July 4, 1939. F. H. MEYER 2,164,935

METHOD AND APPARATUS FOR FORMING PARCEL HANDLES

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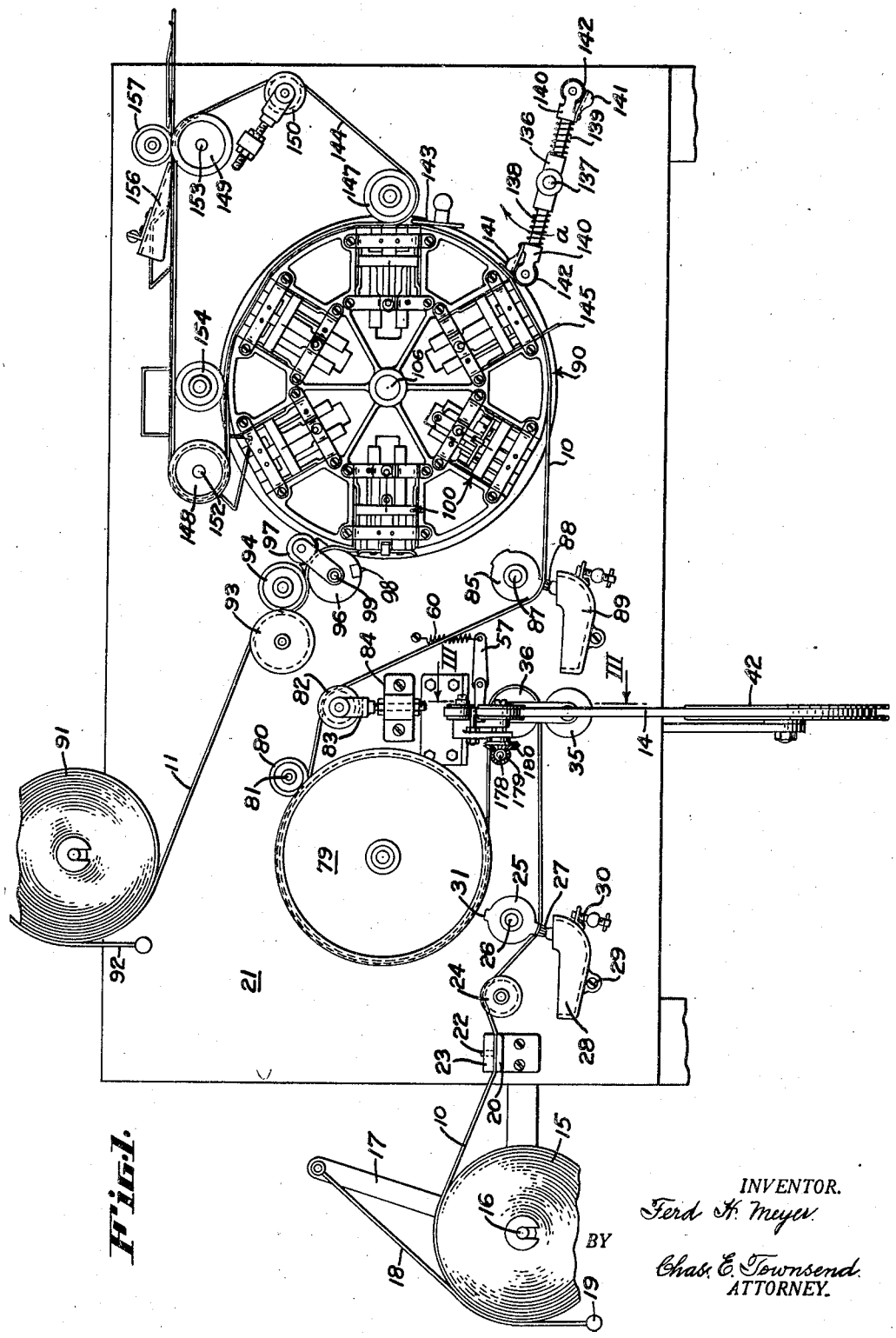


Fig. 1.

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Fig. 2.

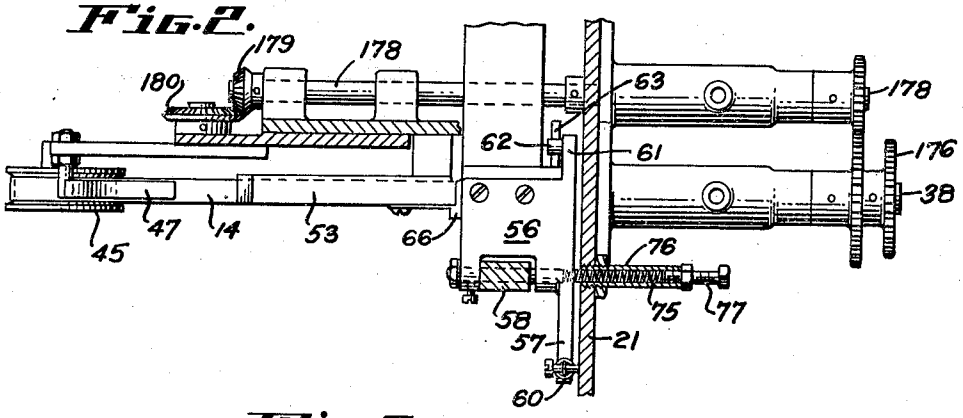


Fig. 3.

