Nov. 13, 1923. 1,474,181

C. E. STEERE

WRAPPING MACHINE

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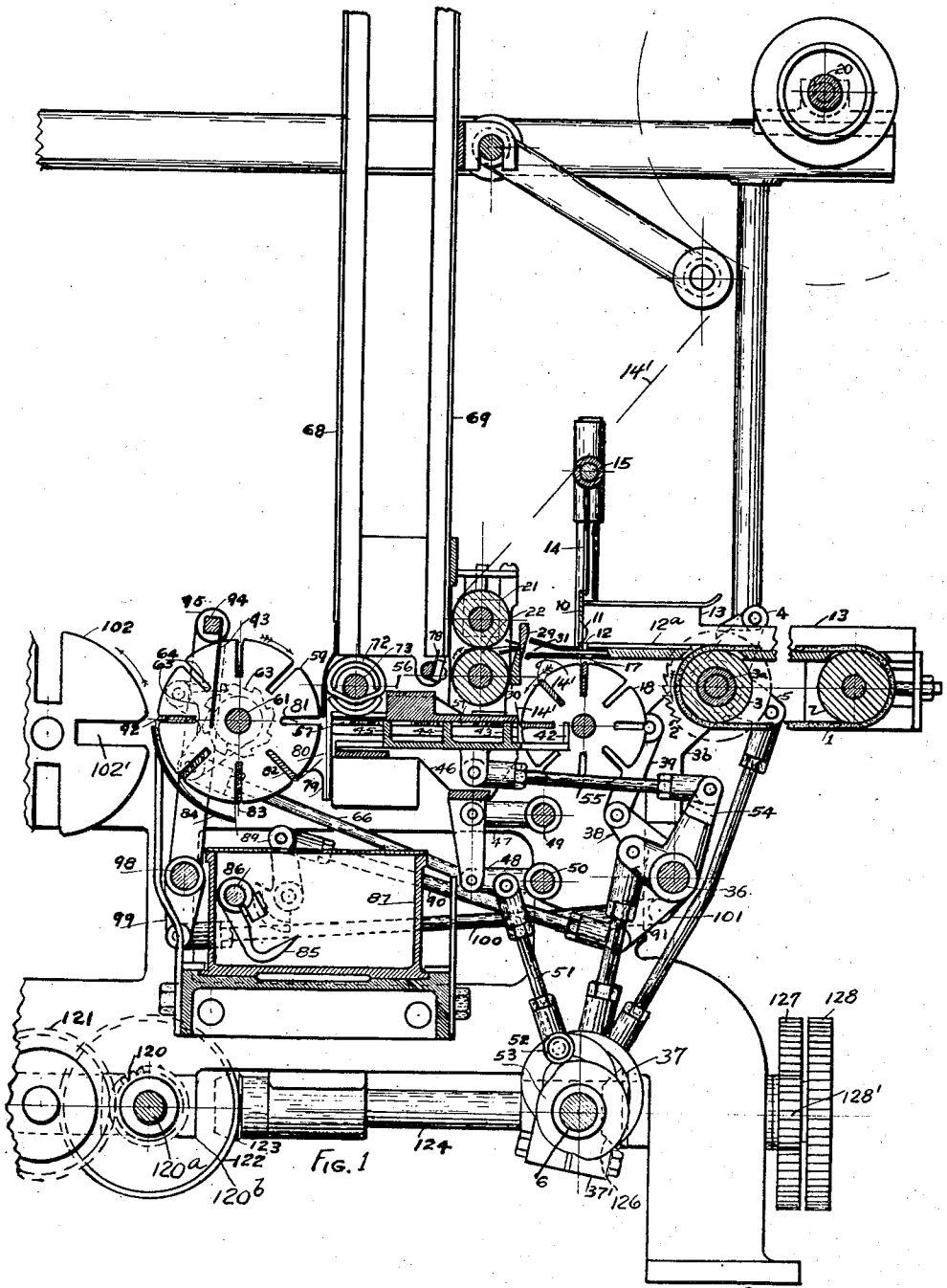


FIG. 1

Clarence E. Steere INVENTOR

BY James R. Townsend his atty

Nov. 13, 1923. 1,474,181

C. E. STEERE

WRAPPING MACHINE

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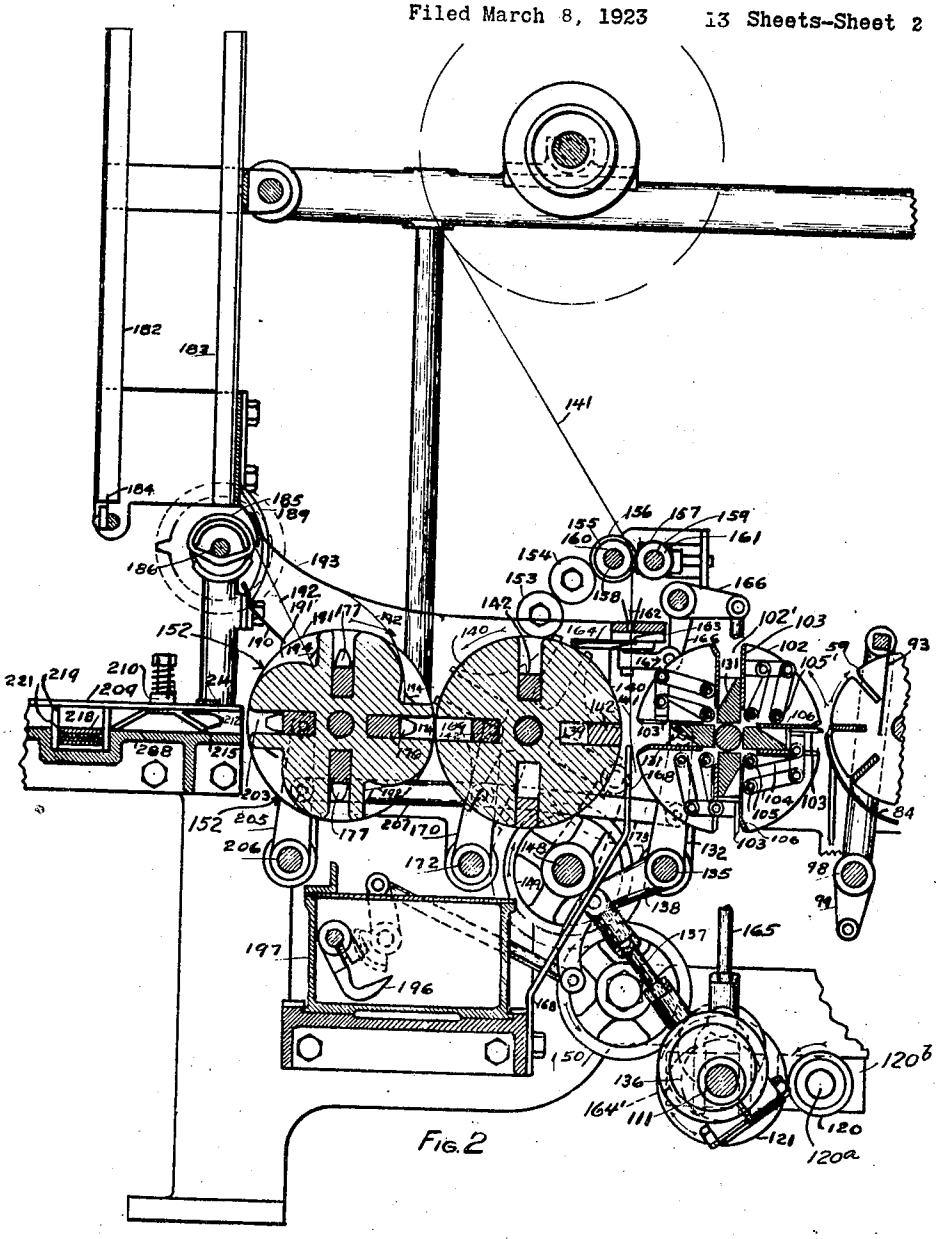


