May 5, 1936. W. J. BRETH 2,039,627

BEAD WRAPPING MACHINE

Filed June 5, 1935 9 Sheets-Sheet 1

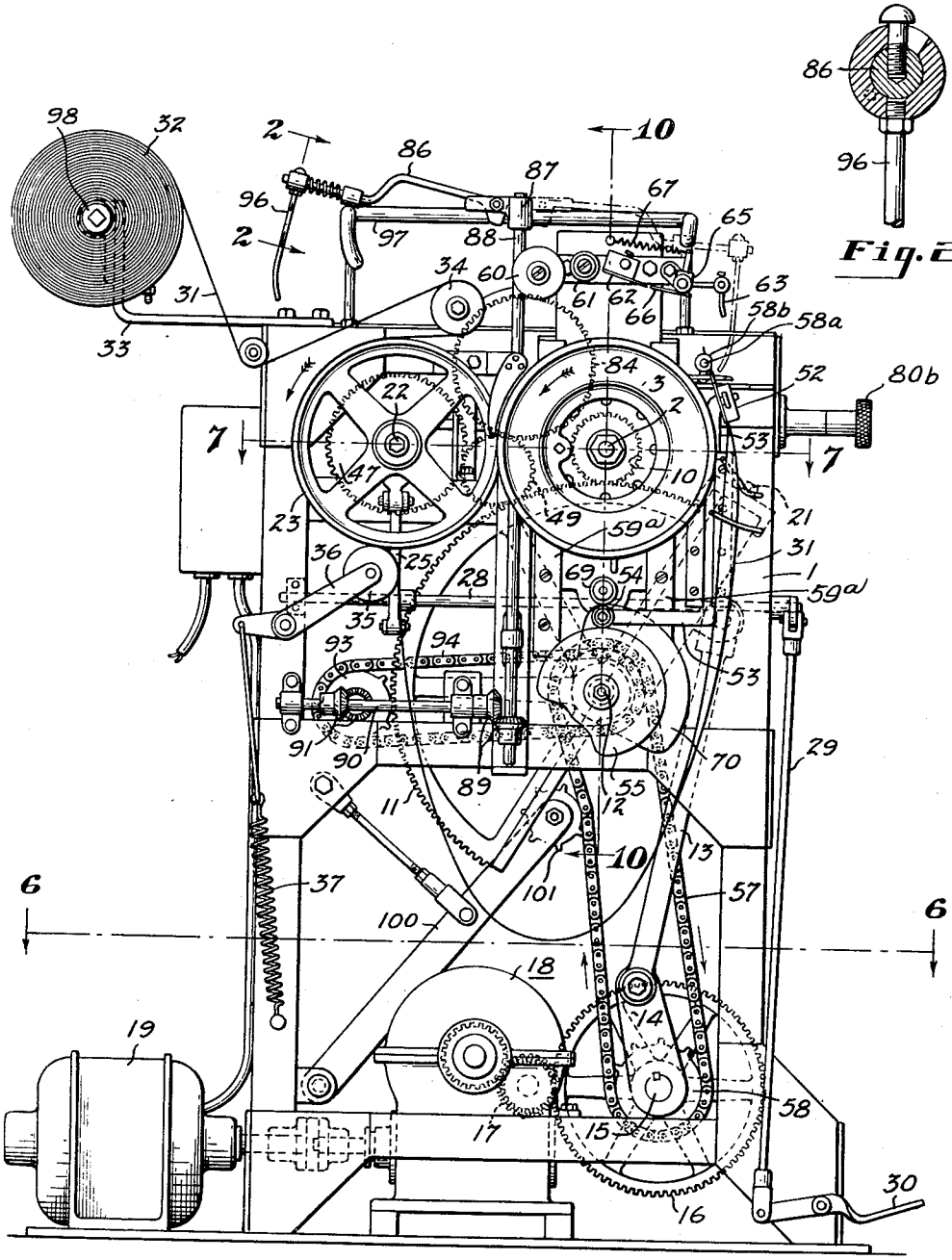


Fig. 1

Fig. 2

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BEAD WRAPPING MACHINE

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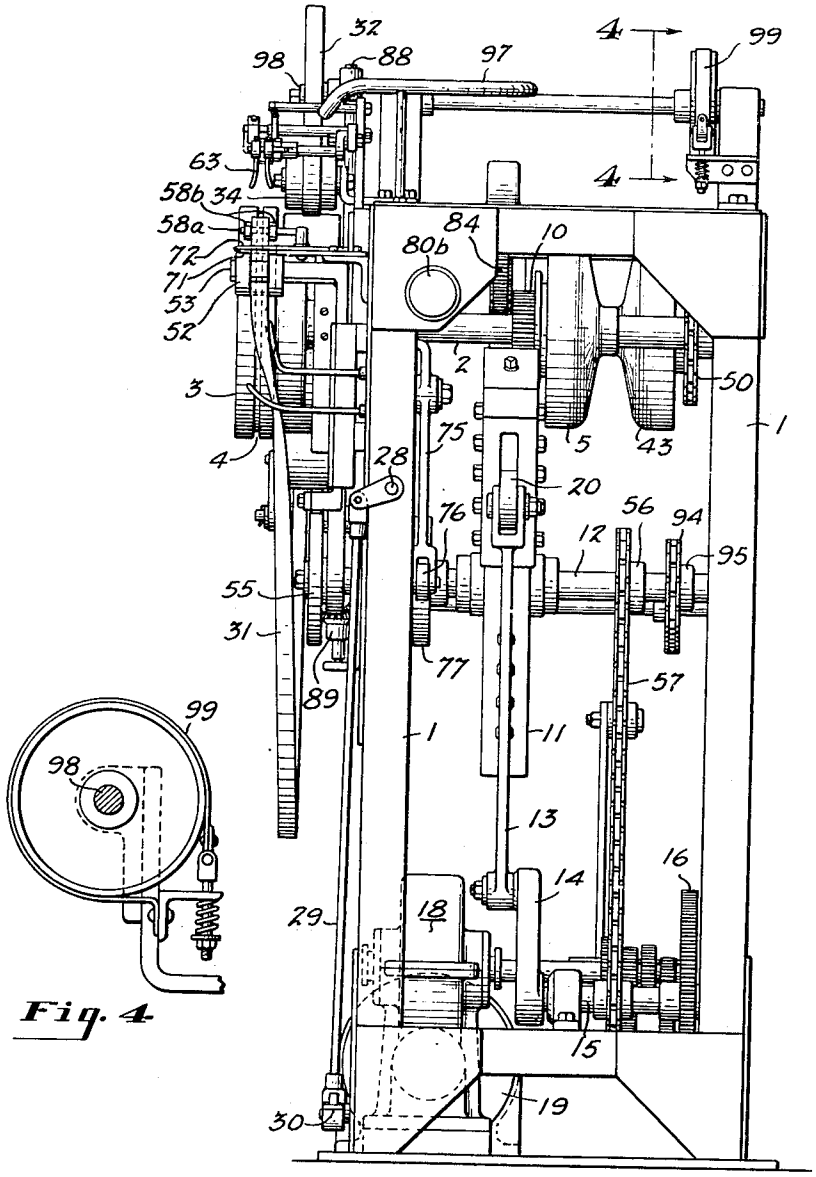