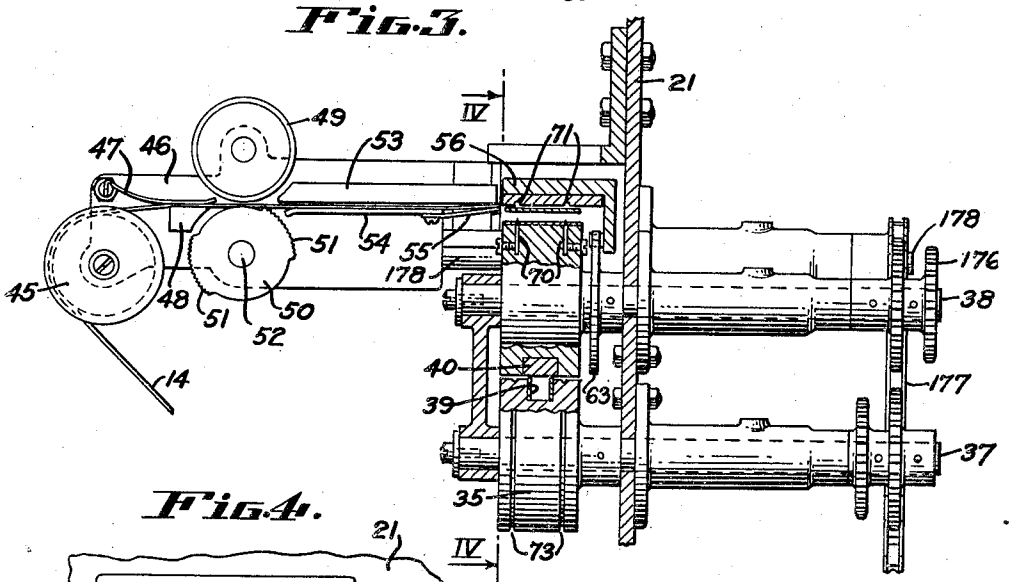
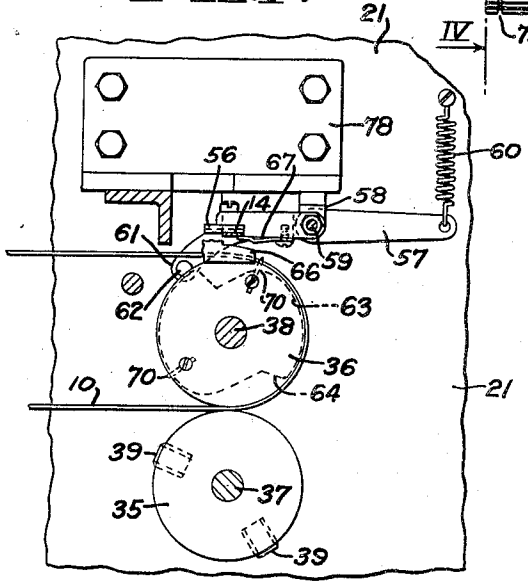


Fig. 4.



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Fig. 5.

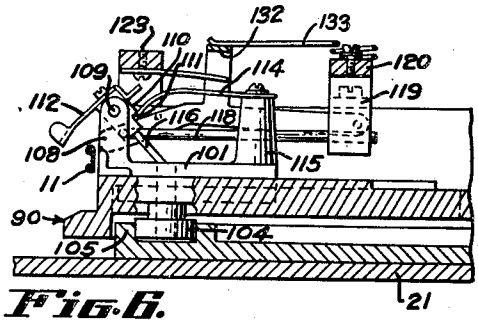


Fig. 9.

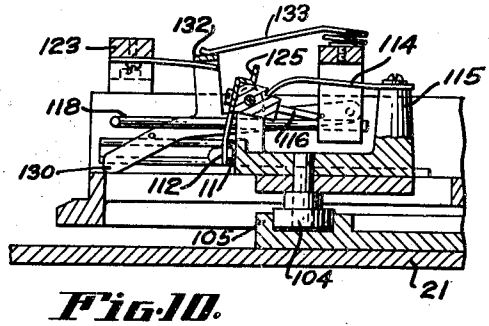


Fig. 6.

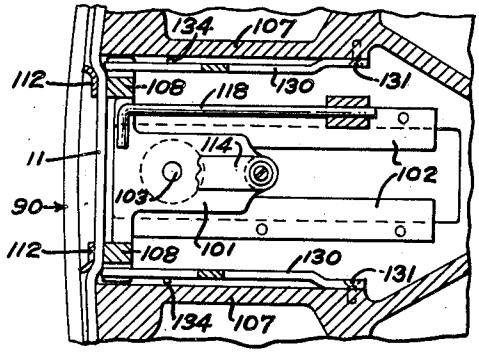


Fig. 10.