FIG. 2

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Nov. 13, 1923. 1,474,181

C. E. STEERE

WRAPPING MACHINE

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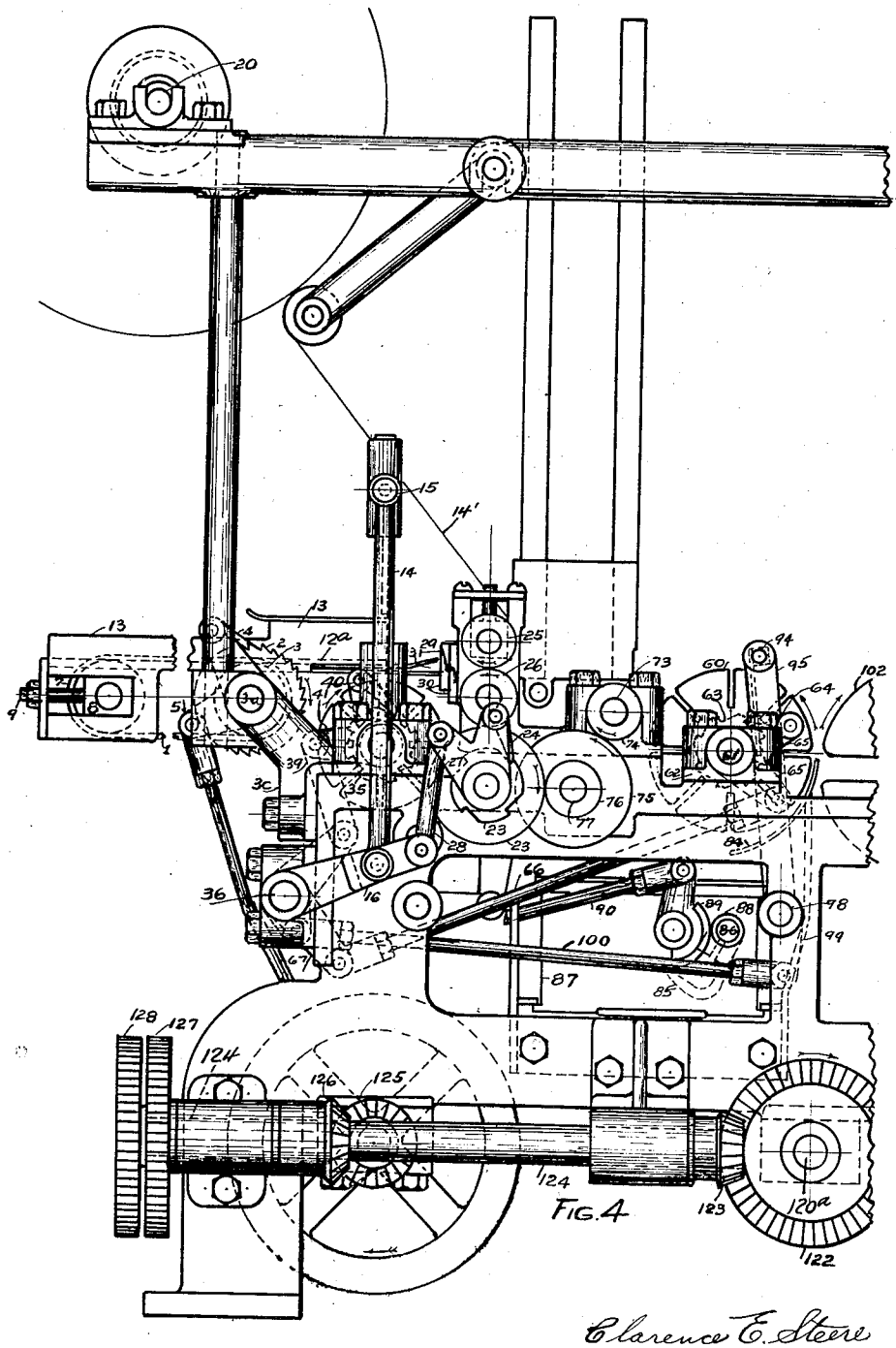


FIG. 4

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Nov. 13, 1923. 1,474,181

C. E. STEERE

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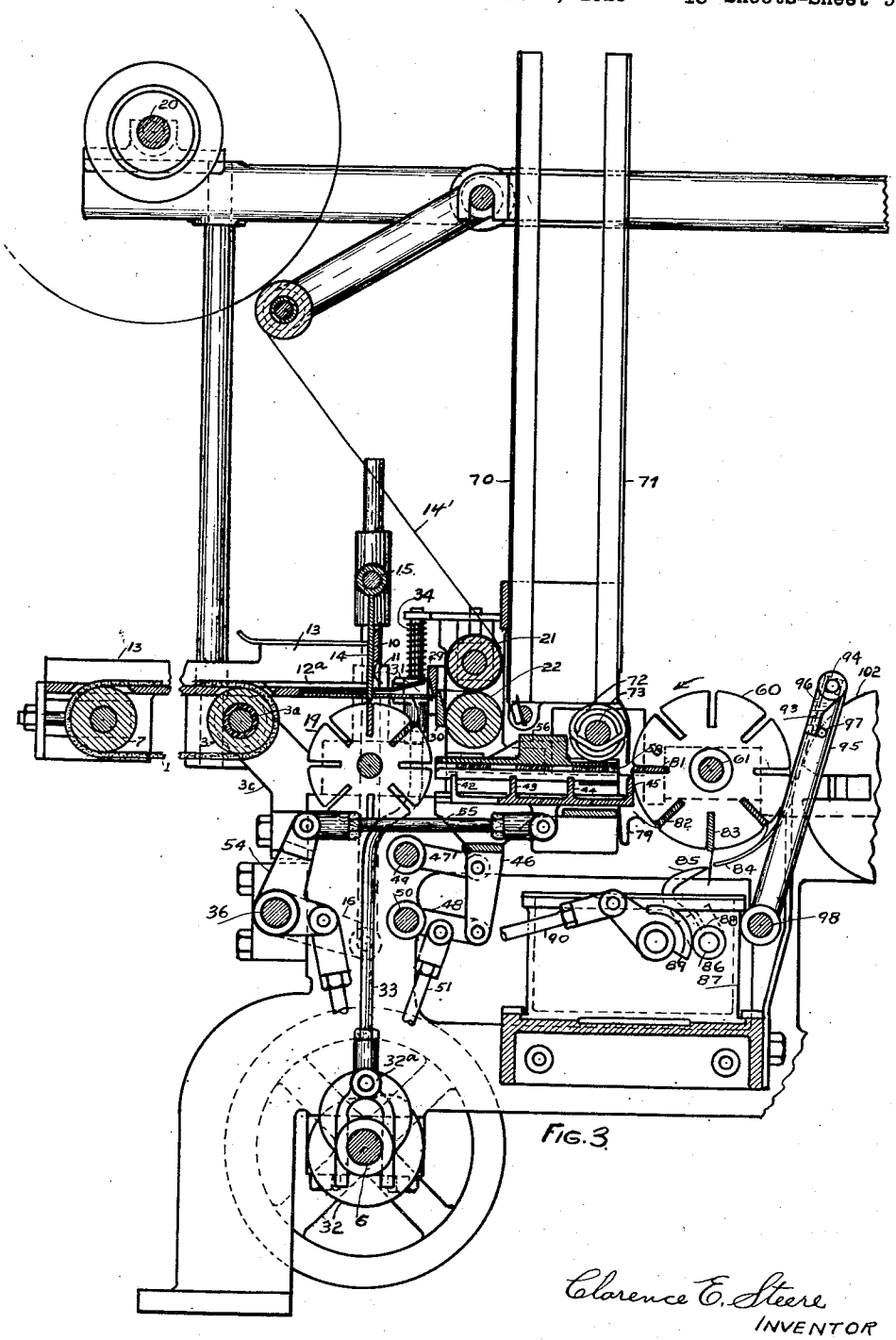


FIG. 3

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Nov. 13, 1923. 1,474,181

C. E. STEERE

WRAPPING MACHINE

Filed March 8, 1923 13 Sheets-Sheet 5

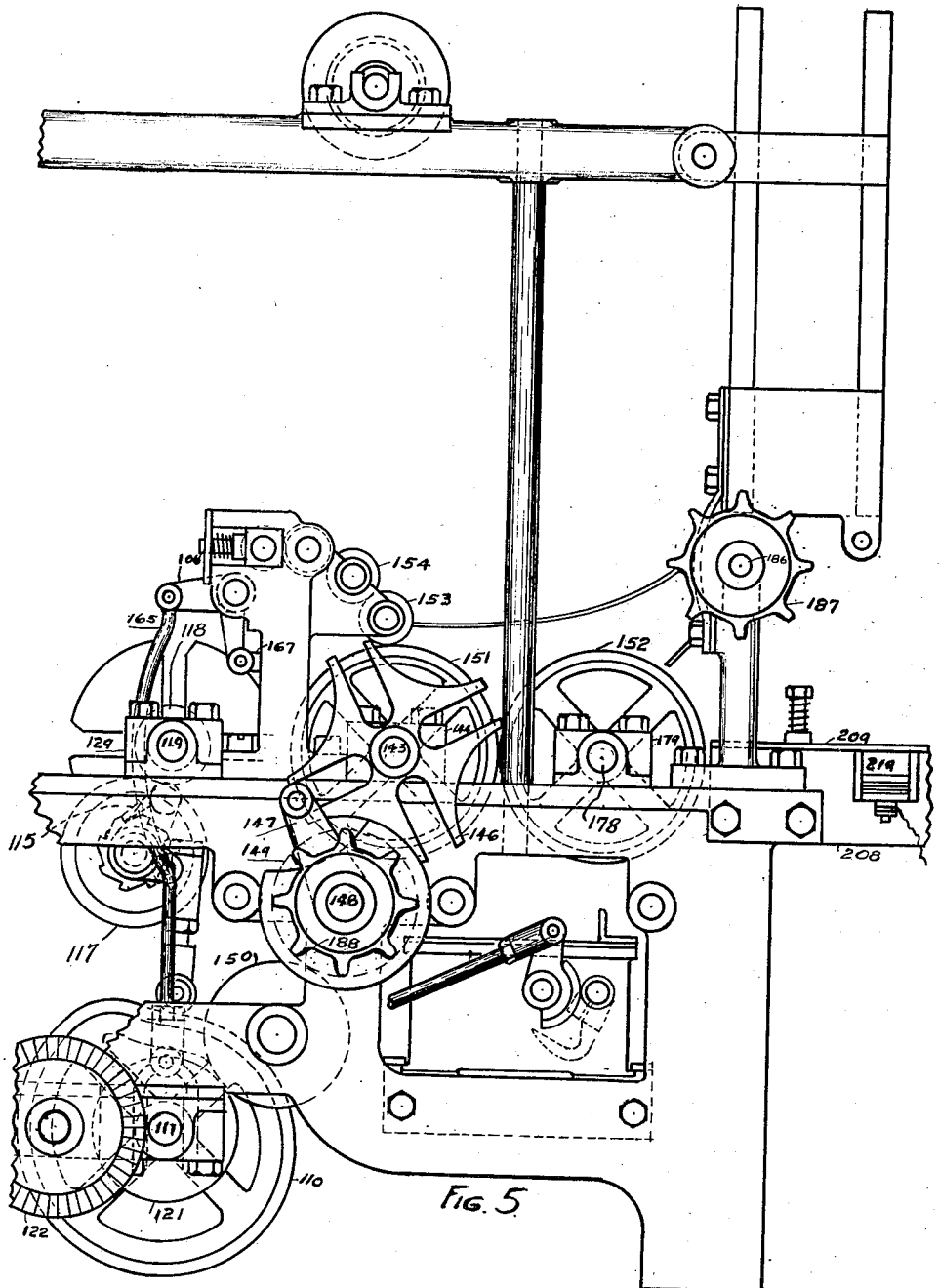


FIG. 5

Clarence E. Steere INVENTOR

BY James R. Townsend ATTY.

