Oct. 5, 1937. L. E. POOLE 2,094,815

PAPER WRAPPING MACHINE

Filed June 4, 1934 8 Sheets-Sheet 1

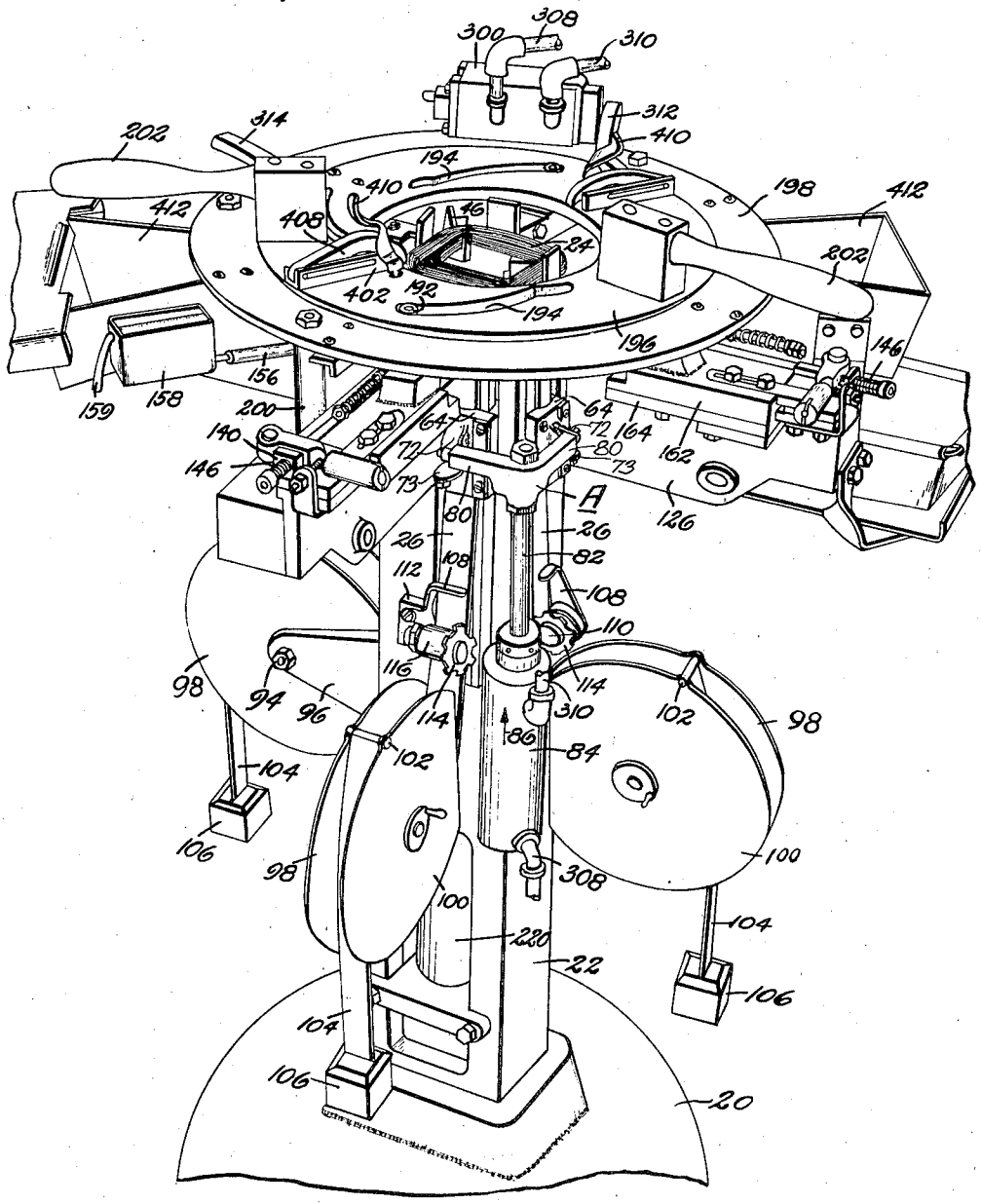

Fig. 1

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Filed June 4, 1934 8 Sheets-Sheet 2