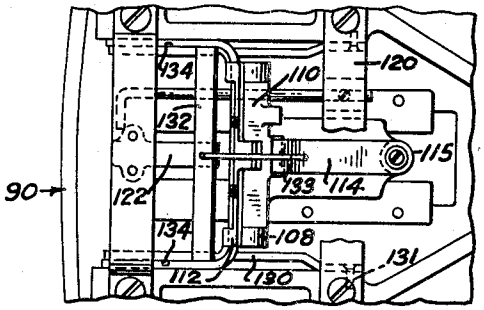


Fig. 7.

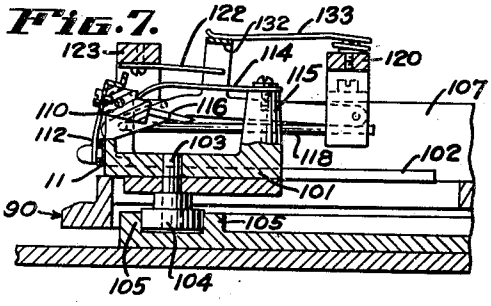


Fig. 11.

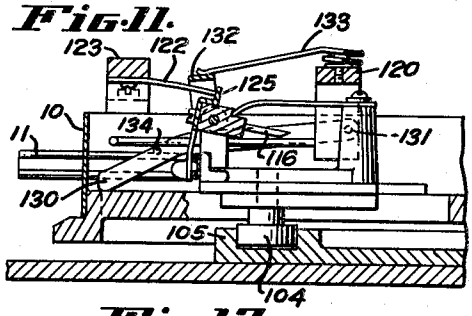


Fig. 8.

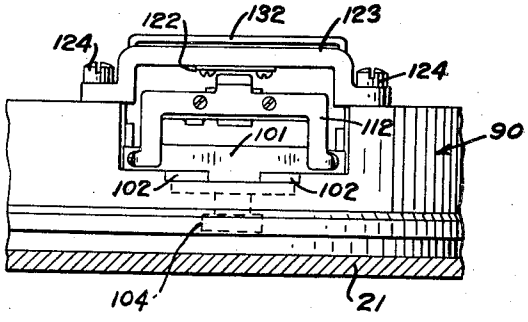
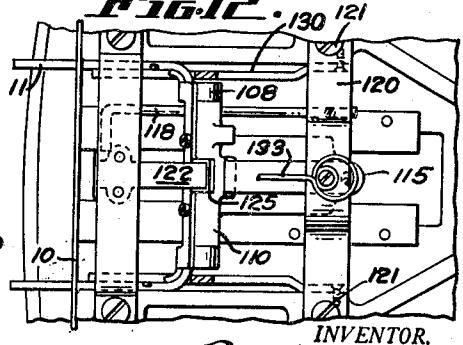


Fig. 12.



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Fig. 13.

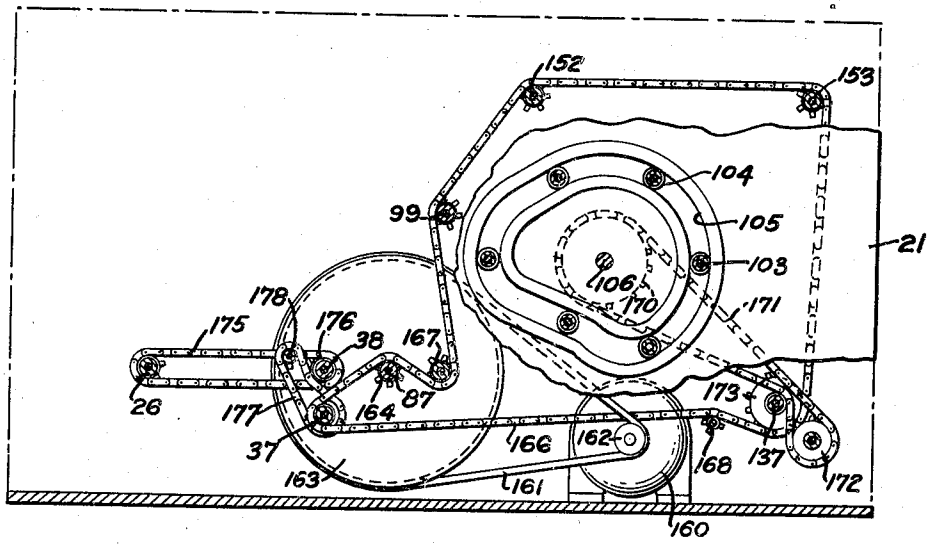
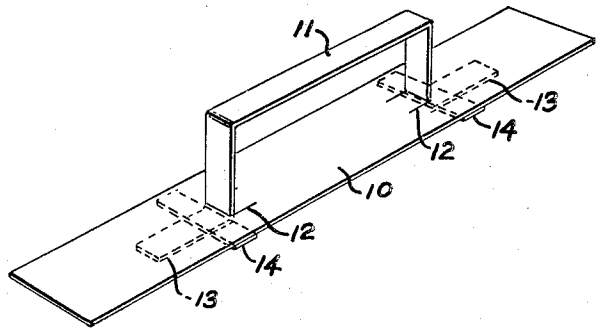


Fig. 14.