Nov. 13, 1923. 1,474,181

C. E. STEERE

WRAPPING MACHINE

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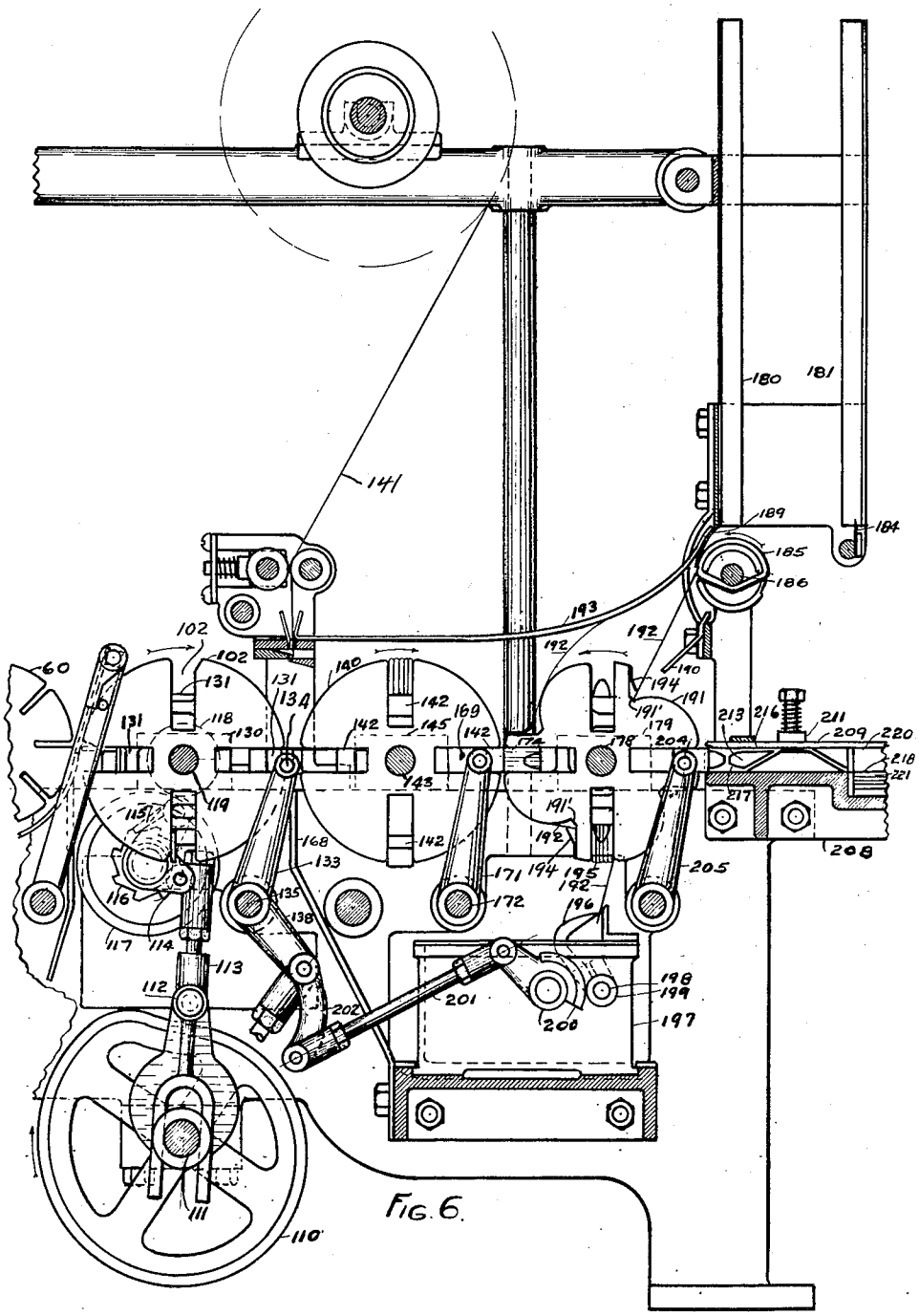


FIG. 6.

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INVENTOR

James BY R. Townsend
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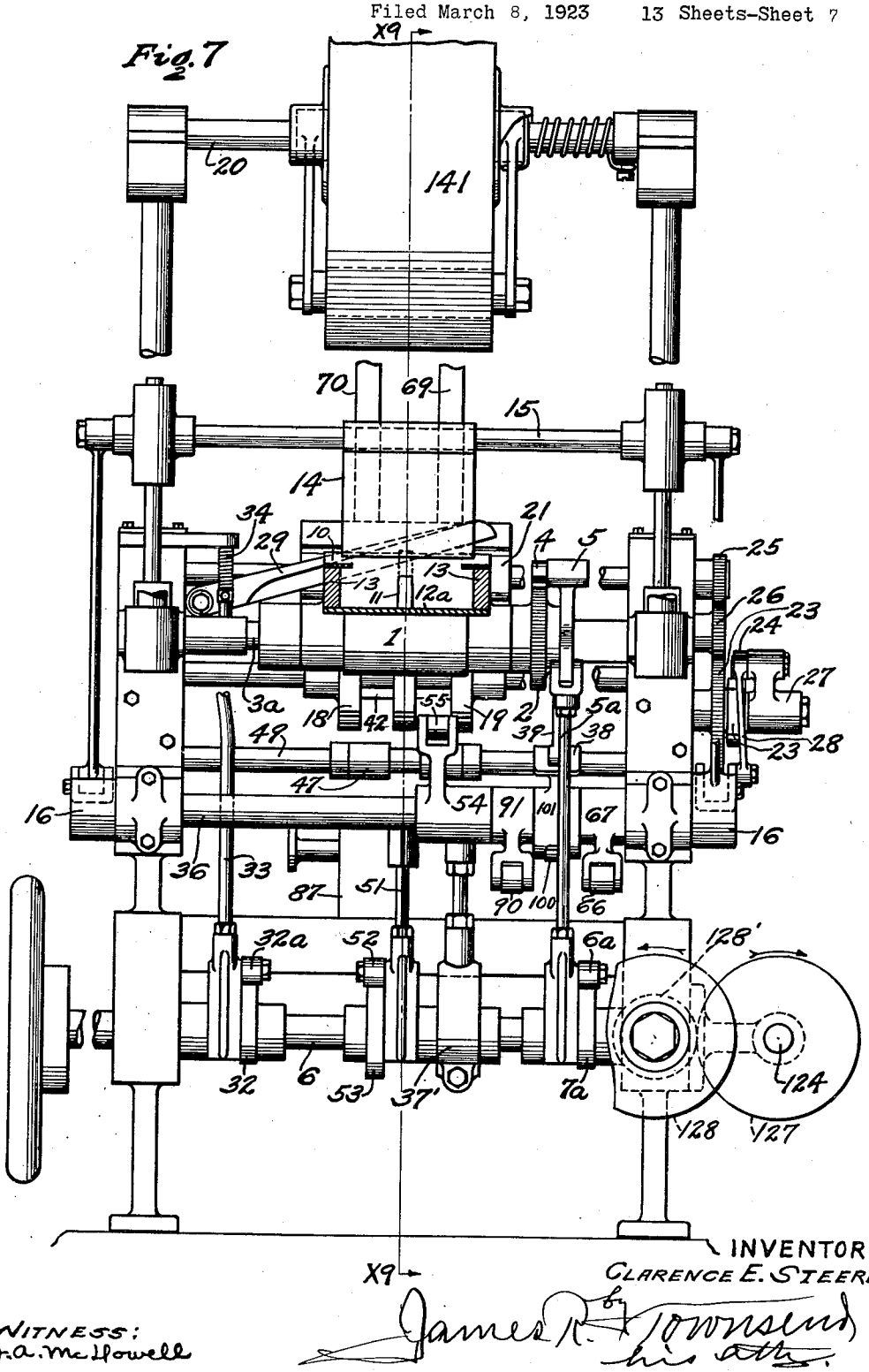
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C. E. STEERE

WRAPPING MACHINE

Filed March 8, 1923 13 Sheets-Sheet 7

Fig. 7



INVENTOR
CLARENCE E. STEERE
by James R. Townsend
his Atty.