Fig. 3

Fig. 4

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BEAD WRAPPING MACHINE

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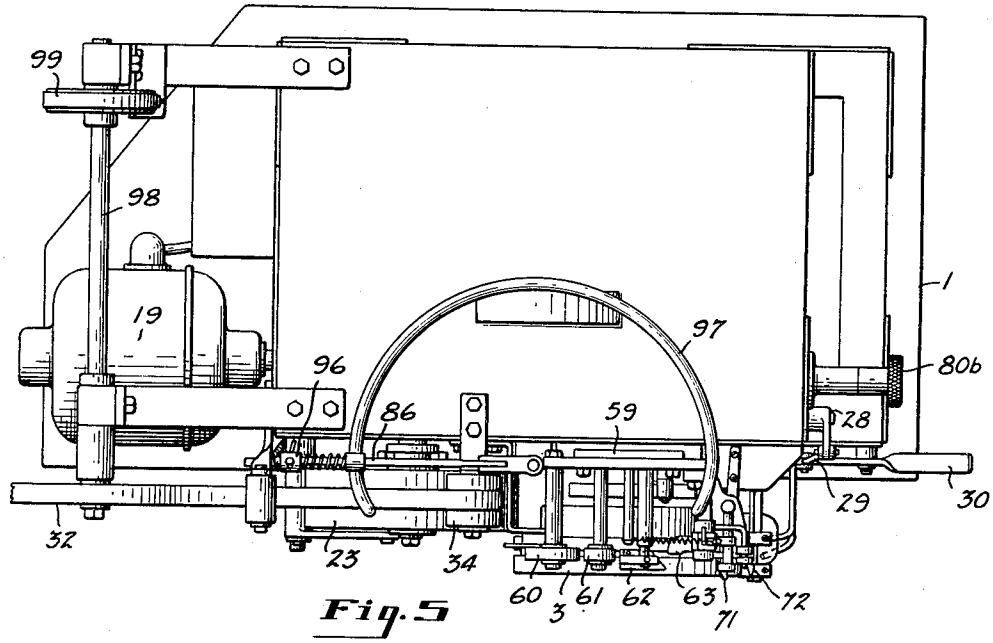


Fig. 5

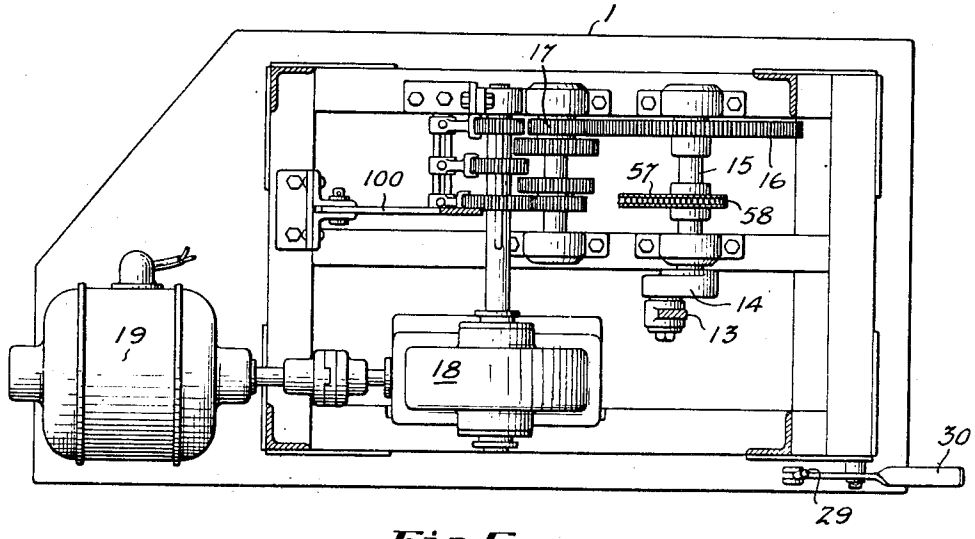


Fig. 6

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BEAD WRAPPING MACHINE

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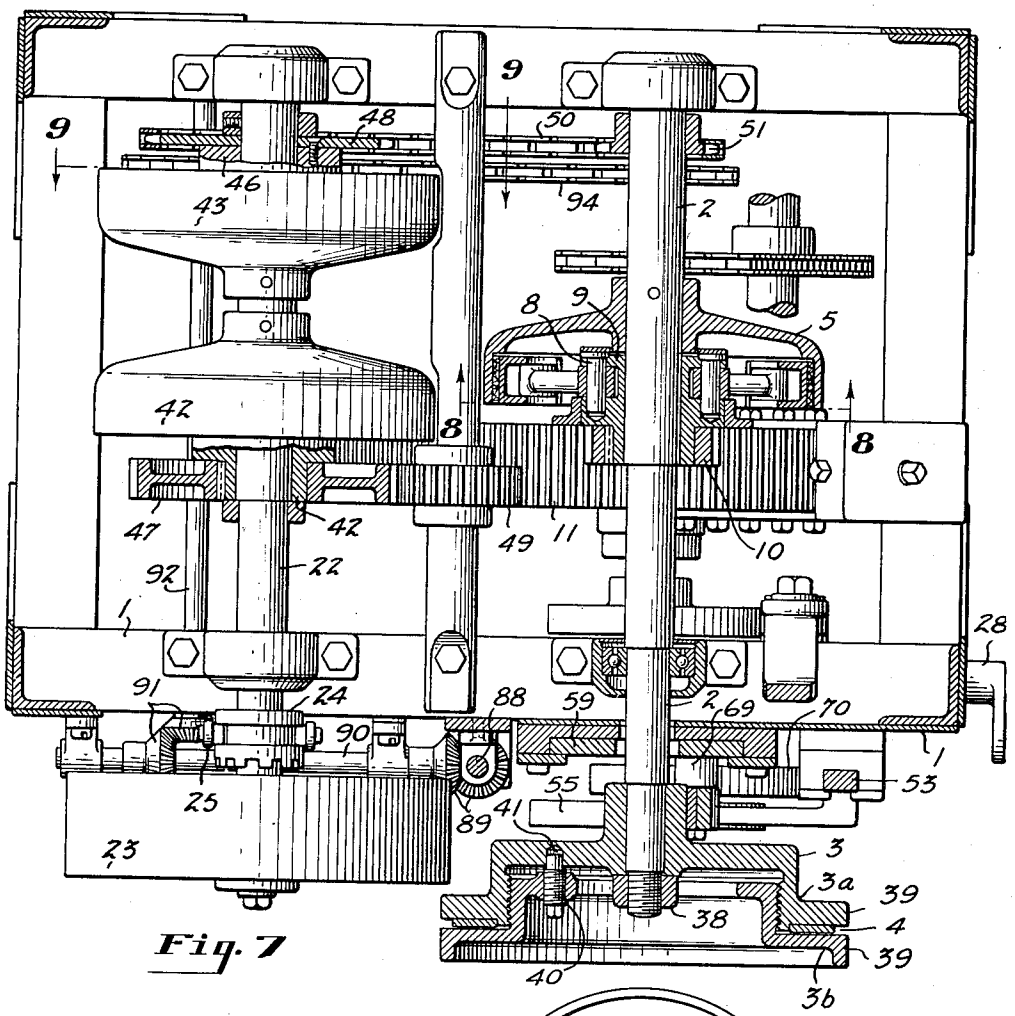