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UNITED STATES PATENT OFFICE

2,164,935

METHOD AND APPARATUS FOR FORMING PARCEL HANDLES

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Application August 2, 1937, Serial No. 156,962

11 Claims. (Cl. 93—1)

This invention relates to a method and apparatus for forming parcel handles of the gummed-paper type and particularly that type of handle disclosed in a copending application of Woodford F. Harrison entitled "Parcel handle", Serial No. 135,495, filed April 7, 1937.

The handle disclosed in the said copending application comprises a body member formed of an elongated strip of gummed paper and a reinforced paper bail member. The body member is perforated, and the ends of the bail member extend through the perforation, terminating on the gummed surface to which they are secured through the medium of the gum thereon. Preferably, a reinforcing paper strip extends transversely of the body member on the gummed surface thereof adjacent the perforation to strengthen the same and distribute the strain of the narrow bail member throughout the entire width of the body member.

It is the object of the present invention to provide a method and apparatus for efficient quantity production of such parcel handles.

It is a further object of this invention to provide a method whereby materials for the body member, the bail, and the reinforcing strips of such a handle, supplied in continuous lengths or rolls, may be formed into handles, and to provide mechanism operating automatically to lead said materials from supply rolls, cut, perforate and combine them rapidly and efficiently.

One form of the invention is exemplified in the accompanying drawings and described in detail in the following specification wherein further objects and advantages of the invention are made apparent.

In the drawings—

Fig. 1 is a front elevation of a machine embodying my invention, and constructed to manufacture parcel handles according to my method;

Fig. 2 is an enlarged horizontal sectional view of a portion of the mechanism shown in Fig. 1 for applying reinforcing strips to the parcel handle;

Fig. 3 is a sectional view of the same mechanism taken on line III—III of Fig. 1;

Fig. 4 is a sectional view taken on line IV—IV of Fig. 3;

Figs. 5 to 12, inclusive, are enlarged detail views of the portions of the mechanism illustrated in Fig. 1 for receiving the bail member of the handle forming it into the shape of a U or staple, and projecting its ends through perforations in the body member of the handle;

Fig. 13 is a front elevation similar to Fig. 1, but with the major portion of the supporting plate and operating mechanism of the machine removed to disclose the drive means and connections between the same and the several driven units of the machine and also to disclose the structure of a cam which operates the bail-forming members; and

Fig. 14 is a perspective view of a handle formed by the machine.

Referring first to Fig. 14 of the drawings, a typical handle constructed by the machine is shown as comprising a body member 10 of gummed paper tape, and a bail member 11 formed of a strip of suitable flexible material such as folded reinforced paper tape. The body member is perforated as at 12 by U-shaped slits to produce tabs which may be forced away from the plane of the body member by the projection against them of the ends of the bail member 11. The extreme ends 13 of the bail member, after having been forced through the perforations 12, are bent against and glued to the under gummed surface of the body member 10. Reinforcing strips 14 of durable paper, preferably gummed on one side, are secured transversely of the body member 10 adjacent the perforations 12, and preferably before the bail member has been inserted.

Referring now to Fig. 1 of the drawings, the gummed paper tape 10 of which the body members of the handles are to be formed, is shown as carried on a roll 15 which is rotatably mounted on a shaft 16. A bracket 17, extending upwardly from the roll 15, carries a flexible fabric tape 18 with a weight 19 at its lower end causing it to frictionally engage the roll 15 and prevent undesired rotation of the roll 15 but permit it to rotate as the tape is drawn from it. From the roll 15, the paper 10 is laid over a guide plate 20 which is in the form of an angle-shaped bracket secured to the main plate 21 which serves as a common support for the several mechanisms hereinafter to be described. A pair of pins 22 projecting upwardly from the plate 20 guide and slidably support a weight 23 which acts as a friction brake to provide further resistance to the feed of the tape from the roll 15.

From this point the tape passes over an idler roller 24 and then through a driven cam 25 which will be referred to as a wetting cam carried on a driven shaft 26. The radius of the cam 25 is such that the lower or gummed surface of the tape 10 is normally spaced a slight distance above a wick 27 which has its lower end depending into a water reservoir 28. The reservoir 28 is pivotally sup-

ported with relation to the main plate 21 by means of a pin 29 and is provided with an adjusting screw 30 to rotate it about its pivotal support 29 and thus vary the distance existing between the upper end of the wick 27 and the lower surface of the tape 10. Spaced lobes 31 on the wetting cam 25 contact the tape 10 as the cam is rotated, and the speed of rotation of the cam is so timed with relation to the movement of the tape that these lobes force the tape downwardly into contact with the wet wick 27 at intervals which will cause the gum of the tape to be wetted for reception of the reinforcing strips 14, shown in Fig. 14.

After the tape has been moistened for reception of the reinforcing strips 14, it passes between a knife-carrying roller 35 and a roller 36, both of which are positively driven, and the details of construction of which are best illustrated in Fig. 4. The knife-carrying roller 35 is driven by a shaft 37, and the roller 36 is driven by a shaft 38. U-shaped knives indicated at 39 are recessed into the peripheral surface of the roller 35 and have cutting edges projecting therefrom to engage and cut the perforations 12 in the paper tape as it passes over the roller 36. It is desirable, as illustrated in Fig. 3 of the drawings, that the roller 36 be provided with bronze or other relatively soft inserts 40 at the point where it is contacted by the knives 39 so that the action of the knife against this roller will not tend to dull its cutting edge.