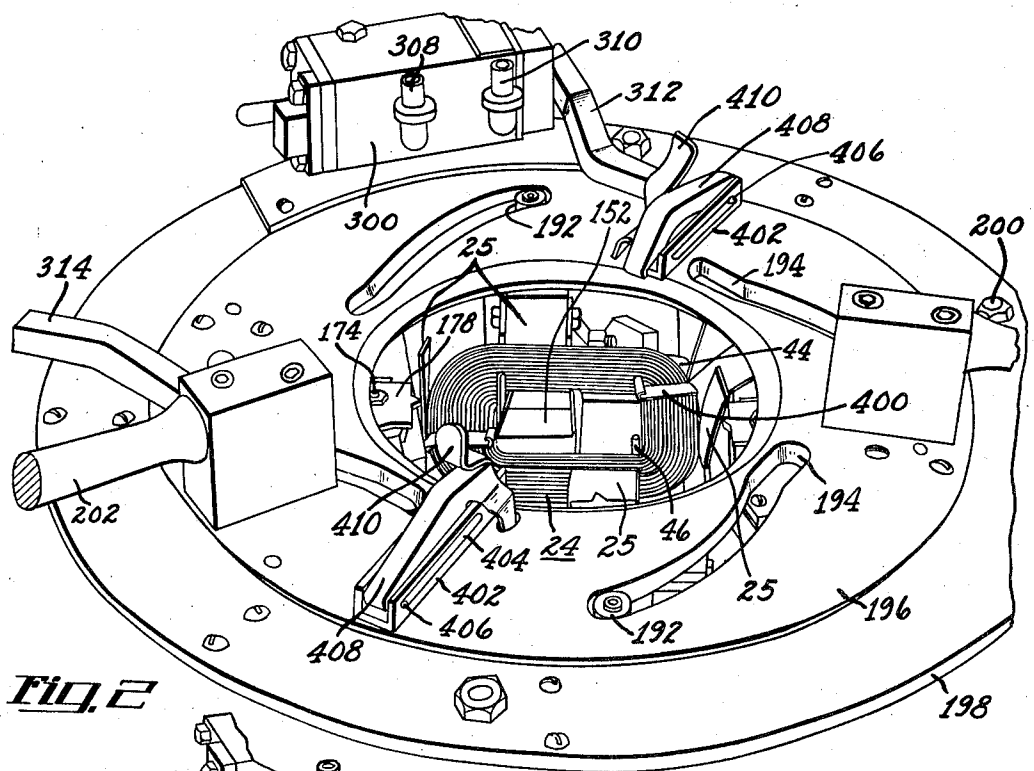

Fig. 2

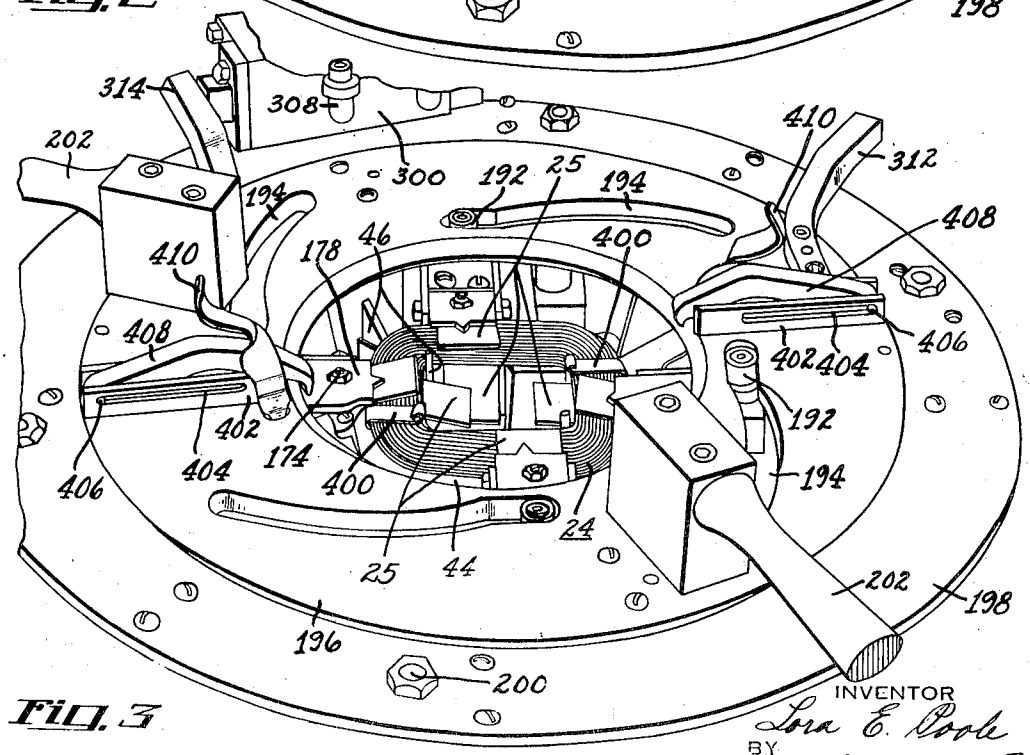

Fig. 3

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PAPER WRAPPING MACHINE

Filed June 4, 1934 8 Sheets-Sheet 3

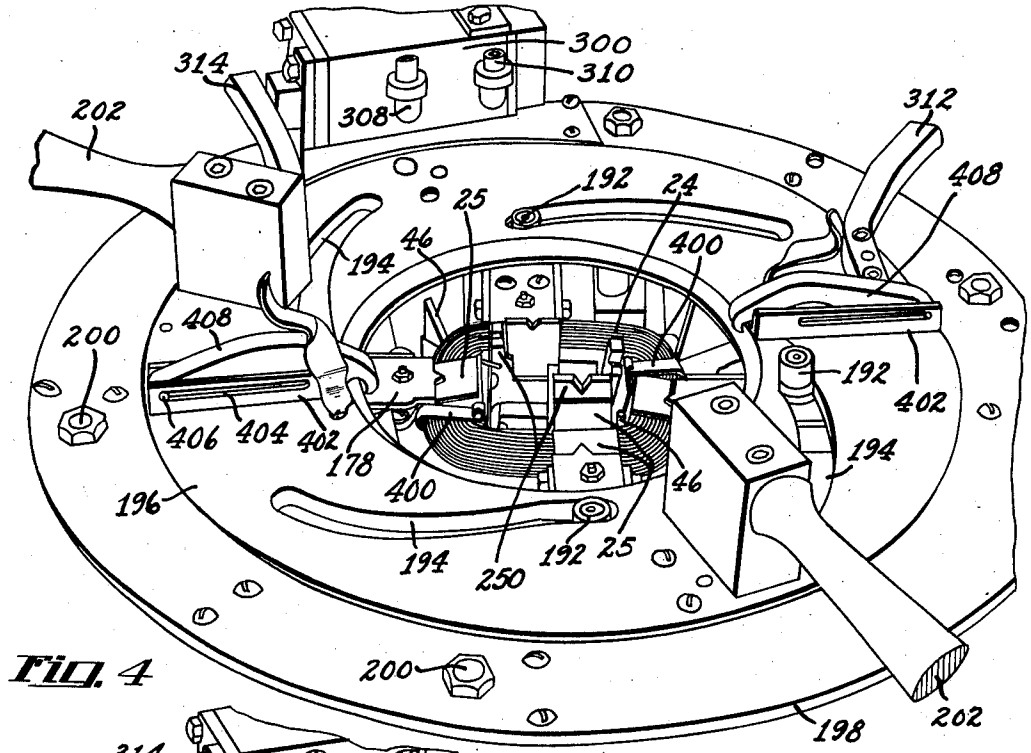

Fig. 4

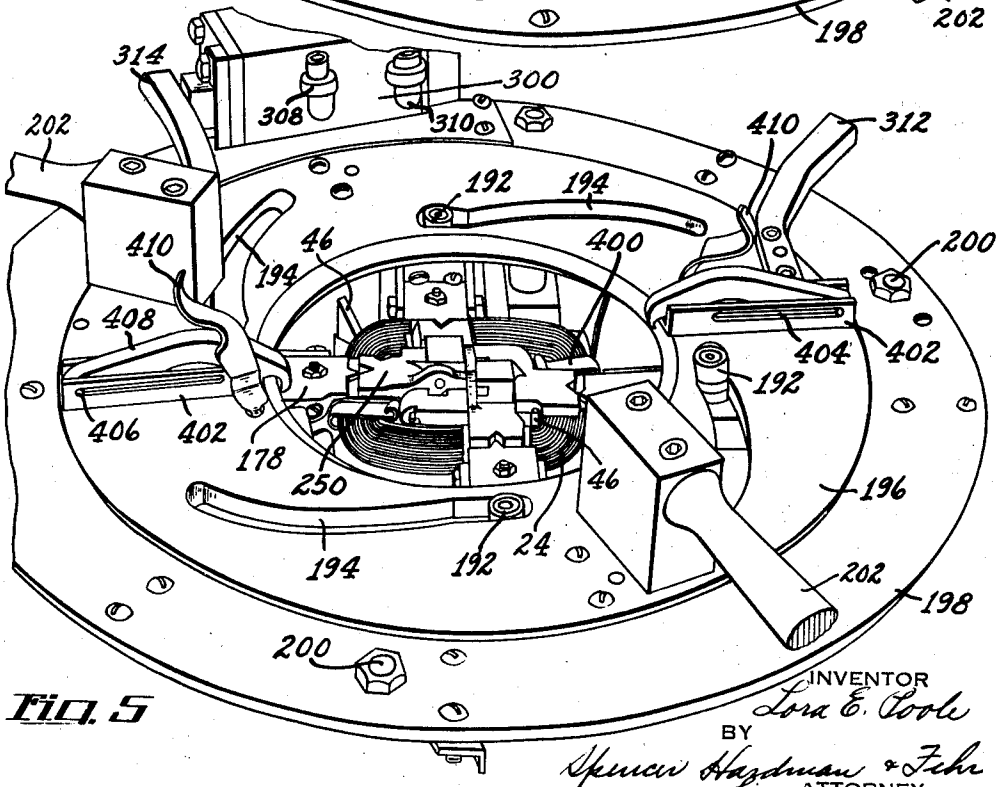

Fig. 5

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PAPER WRAPPING MACHINE

Filed June 4, 1934 8 Sheets-Sheet 4

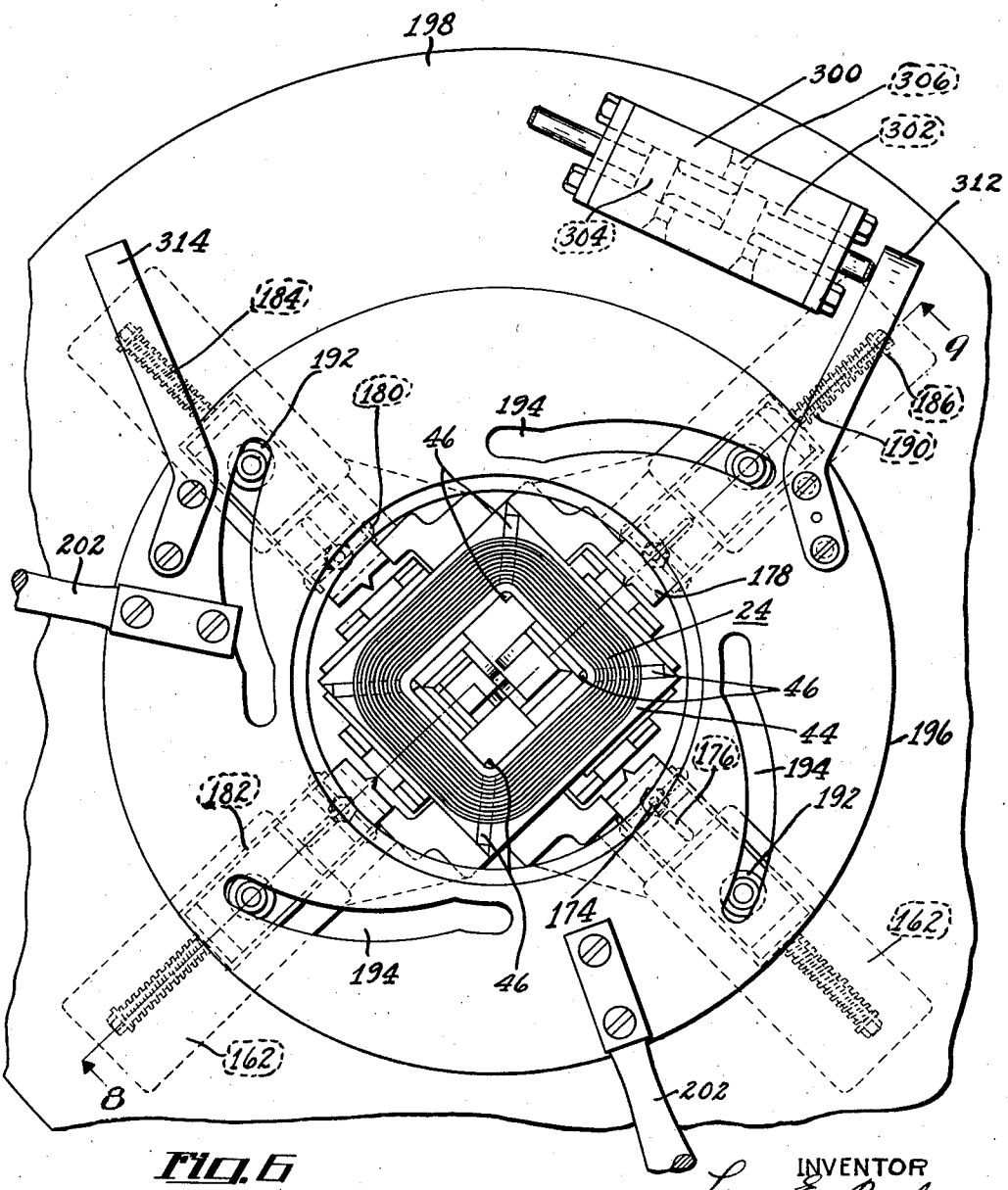

FIG. 6

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Filed June 4, 1934 8 Sheets-Sheet 5