Fig. 7

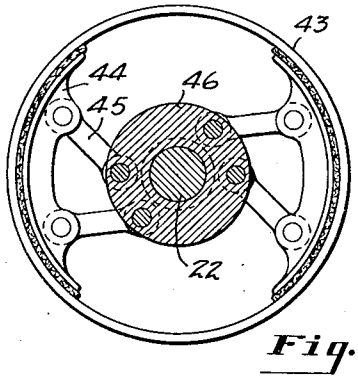


Fig. 9

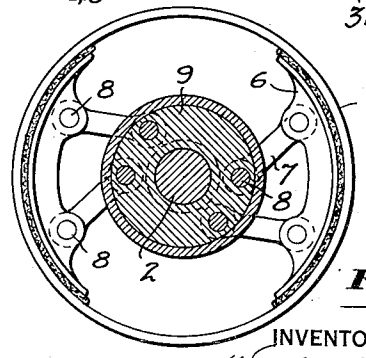


Fig. 8

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BEAD WRAPPING MACHINE

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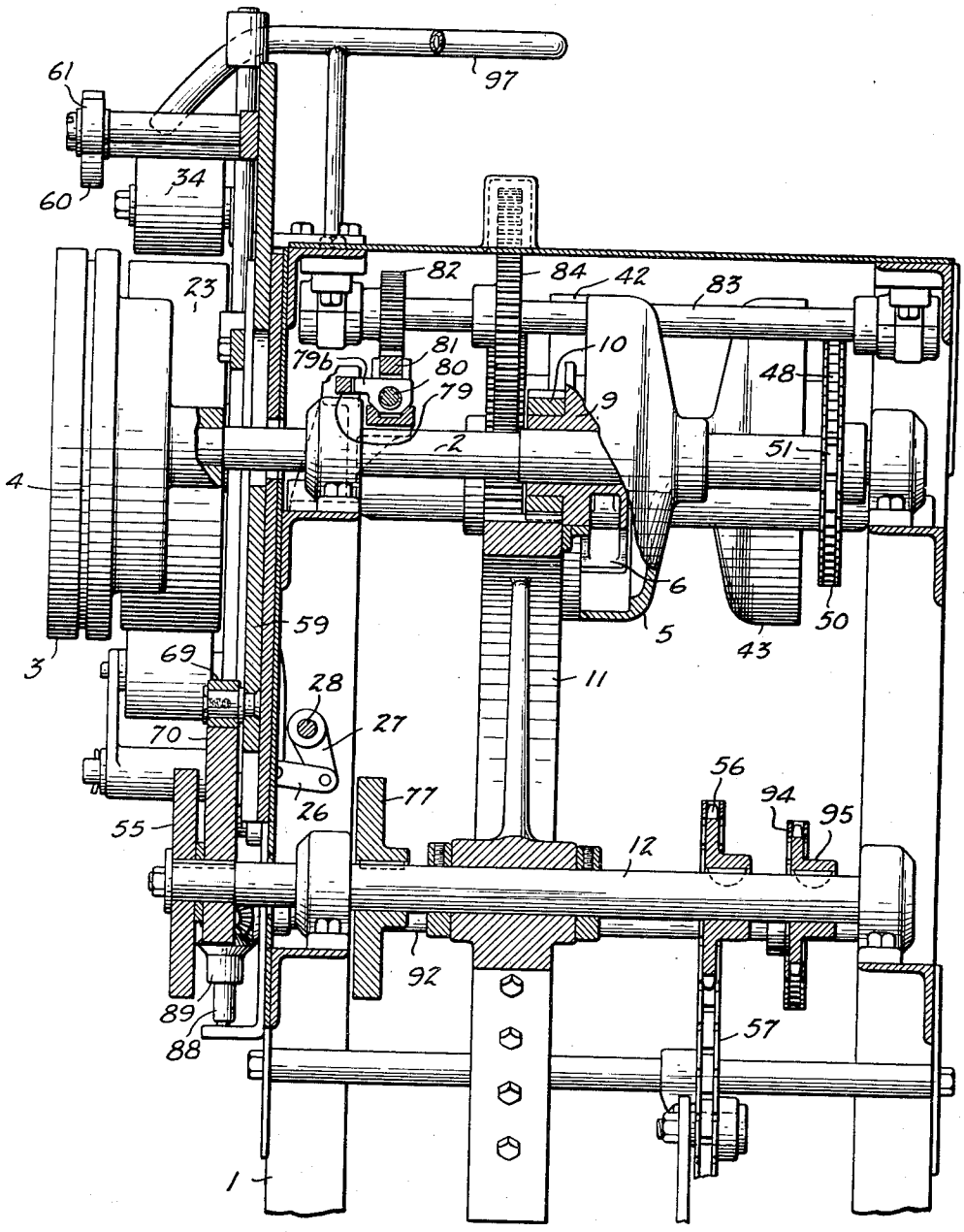


Fig. 10

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BEAD WRAPPING MACHINE

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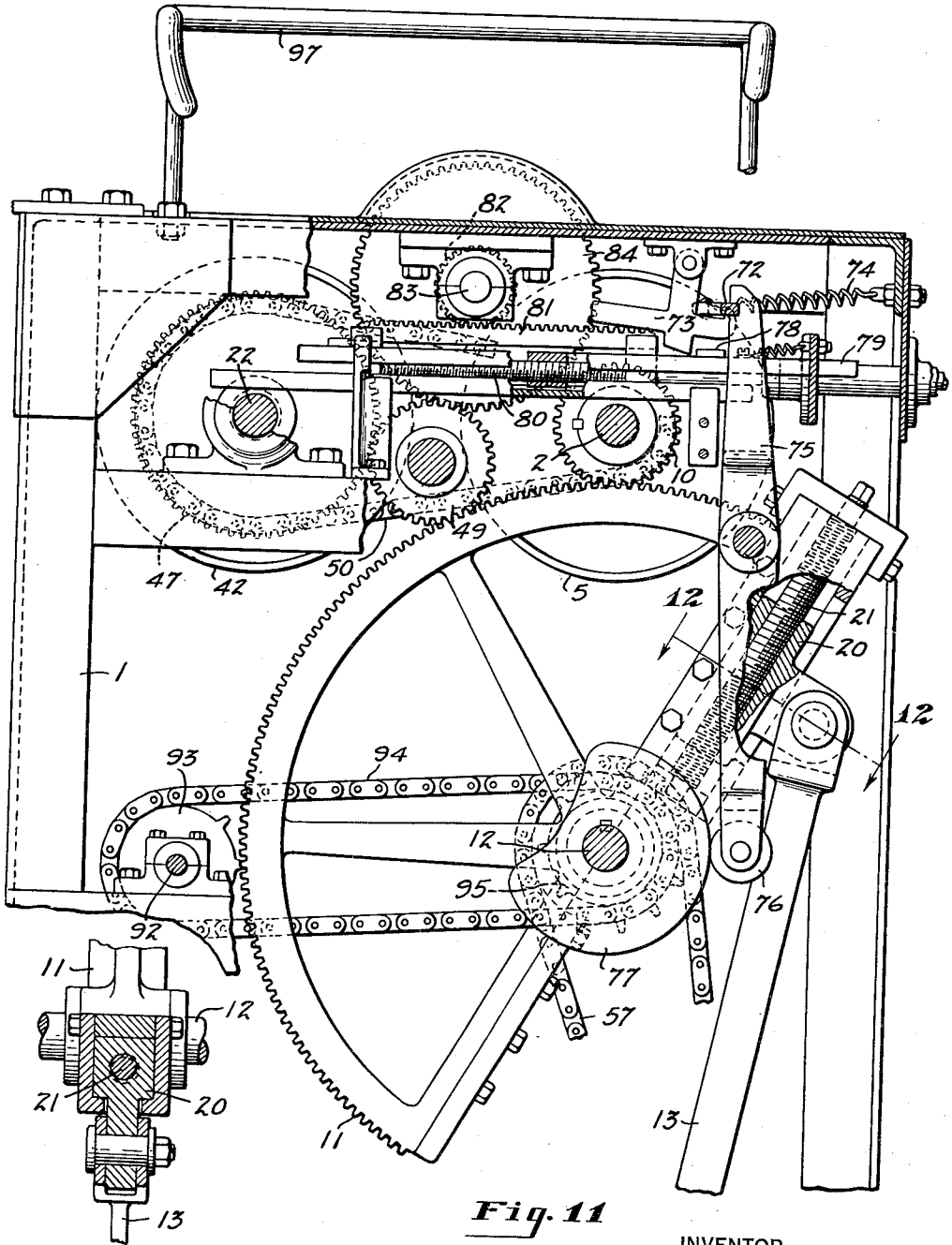