After the perforations have been cut in the paper 10, it is led around and over the top surface of the roller 36, and as it passes the topmost point of this roller, a strip of reinforcing paper is pressed against it, this strip being applied intermittently and its application being timed so that it is deposited upon that portion that has been wetted by the wick 27. Reinforcing strips are fed from a continuous length carried by a reel illustrated at 42 in Fig. 1, and the mechanism for feeding the strips, for cutting them to proper length and pressing them against the wetted surface of the gummed paper tape is illustrated in detail in Figs. 2, 3 and 4.

The tape 14 of which the reinforcing members of the handles are formed, and which is carried on the reel 42, is shown in Fig. 3 leading upwardly over an idler roller 45 carried at the outer end of a bracket 46 which extends outwardly from the face of the plate 21. A friction brake in the form of a spring finger 47 presses the tape 14 downwardly against a guide block 48 and frictionally resists the intermittent feeding of this tape, which is accomplished by its passage between a rubber-faced idler roller 49 and a driving roller 50. The driving roller 50 has two raised portions 51 on its periphery with roughened surfaces so that upon rotation of the roller 50, which is positively driven by shaft 52, the surfaces 51 will intermittently engage and feed the tape by pressing it against the resilient surface of the idler roller 49.

The tape 14 is then guided between the top and bottom guide plates 53 and 54, respectively, and as it leaves the inner end of the guide plate 53, it is held against the lower surface of the same by means of a spring finger 55. This intermittent feeding of the reinforcing tape 14 causes its free end to be projected to a position overlying the uppermost surface of the roller 36 and underlying a presser plate 56. The presser plate 56, as best illustrated in Fig. 4 of the drawings, is carried by a lever arm 57 which is pivotally supported on a bearing member 58 by means of a pin 59. A spring 60 normally urges the presser plate 56 downwardly, and it is held upwardly against the tension of the spring 60 by means of a finger 61 which carries a pin 62 contacting the periphery of a cam 63 positioned directly behind the roller 36 and rotatable therewith. This cam 63 has peripheral depressions 64 into which the pin 62 drops as it rotates to permit the presser plate to snap downwardly against the paper tape 10 as it passes over the roller 36. The outer edge of the presser plate 56 is of hardened steel and cooperates with a blade 66 to shear the tape 14 and thus separate from the main supply thereof that portion which has been positioned between the roller 36 and the presser plate 56. A spring finger 67 maintains the sheared strip of the tape 14 against the lower surface of the presser plate as it is moving downwardly, and until it contacts the wetted portion of the tape 10 to which it is to be secured.

The gummed tape 10 is moving continuously as the reinforcing strip is applied to it so there is a tendency for the strip to slip or skid as it engages the tape. This is particularly true due to the fact that the gum on the tape is wet and because the moisture applied to the tape may be slightly greater at some times than others. Furthermore, re-moistening gums such as are commonly used vary in their characteristics to the extent that some are more slippery when wetted than others. In order to prevent slipping of the reinforcing strips and insure their adherence to the tape 10 in the proper place and position the means presently to be described are provided. At the points on the periphery of the roller 36 where the reinforcing strip is to be applied by the presser plate 56, this roller is provided with sharp pins 70 (see Figs. 3 and 4) which extend radially of the roller and are secured therein by means of set screws. The points of the pins 70 project outwardly to pierce the paper tape 10 and to project into the reinforcing strip as it is pressed against the paper tape 10 and thus prevent the strip from skidding or slipping out of position. The lower surface of the presser plate 56 is provided with recesses 71 to prevent damage to the ends of the pins 70, and the roller 35 is provided with peripheral grooves 73 which also register with the pins 70 to prevent damage to their points as they pass this roller.

In order to secure a good shearing action between the outer edge of the presser plate 56 and the knife 66, a spring 75 (see Fig. 2) is carried in a tubular housing 76 at the back of the main plate 21 and is pressed by a screw 77 forwardly and into contact with the rear surface of the lever 57, tending to urge that lever outwardly on its pivotal support 59. The bearing member 58 through which this pivot 59 extends projects downwardly from an angle plate 78 secured to the main plate 21.

After the reinforcing strips have been applied, the tape 10 passes over a large idler drum 79. In passing over this drum, a slight pressure is applied to the reinforcing strips, and time is permitted for the gum beneath them to dry or set so that they will be securely held in their proper position on the tape. Contacting the tape as it leaves the drum 79 is a rubber-surfaced pressure roller 80 rotatable on a shaft 81 to apply a final pressure desirable to insure firm adherence of the reinforcing tape.

The tape then passes over an idler 82 carried

in a yoke 83 which is supported for vertical adjustment in a bracket 84 so that the length of the tape passing between the drum 79 and the point where the bails are applied thereto may be varied to synchronize the position of the perforations in the tape with the bail-inserting mechanism.

