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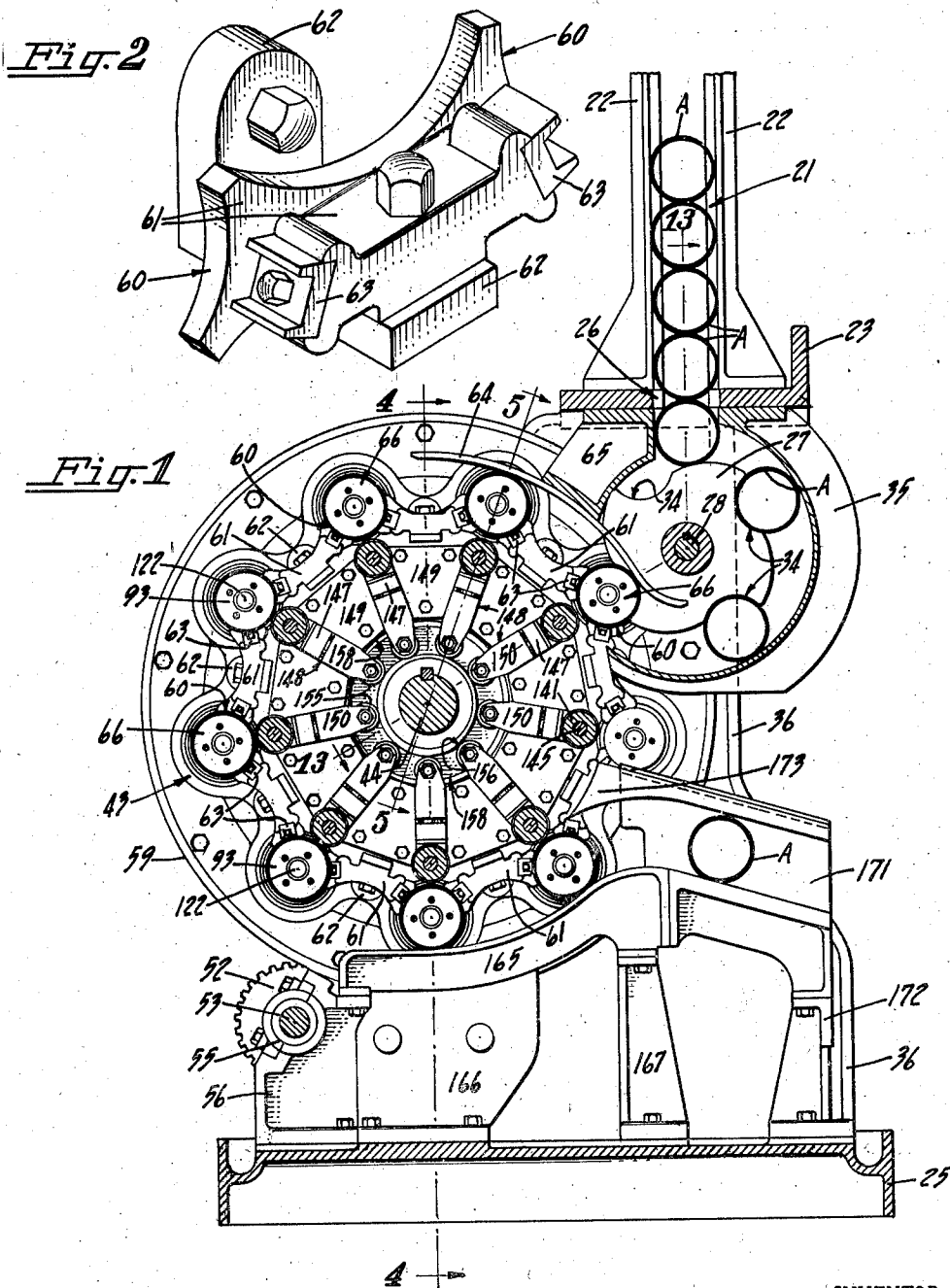
J. F. PETERS

2,424,581

CAN BEADING MACHINE WHICH SKIPS LONGITUDINAL SEAM

Filed Nov. 5, 1943

7 Sheets-Sheet 1



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July 29, 1947.