Fig. 11

Fig. 12

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BEAD WRAPPING MACHINE

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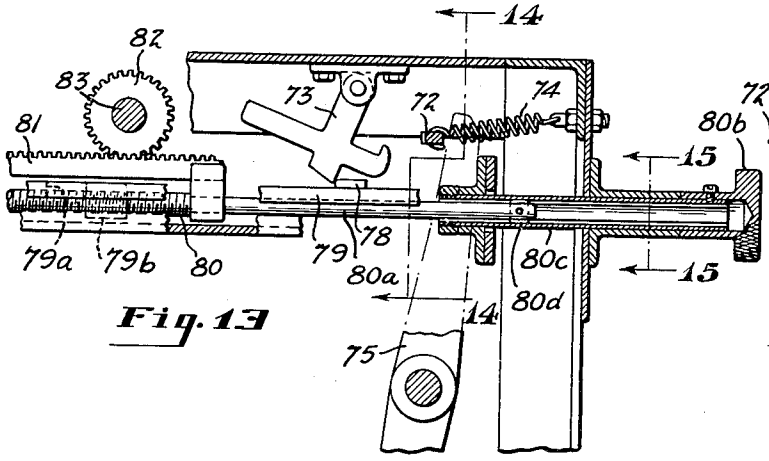


Fig. 13

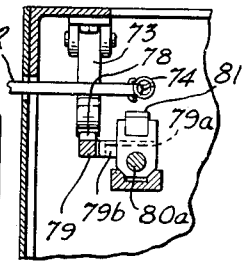


Fig. 14

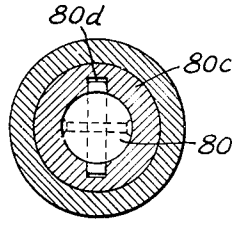


Fig. 15

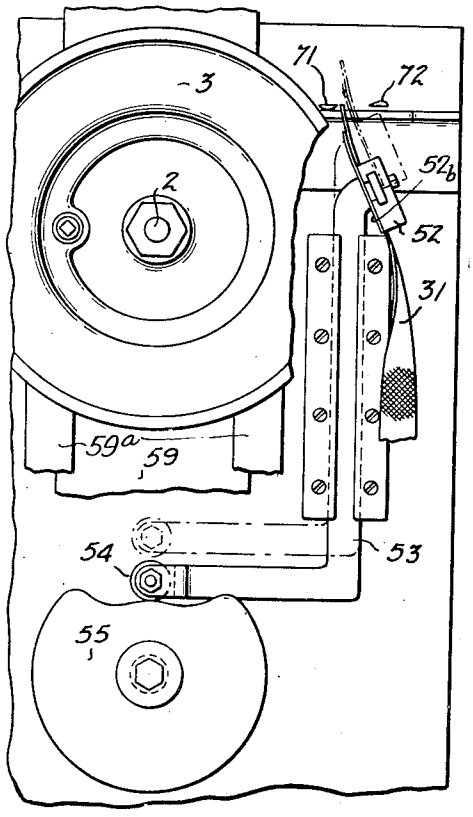


Fig. 16

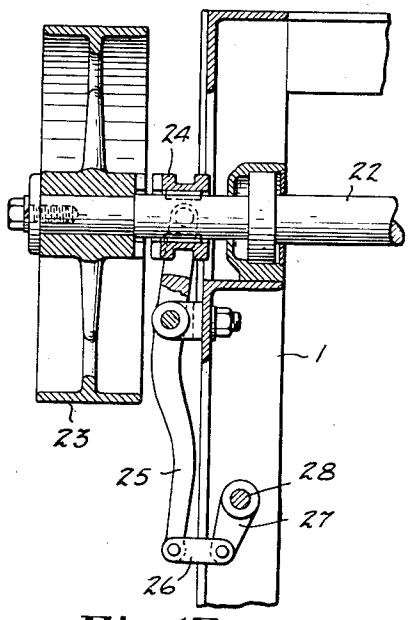


Fig. 17

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BEAD WRAPPING MACHINE

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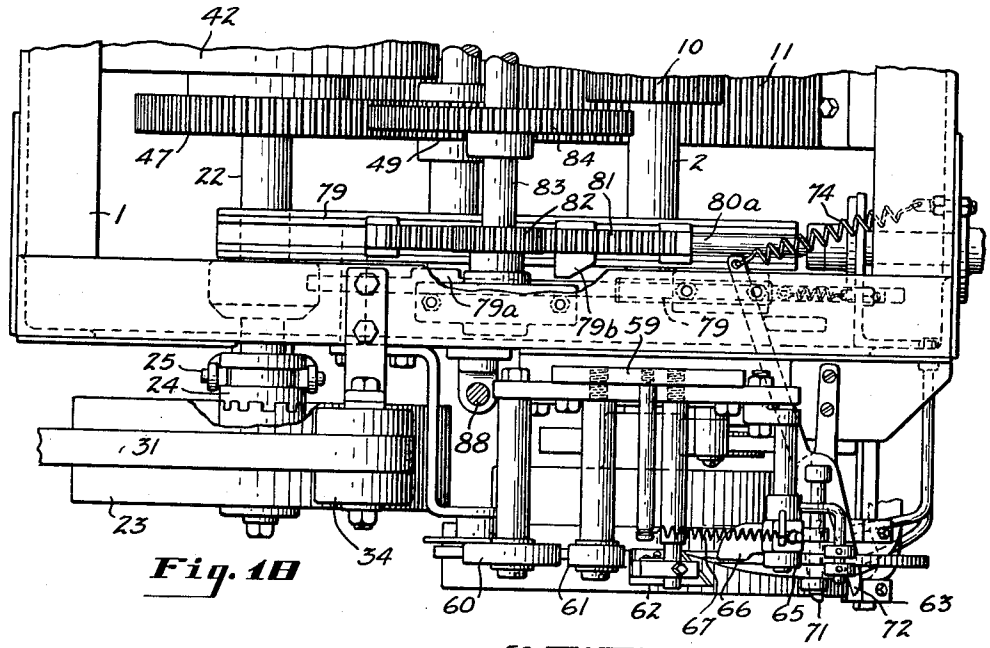