Next the tape passes through a wetting mechanism comprising a driven cam 85 carried by the shaft 87. A wick 88 depends into a reservoir 89 and this wetting mechanism is identical to the one shown at 28, but is designed to wet areas extending centrally and longitudinally of the tape rather than transversely of the tape, as this wetting is done in preparation for the application to the tape of the bail members, the ends of which are secured by the wetted gum to the gummed surface of the tape as illustrated in Fig. 14.

After the tape leaves the wetting mechanism, it passes around the periphery of the bail-forming and bail-inserting drum which is generally indicated at 90, and which serves the purpose, as will presently be described, of shaping the bails and projecting their ends through the perforations in the tape 10 so that they may be secured thereto by means of the moistened gum.

The tape 11 from which the bails are to be formed may be, of course, of any flexible durable material, but the tape illustrated in the present instance is that referred to in the above mentioned copending application. This tape comprises a paper strip gummed on one side and having its edges folded inwardly to embrace a pair of reinforcing twines and to abut each other at the center of the gummed surface. The tape 11 is carried on a reel 91 provided with a weighted friction tape 92 similar to the weighted tape 18 heretofore described. The tape 11 is led from this reel between an idler 93 and a rubber-surfaced idler 94. A knife-carrying roller 96 cooperates with an idler 97 against which a knife 98 acts to sever the tape 11 as it passes between roller 96 and idler 97. The roller 96 is positively driven on a shaft 99 so that the tape is severed at predetermined intervals and separate lengths thereof are projected downwardly alongside the bail-forming drum 90.

These lengths of bail strip 11 are received by the bail-forming heads generally indicated at 100, six of which are provided in the bail-forming drum, and each piece is shaped by them into a staple, the ends of which are projected through the perforations of the tape. The construction of the heads and the manner in which they operate to form a bail is best illustrated in Figs. 5 to 12, inclusive.

Each of the heads 100 comprises a block 101 mounted for reciprocating movement radially of the drum 90. The block 101, as illustrated in Fig. 8, has grooved sides which embrace a pair of parallel guide members 102, and has an inwardly extending pin 103 carrying at its inner end a roller 104 riding between cam tracks 105 (see also Fig. 13). The cam tracks 105 are shaped to impart a desired reciprocal movement to the block 101 as the drum 90 is rotated by its shaft 106. The block 101 reciprocates within a rectangular box, the side walls of which are cast as at 107 on the forward face of the drum 90.

As a piece of the bail tape 11 is severed, it occupies a position tangent to the drum 90 at the extreme left-hand side thereof, as viewed in Fig. 1, and directly opposite the outer end of one of the bail-forming heads 100. In this position of a head 100, the block 101 thereof has been advanced outwardly by its roller 104 and the cam tracks 105 until its outer face is approximately flush with the periphery of the drum 90, as illustrated in Fig. 5.

Spaced brackets 108 at the forward end of the block 101 carry a bearing pin 109 upon which is rotatably mounted an elongated block 110 of rectangular cross-section and having a notch 111 formed in one corner thereof. This block 110 carries a U-shaped gripper finger 112 (see also Fig. 8) which cooperates with the forward face of the block 101 to grasp and retain the bail tape 11 at approximately the instant that it is severed from the main supply by means of the knife 98. The gripper finger 112 is held in either its open position or its closed position by means of a spring 114 supported on a post 115 at the inner end of the block 101 and engaging with the notch 111 in a manner to exert pressure against the rotatable block 110 either above or below a line passing through its center of rotation so that the finger 112 may be snapped either to its open or closed position against the tension of the spring 114 and retained in either position by the same spring. A pin 116 projecting from the inner end of the block 110 strikes against the block 101, as illustrated in Fig. 5, to limit the opening movement of the gripper finger 112, and the closing movement thereof is limited by the engagement of the finger with the tape 11 positioned against the forward face of the block 101.

As theb lock 101 slides outwardly to the position of Fig. 5, the rotatable block 110 engages the bent end of a rod 118 carried by a lug 119 on a bracket 120, which bracket spans the head member and is secured to the front face of the drum 90 by means of screws 121. This causes the finger 112 to close against the tape 11, as illustrated in Fig. 7, and as the drum 90 continues in its rotary movement, the block 101 is retracted by means of its roller 104 and the cam tracks 105, and the ends of the tape member 11 are drawn into the box formed by the side walls 107 so that the tape is caused to assume the shape of a staple as illustrated in Fig. 10.

While the bail member is being thus grasped and formed into the shape of a staple, the head 100 by which it was originally received has moved from its position at the left-hand side of the drum in Fig. 1 to a position approximately at the bottom of the drum where the perforated handle tape 10 is stretched across its outer face, the shape of the cam tracks 105 then causes the block 101 carrying its U-shaped staple to be advanced outwardly, and during this outward movement the ends of the bail tape 11 are projected through the perforations in the tape 10 as shown in Fig. 11 a sufficient distance to permit of their being bent over and secured to the wetted gum on the under surface of the handle tape.

At this point, a resilient finger 122 carried by a bracket 123 which spans the head member and is secured thereto by means of screws 124, engages an upstanding ear 125 of the gripper finger 112 and rocks this finger to its open position, thus releasing the bail member 11 and permitting it to be carried away from the drum 90 as the handle tape 10 subsequently leaves the drum.