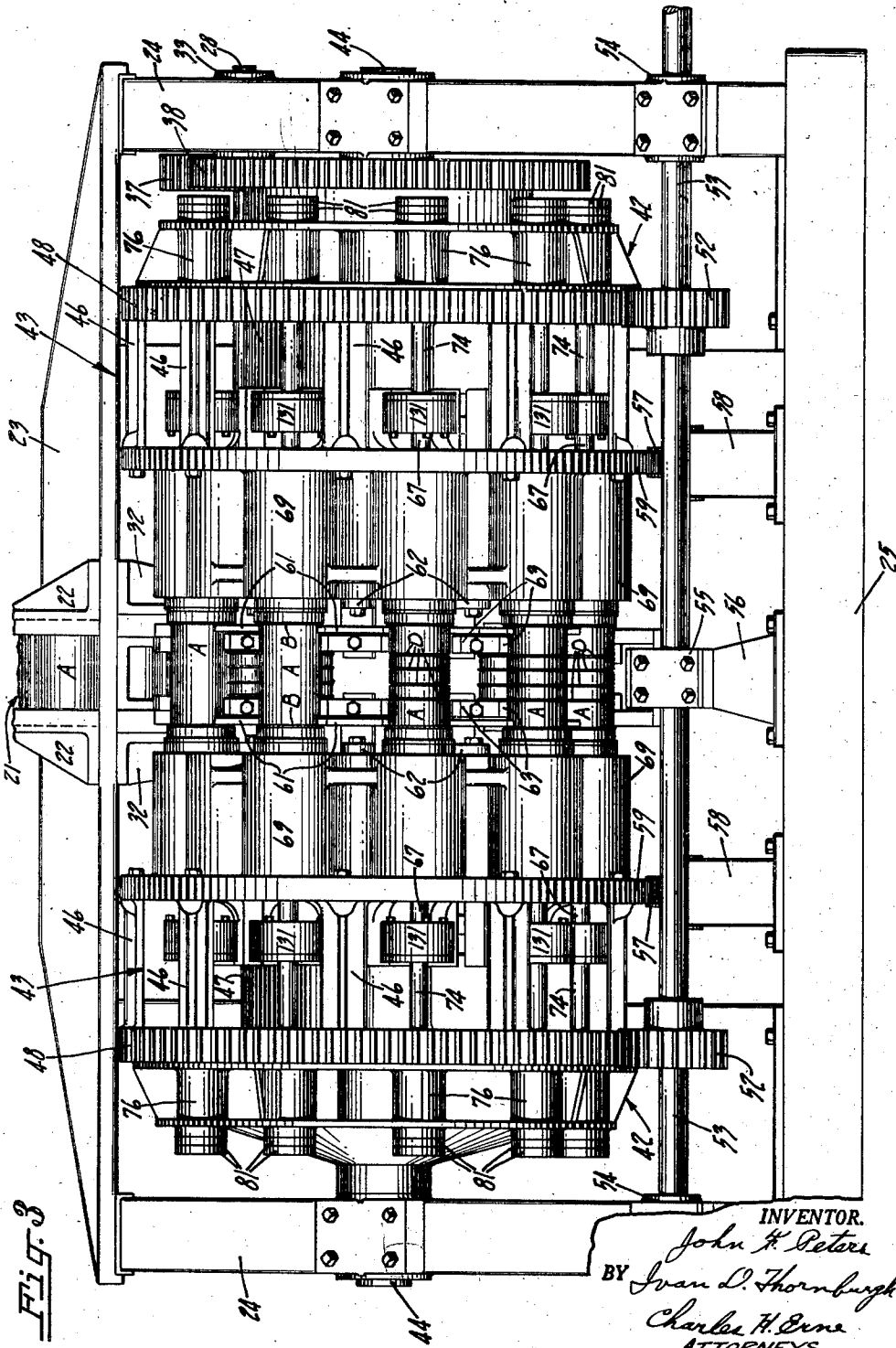
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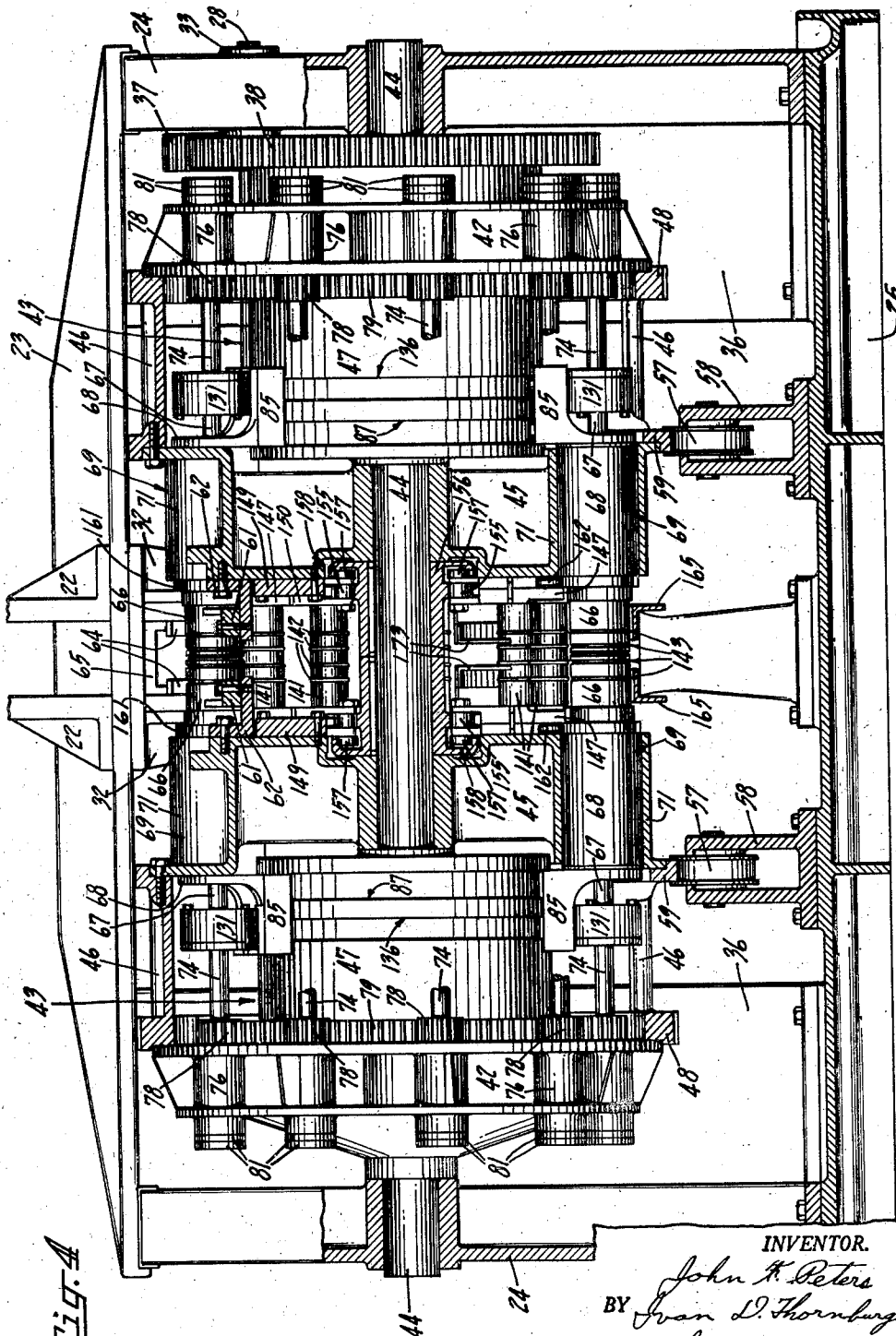


Fig. 4

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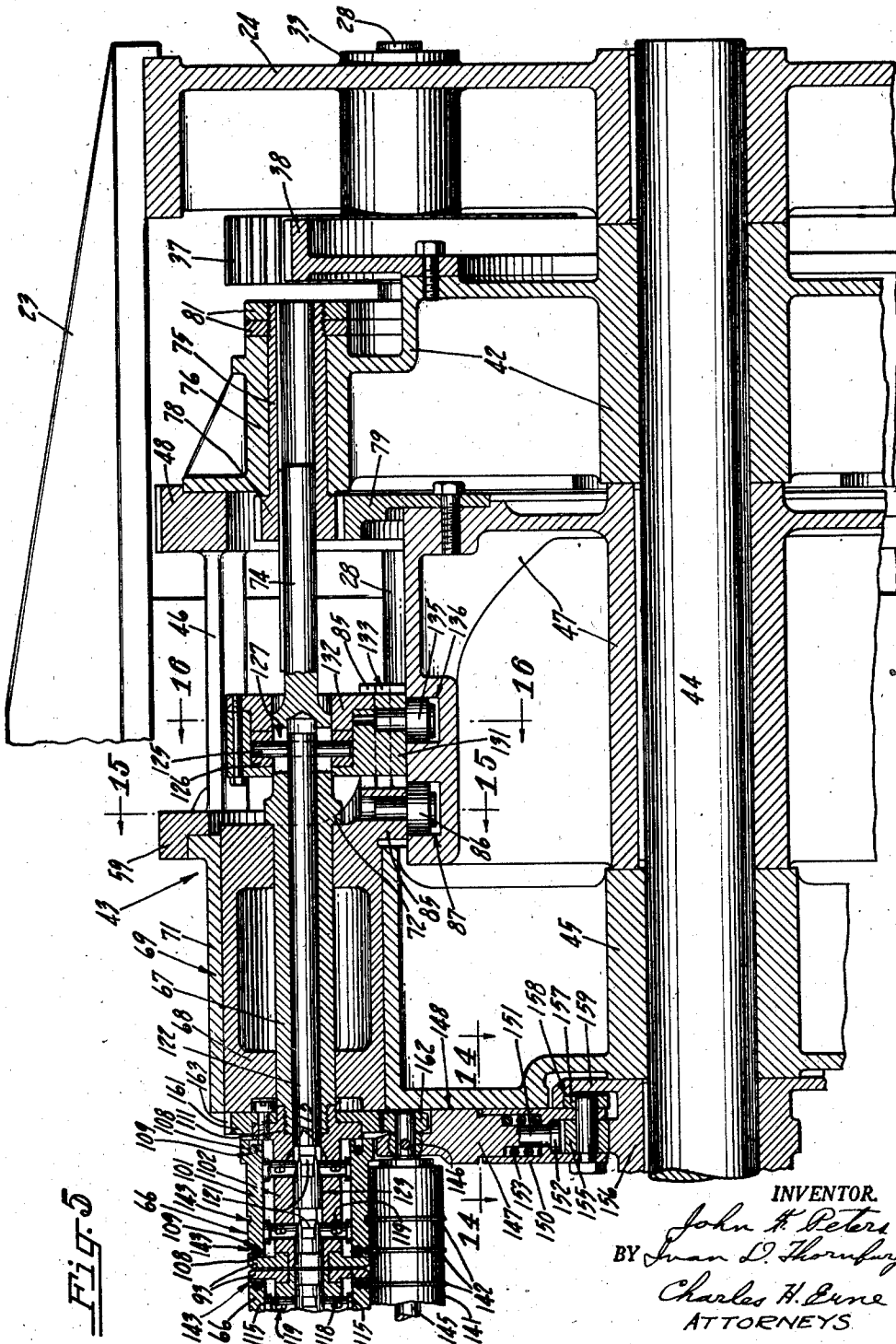
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Filed Nov. 5, 1943

