of their rotational movement with the carrier and permitting retraction of said pins during another part of said movement, means positioned in the path of said pins when the latter are in the advanced position for applying a wrapper element to a roll carried by said pins, and means operative by retraction of the pins for stripping the wrapped rolls from the pins.

8. In a machine for applying dry wrappers to paper rolls, the combination with roll-conveying means, of mechanism cooperative with said conveyer for applying wrappers to said rolls with the ends of the wrapper in overlapped relation, said mechanism comprising elements respectively engaging the said ends of the wrapper and operative to lay said ends against the roll, and means for synchronously actuating said elements whereby the element engaging the underlapped end of the wrapper is operative to retain said end in position until engaged by the overlapped end.

9. In a machine for applying dry wrappers to paper rolls, the combination with roll-conveying means, of mechanism cooperative with said conveyer for applying wrappers to said rolls with the ends of the wrapper in overlapped relation, said mechanism comprising elements respectively engaging the said ends of the wrapper and operative to lay said ends against the roll, means for synchronously actuating said elements whereby the element engaging the underlapped end of the wrapper is operative to retain said end in position until engaged by the overlapped end, and means for applying an adhesive to the under surface of said overlapped end portion.

10. In a machine for applying dry wrappers to paper rolls, the combination with roll-conveying means, of mechanism cooperative with said conveyer for applying wrappers to said rolls with the ends of the wrapper in overlapped relation, said mechanism comprising an element engageable with one end of the wrapper to lay said end against the roll, a second element engageable with the opposite end of the wrapper to lay said end against the roll in overlapped relation with the end first named, and means for synchronously actuating said elements, said first-named element retaining the underlapped end in position until said end is engaged by the overlapping portion.

11. In a machine for applying dry wrappers to paper rolls, the combination with roll-conveying means, of mechanism cooperative with said conveyer for applying wrappers to said rolls with the ends of the wrapper in overlapped relation, said mechanism comprising an element engageable with one end of the wrapper to lay said end against the roll, a second element engageable with the opposite end of the wrapper to lay said end against the roll in overlapped relation with the end first named, means for synchronously actuating said elements, said first-named element retaining the underlapped end in position until said end is engaged by the overlapping portion, and means associated with the first-named element for applying adhesive to the contacting surfaces of the overlapped ends.

12. In a machine for applying dry wrappers to paper rolls, the combination with roll-conveying means, of mechanism cooperative with said conveyer for applying wrappers to said rolls with the ends of the wrapper in overlapped relation, said mechanism comprising elements respectively engageable with the opposite ends of the wrapper, means for actuating one of said elements to lay one end of the wrapper against the roll and to temporarily retain it in position, means for actuating the other of said elements to bring the other end of the wrapper into overlapping engagement with the end first named, and means for retracting the first-named element subsequent to said engagement.

13. In a machine for applying dry wrappers to paper rolls, the combination with roll-conveying means, of mechanism cooperative with said conveyer for applying wrappers to said rolls with the ends of the wrapper in overlapped relation, said mechanism comprising elements respectively engageable with the opposite ends of the wrapper, means for actuating one of said elements to lay one end of the wrapper against the roll and to temporarily retain it in position, means for actuating the other of said elements to bring the other end of the wrapper into overlapping engagement with the end first named and into engagement with said first-named element, means on the latter element for applying adhesive to the inner surface of said overlapping end, and means for retracting the first element to permit the second element to complete the overlapping operation.

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