As the bail strip is drawn into the space between the walls 107 which impart to it its staple-like shape, there may be some tendency for its ends to curl inwardly toward each other and away from these walls. To obviate this tendency and

maintain sufficient rigidity of the bail strip to enable it to be forced readily through the perforations 12 of the body member, it is guided in its movement along the walls 107 by finger 130. The fingers 130 are pivotally connected by screws 131 to the walls 107, and are connected together by a bridge 132. A spring 133 supported on the bracket 120 engages the bridge 132 to urge the outer ends of the fingers 130 to their guiding position as illustrated in Figs. 9 and 11. The fingers 130 are spaced from the walls 107, a distance approximately the thickness of the bail strip 11 so that this strip may be slidably received between the fingers and the walls. Short pins 134 (see Fig. 10) are carried by the fingers 130 to engage the upper edge of the bail strip and prevent any undesired movement thereof in the plane of the walls 107. When the block 101 moves outwardly to release the bail and receive a new strip to be formed into a bail, its forward or outer edge engages the fingers 130 which are inclined downwardly at their outer ends, and lifts them out of their guiding position, as illustrated in Figs. 5 and 7. As the block 101 recedes, the spring 133 urges the fingers back to their guiding position so that they embrace and guide the ends of the bail strip as it is being pulled into the space between the walls 107. After the bail has been formed by one of the heads 100, the forward movement of the block 101 causes the ends of the bail strip to be projected outwardly through the perforations of the body member 10, as illustrated in Figs. 11 and 12, and this occurs when the head 100 is at approximately the lowermost point of its circular path of travel.

Of the two ends of the bail strip which are projected, one must be bent forwardly with respect to the path of travel of the drum 90 so that it may be pressed against the wetted gum of the tape 10, and for the same reason, the other must be bent rearwardly. The means for bending forwardly one of the ends of the bail member are shown in Fig. 1 of the drawings where a sleeve 136 is illustrated as mounted on a rotatable shaft 137. A rod 138 is slidably mounted in the sleeve 136, and the springs 139 interposed between the ends of the sleeve 136, and heads 140 carried by the ends of the rod, tend to centralize the position of the rod and to resist its sliding movement through the sleeve 136 in either direction. The heads 140 carry small metal wipers 141 and resilient pressure rollers 142. The rotation of the shaft 137 in the direction of the arrow *a* is so timed with relation to the movement of the drum 90 that when the ends of the bail members are projected through the tape 10 to extend radially outwardly from the drum 90, the first of these ends is engaged by the wiper 141 to bend it in the direction of travel of the drum 90 toward the wetter spot on the gummed surface of the tape 10.

The roller 142 which immediately follows the wiper 141 and which serves as a resilient pressure member due to the sliding mounting of the rod 138 and the pressure of the springs 139, presses the end of the bail member against the wetted spot where it remains until it passes under a stationary guide and wiper 143 and then under a belt 144 which follows the periphery of the drum throughout about one-quarter of its circumference to hold the end of the bail member against the wetter spot during drying of the gum. The second projecting end of the bail member which is illustrated at 145 in Fig. 1 is unaffected by either of the rollers 142, but is bent rearwardly by the plate 143 just before it enters beneath the belt 144.

The belt 144 leads over drums 147, 148 and 149, and an adjustable tightening roller 150, and is thus held in firm contact with the periphery of the drum 90, the tape 10 and the ends of the bail members passing between the drum 90 and the belt 144 to insure proper adherence of the ends of the bail member to the wetted gum of the tape. The drums 148 and 149 are carried by driven shafts 152 and 153 respectively, rotation of these shafts being timed to cause the belt to travel at the same rate of speed as the drum 90 so that it follows the periphery of the drum and does not slip or slide thereon to result in disturbance of the members being dried.

A rubber-faced pressure roller 154 is preferably mounted to bear against the inner surface of the belt 144 at the point where it leaves the drum 90, and thus supplement the pressure of the belt itself and further insure adherence of the ends of the bail member.

The tape 10 with the completed bail member secured thereto follows the belt 144 over the drum 148. The bail members which then project upwardly from the top surface of the tape 10 in the form of a rectangle are folded or laid flat against the surface of the tape 10 by means of a stationary wiper plate 156 under which they pass. A rubber-faced pressure roller 157 bearing directly against the drum 149 imparts sufficient pressure to crease the material of the bail members and retain them in their flat folded position.

The handle members which are now completed as they leave the machine may be fed into any suitable mechanism for rolling them, folding them, or cutting them apart, depending upon the type of dispensing mechanism in which they are eventually to be contained. In the event that it is desired to maintain them in the form of a continuous strip from which the single handles may be torn as they are delivered from a dispensing device, it is foreseen that it may be desirable to perforate or weaken in some way the tape 10 between adjacent handle members. Suitable perforations may be provided in the tape 10 for this purpose by means of an auxiliary knife or perforator blade carried by the roller 35 (see Figs. 1 and 4) which carries the knives 39 for forming the perforations 12.