WITNESS:
J. A. McHowell

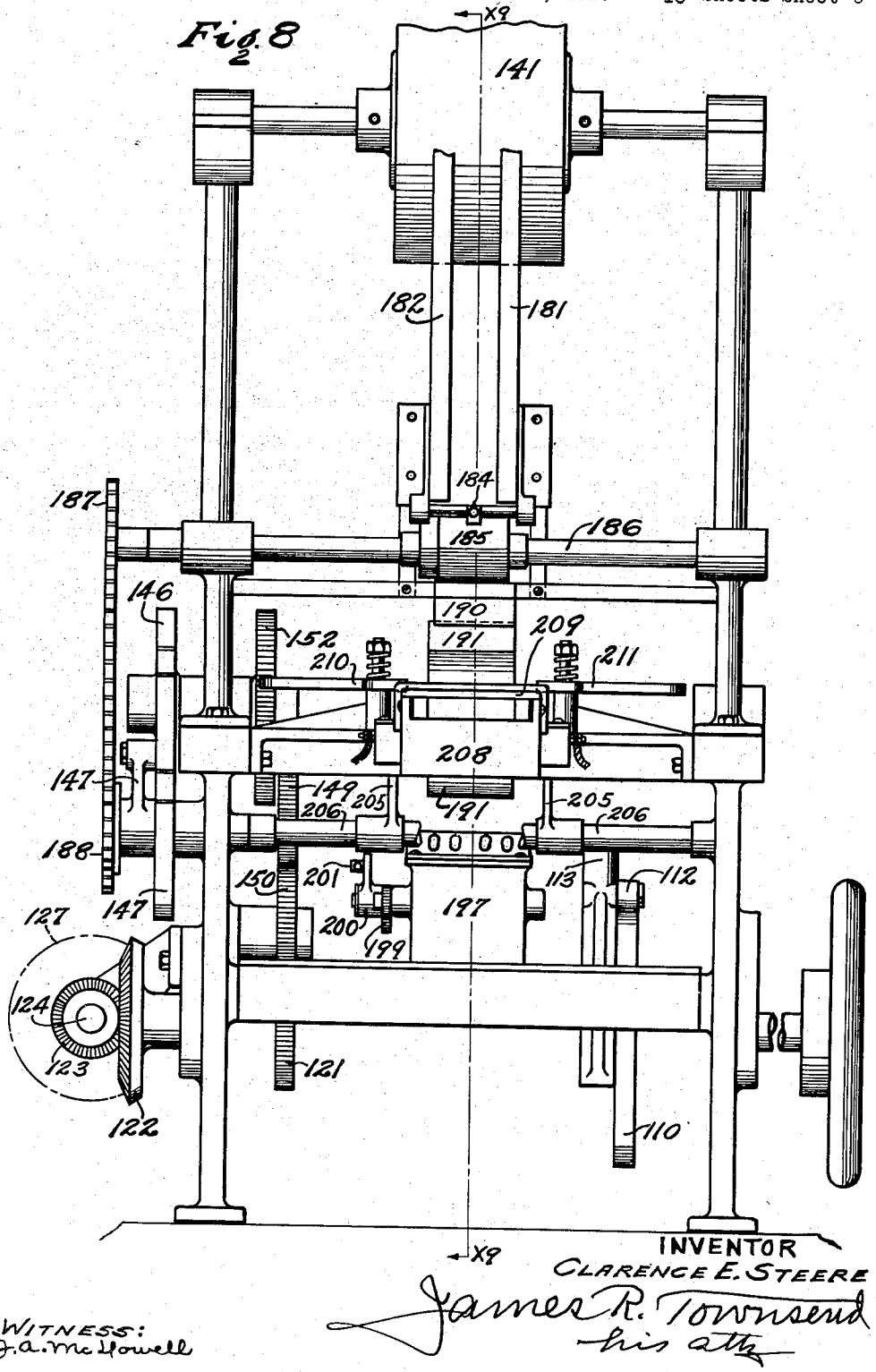
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C. E. STEERE

WRAPPING MACHINE

Filed March 8, 1923 13 Sheets-Sheet 8

Fig. 8



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Nov. 13, 1923. 1,474,181

C. E. STEERE

WRAPPING MACHINE

Filed March 8, 1923 13 Sheets-Sheet 9

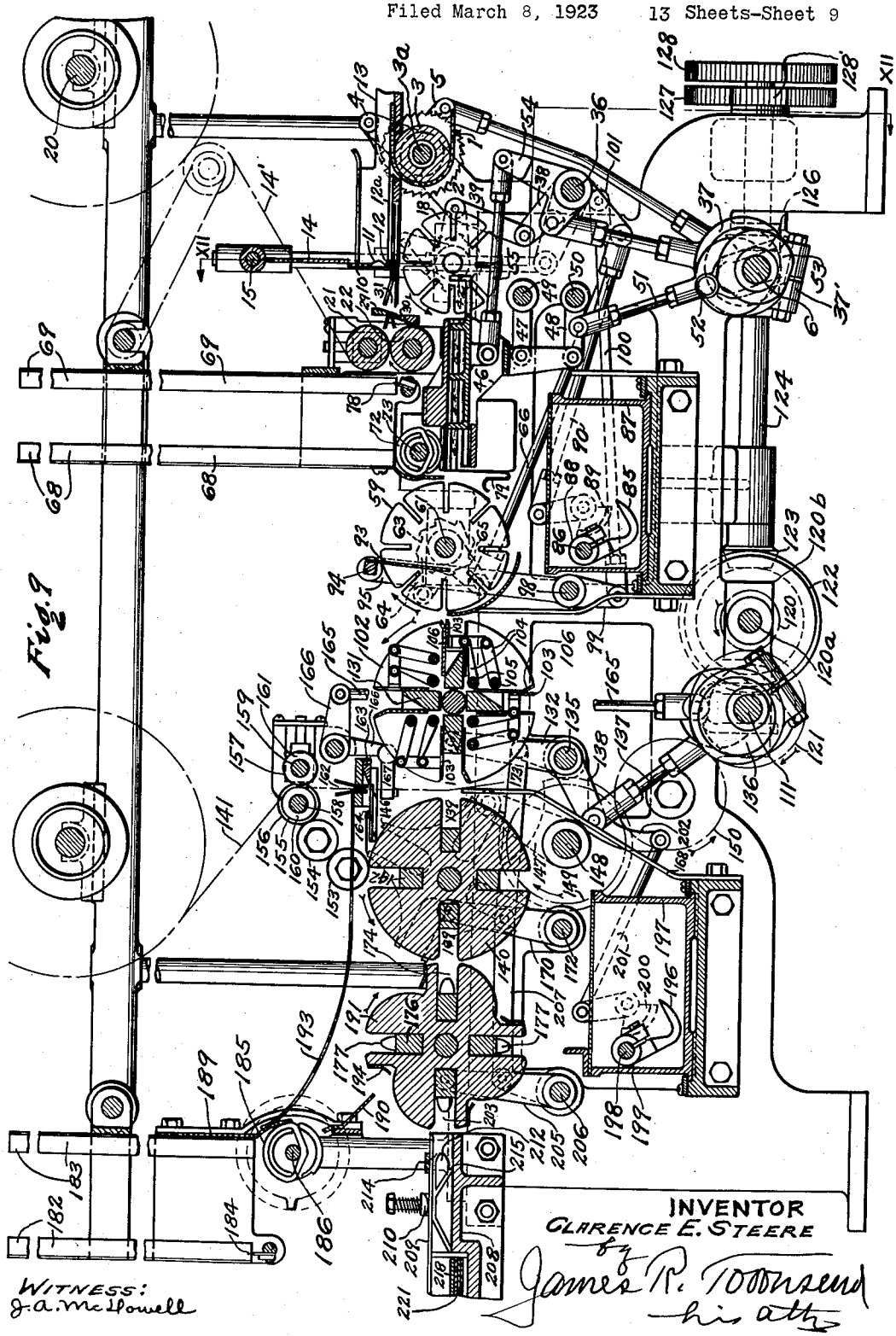


Fig. 9

WITNESS:
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CLARENCE E. STEERE
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his atty

Nov. 13, 1923. 1,474,181

C. E. STEERE

WRAPPING MACHINE.

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Fig. 10

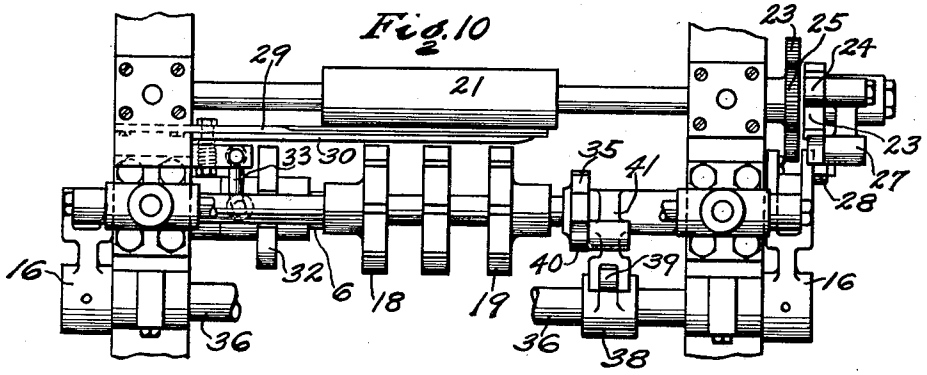
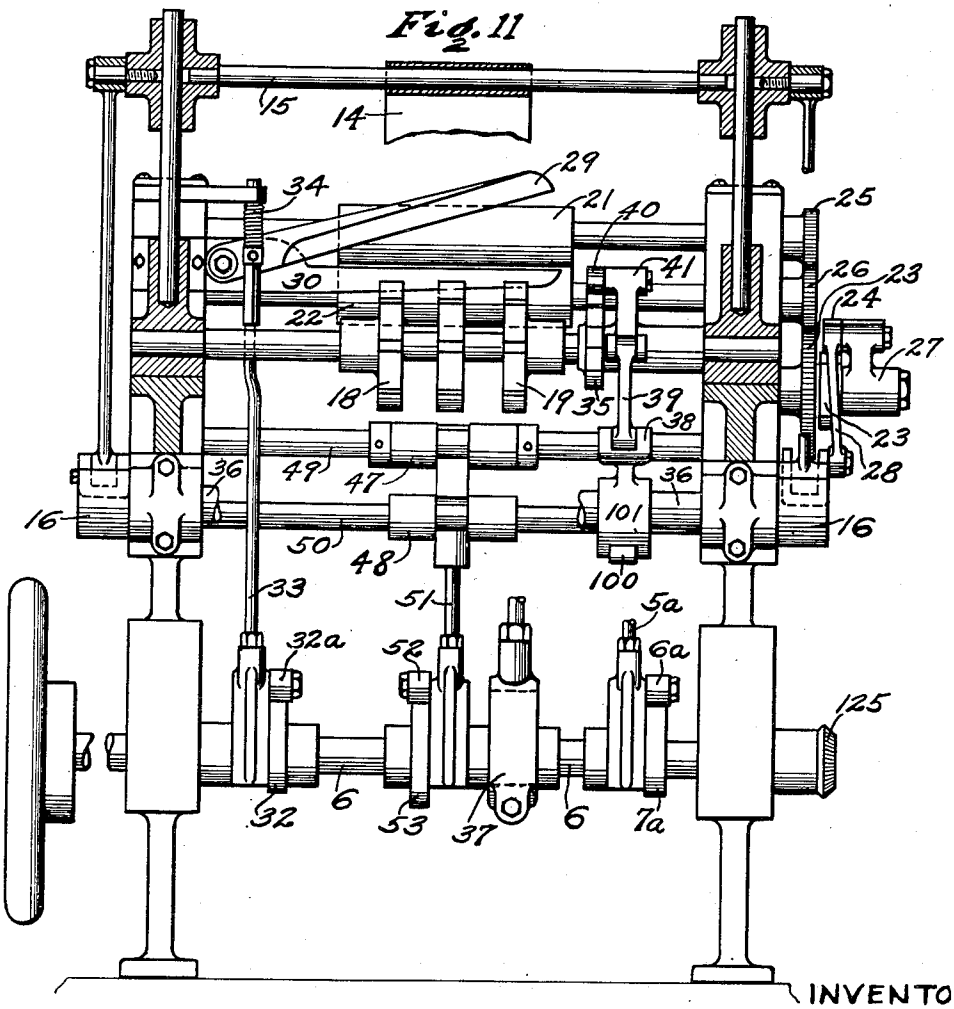