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July 29, 1947.

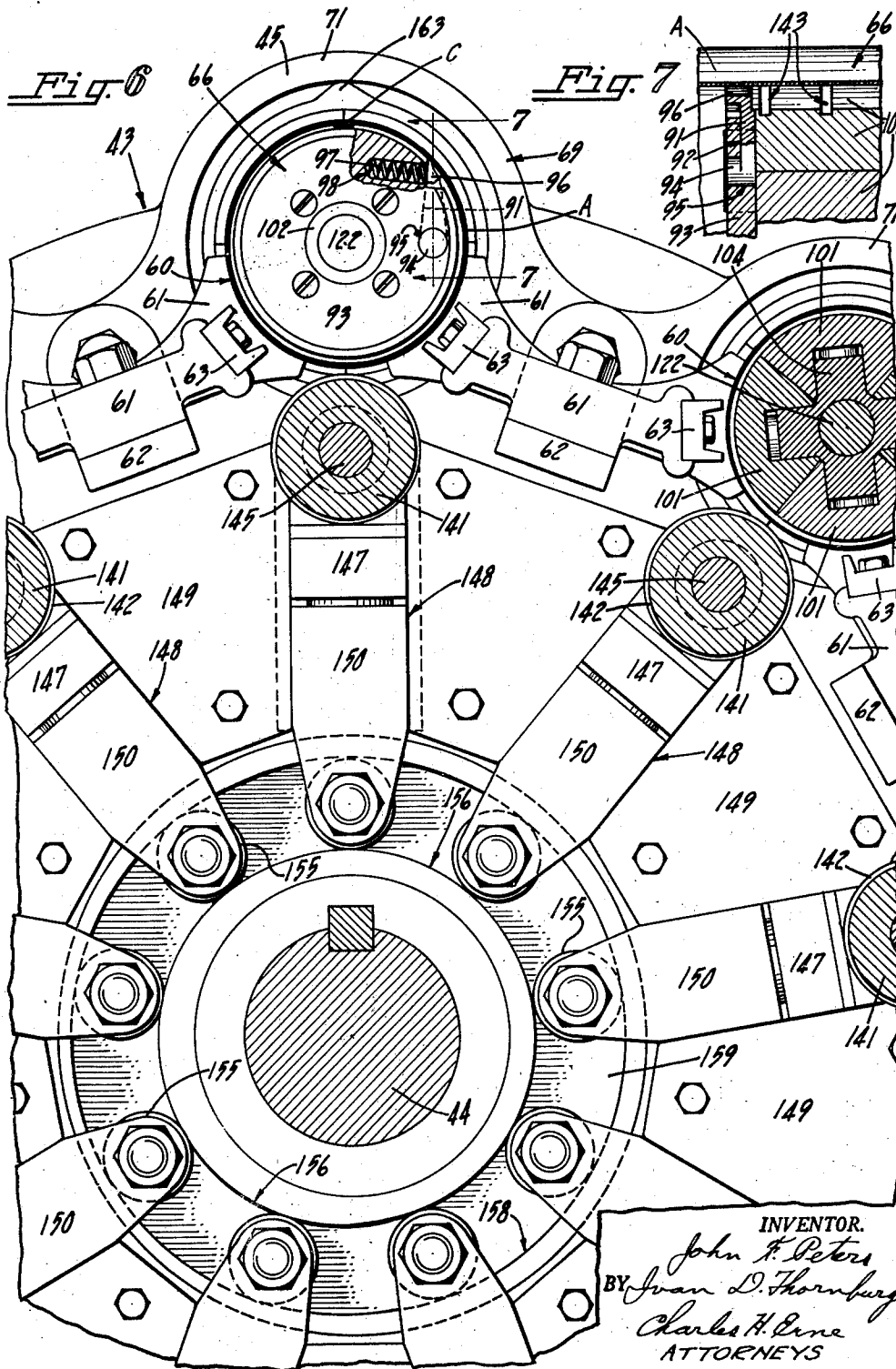
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CAN BEADING MACHINE WHICH SKIPS LONGITUDINAL SEAM