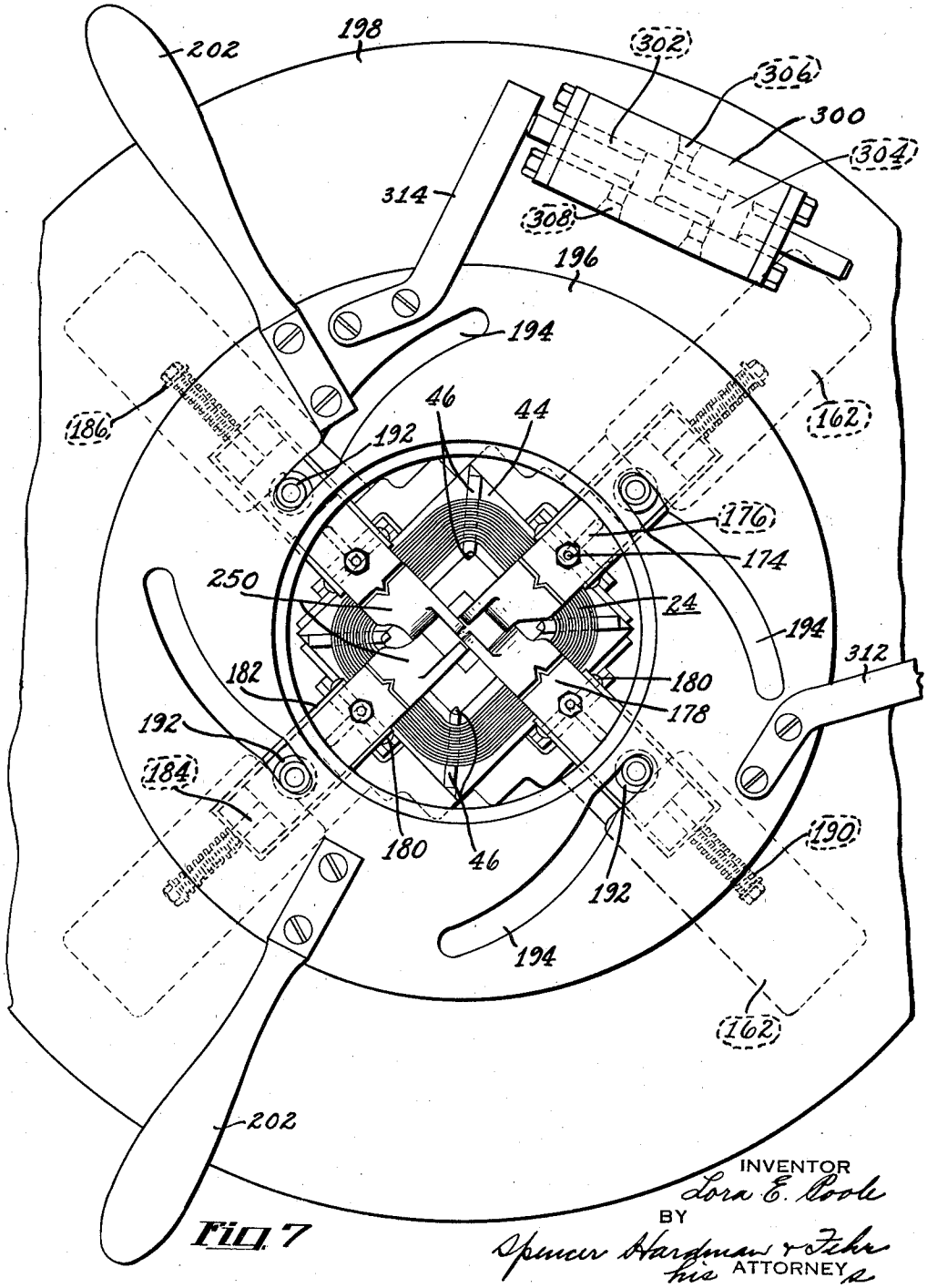

Fig 7

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Filed June 4, 1934 8 Sheets-Sheet 6

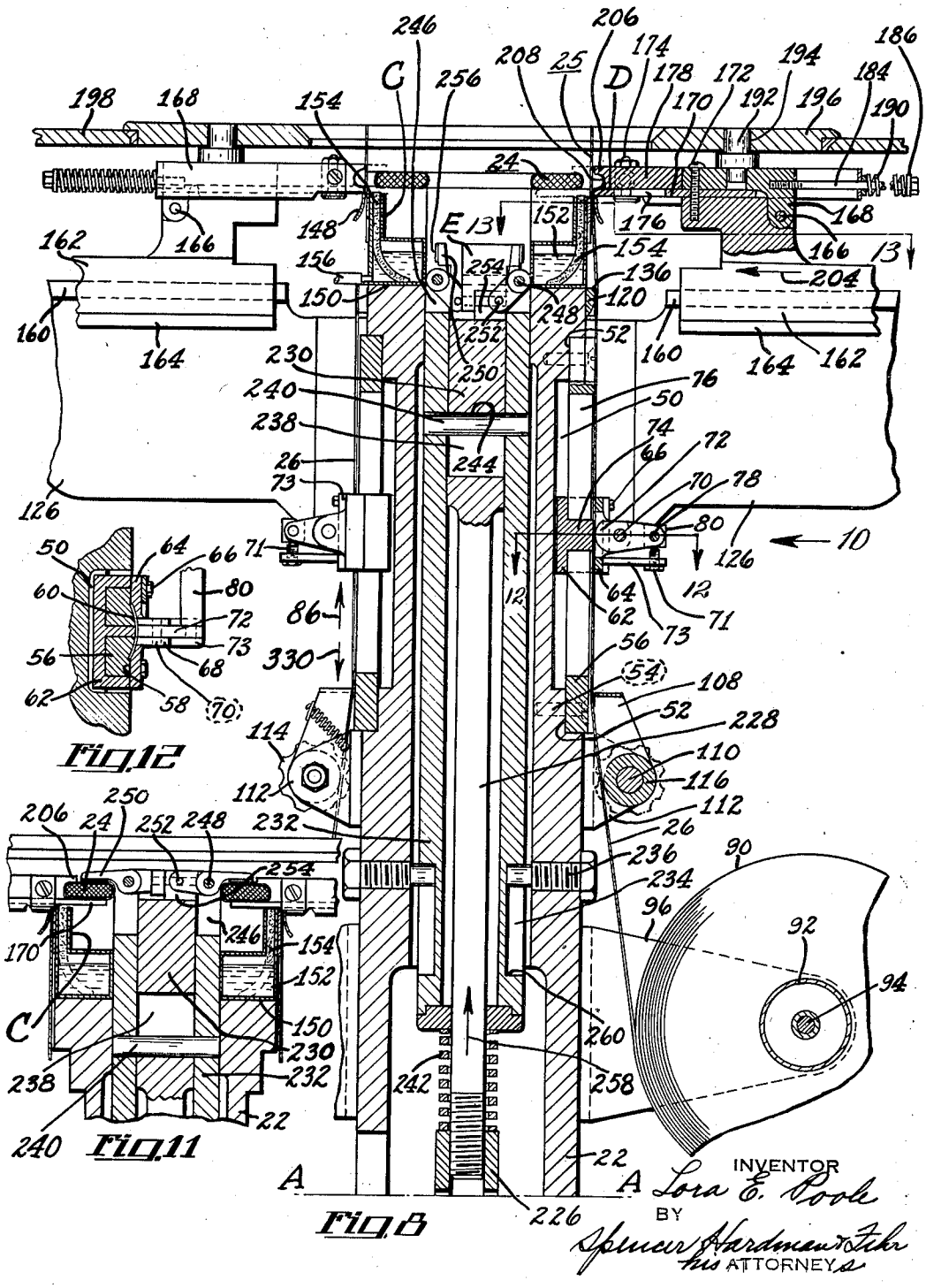

Fig. 12

Fig. 11

Fig. 8

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Filed June 4, 1934 8 Sheets-Sheet 7