Fig. 11



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WITNESS:
J. A. McPowell

Nov. 13, 1923. 1,474,181

C. E. STEERE

WRAPPING MACHINE

Filed March 8, 1923 13 Sheets-Sheet 11

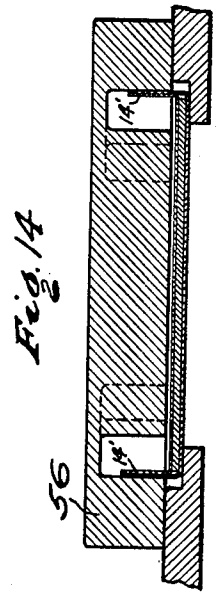


Fig. 14

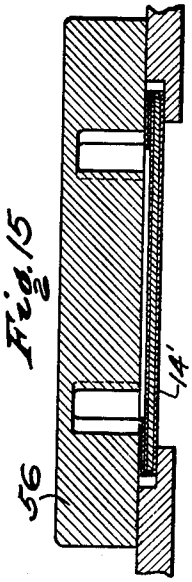


Fig. 15

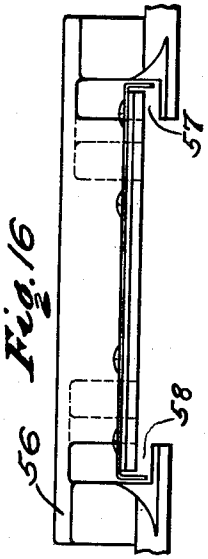


Fig. 16

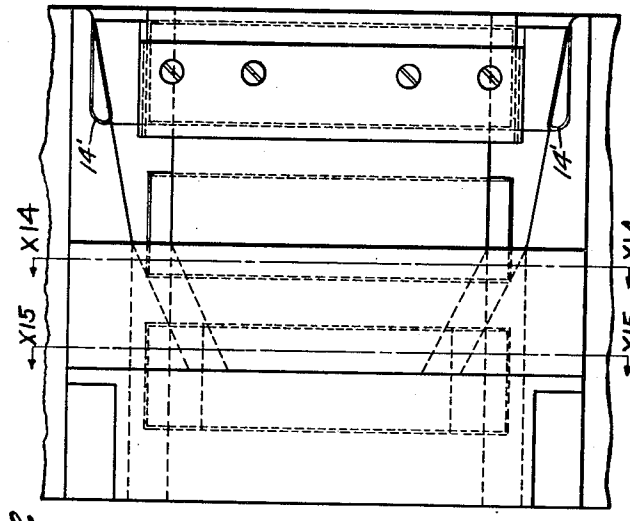


Fig. 12

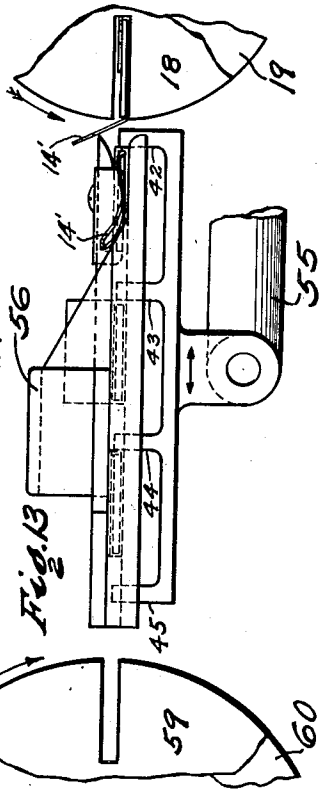


Fig. 13

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WITNESS:
J. A. McDowell

Nov. 13, 1923. 1,474,181

C. E. STEERE

WRAPPING MACHINE

Filed March 8, 1923 13 Sheets-Sheet 12

Fig. 17

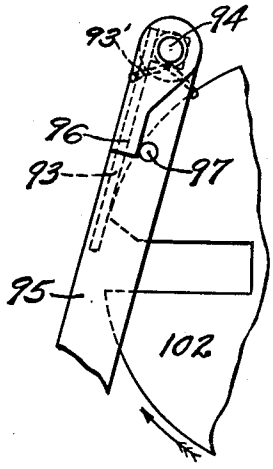


Fig. 19

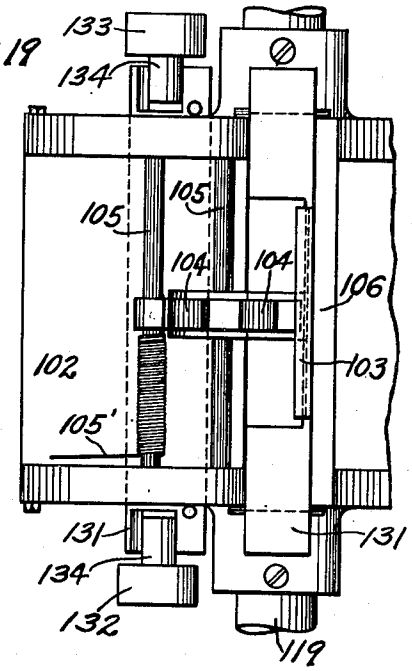


Fig. 20

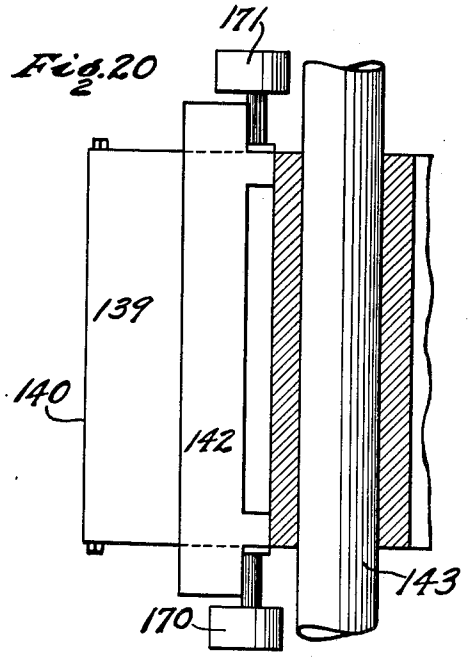


Fig. 18

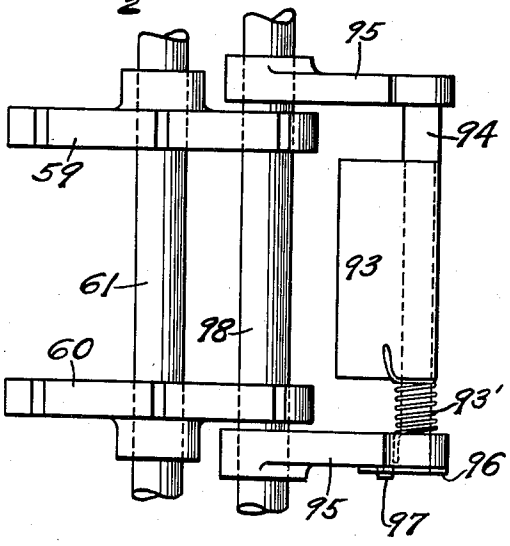
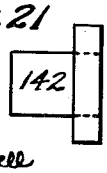


Fig. 21



WITNESS:
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Nov. 13, 1923. 1,474,181