Filed Nov. 5, 1943

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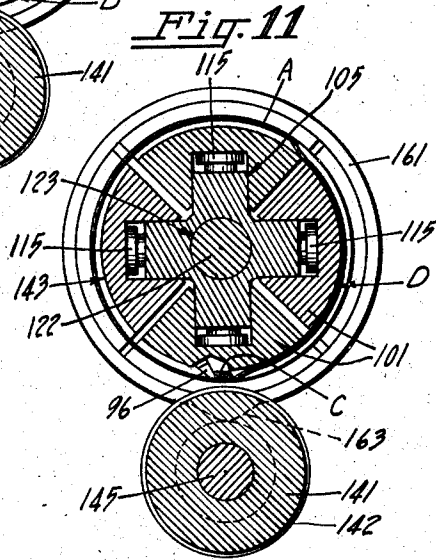
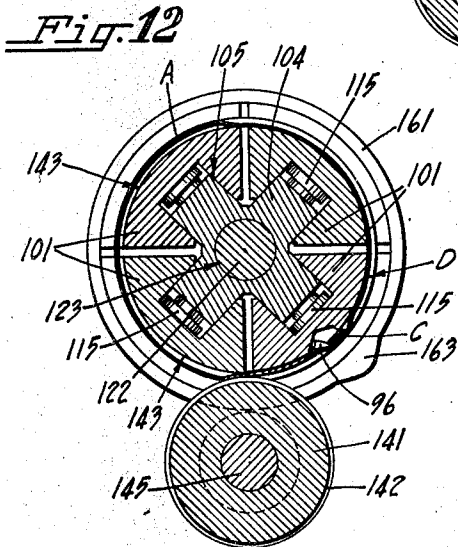
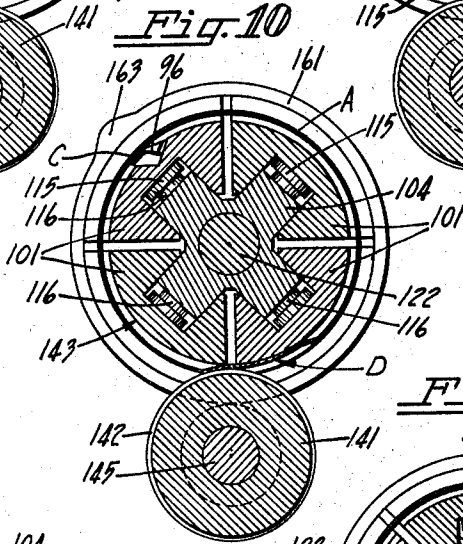
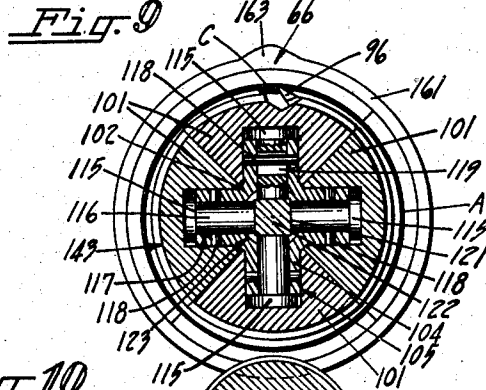
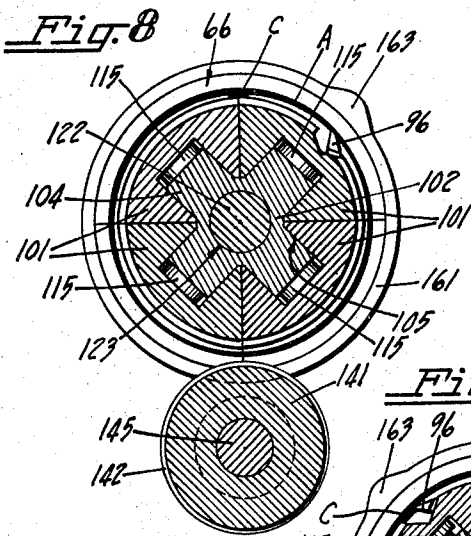
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CAN BEADING MACHINE WHICH SKIPS LONGITUDINAL SEAM

Filed Nov. 5, 1943

7 Sheets-Sheet 6



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CAN BEADING MACHINE WHICH SKIPS LONGITUDINAL SEAM

Filed Nov. 5, 1943

7 Sheets-Sheet 7

Fig. 13

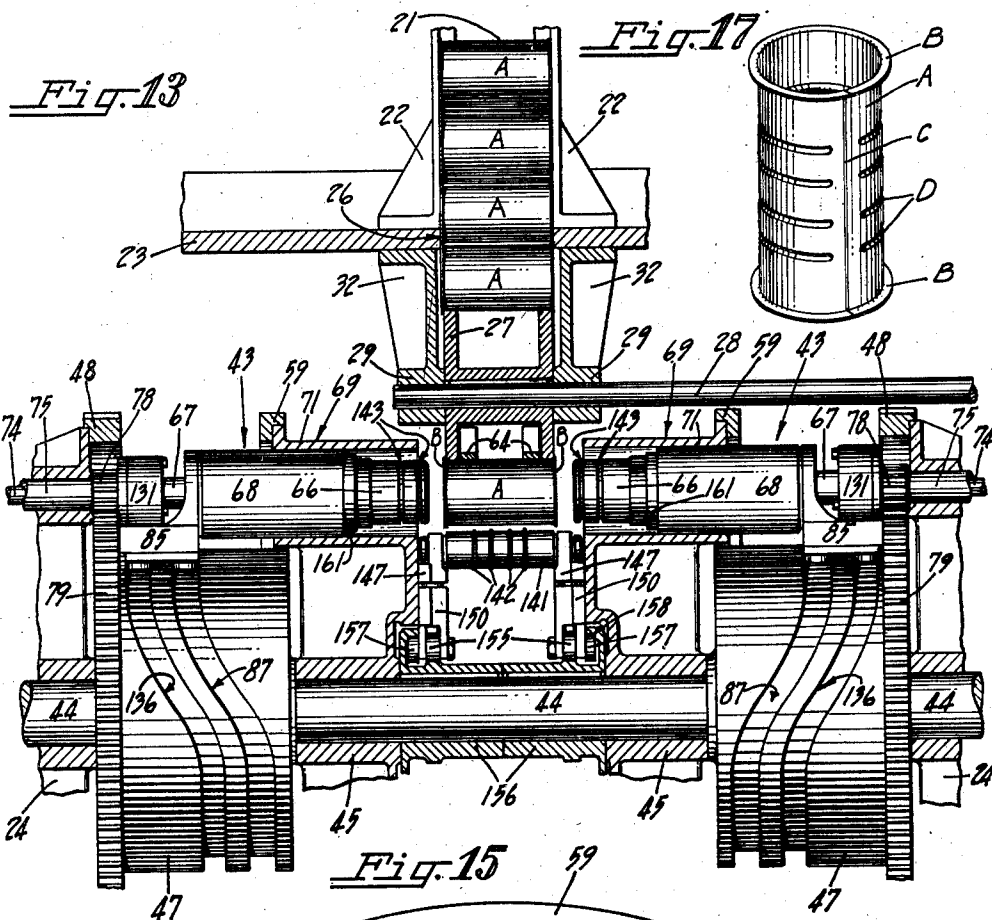


Fig. 17

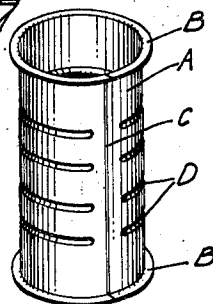


Fig. 15

Fig. 14

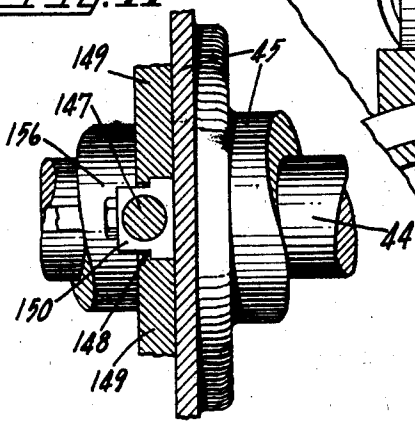
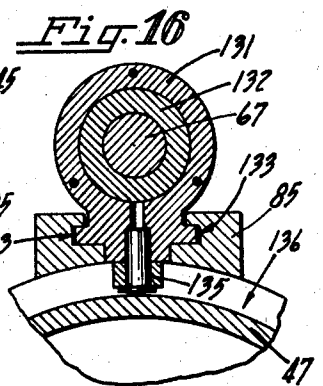


Fig. 16



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UNITED STATES PATENT OFFICE

2,424,581

CAN BEADING MACHINE WHICH SKIPS
LONGITUDINAL SEAMS

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Application November 5, 1943, Serial No. 509,108

10 Claims. (Cl. 153-73)

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This invention relates to a machine for beading tubular metallic can bodies having side seams and has particular reference to devices for forming annular beads in the can body side wall while skipping or jumping the side seam to insure that the seam remains unbeaded.