Fig. 18

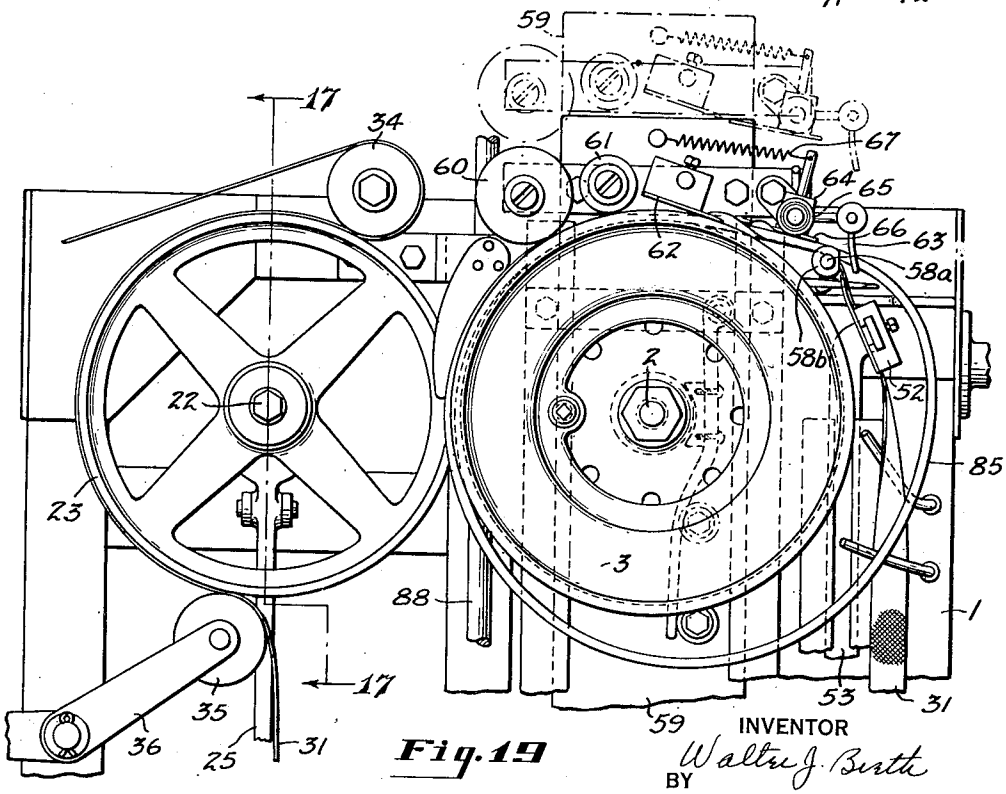


Fig. 19

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BEAD WRAPPING MACHINE

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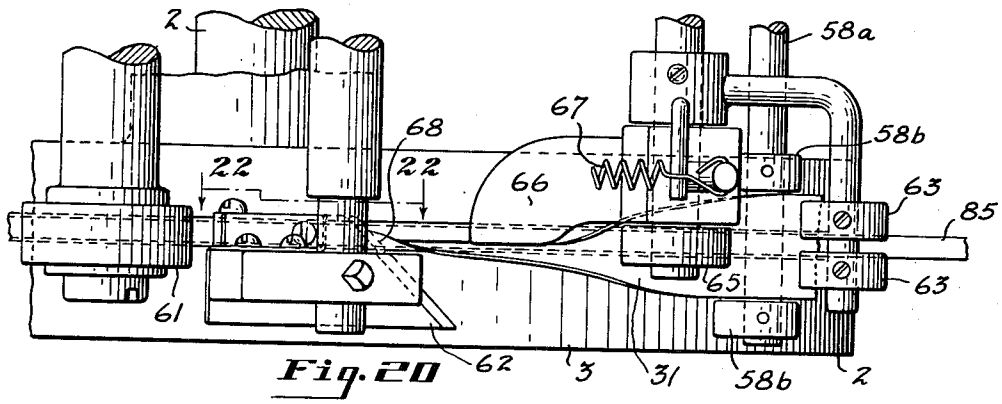


Fig. 20

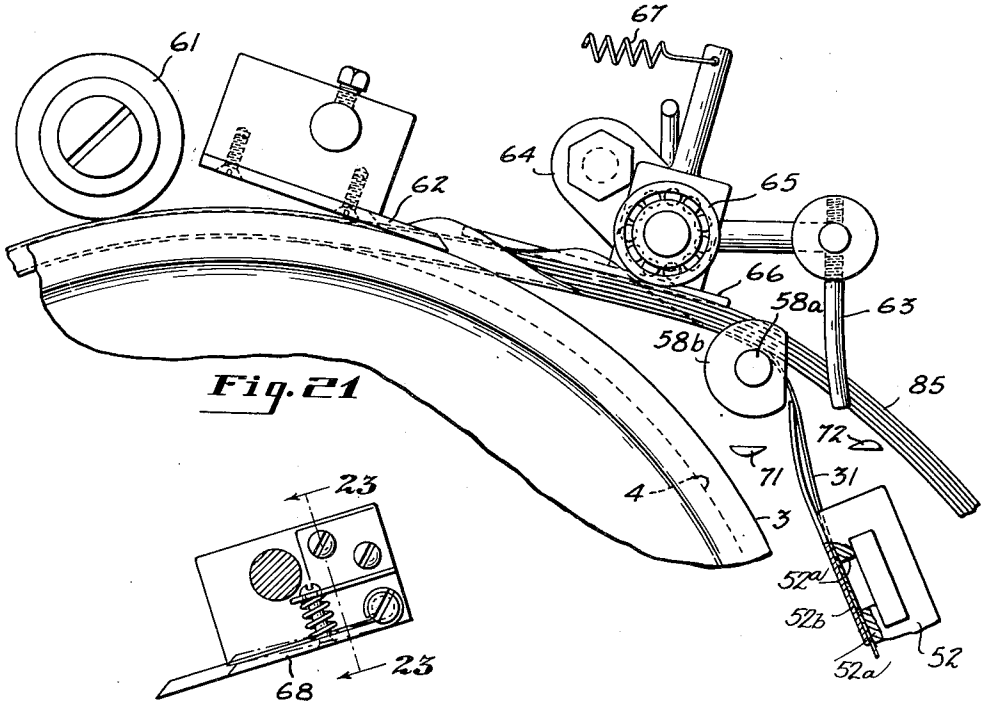


Fig. 21

Fig. 22

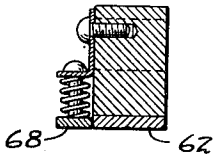


Fig. 23

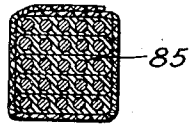


Fig. 24

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Patented May 5, 1936

2,039,627

UNITED STATES PATENT OFFICE

2,039,627

BEAD WRAPPING MACHINE

Walter J. Breth, Akron, Ohio, assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Application June 5, 1935, Serial No. 25,107

18 Claims. (Cl. 154—9)

This invention relates to apparatus for wrapping beads used in the manufacture of pneumatic tire casings.

One of the objects of the present invention is to provide a bead wrapping apparatus of new and improved construction by means of which beads may be wrapped efficiently and economically.

Another object is to provide a bead wrapping apparatus which automatically wraps the bead and severs the wrapper tape so that the tape of all beads of the same size and diameter will be of uniform length and will be uniformly wrapped.

With the above and other objects in view, the present invention consists in certain features of construction and combinations of parts to be hereinafter described with reference to the accompanying drawings and then claimed.