C. E. STEERE

WRAPPING MACHINE

Filed March 8, 1923 13 Sheets-Sheet 13

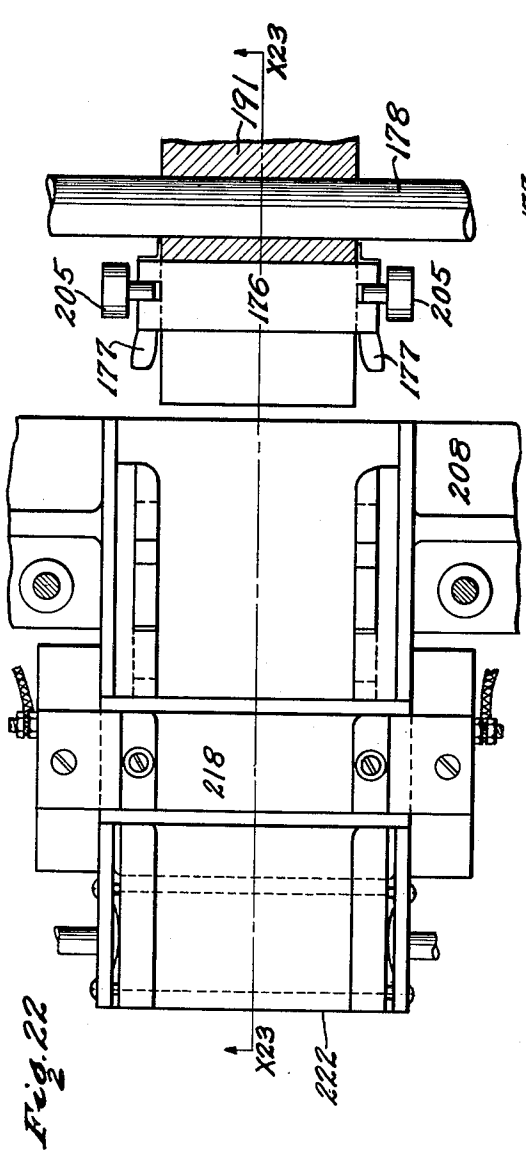


Fig. 22

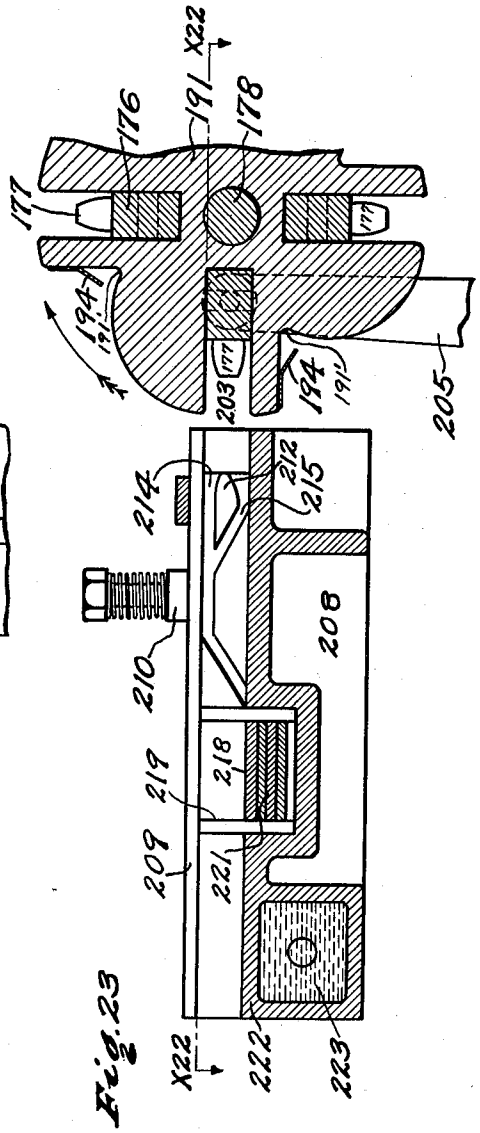


Fig. 23

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WITNESS:
J. A. McHowell

Patented Nov. 13, 1923. 1,474,181

UNITED STATES PATENT OFFICE.

CLARENCE E. STEERE, OF REDONDO BEACH, CALIFORNIA.

WRAPPING MACHINE.

Application filed March 8, 1923. Serial No. 623,640.

To all whom it may concern:

Be it known that I, CLARENCE E. STEERE, a citizen of the United States, residing at Redondo Beach, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Wrapping Machines, of which the following is a specification.

My invention relates to improvements in machines for wrapping chewing gum into packages encased in paraffin paper and hermetically sealed by heat.

One of the objects of my invention is to provide a machine of this character which will be simple, durable and reliable in construction and effective and efficient in operation.

A difficulty heretofore obtaining in this art is that when a bunch of gums is wrapped in waxed paper, sealed by heat, and cooled, and then passed through a mechanism which applies a glued label around four sides of the package; the wax paper has a tendency to break open, due to the natural spring of the bunch of gums before it enters the mechanism which puts on the label and I have therefore provided means whereby the bunch of gums is only partially wrapped in waxed paper and then the label is wrapped around the waxed paper, and after adhesive is applied to the wrapped ends of the label, the package is then held together while the adhesive is brought into contact, and then the heat is applied to the package, thus simultaneously heating the waxed paper and drying the adhesive on the label. I have found that this effectually prevents the package from breaking open.

In order to produce this desired improvement I have provided a novel combination in which the wrapper of waxed paper is not wound or folded intimately around the bunch of gums, and its folds are not sealed together until after the label with its adhesive is applied and fixed in place and preventing the melted wax or adhesive from gumming the machine.

Other objects of my invention will appear hereinafter.

Referring to the accompanying drawings:

Figure 1 is a fragmental longitudinal sectional elevation through the middle of the machine at the feed end.

Fig. 2 is a fragmental continuation of the same view, showing the package assembling means and the discharge end of the machine.

Fig. 3 is a fragmental longitudinal sectional elevation through the middle of the machine at the feed end, viewed from the opposite side of Fig. 1, with the machine advanced 180 degrees from the position shown in Fig. 1.

Fig. 4 is a fragmental longitudinal elevation at the feed end of the drive side of the machine.

Fig. 5 is a continuation of Fig. 4 and showing the discharge end of the machine.

Fig. 6 is a continuation of Fig. 3 and showing the discharge end of the machine.

Fig. 7 is a front elevation of the machine.

Fig. 8 is a rear elevation of the machine.

Fig. 9 is a fragmental longitudinal vertical section of the machine on line x^9, Figs. 7 and 8.

Fig. 10 is a fragmental detail plan of the knife operating means.

Fig. 11 is a fragmental elevation of the receiving end of the machine, partly in section on line x^{11}, Fig. 9, showing the knife operating means and means for driving wheels 18 and 19.

Fig. 12 is a fragmental plan view of the inside wrapper folding mechanism in operation on three pieces or slices of gum, showing three simultaneous steps in the folding of papers, respectively around slices of gum and three stages of folding the ends of a paper around a slice of gum.

Fig. 13 is a side elevation of Fig. 12 showing also the conveyor and fragments of the adjacent slotted wheels. Four stations of a slice of gum are indicated.

Fig. 14 is a section on line x^{14}, Figs. 12 and 13 showing the first wrapper with its ends bent at right angles to the slice of gum.

Fig. 15 is a section on line x^{15}, Fig. 12, showing the first wrapper completely folded around the slice.

Fig. 16 is a front elevation of what is shown in Fig. 13 omitting the gum, the slotted wheels and the conveyor. The mechanism shown in Figs. 12, 14, 15 and 16 is old and well known and is not claimed herein, but is simply shown for convenience of description of this machine and its operation.

Fig. 17 is a detail side elevation on a larger scale showing the stacker wheel and an arm operated by the torsion spring.

Fig. 18 is a plan showing detail of wheels 59 and 60 and operating spring on ejector 93.

Fig. 19 is a detail showing the torsion

spring and the sliding block 131, and parts cooperating therewith.

Fig. 20 is a detail on the scale of Fig. 17 showing member 142.

Fig. 21 is an end elevation of member 142.

Fig. 22 is a fragmental detail on line x^{22}, Fig. 23, showing heating and cooling means.

Fig. 23 is a section on line x^{23}, Fig. 22.

In order to give a general idea of the construction shown I will first outline broadly the construction of the machine.

Referring to the drawings: The gum being cut into thin rectangular slices is placed vertically in multiple with the lower edge resting upon a horizontal endless belt 1, Fig. 1. Belt 1 is driven by the ratchet wheel 2, belt pulley 3, movably mounted on shaft 3^a, said shaft being housed on its outer ends by brackets 3^b, Fig. 1, and 3^c, Fig. 3 and Fig. 4. Ratchet wheel 2 is driven by the ratchet pawl 4, Fig. 1, movably carried by the bell crank 5, said crank 5 being sustained by cam rod 5^a, cam roller 6^a and given a reciprocating motion by cam 7^a on shaft 6, Fig. 7.

Belt 1 is carried in its outer position by idler pulley 7 said pulley being movably mounted in sliding blocks 8, which are held by studs 9 for the purpose of keeping the belt taut.

Referring to Fig. 1 and Fig. 3; belt 1, being driven as described more than the thickness of one piece of gum, will keep the gum packed against rigid stop 10, thereby forcing yielding members 11 flush with the face of stop 10, said yielding members 11 being held against the face of the first gum by spring tension, thereby forcing the first gum against the second with sufficient pressure to prevent the first gum from dropping through slot 12 when the first gum is moved across said slot by belt 1 against stop 10. Belt 1 being driven more than the thickness of one piece of gum, will slip under the pile of gums the difference between the movement and the thickness of one gum, after the first gum is against stop 10.

A sufficient number of gums must be kept on belt 1 to have friction great enough to push the forward gums across the blank portion forming the smooth slideway 12^a between pulley 3 and stop 10, or a weight longer than said portion must be placed upon the belt behind the pile of gums, in order to push the last gum against stop 10.

Slot 12 is cut in the bottom of trough 13, which is sustained by shaft 3^a on its inner end and on its outer end by braces not shown.

The first gum being held against stop 10 is under plate 14 said plate being integral with shaft 15, and given a reciprocating motion by crank arms 16, Fig. 4, shown dotted in Fig. 3, crank arms 16 being on the end of shaft 36, said shaft being given a rocking motion by eccentric 37 on shaft 6, Fig. 1, said plate 14 forcing the first gum through slot 12 and against a piece of paper 14′ in which it is to be wrapped thence through slot 17 into slotted wheels 18, Figs. 1 and 19, Fig. 3.

The foregoing described mechanism being provided to carry the piece of gum to the paper in which it is to be wrapped, the following described mechanism is provided to feed and cut the piece of paper:

The paper is pulled off a roll, suspended on shaft 20, by feed rolls 21 and 22, Figs. 3, 9, 10, 11, which are intermittently moved by geared ratchet 23, Fig. 4, pawl 24, and gears 25 and 26, Fig. 4, on the ends of rolls 21 and 22. Said gears are shown as friction gears for purposes of illustration. Pawl 24 is carried by bell crank lever 27 and given a reciprocating movement by link 28, Fig. 4 and arm 16 on rock shaft 36.

A forward movement of rolls 21 and 22 will thus forward the paper betwen cutting blades 29 and 30 and into slot 31, Figs. 1 and 4, thus bringing the paper 14′ under slot 12 Figs. 1 and 9. Said forward movement of the paper will take place during the upward movement of plate 14, and as soon as this movement is complete knife 29 is closed by cam 32 cam roller 32^a, Fig. 11, Fig. 3, link 33 and compression spring 34 Fig. 3 and shown in open position in Fig. 11, thus cutting the paper into the desired width, the length of the piece of paper 14′ being the width of the paper in the roll.