In the manufacture of light weight sheet metal cans made from thin stock it is often desirable to form a plurality of spaced annular reinforcing beads in the body side wall to increase the strength and rigidity of the body. In such cans it also is desirable to leave unaltered the bonded side seam, which includes numerous layers of body stock, by skipping the seam during the forming of the beads.

The present invention contemplates a beading machine having a rotatable carrier wheel for carrying a plurality of mandrels upon which tubular can bodies are positioned and which are rotated adjacent individual beading rollers, the rollers being movable away from the mandrels to jump or skip over the side seam and thus interrupt the beading as to the side seam.

An object of the invention is the provision of a machine for forming annular or circumferential beads in can bodies having side seams wherein the beading is performed by rollers which are operable against the bodies while they are supported on mandrels and which are movable away from the mandrels when the side seams of the bodies come adjacent the beading rollers for jumping the seam and thus leaving the latter unbeaded.

Another object is the provision in a machine of this character of a side seam locating and driving element carried and operated in the mandrels for bringing the side seam of each can body into a predetermined position on the mandrels prior to coaction with a beading roller so that the beading may be omitted from the side seam.

Another object is the provision in such a machine of a plurality of centralizing molds disposed adjacent each of the mandrels for aligning a tubular can body in place on the mandrel and of magnets adjacent each of the molds for holding a received can body until its side seam is brought into position by the locating element as an incident to the beading operation.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawings, discloses a preferred embodiment thereof.

Referring to the drawings:

Figure 1 is a vertical section of a machine embodying the instant invention;

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Fig. 2 is a perspective view showing in detail, a centralizing mold with magnets secured thereto; Fig. 3 is a front elevation of the machine shown in Fig. 1;

Fig. 4 is a longitudinal section taken substantially along the line 4-4 in Fig. 1, with parts broken away;

Fig. 5 is an enlarged fragmentary sectional view taken substantially along the line 5-5 in Fig. 1, with parts broken away;

Fig. 6 is an enlarged vertical view of a portion of the machine shown in Fig. 1, with parts in section and illustrating a can side seam locating and driving finger;

Fig. 7 is a fragmentary section as viewed substantially along the line 7-7 in Fig. 6;

Figs. 8 and 9 are enlarged schematic sectional views of an expanding mandrel and beading roller showing the locating and driving finger before and after engaging a can body side seam, Fig. 9 showing the mandrel expanding pins in detail;

Figs. 10, 11 and 12 are views similar to Figs. 8 and 9 and show progressive stages of beading a can body and of jumping over the side seam;

Fig. 13 is an enlarged longitudinal sectional view taken substantially along the broken lines 13-13 in Fig. 1, with parts broken away;

Fig. 14 is an enlarged sectional view taken substantially along the line 14-14 in Fig. 5 with parts broken away;

Fig. 15 is an enlarged fragmentary view taken substantially along the line 15-15 in Fig. 5, with parts broken away, and with parts in section;

Fig. 16 is an enlarged sectional view taken substantially along the line 16-16 in Fig. 5; and

Fig. 17 is a perspective view of a can body showing the results of the beading operation performed in the instant machine.

As a preferred embodiment of the instant invention the drawings disclose a machine in which tubular metallic can bodies A (Fig. 17) having end flanges B and longitudinal side seams C are formed with circumferential beads D located at spaced intervals along the length of the body. Such a can body preferably is cylindrical in shape and its side seam may or may not be soldered.

The can bodies A to be beaded are arranged in horizontal position in a vertical stack confined within a magazine 21 (Figs. 1 and 13). The magazine comprises a plurality of spaced vertical stack rails 22 which are located one each at the four corners of the magazine and these are carried on a cross bar 23 (see also Fig. 4). This cross bar is secured to a pair of spaced and parallel side

frames 24, which constitute the main frame of the machine. These frames are mounted on a machine base 25.

The can bodies A in the stack move down through an opening 26 in the cross bar 23 and are fed individually and in timed order by a rotatable star wheel 27 located adjacent the bottom of the magazine. This wheel is secured to a cross shaft 28 journaled in a pair of bearings 29 formed in brackets 32 suspended from the cross bar 23 (Fig. 13) and in a bearing 33 in one of the side frames 24 (as viewed to the right in Figs. 3, 4 and 5).

The star wheel 27 has a plurality of pockets 34 into which individual can bodies A fall from the magazine as the wheel rotates. The wheel carries the bodies, thus picked up through a downward circular path of travel into the machine. The bodies are retained in the pockets during this travel by a curved guide rail 35 which is spaced from and which is concentric with the star wheel (Fig. 1). The guide is secured to the cross bar 23 and to an intermediate frame 36 mounted on the main base 25.

The star wheel 27 is rotated by a gear 37 mounted on one end of the shaft 28 (Figs. 3, 4 and 5), and this gear meshes with a driving gear 38 secured to an outer wheel 42 of a continuously rotatable carrier unit 43. There are two of these carrier units, one on each side of the machine and jointly providing a central path of travel for the can bodies passing through the machine.

The two carrier units 43 operate in unison on a stationary shaft 44 the outer ends of which are mounted in the side frames 24. Each carrier unit comprises chiefly an inner rotatable wheel 45, an intermediate rotatable open spool or ring section 46, and the outer rotatable wheel 42 (Figs. 3, 4 and 5). The inner wheel and the outer wheel of each carrier unit are secured to opposite sides of the ring section and thus all of these parts rotate as a unit. Between the inner and the outer wheels and within the surrounding ring section there is a stationary cylindrical barrel cam 47. There are two of these stationary cams, one in each of the carrier units and they are mounted on and keyed to the stationary shaft 44.

Each carrier unit 43 is rotated by a gear 48 which is formed integrally with its intermediate ring section 46. These two gears (one on each unit) mesh with and are driven by a pair of pinions 52 mounted on a main drive shaft 53 (see Fig. 3). Shaft 53 is journaled in a pair of end bearings 54 in the side frames 24 and in an intermediate bearing 55 of a bracket 56. The bracket is mounted on the base 25. The shaft 53 may be driven in any suitable manner.

The carrier units 43 because of their weight on the shaft 44 are supported also intermediate the side frames 24 by rotatable rollers 57 (Fig. 4) which are carried in brackets 58 mounted on the base 25. These rollers engage with peripheral rims 59 of the ring sections 46.