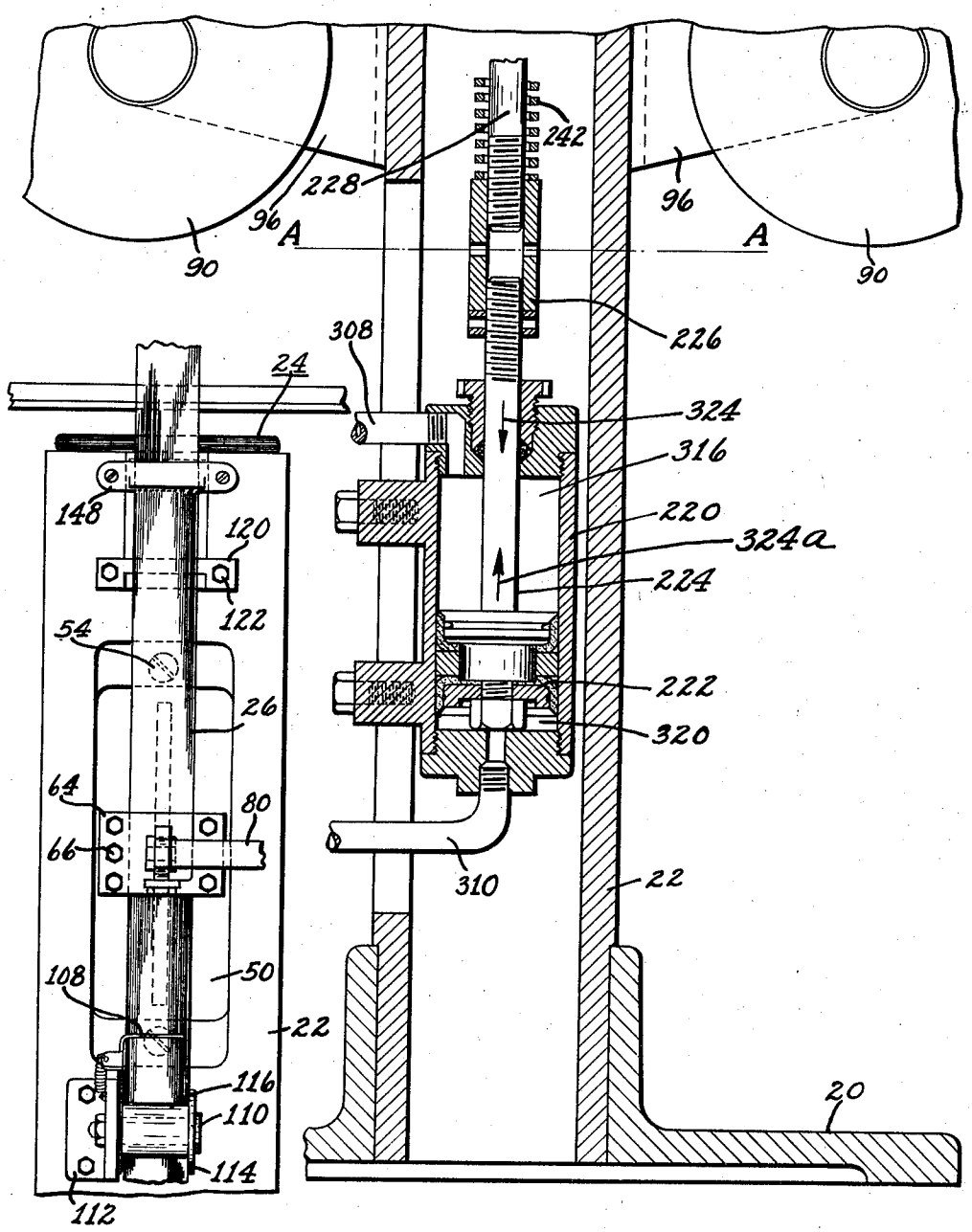

Fig. 10 Fig. 9

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PAPER WRAPPING MACHINE

Filed June 4, 1934 8 Sheets-Sheet 8

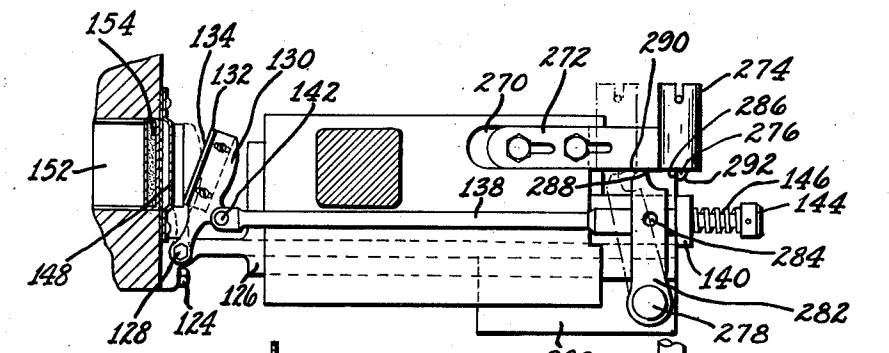

Fig. 13

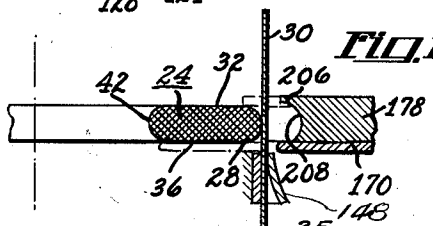

Fig. 15

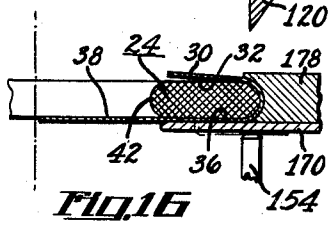

Fig. 16

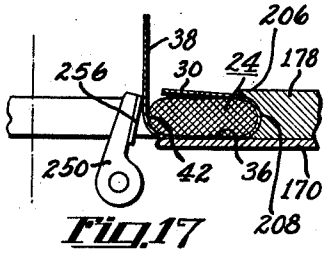

Fig. 17

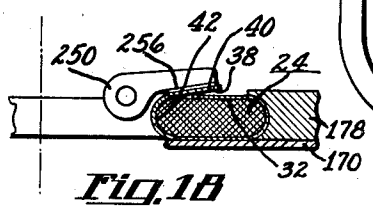

Fig. 18

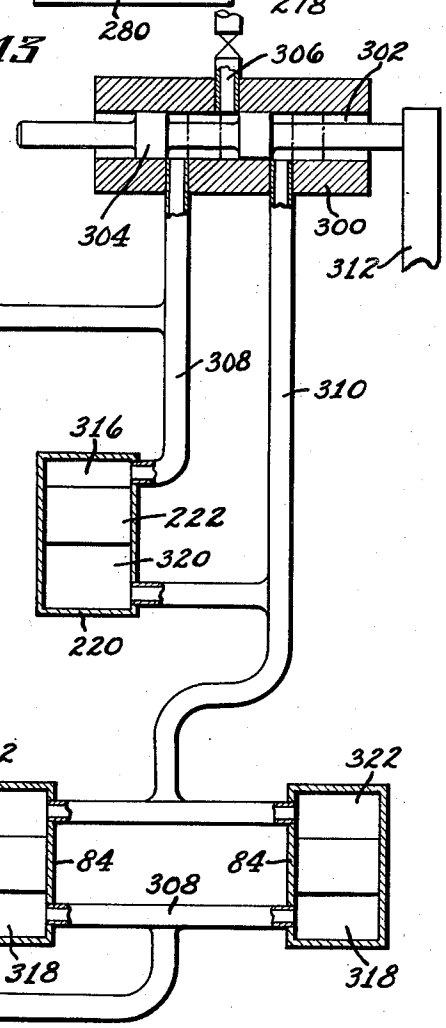

Fig. 14

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Patented Oct. 5, 1937 2,094,815

UNITED STATES PATENT OFFICE

2,094,815

PAPER WRAPPING MACHINE

Lora E. Poole, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Application June 4, 1934, Serial No. 728,843

30 Claims. (Cl. 216—30)

This invention relates to wrapping machines and more particularly to a machine for wrapping paper around electric coils.