Referring to Fig. 13 of the drawings, a motor 160 is illustrated as disposed behind the main plate 21 to actuate all of the driven parts of the machine. A main drive belt 161, driven by a pulley 162 on the motor, drives a pulley 163 carrying a small sprocket 164 fixed to the shaft 87 which is driven thereby. A chain 166 is driven by the small sprocket 164, and meshes with an idler sprocket 167 and sprockets on the shafts 99, 152, 153, 137, and an idler sprocket 168, and a sprocket on the shaft 37. The drum 90 which carries the bail-forming heads is driven by a sprocket 170 on its shaft 106 and a chain 171 which passes over an idler sprocket 172, and is driven by a sprocket 173 also fixed to the shaft 137. The shaft 26 is driven by a chain 175 which is driven from a sprocket on the shaft 38, this shaft receiving its driving movement through a sprocket 176 engaged by a chain 177 which meshes with a sprocket on the shaft 37 and also drives the shaft 178. The shaft 178, as shown in Figs. 1 and 2 of the drawings, extends through the plate 21 and carries at its forward end a beveled gear 179 meshing with a similar gear 180 affixed to the shaft 52 which carries and rotates the cam

50 (see Fig. 3) which intermittently advances the reinforcing strip 14.

In the foregoing description, the method of forming a parcel handle is described which comprises perforating the body member of the handle, then forming a bail strip into the shape of a staple and projecting its ends through the perforations in the handle. The apparatus illustrated for carrying out this method includes a rotary drum carrying the bail-forming heads. It should be understood, however, that the invention is not limited to the particular apparatus shown, but that the bail-forming means may vary in construction and may be stationary or movable in other than a circular path. Other modifications may also be resorted to in the construction and arrangement of the several parts of the invention as it is herein disclosed within the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. The method of forming a parcel handle comprising a body member of gummed paper tape and a bail member of flexible tape secured thereto which comprises perforating the body member, bending the bail member to the shape of a staple, and projecting its ends through the perforations in the body member.

2. The method of forming a parcel handle comprising a body member of gummed paper tape and a bail member of flexible tape secured thereto which comprises perforating the body member, bending the bail member to the shape of a staple, confining the bail member to such shape, and projecting its ends through the perforations in the body member while so confined.

3. The method of forming a parcel handle comprising a body member of gummed paper tape and a bail member of flexible tape secured thereto which comprises perforating the body member, bending the bail member to the shape of a staple, confining the bail member to such shape, projecting its ends through the perforations in the body member while so confined, bending the ends against the gummed surface of the body member, and then releasing the bail member from its confined position.

4. The method of forming a parcel handle having a gummed paper body member and a bail member formed of a flexible strip which comprises perforating the body member, wetting the gum thereon adjacent the perforations, then projecting the ends of the bail member through the perforations and pressing said ends against the wetted gum.

5. The method of forming a parcel handle having a gummed paper body member and a bail member formed of a flexible strip which comprises wetting the gum on the body member at spaced points, perforating the body member adjacent the wetted points, placing reinforcing members transversely of the body member at said points, then wetting the gummed surface again near the perforations, projecting the ends of the bail member through the perforations and pressing said ends against the wetted gum.

6. An apparatus for forming parcel handles which comprises means for moving a continuous strip of gummed tape, means for moving a flexible bail strip in timed relation thereto, means for severing the bail strip, and means for projecting the several ends thereof through the gummed tape during such movement.

7. In an apparatus for forming parcel handles, a forming head for receiving and shaping a flexible strip into the shape of a staple and ejecting the same, and means for passing a perforated tape over the end of said forming head whereby the ends of the staple-shaped strip will be passed through the perforations thereof.

8. In an apparatus for forming parcel handles, a bail-forming member comprising means for receiving a length of a flexible strip, means for drawing said strip into said bail-forming member, and means for projecting the ends of the strip from the forming member and through a tape disposed adjacent the forming member retaining the bail.

9. An apparatus for forming parcel handles comprising means for perforating a strip of gummed tape, means for wetting the gum thereof adjacent the perforations, means for forming bail members, means for projecting the ends of the bail members through the perforations in the tape, and means for pressing said ends against the wetted surface as the tape and bail-forming means move in a common path.

10. In an apparatus for forming parcel handles of gummed tape with flexible tape-like bail members, means for placing reinforcing strips transversely of a continuously moving strip of gummed tape which comprises means for feeding the reinforcing material intermittently, means for cutting it in short lengths, means for pressing said length against a wetted surface of the gummed tape at regular intervals corresponding to points where the bail members are to be secured to the tape, and means for projecting pin points through the tape and into the reinforcing strips to prevent skidding of the strips as they are applied to the wetted gum.

11. An apparatus for forming parcel handles of gummed tape with flexible bail members secured thereto which comprises a plurality of bail-forming heads supported in a rotatable drum, means for passing a continuous strip of gummed tape over said drum, means for perforating, means for reinforcing and means for wetting the tape as it approaches the drum, means in the bail-forming heads for projecting the ends of the bails formed thereby through the perforations in the tape passing over the drum, and means for engaging and pressing said ends against the wetted gum of the tape before the tape leaves the drum.

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