The rotating carrier units 43 pick up the can bodies A to be beaded, from the star wheel 27 and carry them through a curved path of travel corresponding with the periphery of the units. The can bodies thus picked up are received in carrier pockets 60 (Figs. 1, 2 and 6) defined by cooperating molds or cradles 61 which are arranged in regular spaced order around the periphery of the inner wheels 45 of the carrier units 43. The edge portions of two adjacent spaced apart cradles set off each carrier pocket.

These cradles 61 are fastened to L-shaped support blocks 62 (Figs. 2 and 4) which are bolted to the inner carrier wheels 45. Each cradle on one carrier unit 43 is aligned with a corresponding cradle on the other carrier unit and this provides for proper support of a can body in its carrier pocket 60 the support cradles 61 engaging preferably near the end of the body.

Can bodies received in their carrier pockets 60 are retained against displacement by pairs of short permanent magnets 63 (Figs. 2 and 6) which are disposed adjacent the pocket defining edges of the cradles 61. There are two of these magnets for each cradle and two magnets of two adjacent cradles therefore function for each can body in its carrier pocket. Each magnet is bolted to a lateral extension of its associated cradle, as best shown in Fig. 2.

A pair of narrow, spaced and parallel stationary guide rails 64 (Figs. 1, 4 and 13) disposed adjacent the periphery of the carrier units 43 and extending back into the region of the star wheel 27, guide the can bodies and transfer them from the pockets 34 of the star wheel to the pockets 60 of the carrier units. These guide rails are secured to a bracket 65 which is bolted to the magazine cross bar 23.

As soon as a can body A is received in a pocket 60 of the rotating carrier units 43, a pair of rotatable support mandrels 66 (Figs. 1 and 13) move into the open ends of the body from opposite directions. It will be obvious that each pair of mandrels 66 is associated with each carrier pocket and the two mandrels of a pair are substantially on an axis which is centrally located relative to the pocket. These mandrels function to back up the side wall of the body and to rotate the body during the beading operation.

Each pair of aligned mandrels 66 is mounted on the inner ends of aligned rotatable hollow shafts 67 (Fig. 5) journaled in cylindrical slides 68. Each slide has longitudinal movement in a slideway 69 and such a slideway is provided by an inner cylindrical wall of a sleeve housing 71. Each housing is an integral part of its associated inner wheel 45 of the carrier unit 43. The shafts are confined against endwise movement relative to the slides by the restraining action of the mandrels at the inner ends of the two longitudinally aligned slides and by shoulders 72 formed on the shafts at the opposite or outer ends of the slides.

Beyond the shoulder part 72 each shaft 67 projects outwardly in a reduced diameter solid section 74. This solid section of the shaft extends into a bearing sleeve 75 which is journaled in a bearing 76 formed on the periphery of the associated outer wheel 42 of the carrier 43. The shaft sections 74 are feathered in the bearing sleeves 75 thus being slidable therein.

The inner end of each bearing sleeve 75 is formed with a mandrel driving pinion 78 which meshes with a ring gear 79 bolted to its associated stationary cam 47. It will be observed that there are two of these ring gears, one for each of the carrier units 43. The outer ends of the bearing sleeves are threaded and carry lock nuts 81 which retain the sleeves in their respective bearings 76.

Hence as the carrier unit wheels 42, 45 rotate on their support shaft 44 around the stationary cams 47, the mandrel driving pinions 78 revolve around the ring gears 79 and this rotates the pinions on their own axes. The pinions in turn rotate the bearing sleeves 75 and these rotate the shafts 67 and the mandrels 66 secured to their

inner ends. In this manner the mandrels are continually rotated as long as the machine is in operation.

Endwise movement of the mandrels 66 toward each other to effect their insertion into the open ends of the can bodies as the latter are received from the transfer star wheel 27, is brought about by cam action. For this purpose, the cylindrical slides 68 are formed with lug extensions 85 (Figs. 4, 5, 13 and 15) which carry cam rollers 86 operating in cam grooves 87 formed in the stationary cams 47. The inner surfaces of the lug extensions are curved to correspond to the outer face of the cams and this prevents rotation of the cylindrical slides 68 on their own axes.

Hence as each carrier unit wheels 42, 45 rotate around the stationary cam 47 on that side of the machine, the cam rollers 86 traverse the cam groove 87 along its continuous and undulatory contour and thus shift the slides 68 longitudinally within their housings 69. It is this movement of two opposed slides that brings each pair of mandrels 66 toward each other to effect their insertion into the can body therebetween. During a later portion of the cycle of operation of the machine the mandrels will be withdrawn from the can bodies in the same manner and by the same cam mechanism.

Up to now a can body received from the transfer star wheel 27 has remained stationary in its pocket molds 60 being so held by the attraction of the magnets 63. Insertion of the rotating mandrels 66 into the ends of a body raises it slightly so that it is clear of the pocket molds. Rotation of the body, however, does not take place until the circumference of one of the mandrels is located in a predetermined position relative to the side seam C. Such location is necessary in connection with the body beading operation, which will be fully explained hereinafter. When this locating has been accomplished, the side seam is used temporarily as a driving medium for rotating the body with the mandrels.

Locating of the side seam C is brought about by a locating finger 91 (Figs. 6 and 7) which is disposed at the inner end of one of the mandrels 66 of each pair of mandrels and is pivotally mounted in a recess 92 formed in a cylindrical end plate 93 secured to the inner end of the mandrel. The inner end of the finger is formed with a pivot lug 94 which operates in a bearing hole 95 in the end plate. The opposite or outer end of the finger is formed with a sharp flat head 96 which projects slightly beyond the outer periphery of the mandrel, as best shown in Figs. 6 and 8. The finger head is maintained in this projected position by a compression spring 97 which is disposed within a blind bore 98 formed in the end plate 93. One end of the spring presses the finger outwardly.

Hence as the mandrel 66, which carries the locating finger 91, enters a can body, the sharp head 96 of the finger, rotating with the mandrel, sweeps through a helical path of travel adjacent the inside surface of the can body until it engages against the body side seam C. It is this engagement of the finger with the side seam that locates the latter relative to the periphery of the mandrels. Upon such engagement, the body begins to rotate with the mandrel, as hereinbefore mentioned.

With the can body side seam C thus located and the body itself set into a rotating motion, the body is now rigidly clamped in position on the pair of fully inserted mandrels 66 so that the

body side wall is supported or backed up in readiness for the beading operation. It should be understood that this locating of the side seam, the setting of the body into motion, and the backing-up of the body side wall are effected while the body is moving along a circular path of travel with the carrier units 43 while they are moving through a portion of their cycle of rotation.

Supporting of the body side wall is effected from the inside of the body by a conventional expanding portion of each of the mandrels 66 which portion includes a plurality of expandable segment shaped jaws 101 (Figs. 5, 8 and 9). There are four of these jaws for each mandrel and they are arranged to form a cylinder around a central core or support member 102 which is threadedly secured to the inner end of each of the hollow mandrel shafts 67. In cross section, the support member has the shape of a Greek cross in which the four right angularly spaced legs, indicated by the numeral 104 (Fig. 8), serve as tongues which extend into slideway grooves 105 formed in the jaws.