It is an object of the present invention to provide for semi-automatic and simultaneous wrapping of paper around several sides of a multi-sided coil.

It is another object of the present invention simultaneously to seal the paper wrappers of a coil.

It is still another object of the present invention to provide common operating means for the various identical machine elements which simultaneously fold paper wrappers around several sides of a multi-sided coil.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings wherein a preferred embodiment of the present invention is clearly shown.

In the drawings:

Fig. 1 is a perspective view of a machine embodying the present invention.

Figs. 2 to 5 inclusive, are enlarged fragmentary perspective views of a part of the machine which illustrate progressive steps of a wrapping operation performed upon a coil.

Fig. 6 is an enlarged fragmentary plan view of the machine.

Fig. 7 is a plan view similar to Fig. 6 showing however, certain elements of the machine in a different position of operation.

Figs. 8 and 9 together represent a complete section taken on the line 8—9 of Fig. 6.

Fig. 10 is a side elevation of a part of the machine as viewed in the direction of arrow 10 in Fig. 8.

Fig. 11 is a fragmentary section similar to a part of Fig. 8 showing, however, certain elements of the machine in a different position of operation.

Fig. 12 is a fragmentary section taken on the line 12—12 of Fig. 8.

Fig. 13 is a fragmentary section taken on the line 13—13 of Fig. 8.

Fig. 14 illustrates in a diagrammatic manner the control for the admission of fluid pressure to various cylinders of the machine.

Figs. 15 to 18 inclusive, illustrate in a diagrammatic manner progressive steps in the wrapping of a sheet of paper around one of the sides of a multi-sided coil.

Referring to the drawings, the present machine comprises a base 20, supporting a rectangular, hollow post 22 on which are mounted various operating devices of the machine such as a plurality of paper feeding devices A, a plurality of paper cutting devices B, a plurality of paper moistening devices C (see Fig. 8), and a plurality of cooperating paper wrapping devices D and E (see also Fig. 8).

In the present instance the machine is adapted for wrapping sheets of paper around the four sides of a four-sided coil such as the generator field coil designated by the reference numeral 24 in Figs. 2 to 5, inclusive. Briefly, during one cycle of operation the machine performs the following functions. Four strips of paper, emerging from four supply rolls, are simultaneously and intermittently fed past four paper cutting devices B and past the outer confines of the four sides of a properly located coil. Short sheets of paper are then simultaneously severed from the fed strips by the cutting devices B. Referring particularly to Figs. 15 to 18 inclusive, there is shown in Fig. 15 one of the four sheets 25 of paper in the position in which it was severed from a strip. The severed sheets are then simultaneously pressed against the outer confines 28 of the properly located coil 24, the one end portion 30 of each sheet 25 is folded over the top surface 32 of the coil and the opposite end portion 34 of each sheet is folded underneath the bottom surface 36 of the coil as illustrated in Fig. 16. While the end portions 34 of the sheets are thus folded underneath the bottom surface 36 of the coil, the gummed sheet surfaces 38 are moistened. Next the inwardly extending sheet ends 40 are simultaneously folded, first upwardly into engagement with the inner confines 42 of the coil and finally over the top surface 32 thereof on top of the previously folded sheet ends 30. The contacting sheet ends thereby become sealed due to the engagement of the moistened gummed sheet surfaces 38 with the folded sheet ends 30.

The coil 24 is supported by the top surface 44 of post 22 and located thereon by two pairs of fingers 46 which receive two diagonally opposite corners of the coil, each pair of fingers being joined by a yoke which is pressfitted into and flush with the coil supporting top surface 44 of post 22.

Paper feeding device A

Referring more particularly to Figs. 1, 8, 10 and 12, the four sides of post 22 are each provided with a rectangular recess 50 which is stepped up at 52. Attached by screws 54 to the steps 52 of each recess 50 is a track 56, part of the front face 58 of which is convex as at 60

(see Fig. 12). Fitting over each of said tracks 56 is a substantially U-shaped slide 62 which is retained on the track by a cover plate 64, attached to said slide 62 by a plurality of screws 66. As best shown in Fig. 12, that face of each cover plate 64 which is adjacent the convex face portion 60 of a track 56 is concave and slightly spaced from said convex track face 60. Each one of the four paper strips 26 passes through a curved space intermediate a track 56 and a cover plate 64. Each of the cover plates 64 is provided with a forked bearing lug 68, pivotally receiving at 70 an eccentric 72 which in the position disclosed in Fig. 8 clamps a paper strip to a depending lug 74 of a slide 62. Each lug 74 is received by a longitudinal groove 76 of a track 56 so that the slides 62 and the attached cover plates 64 may move along their respective tracks without interference from the lugs 74. Two of the four eccentrics 72 are pivotally connected at 78 to the arms 80 which are adjustably mounted on a piston rod 82 of a piston, received by a fluid pressure operated cylinder 84 which is mounted in any suitable manner on post 22. Due to the direct connection of each driving piston with a pair of eccentrics 72, upward motion of both pistons in the direction of arrow 86 in Fig. 1 causes all eccentrics first to clamp their respective paper strips 26 against the adjacent lugs 74 before the slides 62 and attached cover plates 64 are moved by said pistons while the paper strips remain clamped to said lugs 74 as can be readily understood. Such upward movement of the piston, therefore, results in a feeding of the paper strips along the convex track faces 60 in the direction of arrow 86 in Figs. 1 and 8. Upon downward movement of the pistons, the eccentrics 72 are first rocked out of clamping engagement with the paper strips until they engage adjustable set screws 71, carried by brackets 73, attached in any suitable manner to the cover plates 64. As soon as during such downward movement of the pistons the eccentrics are rocked into engagement with the set screws 71, the feeders which include the slides 62, cover plates 64 and eccentrics 72, are moved downwardly in unison with the pistons as can be readily understood.

The paper strips 26 are drawn from supply reels 90 which are wound on drums 92 each of which is journaled on a stationary axis 94, projecting from a bracket 96 which is mounted in any suitable manner on post 22. Each supply reel 90 is held between two discs 98 and 100, the former being attached in any suitable manner to a bracket 96 and the latter being removably supported on the axis 94. Each disc 98 is provided with a pin 102 on which is suspended a metal brake band 104 which is weighted at 106. These metal bands are in permanent frictional engagement with the periphery of the paper supply reels and have a tendency to maintain the layers thereof tightly wound. The paper strips 26, being unwound from their respective supply reels, are guided into engagement with the convex track faces 60 by means of spring-urged elements 108 which are pivotally mounted at 110 on brackets 112 (see Fig. 8), secured in any suitable manner to post 22. The paper strips 26 are kept in lateral alignment with the convex track faces 60 by being confined between the brackets 112 and discs 114 which are mounted on the pivots 110 and properly spaced from said brackets by collars 116 (see Fig. 10). For replacement of any one of the supply reels, the respective disc 100 and the drum which carried the exhausted reel are removed from the supporting axis and a new reel is installed.

Paper cutting devices B

Referring to Figs. 8, 10 and 13, the paper strips 26, after leaving the tracks 56, pass stationary shear blades 120 which are attached by screws 122 to post 22. Mounted on each side of post 22 by screws 124 is a bracket 126, pivotally supporting at 128 (see Fig. 13) among other structure to be described later a lever 130 which adjustably carries a knife 132 the cutting edge 134 of which cooperates with the cutting edge 136 of a stationary shear blade 120. A link 138 which passes through a lug 140 of each bracket 126 is pivotally connected at 142 to each knife carrying lever 130. Interposed between each lug 140 and a collar 144 on each link 138 is a compression spring 146 normally retaining the links and the attached knife carrying levers out of cutting engagement with their respective stationary shear blades 120, see normal position in Fig. 13. The four knife carrying levers 130 are rocked from normal position into cooperative engagement with their respective shear blades 120 by means to be described later. A sheet retaining guide 148 is secured to each side of post 22 through which the fed paper strips 26 pass. As will be noticed from Figs. 8 and 15, the guides 148 cause the paper strips 26 to bend abruptly around the shearing edges 136 of the stationary shear blades 120 so that upon the severing of the sheets 25 from the strips 26, the former will rest on top of the shear blades 120 substantially as shown in Fig. 15.

Paper moistening devices C

As best shown in Figs. 6, 8 and 11, the topmost portion of post 22 is provided with four notches 150, each being in alignment with a fed paper strip 26. Located in each one of these notches is a vessel 152 provided with a wick 154. Communicating with each two vessels through a suitable hose connection 156 (see Fig. 1) is a reservoir 158 which receives a supply of water. Each of the two reservoirs is provided with an overflow 159 so as to maintain the maximum level of the water in the communicating reservoirs and vessels substantially as shown in Fig. 11. While the ends 34 of the severed paper sheets 25 in the position shown in Fig. 15 are folded underneath the bottom surface 36 of a properly located coil, the gummed sheet surfaces 38 brush past the moistening wicks 154 in a manner to be described later.