In the drawings which illustrate a suitable embodiment of the invention,

Figure 1 is a side elevation of the bead wrapping apparatus;

Fig. 2 is a section taken approximately on the line 2—2 of Fig. 1 showing the mounting of the arm which removes the wrapped bead from the apparatus;

Fig. 3 is an end elevation of the bead wrapping apparatus shown in Fig. 1;

Fig. 4 is a section taken approximately on the line 4—4 of Fig. 3;

Fig. 5 is a top plan view of the bead wrapping apparatus;

Fig. 6 is a horizontal section taken approximately on the line 6—6 of Fig. 1;

Fig. 7 is an enlarged horizontal section taken approximately on the line 7—7 of Fig. 1;

Fig. 8 is a section taken on the line 8—8 of Fig. 7 showing one of the clutch mechanisms;

Fig. 9 is a section taken on the line 9—9 of Fig. 7 showing one of the other clutch mechanisms;

Fig. 10 is an enlarged section taken approximately on the line 10—10 of Fig. 1;

Fig. 11 is an enlarged fragmentary side elevation similar to Fig. 1, portions of the apparatus being shown in section;

Fig. 12 is a section taken on the line 12—12 of Fig. 11;

Fig. 13 is a sectional view of the trip mechanism;

Fig. 14 is a section taken on the line 14—14 of Fig. 13;

Fig. 15 is a section taken on the line 15—15 of Fig. 13;

Fig. 16 is a fragmentary side elevation of a portion of the apparatus showing the guide means for the wrapper tape;

Fig. 17 is a fragmentary section taken approximately on the line 17—17 of Fig. 19;

Fig. 18 is an enlarged fragmentary plan view of the apparatus;

Fig. 19 is an enlarged fragmentary side elevation showing a bead in the process of being wrapped;

Fig. 20 is an enlarged fragmentary plan view showing the bead in the process of being wrapped;

Fig. 21 is an enlarged fragmentary side elevation showing certain parts of the machine in their positions for wrapping a bead, and also showing a bead in the process of being wrapped;

Fig. 22 is a section taken approximately on the line 22—22 of Fig. 20;

Fig. 23 is a section taken on the line 23—23 of Fig. 22; and

Fig. 24 is a transverse section through a wrapped bead.

Referring to the accompanying drawings in which like numerals refer to like parts throughout the several views, the bead wrapping apparatus of the present invention includes a framework 1 having a mandrel 2 rotatably journalled therein. The mandrel 2 projects beyond the framework at one side and carries a bead supporting drum 3 which is securely attached thereto, the drum 3 having a circumferential recess 4 therein for supporting and guiding the bead to be wrapped. The drum 3 as shown in Fig. 7 is comprised of two parts, a part 3*a* which is mounted on the mandrel 2 by means of a nut 38, and an outer part 3*b* which is threadably received within the part 3*a*, both parts having parallel, radially extending circumferential flanges 39 which are spaced apart to provide the bead carrying groove 4. By rotating the part 3*b* within the part 3*a* the width of the groove 4 may be varied. The parts 3*a* and 3*b* are held against rotation with respect to each other by means of a screw 40 which is threaded in the part 3*b* and which extends into a recess 41 in the part 3*b*.

The mandrel 2 is provided with a clutch drum 5 rigidly secured thereto which houses clutch shoes 6 that are carried by pivoted links 7. The links 7 are pivoted by means of pins 8 to a collar 9 rotatably mounted on the mandrel 2. The collar 9 carries a pinion 10 which is meshed with a segmental rack 11. The rack 11 is rotatably mounted on a shaft 12 and is actuated by a connecting rod 13 from a rotatable crank 14. The

crank 14 is mounted on a shaft 15 which is provided with a gear 16, the gear 16 being meshed with a pinion 17 that is driven from a speed reducing mechanism 18. The speed reducing mechanism is driven by an electric motor 19. The rack 11 carries a slidably mounted member 20 to which the connecting rod 13 is pivoted and the member 20 threadably receives a fixed adjusting screw 21. By rotating the screw 21 the degree of movement of the rack 11 may be adjusted. Mounted in parallel relation with respect to the mandrel 2 is a second mandrel 22. This mandrel also projects through the one side of the framework and is provided at its projecting end with a freely rotatable pulley 23. The driving connection between the mandrel 22 and the pulley 23 is effected by means of a slidable dog clutch 24 which is actuated by means of a pivoted lever 25. The lever 25 is actuated by a link 26 from a lever 27 carried by an oscillatable shaft 28. The shaft 28 is actuated by a connecting link 29 from the foot pedal 30.

The pulley 23 serves as a means for feeding the wrapper tape 31 which is arranged in a roll 32 rotatably carried by a bracket 33 which extends from the upper end of the framework 1. The tape 31 is engaged through a substantial portion of the circumference of the pulley 23 by arranging the same over an upper roller 34 and a lower roller 35. The lower roller 35 is preferably mounted on a pivoted arm 36 which urges, through the medium of a tension spring 37, the roller 35 toward the pulley 23 to cause the tape to firmly engage the pulley 23.

The clutch mechanism for the mandrel 2 is of the overrunning type so that the mandrel 2 will be driven by the rack 11 when the rack 11 moves in one direction only. As viewed in Fig. 1, the drum 3 is driven in a counterclockwise direction as indicated by the arrow on the face of the drum, the drum 3 being driven in the counterclockwise direction when the rack 11 is moving in a clockwise direction. Upon movement of the rack 11 in a counterclockwise direction as viewed in Fig. 1, the clutch shoes are caused to draw away from the drum and release the driving connection.

The mandrel 22 carries two clutch drums 42 and 43, the clutch mechanism for each of which is shown in Fig. 9 comprises clutch shoes 44 which are supported by links 45 from a collar 46 rotatably mounted on the mandrel 22. The collar 46 for the mechanism for the clutch drum 42 is provided with a gear 47 and the collar 46 for the clutch mechanism for the drum 43 is provided with a sprocket 48. The gear 47 is meshed with a rotatable pinion 49 which in turn is meshed with the rack 11. The sprocket 48 is driven by means of a sprocket chain 50 from a sprocket 51 rigidly mounted on the mandrel 2. The clutch mechanisms for the drums 42 and 43 are of the overrunning type and reversed with respect to each other, and are arranged in such a manner that the mandrel 22 is driven in a counterclockwise direction by the rack 11 when the mandrel 2 is not being driven by the rack 11 and when the rack 11 is moving in a counterclockwise direction, and by the sprocket chain 50 through the mandrel 2 when the mandrel 2 is being driven by the rack 11.

The free end of the wrapper tape 31 is carried by a friction block 52 which is mounted on a vertically reciprocable arm 53, the arm 53 having a cam follower 54 which engages with a rotatable cam 55. The end of the tape 31 is threaded through aligned slots 52a formed in the member 52 as shown in Fig. 4 and the tape is retained in the slots 52a through frictional engagement with a plate 52b which bridges the open sides of the slots. The cam 55 is fixed to the rotatable shaft 12 which carries a sprocket 56 that is driven by a chain 57 from a sprocket 58 mounted on the rotatable shaft 15. The cam 55 causes the tape-carrying block 52, at a predetermined interval, to move downwardly from the position shown in Figures 1 and 19 to the position shown in Figure 16, at which time shears, to be hereinafter described, operate to sever the wrapper tape. Mounted on a bar 58a above the block 52 are a pair of spaced guides 58b for guiding the tape and the bead to be wrapped.

Also mounted for vertically reciprocable movement within vertical guides 59a is a support 59 which carries a pair of rollers 60 and 61 that function to hold the wrapped bead against the drum and to stitch the overlapped edges of the tape against the bead. The support 59 also carries a fixed folding plow 62, a fixed forked bead guide 63, and a pivoted lever 64, which carries a roller 65, and a folding plow 66. The lever 64 is urged to an extreme pivoted position by a tension spring 67.

The folding plow 62 includes a spring pressed, pivoted portion 68, more clearly shown in Figures 22 and 23, which rides on the peripheral surface of the bead being wrapped.

The support 59 carries a cam follower 69 which engages with a cam 70 which is mounted to rotate with the shaft 12 and to move the support 59 upwardly at a predetermined time to permit the wrapped bead to be removed from the drum 3.