The foregoing described motion being completed, wheels 18 and 19 are revolved by ratchet 35 Fig. 11, which is shown in dotted lines in Fig. 4, such revolution taking place during the upward travel of plate 14, and the forward motion of the piece of paper. Ratchet 35 is driven by arm 38 on rock shaft 36, through link 39, pawl 40 and bell crank 41. Figs. 4, 10 and 11.

Wheels 18 and 19 are spaced with their outer faces equal to the ends of the gum and spaced apart to clear conveyor 42. Wheels 18 and 19 in revolving bring the gum partially wrapped in the piece of paper in front of conveyor 42, Figs. 1 and 3, which conveyor is integral with conveyors 43, 44 and 45. Said conveyors are housed in ways in brackets 46, which in turn is suspended on parallel arms 47 and 48, on shafts 49 and 50, the whole being sustained by cam rod 51, cam roller 52 and given a reciprocating motion by cam 53. Said conveyors are given a longtudinal reciprocating motion by arm 54 and link 55, said arm 54 being integral with shaft 36 which is given an oscillating motion previously described. A movement of arm 54 carries conveyor 42 to a position a small distance ahead of the position occupied by conveyor 43 in Fig. 1, thus carrying the gum out of wheels 18 and 19 under plate

56, the ends of the gum fitting into slot 57 Fig. 1, and 58, Fig. 3. Said conveyors, moving forward in a raised position as shown by Fig. 1, will drop to a lowered position as shown by Fig. 3, by the action of cam 53, Fig. 1, remaining in the lowered position during the backward travel of arm 54 from the position shown in Fig. 3 to the position shown in Fig. 1, when the conveyors will be raised by cam 53, thus moving the gum one by one and step by step under plate 56, completing the folding of the wrapping paper around the ends of the gum and delivering the gum into slotted wheels 59, Fig. 1, and 60, Fig. 3. Wheels 59 and 60 are spaced with their outer faces equal to the ends of the gum and are fixed to shaft 61, which shaft is journaled on the ends by boxes bolted to the main frame, as 62, Fig. 4. Fixed to shaft 61 is ratchet 63 driven by pawl 64, bell crank 65 link 66 and arm 67 on rock shaft 36 Fig. 4.

It is one of the functions of the machine to wrap a piece of paper around the gum, said piece of paper being approximately the same length as the gum, and stick the ends of the piece of paper together with an adhesive, thus forming a cover open at the ends.

This function is accomplished by the following described mechanism. The paper is cut in pieces and stacked vertically in a magazine, the corners of which are angles 68 and 69, Fig. 1 and 70 and 71, Fig. 3. One end of the piece of paper rests on roller 72 said roller having a frictional surface for about one half of its periphery, the remaining portion of the periphery being practically frictionless, said frictional surface being less than the length of the piece of paper. Said roller 72 is driven by shaft 73, gears 74, 75 and 76, Fig. 4, the latter gear meshing with geared ratchet 23. Said gears are shown as friction gears for purposes of illustration. Gears 75 and 76 are integral and revolve on pin 77.

The other end of the piece of paper rests on needle 78, Fig. 1 which penetrates one or more papers and prevents more than the bottom piece of paper being removed. This removal is accomplished by a single revolution of roll 72, by the action of the frictional surface against the piece of paper, which is thrown down into holder 79, and into the path of the gum as shown by position 80 Fig. 1. When the gum is pushed into the slot in wheels 59 and 60 by conveyor 45 it will carry the piece of paper with it from position 80 to position 81, in which position the piece of paper is wrapped partially around the gum, one end of the piece of paper protruding from the slot in wheels 59 and 60 as shown by position 82 and 83 Fig. 1. In position 83 the natural spring in the piece of paper brings it to rest against deflector 84, in which position fingers 85 are swung into the position shown in Fig. 3 from the position shown in Fig. 1, in which position fingers 85 are immersed in adhesive material, and in position shown by Fig. 3 fingers 85 strike the protruding end of the piece of paper and apply the adhesive.

Fingers 85 are clamped to shaft 86, journaled in box 87, on the outer end of shaft 86 is pinion 88, Fig. 3, meshing with segment 89, shown as friction gearing, driven by link 90 and arm 91, Fig. 1, fixed to rock shaft 36.

A continued rotation of wheels 59 and 60 bring the gum to position 92, Fig. 1, in front of ejector 93. Ejector 93 is fixed to shaft 94, which shaft is pivotally housed in arms 95 on the outside of wheels 59 and 60, ejector 93 extending between wheels 59 and 60. A torsion spring 93′ is placed around shaft 94 keeping arm 96, Fig. 3, against pin 97. Arms 95 are fixed to shaft 98, which shaft is reciprocated by crank 99, Fig. 1, link 100 and crank 101, fixed to rock shaft 36.

A forward movement of ejector 93 carries the gum out of wheels 59 and 60 into stacking or bunch assembling wheels 102, the protruding end of the piece of paper heretofore referred to, being deflected by plate 84 so that when the piece of paper enters wheel 102 it is completely wrapped around the gum and the adhesive brought in contact.

One of the functions of the machine is to assemble the gum after being wrapped in two pieces of paper as described, into packages of two or more. This is accomplished by bunch assembling wheel 102 having a multiple of slots 102′, Fig. 2, one side of each slot being movable as plate 103, which plate is held by parallel levers 104 on shafts 105. A torsion spring 105′ Fig. 2 and Fig. 19 on one of shafts 105 will hold plate 103 in a closed position against the fixed side of its slot in wheel 102, said fixed side being shown at 106. When the gum is ejected by ejector 93 it will be injected between moving plate 103 and fixed plate 106, Figs. 2, 19. Inasmuch as the bottom face of plate 106 is on the same line as the top of the slots in wheels 59 and 60 the gum is deflected down equal to its thickness when injected as described, thus pushing moving plate 103 away from fixed plate 106. A second gum ejected by ejector 93 will be injected between the first gum and plate 106, this sequence of movement being continued until a slot in wheel 102 is filled when bunch assembling wheel 102 is revolved by means hereinafter described to bring an empty slot into position. Wheel 102 must remain in a fixed position while ejector 93 places the desired number of

gums in a slot, then rotate to bring an empty slot in position during the backward travel of ejector 93.

Referring to Fig. 6: Cam 110 on shaft 111 will act upon cam roller 112 to lift cam fork 113, which will actuate bell crank 114 pawl 115 and hence ratchet 116, said ratchet being integral with gear 117, shown as a friction gear, and gear 118, shown in dotted lines, gear 118 being fixed to shaft 119. Shaft 111 is driven by pinion 120, driving gear 121 fixed to shaft 111. Pinion 120 is fixed to shaft 120^a, on one end, said shaft being journaled in bearing 120^b. Bevel gear 122, Figs. 4 and 8 is fixed to shaft 120^a, and is driven by bevel pinion 123, fixed to shaft 124. Miter gear 125 is fixed to the outside end of shaft 6, see Figs. 4 and 11. Miter gear 126 is fixed to shaft 124, which is driven by gear 127 fixed to said shaft, through integral pinion and gears 128 and 128′. Gears 125 and 126 are the same in size, hence shaft 6 and shaft 124 move at the same speed.

The reduction from pinion 123 to gear 122 and from pinion 120 to gear 121 is equal to the number of gums assembled into a package, the continued ratio, will be in the machine shown, five to one, inasmuch as five pieces of gum are wrapped into one package.

Wheel 102 is fixed to shaft 119, said shaft being journaled in pillow blocks 129, Fig. 5, and 130, Fig. 6. Wheel 102 carries sliding blocks 131 in slots 102′, and in rotating will bring projecting lugs on each end of block 131 in front of lever 132, Fig. 2, and lever 133, Fig. 6 and Fig. 19. Said levers are provided with projecting pins 134, Fig. 19, and are spaced each side of wheel 102, and pins 134 will engage in the projecting lugs on block 131.

Levers 132 and 133, Figs. 2 and 6, are fixed to shaft 135, housed in the main frame, said shaft being reciprocated by eccentric 136 on shaft 111, eccentric link 137 and crank arm 138. A rotation of 180 degrees of shaft 111 will move arms 132 and 133, Fig. 19, from the position shown in Fig. 2 to the position shown in Fig. 6, thus moving sliding block 131, ejecting the assembly of gums from wheel 102 into a slot 139 in the transfer wheel 140, carrying with the assembled gums, (hereafter called a package), a piece of waxed paper 141, Fig. 2, and pushing back sliding block 142 in slot 139.

Wheel 140, Fig. 6, is fixed to shaft 143 journaled in blocks 144, Fig. 5, and 145, Fig. 6. On the end of shaft 143 is Geneva stop gear 146, Fig. 5, driven by arm 147 on shaft 148, to which shaft is fixed gear 149, Fig. 2, meshing with idler 150, which in turn meshes with gear 121 on shaft 111. Fixed to shaft 143 is gear 151, Fig. 5, driving gear 152. Gear 151 drives idlers 153 and 154, and pinions 155, 156 and 157, Fig. 2 said gears being shown in the drawings as friction gears. Pinion 156 is on shaft 158 and pinion 157 is on shaft 159. Said shafts carry rolls 160 and 161, which will revolve when driven by the gear train as described, thus conveying the waxed paper 141, Fig. 2, through slot 162, cutting knives 163 and 164 and in front of wheel 102.

Cutting blade 163 is fixed, cutting blade 164 being opened and closed by a cam 164′ shown on shaft 111, link 165, bell crank 166 and link 167, Fig. 2.

Waxed paper 141 is wider than the length of the package and is cut off by the knives described just as the package is moved from wheel 102 across deflector 168, Fig. 6.