The jaws 101 are held in place on their support members 102 by a pair of endless coil springs 108 (Figs. 5 and 7) which are disposed in annular channels 109 formed in the ends of the jaws. The jaws of each mandrel are confined against endwise displacement by the end plate 93 which is secured to the inner end of the support member and by a flange 111 which is formed on the support member at its outer end.

The springs 108 hold the jaws 101 in a normally contracted position (Figs. 8 and 9) against expander buttons 115 formed with stems 116 carried in radial bores 117 in the legs 104 of the support member 102. There are eight of these expander buttons for each mandrel, there being two buttons in spaced relation in each leg (see Fig. 5). The buttons are loosely held in place by short pins 118 which extend through the legs and through slots 119 in the button stems.

The inner ends of the button stems 116 engage against cam sections 121 (see also Fig. 5) formed on a reciprocable expander rod 122 carried in a bore 123 in the middle of each support member 102. The expander rod extends back through the hollow mandrel shaft 67 and at its outer end is keyed, by way of a cross pin 125, into a collar 126 which surrounds the mandrel shaft. The cross pin extends through a slot 127 in the mandrel shaft. This construction permits longitudinal movement of the rod relative to the shaft.

The collar 126 is rotatably mounted in a slide block 131 so that the expander rod 122 will rotate freely with the mandrel shaft 67 and with the mandrel 66 secured to the inner end thereof. There is one of these slide blocks for each mandrel. A cap 132 secured to the slide block holds the collar in place. The slide block is mounted in a pair of slideways 133 (Fig. 16) formed in the lug extension 85 of the cylindrical slides 68 and carries a cam roller 135 which operates in a groove 136 formed in the stationary cam 47.

Hence as the carrier wheels 42, 43 rotate, each cam roller 135 on its slide block 131 traverses the cam groove 136 and at the proper time shifts the slide block and the associated rotating expander bar, first through an inward or expanding stroke and thence through an outward or contracting stroke. These movements expand or contract the mandrel jaws 101 in the usual manner. Fig. 10 shows the expanded position of the jaws.

While the mandrel jaws 101 are being expanded inside a can body and while the body is still being carried around with the carrier wheels 42, 45, the annular beads D are formed in the body. The forming of the beads is effected by a beading roller 141 having a plurality of annular beading ridges or projections 142 which cooperate with annular beading grooves 143 formed in the outer peripheral surfaces of the mandrel jaws 101. This cooperation bends the engaged sections of the side wall of the body inwardly to produce the beads.

There is one beading roller 141 for each pair or set of mandrels 66. Each roller is located radially between the mandrels and the support shaft 44 of the carrier wheels 42, 45 and each roller is rotatably mounted on a shaft 145. The shaft adjacent its ends, is supported in universal joint mountings 146 (Figs. 5 and 6) carried in radial slides 147 which operate in slideways 148 formed in the edges of triangular shaped plates 149 (Figs. 1 and 14) bolted onto the inner face of the inner carrier wheel 45.

The inner ends of the radial slides 147 are disposed in cam sleeves 150 which also operate in the slideways 148. The slides are confined within the sleeves by shanks 151 which are formed on the slides and which extend through a hole in the inner end of the cam sleeves. A lock nut 152 on the end of each shank holds the slide in place while a compression spring 153 surrounding the shank and interposed between the slide and the sleeve provides a yieldable connection between these parts.

During the rotation of a can body with the mandrels 66, the beading roller 141 is moved outwardly as shown in Fig. 10 into frictional engagement with the body to impress or roll the annular beads D into the body side wall as hereinbefore mentioned. This movement of the beading roller is brought about by cam action. For this purpose the inner ends of the cam sleeves 150 carry cam rollers 155 (Fig. 5) which operate against stationary edge cams 156 mounted on the main support shaft 44 adjacent the inner carrier wheels 45.

Upon completion of the beading operation, the beading roller 141 is drawn away from the cam body by cam action. This is brought about by an auxiliary cam roller 157 which is carried on the inner end of the cam sleeve 150 adjacent the cam roller 155 and on the same spindle. This auxiliary cam roller operates in a cam track 159 formed on a flange 159 of the cam 156.

Provision is made for jumping or skipping the side seam C of the can body when the seam comes adjacent the beading roller 141 during the rotation of the body so that the seam will be left unbeaded. This jumping of the body side seam is brought about by a pair of timing discs 161 (Figs. 5 and 8) which are associated with each mandrel unit and each disc is located between the outer ends of the mandrel 66 and the inner end of the corresponding cylindrical slide 68. The discs are bolted to the flanges 111 of the two expander jaw support members 102. These discs rotate with the mandrels and each disc is in operative alignment with a timing roller 162 (Fig. 5). The timing rollers of each unit are mounted on the ends of the beading roller shaft 145. Each disc is formed with a cam projection 163 and aligned cam projections of the two discs are located adjacent and in the same arcuate position as the head 95 of the seam locating finger 91 for that unit,

The body side seam C being engaged by the finger (as best shown in Figs. 8 and 9) therefore is adjacent the cam projections and when the seam comes adjacent a beading roller 141, the cam projections 163 simultaneously engage the timing rollers 162 on the beading roller shaft 145. This depresses the radial slides 147 against the resistance of their compression springs 153. This action momentarily shifts the beading roller 141 away from the rotating can body, as in Fig. 11, and thus permits the side seam to pass by the beading roller without being beaded or otherwise distorted. This explains the statement that the side seam is jumped or skipped.

As soon as the side seam C has passed the beading roller 141 and the cam projection 163 rides off the timing rollers 162, the compression springs 153 in the beading roller slides 147 return the beading roller into engagement with the can body as best shown in Fig. 12 to complete the formation of the annular beads D. It should be understood that this forming of the body beads D is accomplished while the body is being conveyed around a curved path of travel with the carrier wheels 42, 45.

Upon completion of the body beads D in a can body the beading roller 141 is drawn away from the body, as hereinbefore mentioned. The body is now ready for discharge from the machine and accordingly it is brought adjacent a discharge station. As the body approaches the discharge station, it enters upon a pair of curved, spaced and parallel guide rails 165 (Figs. 1 and 4) which are located adjacent the path of travel of the bodies. These guide rails are secured to brackets 166, 167 bolted to the machine base 25. When the body is fully on the guide rails the expanded jaws 101 of the mandrels 66 are retracted and the mandrels are withdrawn from the body. This frees the body and leaves it in the molds 61, the body again being held stationary by the magnets 63.

Continued travel of the body along the guide rails 165 brings it adjacent the mouth of a discharge chute 171 which is secured to the terminal ends of the guide rails. The chute is supported on a bracket 172 bolted to the machine base 25. The chute is formed with a combined ceiling and stripper plate 173 which extends into the path of travel of the beaded can bodies moving with the carrier wheels 42, 45.