Cooperating paper folding devices D and E

Referring particularly to Figs. 1, 6, 7, 8, and 11, the brackets 126 provide tracks 160 on which are movable slides 162, retained on said tracks by gib plates 164 which are attached in any suitable manner to said slides. Pivotally mounted at 166 to each slide 162 is a member 168. Interposed between each member 168 and each slide is a paper folding blade 170 as best shown in Fig. 8. The members 168 and the folding blades 170 are held rigid on the slides 162 by a plurality of screws 172. Secured to each folding blade 170 for limited movement relative thereto by means of a screw and slot connection 174, 176 is a retainer plate 178 which is pivotally connected at 180 (see Fig. 7), to a yoke 182, straddling said retainer plate and the associated member 168 and being furthermore slidably sup-

ported by a screw pin 184 which is carried by said member 168. Interposed between each yoke 182 and a washer 186 on each screw pin 184 is a compression spring 190 which normally tends to draw said yoke and attached retainer plate into the extreme left-hand position shown in Fig. 8, which is determined by the extent of the oblong slot 176 in blade 170. Mounted in any suitable manner on each member 168 is an anti-friction roller 192 which cooperates with one of four cam slots 194, provided in a disc 196 which is rotatably mounted on its periphery on a stationary ring plate 198. This ring plate 198 is mounted on a plurality of studs 200 which are secured in any suitable manner to the four brackets 126 which radiate from the post 22. The rotatable cam disc 196 is provided with two handles 202 for manual rotation of said disc (see Fig. 1). The relative positions of the cam slots 194 and cooperating rollers 192 as shown in Fig. 2 correspond to the relative positions of the retainer plates 178 and associated folding blades 170 as shown in Fig. 8. Upon clockwise rotation of cam disc 196 from the position shown in Fig. 2 to that shown in Fig. 3, the four slides 162 will be moved in the direction of arrow 204 in Fig. 9 due to the cooperation between the rollers 192 and the cam slots 194. During a cycle of such simultaneous movement of the slides 162, the retainer plates 178 thereof will simultaneously engage the four paper sheets 25 with their noses 206 which border substantially semi-circular surfaces 208 of said retainer plates. The noses 206 of the retainer plates 178 fold the end portions 30 of the paper sheets 25 over the top surface 32 of coil 24, whereas the substantially semi-circular surfaces 208 thereof firmly press the paper sheets into engagement with the outer confines 28 of the coil. At the time the retainer plates 178 engage said outer confines of the coil, they are stopped from further unitary movement with the slides 162 in the direction of arrow 204 in Fig. 8 by the coil itself. However, the slides have at this stage not yet finished their movement in the direction of arrow 204 in Fig. 8 and, therefore, move relative to the retainer plates 178. During such relative movement of the slides 162, the paper folding blades 170 advance into the position shown in Figs. 11 or 16, thereby drawing the ends 34 of the paper sheets 25 between the lower surface 36 of the coil and the wicks 154 of the moistening devices C until the strip ends 38 extend toward the center of the coil as shown in Fig. 16. It is obvious that during such relative movement between the paper folding blades 170 and the retainer plates 178, the compression springs 190 will be further compressed due to their interposition between the washers 186, movable with the slides 162, and the yokes 182 which are movable with the retainer plates 178. Therefore, upon counter-clockwise rotation of cam disc 196 as viewed in Fig. 3, the slides 162 together with the blades 170 will first retract from the coil relative to the retainer plates 178 until the springs 190 have expanded sufficiently to urge the screws 174 of the retainer plates into engagement with the ends of the slots 176 in the blades whereupon the latter drag the retainer plates 178 along into the inoperative or initial position disclosed in Fig. 8. It thus appears that one oscillation of the cam disc 196 results in a partial wrapping of all paper sheets 25 around the coil and in a moistening of the gummed surfaces 38 of said sheets.

Referring particularly to Figs. 8 and 9, there is shown a cylinder 220, attached in any suitable manner to the interior of the hollow post 22. Received by said cylinder is a double acting piston 222 of any suitable construction, the piston rod 224 of which is lengthwise adjustably connected by a sleeve 226 with the cylindrical stem 228 of a substantially square rod 230 which is slidably received in a substantially rectangular quill 232. Quill 232 is slidable vertically within the hollow post 22 within limits defined by opposite oblong slots 234 which receive screw pins 236, threaded into post 22 as best shown in Fig. 8. Rod 230 is movable relative to quill 232 within limits defined by an oblong slot 238 through which extends a pin 240, secured to said quill 232. A compression spring 242, surrounding the stem 228 of rod 230 and being interposed between sleeve 226 and quill 232, normally urges said rod into the position shown in Fig. 8 in which the end wall 244 of slot 238 in rod 230 is resting against pin 240 of the quill. Quill 232 is provided at the top with four notches 246 which are in alignment with the retainer plates 178 and associated paper folding blades 170. Each one of these notches 246 pivotally receives at 248 a paper folding lever 250 which in the normal relative position of rod 230 and quill 232 as shown in Fig. 8 assumes the position shown in this figure due to its pivotal connection 252 with one of a pair of depending lugs 254 of rod 230. Each one of the levers 250 is provided with a felt pad 256. Upon admission of fluid pressure to the chamber 320 of cylinder 220, the piston 222 therein together with rod 230 and quill 232 move at first in unison in the direction of arrow 258 in Fig. 8 until the end walls 260 of the slots 234 in quill 232 engage the screw pins 236. Thereafter, the rod 230 continues to move relative to the quill 232 as can be readily understood. At the end of the unitary movement of rod 230 and quill 232, the levers 250 have reached the position shown in Fig. 17 and folded the inwardly extending sheet ends 34 around the inner confines 42 of the coil substantially as illustrated. During the succeeding continued movement of the rod 230 relative to the quill, spring 242 will be further compressed and the levers 250 will be rocked into the position shown in Fig. 18 due to their pivotal connections 252 with the rod 230, thereby folding the remaining sheet ends 40 over the top surface 32 of the coil and on top of the previously folded sheet ends 30 with the moistened gummed surfaces 38 contacting said ends 30.

Operation of paper cutting knives

Adjustably mounted in a groove 270 of each slide 162 is a bar 272, having a cylindrical boss 274 which receives a spring urged plunger 276 as best shown in Fig. 13. Pivotally mounted at 278 to a boss 280 of each bracket 126 is a latch member 282 which is also pivotally connected at 284 with a link 138. Upon advancement of the slides 162 toward a properly located coil 24, the shoulder 286 of each spring urged plunger 276 engages the shoulder 288 of its associated latch member 282 and rocks the same counterclockwise as viewed in Fig. 13 from the full line position into the dot-and-dash position whereby link 138 is moved toward the left and the associated cutting knife 132 cooperates with an adjacent stationary shear blade 120 and severs a paper sheet 25 from a paper strip 26. Immediately after the advancing plungers 276 clear the latch members 282 as indicated in dot-and-dash lines in Fig. 13, the latter will be returned into the full line position by

means of the compression springs 146 which urge the links 138 into the position shown in Fig. 14. During the retraction of the slides 162 from the coil into the position shown in Fig. 13, the beveled surfaces 290 and 292 of the latch members 282 and the plungers 276, respectvely, cooperate to push said plungers into their respective bosses 274 when passing the latch members in the full line position of Fig. 13. From the relative positions of the spring-urged plunger 276 and the latch member 282 in most retracted position of the slide 162 as shown in Fig. 13, it appears that immediately upon an advancement of the slide toward the coil a sheet 25 is severed from each supply strip 26.