The transfer wheel 140 in revolving in the direction shown by the arrow in Fig. 2, will carry the package partially wrapped in wrapper 141 to position 169, shown in Fig. 2 bringing the protruding lugs on sliding block 142, Fig. 20, in front of pins on arms 170, Fig. 2, and 171, Fig. 6. Said arms are fixed to shaft 172, journaled in the main frame, and given a reciprocating motion by link 173, Fig. 2, pivoted to arm 132 and arm 170. Block 142 in moving forward will push the package covered on three sides by waxed paper 141 into slot 174, in band carrying wheel 191 and against sliding block 176, between projections 177 on both ends of block 176. Wheel 191 is driven by gear 152, and is fixed to shaft 178 journaled in blocks 179 on the main frame.

One of the functions of the machine is to assemble a paper cover around the package outside of the waxed paper 141 with the ends of the paper cover lapped and glued together on the same side of the package as the lapped ends of the waxed paper 141.

This is accomplished by putting the paper cover cut into correct size, which is narrower than the length of the package and long enough to more than go once around the package, into a magazine composed of corner angles 180, 181, 182 and 183. The cover rests on one end on needle 184 and on the other end on roll 185, the action of which roll is the same as described heretofore for the delivering of a piece of paper by roll 72.

Roll 185 is driven by shaft 186, sprocket 187 and sprocket 188 on shaft 148, Fig. 5 through a chain not shown. Roll 185 in revolving will carry a cover out of the magazine against deflector 189, Fig. 6, apron 190 and against band carrying wheel 191. Wheel 191 has indents 191′ agreeing in number with the number of slots and disposed around the periphery in alternation with said slots. Any indent 191′ is spaced a predetermined distance from the following slot so that cover 192 will lap a predetermined distance across said slot. Cover 192 is carried by wheel 191 because it is bound against guard 193 by rotation of wheel 191,

place 194 in indent 191', on one end, wheel 191 in the middle, and guard 193 on the other end as shown in Figs. 2 and 6.

A further rotation of wheel 191 will bring it to position 174 with cover 192 across slot 174, Fig. 6. The package on entering slot 174 as described will carry cover 192 with it into the slot, thus wrapping cover 192 around the package on three sides outside of waxed paper 141, which is folded around the package on four sides. Waxed paper 141 protruding beyond the ends of the package will be tucked on one edge by projections 177 on sliding block 176.

A further rotation of wheel 191 will bring the package to position 195, Fig. 6, with cover 192 protruding as shown, ready to have glue applied for holding the cover securely around the package.

The glue is applied to cover 192 by means of one or more fingers 196, which move in glue box 197, said fingers 196 being shown lowered into the glue in Fig. 2, and raised against cover 192 in Fig. 6. Fingers 196 are clamped to shaft 198, which is moved by pinion 199 on the outer end of shaft 198. Pinion 199 meshes with segment 200, and are shown as friction gearing. Link 201 is pivotally fastened to segment 200 and extension 202 on arm 138. Arm 138 being given a reciprocating motion as described.

A further movement of wheel 191 will bring the package to position 203 with sliding block 176 in front of pins 204 in arms 205, Fig. 6 and Fig. 2. Said arms are fixed to shaft 206 journaled in the main frame and are given a reciprocating motion through link 207, pivotally secured to arm 170 and arm 205.

Sliding block 176 will push the package out of wheel 191 on to bracket 208 and under frame 209, which is yieldingly held by spring clamp 210, Fig. 2, and 211, Fig. 6.

Cover 192 is then wrapped around the package on four sides outside of paraffin waxed paper 141, with the ends lapped and glued. Wrapper 141 is tucked on the other or forward edge of ends protruding beyond the package by lug 212, Fig. 2 and lug 213, Fig. 6, which lugs are part of bracket 208. Wrapper 141 then has a projection on both sides of the package on both ends of the package, such projections entering slots 214 and 215, Fig. 2, and 216 and 217, Fig. 6.

A succeeding package being pushed out of wheel 191 as described will push the forward package ahead of it, the projecting ends of wrapper 141 being layed down over each other on the ends of the package by moving across slots 214, 215, 216 and 217.

A sufficient number of packages being pushed out of wheel 191 will push the leading package across plate 218 between end block 219, Fig. 2, and block 220, Fig. 6. Plate 218 and end blocks 219 and 220 are electrically heated by heating element 221, Fig. 2.

Wrapper 141 being completely wrapped around the package with the ends one above the other on the lower side of the package against plate 218, will be heated by plate 218 and blocks 219 and 220, the heat being applied through cover 192 by plate 218, and to the ends of the package by blocks 219 and 220.

Cover 192 being wrapped around the package outside of wrapper 141, with ends lapped and glued, and against plate 218, will have the glue set by the action of the heat as described, and will prevent the package from opening, after the package passes off of plate 218, bracket 208 and from under frame 209.

Air spaces are provided around plate 218 and heating element 221, which is secured to bracket 208 by insulating means, thus keeping bracket 208 from direct contact with heating element 221. Bracket 208 is bolted to the main frames, and is a brace between said frames.

Bracket 208 may be cooled by a blast of cool air, or may be water jacketed, if it is desired, as at 223.

Additional packages being delivered on to bracket 208 the first package will be pushed off of plate 218 on to a continuation 222 of bracket 208 and under a continuation of frame 209, thus cooling the package sufficiently to harden the waxed wrapper 141 and make a hermetically sealed package.

The package is then complete and ready for boxing.

Having thus described my invention, what I claim as new in the art and desire to secure by Letters Patent in the United States is:—

1. In a gum wrapping machine, means for assembling wrapped pieces of gum into a package, said means consisting of a rotatable wheel having a multiplicity of slots therein, said slots having one side fixed and one side yieldingly movable, and means for injecting the wrapped pieces of gum one by one between said fixed side and said yielding side of said slot.

2. A gum wrapping machine comprising a wheel having slots to receive slices of gum; means to revolve the wheel on a horizontal axis; means above the wheel to place pieces of paper over the slots, respectively; means to hold slices of gum on edge above the level of the wheel; means to move said slices one by one flatwise and on edge into position above the slots respectively; and means to move the slices down into said slots respectively.

3. In a gum wrapping machine; means for assembling wrapped pieces of gum into a package; said means consisting of a rotatable wheel having a multiplicity of slots therein;

said slots have one side fixed and one side yieldingly movable; and means for inserting the wrapped pieces of gum one by one between the fixed side and the yielding side, thereby assembling the gums into a bunch; and means for ejecting the bunch of gums from said wheel.

4. In a gum wrapping machine, the combination of a bunch assembling wheel as described; means for feeding waxed paper from a roll into the path of the bunch of gums when ejected from said wheel; means for ejecting the bunch from said wheel; and means for cutting the waxed paper off into desired lengths while the bunch is impinged against the waxed paper, said cutting off means comprising a blade intermittently moved by a driving mechanism synchronized with the bunch assembling wheel.

5. In a gum wrapping machine, the combination of a bunch assembling wheel as described; means for feeding waxed paper from a roll into the path of the bunch when ejected from said wheel; means for ejecting the bunch from said wheel; means for cutting the waxed peper into the desired length while bunch is impinged against the waxed paper; and a rotatable slotted wheel into which the bunch is inserted, thereby carrying the cut waxed paper into one of such slots, and wrapping the waxed paper around three sides of the bunch.

6. In a gum wrapping machine, the combination of a bunch assembling wheel as described; means for feeding waxed paper from a roll into the path of the bunch when ejected from said wheel; means for cutting the waxed paper to the desired lengths while the bunch is impinged against the waxed paper and a rotatable slotted wheel into which the bunch is inserted, carrying the waxed paper into one of such slots, thereby wrapping the waxed paper around three sides of the bunch; and slidable members inserted respectively in said slots; each of said slidable members being at the periphery of said slotted wheel when a bunch is ejected from the bunch assembling wheel as described, thereby impinging the waxed paper between such bunch of gums and the sliding member; and means for cutting off the waxed paper while said waxed paper is impinged as described.

7. In a gum wrapping machine, the combination of a transfer wheel as described, a band carrying wheel moving in unison with the transfer wheel, and means on the periphery of said band carrying wheel for conveying a piece of paper to juxtaposition with the transfer wheel from which a package of gums having waxed paper wrapped on three sides is inserted into said band carrying wheel, thereby wrapping the package of gums on four sides by the first or waxed paper and on three sides by the second piece of paper.

8. In a machine of the class described, a wheel having a series of slots for the reception of packages and a corresponding series of indents adjacent to the slots, each indent being arranged to yieldingly carry a piece of paper to be wrapped around a package to be inserted in an adjacent slot.

9. In a gum wrapping machine, the combination of a slotted wheel for carrying a package of gum partially wrapped in two pieces of paper, said wheel having indents upon its periphery agreeing in number with the number of slots, each indent carrying a piece of paper across a slot to be wrapped around a package of gum when injected into said slot, and sliding blocks in said slots, said sliding blocks having on their outer edges lugs spaced apart a distance equal to the length of the package, thereby folding the protruding end of the first or waxed piece of paper across the end of the package, when the package is pushed between such lugs.

10. In a machine of the class described, a wheel having a series of slots for the reception of packages and a corresponding series of indents adjacent to the slots, means for moving the wheel step by step, means for feeding a sheet of paper to the wheel so that one edge of said paper will be inserted in a narrow space in one of said indents and a guard against which the other edge of the paper impinges when the wheel is moved, said parts being so arranged that the trailing part of the sheet is brought over an adjacent slot at the time a package is to be inserted therein.

11. In a machine of the class described, a combination with devices for wrapping paper about pieces of gum and assembling such pieces in bunches, of means for wrapping waxed paper about the bunches and holding them against expansion, means for wrapping covers over the waxed paper on such bunches and sealing said covers with adhesive while said bunches are still held against expansion, and means for applying heat to seal the waxed paper after the covers have been secured in place.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 1st day of March, 1923.

CLARENCE E. STEERE.

Witness:

JAMES R. TOWNSEND.