Associated with the apparatus are fixed and movable shear blades 71 and 72 between which the wrapper tape passes during the wrapping operation. The movable blade 72 is pivoted on the fixed blade 71 and is normally held in wide open position by means of a pivoted catch 73, a spring 74 being provided to close the shear blades and sever the wrapper tape. Upon release of the catch 73 the spring 74 tends to pivot the blade 72 to closed operative position, but pivoting of the same is controlled by a lever 75 which is pivoted intermediate its ends, one end being in engagement with the blade 72 and the opposite end having a cam follower 76 which engages with a cam 77 fixed to rotate with the shaft 12.

The catch 73 moves to latching position by gravity and is unlatched by a lug 78 carried by a reciprocable member 79. The member 79 is provided with a lug 79a which is engaged by a block 79b threadably carried by an adjusting screw 80. A rack 81 which is meshed with a pinion 82 carries the screw 80 which is axially fixed thereto. The screw 80 carries an extension 80a which is mounted to be rotated by a knob 80b having a sleeve 80c which is slotted to receive a key 80d on the extension 80a to permit the extension to reciprocate therein and be rotated thereby. The pinion 82 is carried by a shaft 83 which in turn is driven by a gear 84 meshed with the idler pinion 49. By adjusting the screw 80 the block or lug 78 may be adjusted to any desired position for unlatching the catch 73.

There is also associated with the apparatus an automatic means for removing the wrapped bead 85 from the wrapping drum 3. This means includes a horizontal rotatable arm 86 pivoted to a member 87 which is mounted on the upper end of a vertical shaft 88. The shaft 88 is driven by bevel pinions 89 from a shaft 90, which in turn

is driven by bevel pinions 91 from a shaft 92. The shaft 92 carries a sprocket 93 which is driven by a chain 94 from a sprocket 95 fixed to rotate with the shaft 12. The outer end of the arm 86 carries a depending, spring-pressed, pivoted arm 96, the lower end of which is curved to engage with the wrapped bead. The arm 96 is arranged to have a limited pivotal movement when it lifts and removes the bead from the wrapping drum 3. The rotating arm 86 rides on a horizontal guide 97, which is recessed at one side so that, at the proper time the arm 96 will drop to its bead removing position. The reel 98 which carries the roll 32 of wrapper tape may be provided with a friction brake 99 shown in Fig. 4, which exerts a slight drag on the reel to prevent the roll 32 from unwinding too rapidly.

An adjusting arm 100 and a sprocket 101 may be provided, if desired, for maintaining the proper tension in the drive chain 57.

The bead to be wrapped is mounted on the wrapping drum 3, while the drum 3 is stationary and when the parts are arranged as shown in Figure 1. The tape-holding block 52 is in its uppermost position, with the leading end of the wrapper tape positioned on the support 58*a* between the guides 58*b*. The support 59 is also in its uppermost position and the arm 86 is supported on the guide 97.

While the drum 3 is stationary the operator positions an unwrapped bead within the drum groove 4 and over the support 58*a* with the inner peripheral surface of the bead in engagement with the leading end of the tape 31, the tape being sufficiently tacky to adhere to the bead. As the mechanism continues its operation the support 59 moves downwardly to bring the rollers 60, 61 and 65 into engagement with the outer surface of the bead and to position the plows 62 and 66 into wrapping position. Immediately after these parts are in position the drum 3 is caused to rotate in a counterclockwise direction, as viewed in Figures 1, 19 and 21, to rotate the bead and wind the wrapper tape. The plow 66 folds one side edge of the tape against one side of the bead and over the top thereof. The opposite side edge of the tape is then folded against the other side of the bead by the adjacent side wall of the groove 4 and the plow 62 completes the fold over the first fold at the top of the bead. As the drum continues its rotation the tape is automatically wrapped about the bead, the rollers 61 and 60 acting to press the wrapped head against the bottom of the drum recess 4 and to stitch the overlapped edges of the tape against the bead.

Prior to the completion of the wrapping operation the tape holder 52 drops downwardly to clear the shear blades 71 and 72 and the blades then operate to sever the wrapper tape. As soon as the trailing end of the wrapper tape is overlapped with the leading end and wrapped about the bead and passes beyond the roller 60, the support 59 moves upwardly. Immediately thereafter the arm 96, which is being rotated by the arm 86 drops to the dotted position shown at the right in Figure 1 and raises the wrapped bead from the drum groove 3 and carries the bead from the drum 3. Immediately after the wrapped tape is removed by the arm 96 from the drum the tape-holding block 52 moves to its uppermost position shown in Figure 19 and by this time the drum 3 has ceased its rotation and is ready to receive another bead.

If, during the operation the wrapper tape 31 is draped too far downwardly, the operator depresses the pedal 30, which disengages the dog clutch 24 to stop the feeding operation of the tape.

One of the advantages of the apparatus of the present construction is that the beads are uniformly wrapped and that the tape of all beads of the same size and diameter will be of uniform length.

Another advantage of the apparatus described is that it is only necessary for the operator to place the beads upon the wrapping drum 3 and this provides for efficient and rapid wrapping of tire beads.

Although a single embodiment of the invention has been herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention, as defined in the following claims.

What I claim is:

1. In a tire bead wrapping machine, a rotatable drum having a circumferential bead receiving groove, a bead support adjacent said drum for supporting the bead carried in said groove in eccentric relation with respect to said drum and for supporting a wrapper tape in engagement with the inner peripheral surface of the bead, means for rotating said drum whereby to impart a rotative movement to the bead and tape engaged therewith, a guide plow for folding one edge of the tape against one side and against the outer peripheral surface of the bead, and a second guide plow for folding the other edge of the tape against the outer peripheral surface of the bead in overlapping relation with said first mentioned edge.

2. In a tire bead wrapping machine, a rotatable drum having a circumferential bead receiving groove, a bead support adjacent said drum for supporting the bead carried in said groove in eccentric relation with respect to said drum and for supporting a wrapper tape in engagement with the inner peripheral surface of the bead, means for rotating said drum whereby to impart a rotative movement to the bead and tape engaged therewith, a guide plow for folding one edge of the tape against one side and against the outer peripheral surface of the bead, a second guide plow for folding the other edge of the tape against the outer peripheral surface of the bead in overlapping relation with said first mentioned edge, and a roller for holding the bead against the bottom of said groove and for stitching said overlapped edges against said bead.

3. In a tire bead wrapping machine, a rotatable drum having a circumferential bead receiving groove, a bead support adjacent said drum for supporting the bead carried in said groove in eccentric relation with respect to said drum and for supporting a wrapper tape in engagement with the inner peripheral surface of the bead, means for intermittently rotating said drum whereby to impart a rotative movement to the bead and tape engaged therewith, a guide plow for folding one edge of the tape against one side and against the outer peripheral surface of the bead, and a second guide plow for folding the other edge of the tape against the outer peripheral surface of the bead in overlapping relation with said first mentioned edge.

4. In a tire bead wrapping machine, a rotatable drum having a circumferential bead receiving groove, a bead support adjacent said drum for supporting the bead carried in said groove in eccentric relation with respect to said drum and for sup-

porting a wrapper tape in engagement with the inner peripheral surface of the bead, means for rotating said drum whereby to impart a rotative movement to the bead and tape engaged therewith, a guide plow for folding one edge of the tape against one side and against the outer peripheral surface of the bead, a second guide plow for folding the other edge of the tape against the outer peripheral surface of the bead in overlapping relation with said first mentioned edge, and means for automatically moving said plows away from said bead upon completion of the wrapping operation.