Control of fluid pressure operated cylinders

Referring more particularly to Figs. 1 to 5 inclusive, 9 and 14, there is mounted in any suitable manner on top of the stationary ring plate 156 a control valve 300 of the type disclosed diagrammatically in Fig. 14. This valve is provided with a central passage 302, receiving a sliding valve 304 therein. Any suitable conduit 306 provides communication between a suitable supply of fluid pressure and the valve passage 302. Suitable conduits 308 provide communication between the valve passage 302 and one side of cylinder 220 and each of the feeder cylinders 84, and other conduits 310 provide communication between said valve passage 302 and the other side of cylinder 220 and each of the feeder cylinders 84. Mounted in any suitable manner on cam disc 196 are two angularly spaced bars 312 and 314 which are adapted to shift the sliding valve 304 into either one of two positions. In Fig. 2 the bar 312 has shifted the sliding valve 304 into the position shown diagrammatically in Fig. 14, in which fluid pressure from the supply flows through the conduit 306, valve passage 302 and conduits 308 to the top chamber 316 of cylinder 220 and to the bottom chambers 318 of cylinders 84. Fluid pressure in the bottom chamber 320 of cylinder 220 and in the top chambers 322 of cylinders 84 may escape through conduits 310 and the valve passage 302 to the atmosphere. Admission of fluid pressure to the various cylinders in such specified manner results in movement of piston 222 in cylinder 220 in the direction of arrow 324 in Fig. 9 into the full line position shown therein, and in movement of the feeders in the direction of arrow 86 in Fig. 8, during which movement the paper strips 26 are fed. It will be noticed from Fig. 2 that in the referred to position of the valve 304 which corresponds to the position in Fig. 14 the retainer plates 178 and paper holding blades 170 are in the position shown in Fig. 8 since the rollers 192 of the slides 162 are shown in a position most retracted from coil 24. Upon manual clockwise rotation of cam disc 196 from the position shown in Fig. 2 to that shown in Fig. 3, bar 314 shifts valve 304 from the full line position into the dot and dash position shown in Fig. 14. Fluid pressure from the supply is now permitted to flow through conduit 306, valve passage 302 and conduits 310 into chamber 320 of cylinder 220 and the chamber 322 of the cylinders 84. Fluid pressure in chamber 316 of cylinder 220 and in chambers 318 of cylinders 84 may escape through the conduits 308 and the valve passage 302 to the atmosphere. Such specified admission of fluid pressure to the various cylinders results in movement of piston 222 in cylinder 220 in the direction of arrow 324*a* and in movement of the feeders in the direction of arrow 330 (both in Fig. 8). However, such movement of the feeders does not result in a feeding of the paper strips as explained earlier.

Mode of operation

Assuming that the machine is in normal or inoperative position as shown in Fig. 1, the operator will first locate a coil 24 on top of post 22 in such manner that two diagonally opposite corners of the coil are received between two pairs of locating fingers 46. In normal inoperative position of the machine, the slides 162 and the paper folding fingers 250 are in the relative position shown in Fig. 8 and the previously fed ends of the paper strips 26 are in a position ready for a strip severing operation of the machine. In order to start a wrapping operation of the machine, the operator manually rotates the cam disc 196 from the position shown in Fig. 2 to that shown in Fig. 3. Such manual rotation of the cam disc results in the earlier explained simultaneous advancement of the slides 162 toward the coil 24. Immediately after the slides 162 advance and before the retainer plates 178 thereof contact the paper strips, the knives 132 are actuated as earlier explained so that the retainer plates 178 grasp just severed paper sheets 25, pressing the same against the outer confines 28 of the coil and folding the topmost sheet end portions 30 over the top surface 32 of the coil. Advancement of the slides 162 toward the coil also results in a drawing by the blades 170 of the sheet end portions 34 past the moistening wicks 154 and into the position most clearly shown in Fig. 16.

Manual rotation of cam disc 196 from the position shown in Fig. 2 to that shown in Fig. 3 also results in shifting of valve 304 from the full line position into the dot-and-dash position shown in Fig. 14. As earlier explained, such shifting of valve 304 results in idle retraction of the feeders in the direction of arrow 330 in Fig. 9 and in movement of piston 222 in the direction of arrow 324*a* in Fig. 9. Such movement of piston 222 causes combined movement of rod 230 and quill 232 in the direction of arrow 258 in Fig. 8 until the end walls 260 of the slots 234 in the quill engage the screw pins 236. During such combined movement of rod 230 and quill 232, the paper folding levers 250 fold the inwardly extending sheet ends 40 into engagement with the inner confines 42 of the coil and at the end of such combined movement the levers 250 have reached the position relative to the coil shown in Fig. 17 without changing their relative position with respect to rod 230 and quill 232. However, while the quill 232 has reached its stroke limit, rod 230 continues to move in the direction of arrow 258 in Fig. 8, thereby causing the levers 250 to fold the remaining sheet portions 40 over the top surface 32 of the coil in such manner that the moist gummed sheet surfaces 38 come into contact with the previously folded sheet ends 30 whereby the wrapping sheets become sealed. At this stage the operator returns cam disc 196 from the position shown in Fig. 5 to that shown in Fig. 2 whereby the cam slots 194 cause the retraction from the coil of the slides 162 and the elements carried thereby in the earlier specified manner and the arm 312 on said cam disc shifts valve 304 from the dot and dash position into the full line position shown in Fig. 14. Such shifting of valve 304 results in movement of piston 222 and the parts connected therewith into the position shown in Figs. 8 and 9 and in movement of the feeders in the direction of arrow 86 in Fig. 8 during which movement the

paper strips are fed until the foremost edges thereof reach the position shown in Fig. 8. Movement of piston 222 into the position shown in Fig. 9 results first in movement of rod 230 relative to quill 232 and responsive rocking of the paper folding levers 250 from the position shown in Fig. 18 to that shown in Fig. 8 or 17, thereafter rod 230 and quill 232 move in unison into the position shown in Fig. 8 due to the engagement of end wall 244 of slot 238 in rod 230 with the pin 240 which is carried by the quill.

The wires of each coil before and during part of the wrapping operation are loosely bound together by two spring clips 400 which are preferably applied near two diagonally opposite corners of a coil other than the ones which are received between the two pairs of locating fingers 46 on top of the machine post 22. As best shown in Figs. 2 to 5 inclusive, the cam disc 196 is provided with two opposite guides 402, providing longitudinal grooves 404 in which are slidably received the pivots 406 of clip removers 408 which are provided with thumb-handles 410. After the operator has started a wrapping operation by manually rotating cam disc 196 into the position shown in Figs. 3 to 5 inclusive, he manipulates the clip removers which are then in substantial alignment with the clips 400 of a coil in the machine and strips said clips off said coil and into any suitable receptacle such as the hoppers 412 which are within easy reach of the operator so that he may again apply the delivered clips to other coils to be wrapped.

While the embodiment of the present invention as herein disclosed, constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

I claim:

1. In a wrapping machine, the combination of cooperating means movable linearly in parallel planes for wrapping flexible material around three sides of a substantially rectangular portion of an article with one end portion of the material bearing against one of said three sides; and means movable transversely of said planes and including a pivotally mounted lever for wrapping the partially wrapped material around the fourth side of said article portion and for folding the remaining end portion of the material into overlapping engagement with said one end portion thereof.

2. In a wrapping machine, the combination of cooperating members movable linearly in parallel planes for wrapping flexible material around three sides of a substantially rectangular portion of an article with one end portion of the material bearing against one of said three sides; and means for wrapping the partly wrapped material around the fourth side of said article portion and for folding the remaining end portion of the material into overlapping engagement with said one end portion thereof, said means including two elements movable relative to each other and in a direction transversely of said planes, and a lever pivoted to both elements.

3. In a wrapping machine, the combination of cooperating means movable linearly in parallel planes for wrapping flexible material around three sides of a substantially rectangular portion of an article; and means to finish wrapping the partly wrapped material, said means including two elements movable relative to each other and in a direction transversely of said planes, a lever pivoted to both elements, and means for causing unitary movement of both elements through a certain cycle in order that the lever folds the unwrapped material into engagement with the fourth side of said article portion, and then for causing movement of one of the elements relative to the other element whereby the lever is rotated and folds the depending unwrapped end portion of the material into overlapping engagement with the other end portion thereof.

4. In a wrapping machine, the combination of means for partially wrapping flexible material around a substantially rectangular portion of an article, said means including two members movable relative to each other in parallel planes, and means for causing unitary movement of both members through a certain cycle whereby one of the members clamps the material to one side of said article portion and folds an end portion of said material over another side of said article portion, and then for causing continued movement of the other member relative to said one member for folding the material around a third side of said article portion; and means movable transversely of said planes and including a pivotally mounted lever for wrapping the partly wrapped material around the fourth side of said article portion and for folding a depending end portion of the material into overlapping engagement with the other end portion thereof.

5. In a wrapping machine, the combination of means for supporting an article; a vessel containing water and a wick extending adjacent one plane surface of a substantially rectangular portion of a supported article; and means for wrapping a sheet of gummed flexible material around said article portion, said means including a member for clamping part of the sheet against the article portion and a blade movable parallel to said one plane surface in close proximity thereto so that another part of the sheet in the path of movement of the blade is drawn thereover, the thickness of said blade being such that said other sheet part while drawn over the blade is first progressively moved past the bodily engaging wick and thus becomes moistened and a length of said other sheet part is then forced into engagement with said one plane surface, the end portion of the remaining moistened sheet part becoming sealed to the other end portion of the sheet when in overlapping engagement therewith.