The inner end of the stripper plate 173 engages behind a beaded can body as the latter approaches the discharge chute and strips it out of its molds 61 against the resistance of the magnets 63 as the molds pass the chute. The stripped off can body falls into the chute and rolls to any suitable place of deposit. This completes the cycle of operations of the machine.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages; the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. In a can body beading machine, the combination of a support for a tubular can body having a side seam, means for locating the can body on said support to bring the body side seam into a predetermined circumferential position relative to said support, a roller disposed adjacent

said support for forming an annular bead in a wall of the can body, means for effecting rotary movement between said can body support and said roller so that the roller will circumferentially traverse the wall of the can body, and means on said support and in registry with said side seam locating means for separating said support and said roller at the pre-located side seam area of said can body to skip the seam to prevent the forming of the bead through the seam.

2. In a machine for forming an annular bead in tubular can bodies each having a side seam, the combination of a movable carrier for advancing a can body along a predetermined path of travel, a rotatable mandrel mounted adjacent the path of travel of the can body and insertable within the can body for supporting and for rotating the latter, a locating finger on said mandrel for engaging the side seam of the can body disposed on said mandrel for locating the seam in a predetermined circumferential position on the mandrel, a beading roller located adjacent said mandrel and having means for moving the same toward the mandrel for forming an annular bead in the can body while the latter rotates with the mandrel, and means disposed in registry with said locating finger for shifting said beading roller away from said can body when the roller comes adjacent the body side seam area to jump the seam.

3. In a can body beading machine, the combination of a movable carrier for advancing a tubular can body along a predetermined path of travel, a rotatable and expandable mandrel mounted adjacent said path of travel of the can body and insertable within said body for supporting and for rotating the latter, locating means for circumferentially positioning the side seam of the body relative to the mandrel, a rotatable beading roller mounted on said carrier adjacent said mandrel and having means for moving the same toward the can body on the mandrel for forming annular beads in the body, and cam means on said mandrel and in register with said locating means for shifting said beading roller away from said can body to an inoperative position when it comes adjacent the side seam area so that the roller will leave the seam unbeaded.

4. In a machine for forming annular beads in tubular can bodies each having a side seam, the combination of a rotatable carrier having a plurality of stations therearound, means for delivering can bodies individually to said stations, a pair of rotatable mandrels on said carrier and movable thereby adjacent each of said stations, said mandrels also having means for moving the same toward each other to a position within a said can body for supporting and rotating the latter, a locating finger mounted on a said mandrel for engaging the side seam of the can body and for circumferentially locating the seam in a predetermined position on said mandrels, expanding devices carried by said mandrels for holding the can body in its located position on the mandrels, a rotatable beading roller mounted on said carrier at each of said stations and having means for moving the same toward the can body on said mandrels for forming an annular bead in the can body, and a cam carried by one of said mandrels in registry with said locating finger and operable against said beading roller for shifting said roller away from said can body to an inoperative position when it comes adjacent the

side seam area so that the roller will jump the seam and leave the same unbeaded.

5. In a machine for forming annular beads in tubular can bodies each having a side seam, the combination of a pair of spaced and parallel rotatable carrier wheels, a plurality of molds mounted in spaced relation around each of said carrier wheels and setting off therebetween pockets for receiving can bodies, pairs of rotatable mandrels mounted with one mandrel of each pair on each of said carrier wheels and located in longitudinal alignment with each other and in alignment with said pockets for movement toward each other to a position within a said can body for supporting and rotating the latter, a locating finger on a mandrel of each pair for engaging the side seam of the can body and for circumferentially locating the body seam in a predetermined position on said mandrel, a plurality of rotatable beading rollers located between said carrier wheels and disposed one each adjacent each pair of said mandrels, said beading rollers having means for moving the same toward a said can body on said mandrel for forming annular beads in the can body, and means in registry with said locating finger for shifting said beading roller radially away from said can body to an inoperative position when it comes adjacent said side seam area so that the roller will jump the seam and leave the same unbeaded.

6. In a can body beading machine, the combination of a movable carrier, a plurality of magnets mounted in spaced relation on said carrier for holding a tubular can body having a side seam, a rotatable mandrel mounted on said carrier adjacent said magnets and having means for inserting the same longitudinally within said can body to remove the body from the magnets and for supporting and rotating said body, a beading roller located adjacent said mandrel and having means for moving the same toward said mandrel for engaging and forming a bead in said can body while the latter is rotating, and means for separating said mandrel and said beading roller at the side seam area of said can body to skip the seam to prevent the forming of the bead through the seam.

7. In a can body beading machine, the combination of a movable carrier having a pocket for a tubular can body, a plurality of magnets mounted in spaced relation on said carrier adjacent said pocket for holding a can body having a side seam, a rotatable mandrel mounted on said carrier and disposed in alignment with said pocket and having means for inserting the mandrel to within said can body to remove the body from said magnets and for supporting and rotating said body, a beading roller located adjacent said mandrel and having means for moving the same radially toward the mandrel for engaging and forming an annular bead in said can body while the latter is rotating, and means for temporarily separating said mandrel and said beading roller at the side seam of the can body to skip the seam area to prevent the forming of the bead through the seam at said area.

8. In a can body beading machine, the combination of a rotatable carrier wheel, means for delivering tubular can bodies each having a side seam to said carrier wheel, a plurality of magnets mounted on said carrier wheel at spaced intervals therearound to set off working stations for holding the delivered can bodies at said stations, a plurality of pairs of rotatable mandrels mounted on said carrier wheel and movable there-

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by past each of said stations, said pairs of mandrels having means for inserting the same within the can bodies for supporting and for rotating the latter, a rotatable beading roller located at each of said stations and having means for moving the same toward said mandrels at a said station for engaging and forming an annular bead in a said can body while the body rotates on its mandrel, and means for separating said mandrel and said beading roller at the side seam area of said can body to skip the seam and thereby prevent the forming of the bead through the seam.

9. In a can body beading machine, the combination of a movable carrier, a plurality of molds mounted in spaced relation on said carrier for receiving tubular can bodies each having a side seam, a permanent magnet on said carrier adjacent each of said molds for holding the can bodies in place on the carrier, a mandrel mounted on said carrier adjacent said molds and having means for inserting the same to within said can bodies for supporting the latter, a beading roller located adjacent said mandrel and having means for moving the same radially toward the mandrel for engaging and forming a circumferential bead in each of said can bodies, means for effecting rotary movement between said mandrel and said beading roller so that the roller will circumferentially traverse the wall of the can body, and means for separating the mandrel

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and the beading roller at the side seam area of the can body and thereby skip the seam to prevent the forming of the bead through the seam.

10. In a can body beading machine, the combination of a support for a tubular can body having a side seam, a roller disposed adjacent said support for forming an annular bead in the side wall of the can body, said roller having an axial extension, means for effecting rotary movement between said can body support and said roller so that the roller will peripherally traverse and form a bead in the side wall of the can body, and means rotatable on the axis of said can body and engageable with the axial extension of said roller for bodily moving the roller away from said support at the side seam of the can body to skip the seam and thus prevent forming of the bead through said side seam.

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