5. In a tire bead wrapping machine, a rotatable drum having a circumferential bead receiving groove, a bead support adjacent said drum for supporting the bead carried in said groove in eccentric relation with respect to said drum and for supporting a wrapper tape in engagement with the inner peripheral surface of the bead, means for rotating said drum whereby to impart a rotative movement to the bead and tape engaged therewith, a guide plow for folding one edge of the tape against one side and against the outer peripheral surface of the bead, a second guide plow for folding the other edge of the tape against the outer peripheral surface of the bead in overlapping relation with said first mentioned edge, means for automatically moving said plows away from said bead upon completion of the wrapping operation, and means for automatically removing the wrapped bead from said drum.

6. In a tire bead wrapping machine, a rotatable drum having a circumferential bead receiving groove, a bead support adjacent said drum for supporting the bead carried in said groove in eccentric relation with respect to said drum and for supporting a wrapper tape in engagement with the inner peripheral surface of the bead, means for rotating said drum whereby to impart a rotative movement to the bead and tape engaged therewith, a guide plow for folding one edge of the tape against one side and against the outer peripheral surface of the bead, a second guide plow for folding the other edge of the tape against the outer peripheral surface of the bead in overlapping relation with said first mentioned edge, and means for automatically severing the wrapper tape just prior to the completion of the wrapping operation.

7. In a tire bead wrapping machine, a vertically arranged drum having a bead receiving and supporting groove, means for intermittently rotating said drum, mechanism for wrapping the bead supported in said groove, and means for automatically removing the bead from said groove and drum, said means including a member for engaging the bead and means for moving said member through a circular path.

8. In a tire bead wrapping machine, a drum having a bead receiving and supporting groove, means for intermittently rotating said drum, a tape feeding drum, and means for continuously rotating said tape feeding drum.

9. In a tire bead wrapping machine, a drum having a bead receiving and supporting groove, a supporting shaft for said drum, a freely rotatable collar on said shaft having a gear, a rack for rotating said gear, means for reciprocating said rack, and an overrunning clutch between said collar and shaft, whereby to rotate said shaft and drum during movement in one direction only of said rack.

10. In a tire bead wrapping machine, a drum having a bead receiving and supporting groove, a supporting shaft for said drum, a freely rotatable collar on said shaft having a gear, a rack for rotating said gear, means for reciprocating said rack, an overrunning clutch between said collar and shaft, whereby to rotate said shaft and drum during movement in one direction only of said rack, a tape feeding drum, and a driving connection between said tape feeding drum and shaft whereby said tape feeding drum is rotated simultaneously with said first mentioned drum.

11. In a tire bead wrapping machine, a drum having a bead receiving and supporting groove, a supporting shaft for said drum, a freely rotatable collar on said shaft having a gear, a rack for rotating said gear, means for reciprocating said rack, an overrunning clutch between said collar and shaft, whereby to rotate said shaft and drum during movement in one direction only of said rack, a tape feeding drum, a driving connection between said tape feeding drum and shaft whereby said tape feeding drum is rotated simultaneously with said first mentioned drum, and means for continuing the rotation of said tape feeding drum while said bead supporting drum is at rest.

12. In a tire bead wrapping machine, a drum, having a bead receiving and supporting groove, a supporting shaft for said drum, a freely rotatable collar on said shaft having a gear, a rack for rotating said gear, means for reciprocating said rack, an overrunning clutch between said collar and shaft, whereby to rotate said shaft and drum during movement in one direction only of said rack, a tape feeding drum, a driving connection between said tape feeding drum and shaft whereby said tape feeding drum is rotated simultaneously with said first mentioned drum, and means for continuing the rotation of said tape feeding drum while said bead supporting drum is at rest, said driving connection including an overrunning clutch to permit rotation of said tape feeding drum by said last mentioned means.

13. In a tire bead wrapping machine, a drum having a bead receiving and supporting groove, a supporting shaft for said drum, a freely rotatable collar on said shaft having a gear, a rack for rotating said gear, means for reciprocating said rack, an overrunning clutch between said collar and shaft, whereby to rotate said shaft and drum during movement in one direction only of said rack, a tape feeding drum, a driving connection between said tape feeding drum and shaft whereby said tape feeding drum is rotated simultaneously with said first mentioned drum, and means for continuing the rotation of said tape feeding drum while said bead supporting drum is at rest, said last mentioned means having a driving connection with said rack reciprocating means.

14. In a tire bead wrapping machine, a drum having a bead receiving and supporting groove, a supporting shaft for said drum, a freely rotatable collar on said shaft having a gear, a rack for rotating said gear, means for reciprocating said rack, an overrunning clutch between said collar and shaft, whereby to rotate said shaft and drum during movement in one direction only of said rack, a tape feeding drum, a driving connection between said tape feeding drum and shaft whereby said tape feeding drum is rotated simultaneously with said first mentioned drum, and means for continuing the rotation of said tape feeding drum while said bead supporting drum is at rest, said driving connection including an overrunning clutch to permit rotation of said tape

feeding drum by said last mentioned means, said last mentioned means having a driving connection with said rack reciprocating means.

15. In a tire bead wrapping machine, a drum having a bead receiving and supporting groove, a supporting shaft for said drum, a freely rotatable collar on said shaft having a gear, a rack for rotating said gear, means for reciprocating said rack, an overrunning clutch between said collar and shaft, whereby to rotate said shaft and drum during movement in one direction only of said rack, a tape feeding drum, a driving connection between said tape feeding drum and shaft whereby said tape feeding drum is rotated simultaneously with said first mentioned drum, and means for continuing the rotation of said tape feeding drum while said bead supporting drum is at rest, said driving connection including an overrunning clutch to permit rotation of said tape feeding drum by said last mentioned means, said last mentioned means having a driving connection with said rack reciprocating means, and including an overrunning clutch to permit rotation of said tape feeding drum during rotation of said bead supporting drum.

16. In a tire bead wrapping machine, a drum having a bead receiving and supporting groove, means for intermittently rotating said drum, a tape feeding drum, means for continuously rotating said tape feeding drum, and clutch means for discontinuing rotation of said tape feeding drum.

17. In a tire bead wrapping machine, a rotatable drum having a circumferential bead receiving groove, a bead support adjacent said drum for supporting the bead carried in said groove in eccentric relation with respect to said drum and for supporting a wrapper tape in engagement with the inner peripheral surface of the bead, means for rotating said drum whereby to impart a rotative movement to the bead and tape engaged therewith, a guide plow for folding one edge of the tape against one side and against the outer peripheral surface of the bead, a second guide plow for folding the other edge of the tape against the outer peripheral surface of the bead in overlapping relation with said first mentioned edge, means for automatically severing the wrapper tape just prior to the completion of the wrapping operation, and means for automatically moving said plows away from the bead upon completion of the wrapping operation.

18. In a tire bead wrapping machine, a rotatable drum having a circumferential bead receiving groove, a bead support adjacent said drum for supporting the bead carried in said groove in eccentric relation with respect to said drum and for supporting a wrapper tape in engagement with the inner peripheral surface of the bead, means for rotating said drum whereby to impart a rotative movement to the bead and tape engaged therewith, a guide plow for folding one edge of the tape against one side and against the outer peripheral surface of the bead, a second guide plow for folding the other edge of the tape against the outer peripheral surface of the bead in overlapping relation with said first mentioned edge, means for automatically severing the wrapper tape just prior to the completion of the wrapping operation, means for automatically moving said plows away from the bead upon completion of the wrapping operation, and means for automatically removing the wrapped bead from said drum.

WALTER J. BRETH.