6. In a wrapping machine, the combination of means for wrapping a sheet of flexible material around an article; means adjacent the article for severing a sheet from a supply strip; a track having a convex guiding surface over which the strip is guided to the severing means; and means for feeding the strip on the track toward the severing means said feeding means forcing the strip into engagement with the convex track surface whereby said strip assumes a correspondingly curved shape which resists bending of the strips away from the track.

7. In a wrapping machine, the combination of a locator for supporting an article in a fixed position; cooperating means movable relative to a supported article for wrapping gummed flexible material around a portion of said article and sealing the overlapping ends of the wrapper; and means moistening the gummed material upon being wrapped around the article portion.

8. In a wrapping machine, the combination of cooperating shears for severing a sheet from a supply of flexible material; means for feeding supply material to the severing means; means for wrapping the sheet around an article; and means

including one of the shears for supporting the severed sheet in position for wrapping.

9. In a wrapping machine, the combination of movable means for partially wrapping a sheet around a certain length of an article; means actuated by the moving wrapping means for severing a sheet from a supply of flexible material; power operated means for feeding the supply material to the severing means; and a controller actuated by the moving wrapping means for causing operation of the feeding means.

10. In a wrapping machine, the combination of movable means for partially wrapping a sheet around a portion of an article; power operated means to finish wrapping the sheet around said portion; means for severing a sheet from a supply of flexible material; power operated means for feeding supply material to the severing means; and a single controller actuated by the moving partial wrapping means for causing operation of the finish-wrapping means and the feeding means.

11. In a wrapping machine, the combination of movable means for partially wrapping a sheet around a portion of an article; power operated means to finish wrapping the sheet around said portion; means actuated by the moving partial wrapping means for severing a sheet from a supply of flexible material; power operated means for feeding supply material to the severing means; and a single controller for causing operation of the finish-wrapping means and the feeding means.

12. In a wrapping machine, the combination of movable means for partially wrapping a sheet around a portion of an article; power operated means to finish wrapping the sheet around said portion; means actuated by the moving partial wrapping means for severing a sheet from a supply of flexible material; power operated means for feeding supply material to the severing means; and a single controller actuated by the moving partial wrapping means for causing operation of the finish-wrapping means and the feeding means.

13. In a wrapping machine, the combination of means for partially wrapping gummed flexible material around a portion of an article; means moistening the gummed material upon being partially wrapped around the article portion; and means to finish wrapping the moistened material around said article portion whereby the overlapping ends of the material become sealed.

14. In a wrapping machine, the combination of movable means for partially wrapping a sheet of gummed flexible material around a portion of an article; means moistening the sheet during a partial wrapping thereof; a power operated device to finish wrapping the sheet around said portion whereby the overlapping ends of the sheet become sealed; means for severing a sheet from a supply of gummed flexible material; a power operated device for feeding supply material to the severing means; and a single controller actuated by the moving partial wrapping means for causing operation of all devices.

15. In a wrapping machine, the combination of movable means for partially wrapping a sheet of gummed flexible material around a portion of an article; means moistening the sheet during a partial wrapping thereof; a power operated device to finish wrapping the sheet around said portion whereby the overlapping ends of the sheet become sealed; means actuated by the moving partial wrapping means for severing a sheet from a supply of gummed flexible material; a power operated device for feeding supply material to the severing means; and a single controller for causing operation of all devices.

16. In a wrapping machine, the combination of movable means for partially wrapping a sheet of gummed flexible material around a portion of an article; means moistening the sheet during a partial wrapping thereof; a power operated device to finish wrapping the sheet around said portion whereby the overlapping ends of the sheet become sealed; means actuated by the moving partial wrapping means for severing a sheet from a supply of gummed flexible material; a power operated device for feeding supply material to the severing means; and a single controller actuated by the moving partial wrapping means for causing operation of all devices.

17. In a wrapping machine, the combination of movable means for partially wrapping a severed sheet of flexible material around a portion of an article; a power operated device to finish wrapping the sheet around said portion; a power operated device for feeding flexible supply material into position for wrapping; and a controller actuated by the moving partial wrapping means for causing operation of all devices.

18. In a wrapping machine, the combination of movable means for simultaneously wrapping sheets around spaced portions of an article; means for simultaneously feeding supplies of flexible material adjacent the wrapping means; and means actuated by the moving wrapping means for simultaneously severing sheets from the fed supply materials.

19. In a wrapping machine, the combination of movable means for simultaneously wrapping sheets around spaced portions of an article; means operated in timed relation with the operation of the wrapping means for simultaneously feeding supplies of flexible material adjacent the wrapping means; and means actuated by the moving wrapping means for simultaneously severing sheets from the fed supply materials.

20. In a wrapping machine, the combination of stationary means for locating a multi-sided coil; a plurality of devices for partially wrapping sheets around various sides of the located coil; a manually operable single means for operating all devices; a plurality of power operated mechanisms to finish wrapping the sheets around said coil sides; and a single controller for causing operation of all mechanisms.

21. In a wrapping machine, the combination of a plurality of devices for partially wrapping sheets of flexible material around spaced portions of an article; a manually movable single means for operating all devices; a plurality of power operated mechanisms to finish wrapping the sheets around said portions; and a single controller actuated by the moving single means for causing operation of all mechanisms.

22. In a wrapping machine, the combination of stationary means for locating a multi-sided coil; means for partially wrapping sheets around various sides of the located coil; a plurality of power operated devices for feeding supply materials adjacent said coil sides; means for severing a sheet from each fed supply material; a plurality of power operated devices to finish wrapping the sheets around said coil sides; and a single controller for causing operation of all devices.

23. In a wrapping machine, the combination of stationary means for locating a multi-sided coil; a plurality of mechanisms for partially wrapping

sheets around various sides of the located coil; a manually operable single means for operating all mechanisms; a plurality of power operated devices for feeding supply materials adjacent said coil sides; means for severing a sheet from each fed supply material; a plurality of power operated devices to finish wrapping the sheets around said coil sides; and a controller for causing operation of all devices.

24. In a wrapping machine, the combination of a plurality of mechanisms for partially wrapping sheets around spaced portions of an article; a manually movable single means for operating all mechanisms; a plurality of power operated devices for feeding flexible supply materials adjacent said article portions; means for severing a sheet from each fed supply material; a plurality of power operated devices to finish wrapping the sheets around said portions; and a controller actuated by the moving single means for causing operation of all devices.

25. In a wrapping machine, the combination of movable means for partially wrapping sheets around spaced portions of an article; a plurality of power operated devices for feeding flexible supply materials adjacent said article portions; means actuated by the moving wrapping means for severing a sheet from each fed supply material; and a plurality of power operated devices to finish wrapping the sheets around said portions.

26. In a wrapping machine, the combination of movable means for partially wrapping sheets around spaced portions of an article; a plurality of power operated devices for feeding flexible supply materials adjacent said article portions; means actuated by the moving wrapping means for severing a sheet from each fed supply material; a plurality of power operated devices to finish wrapping the sheets around said portions; and a single controller for causing operation of all devices.

27. In a wrapping machine, the combination of a plurality of movable mechanisms for partially wrapping sheets around spaced portions of an article; a manually movable single means for simultaneously operating all mechanisms; a plurality of power operated devices for feeding flexible supply materials adjacent said article portions; means actuated by the moving mechanisms for severing a sheet from each fed supply material; a plurality of power operated devices to finish wrapping the sheets around said portions; and a single controller actuated by the moving single means for causing operation of all devices.

28. In a wrapping machine, the combination of movable means for partially wrapping a sheet of gummed material around a portion of an article; means moistening the sheet upon being partially wrapped around the article portion; power operated means to finish wrapping the sheet around said article portion whereby the overlapping ends of the sheet become sealed; and a controller actuated by the moving partial wrapping means for causing operation of the finish-wrapping means.

29. In a wrapping machine the combination of means for partially wrapping a severed sheet of gummed material around a portion of an article; means moistening the sheet upon being partially wrapped around the article portion; a power operated device to finish wrapping the sheet around said article portion whereby the over-lapping ends of said sheet become sealed; a power operated device for feeding gummed supply material into position for wrapping; and a single controller for causing operation of all devices.

30. In a wrapping machine, the combination of movable means for partially wrapping a severed sheet of gummed material around a portion of an article; means moistening the sheet upon being partially wrapped around the article portion; a power operated device to finish wrapping the sheet around said article portion whereby the over-lapping ends of said sheet become sealed; a power operated device for feeding gummed supply material into position for wrapping; and a single controller actuated by the moving partial wrapping means for causing operation of all devices.

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