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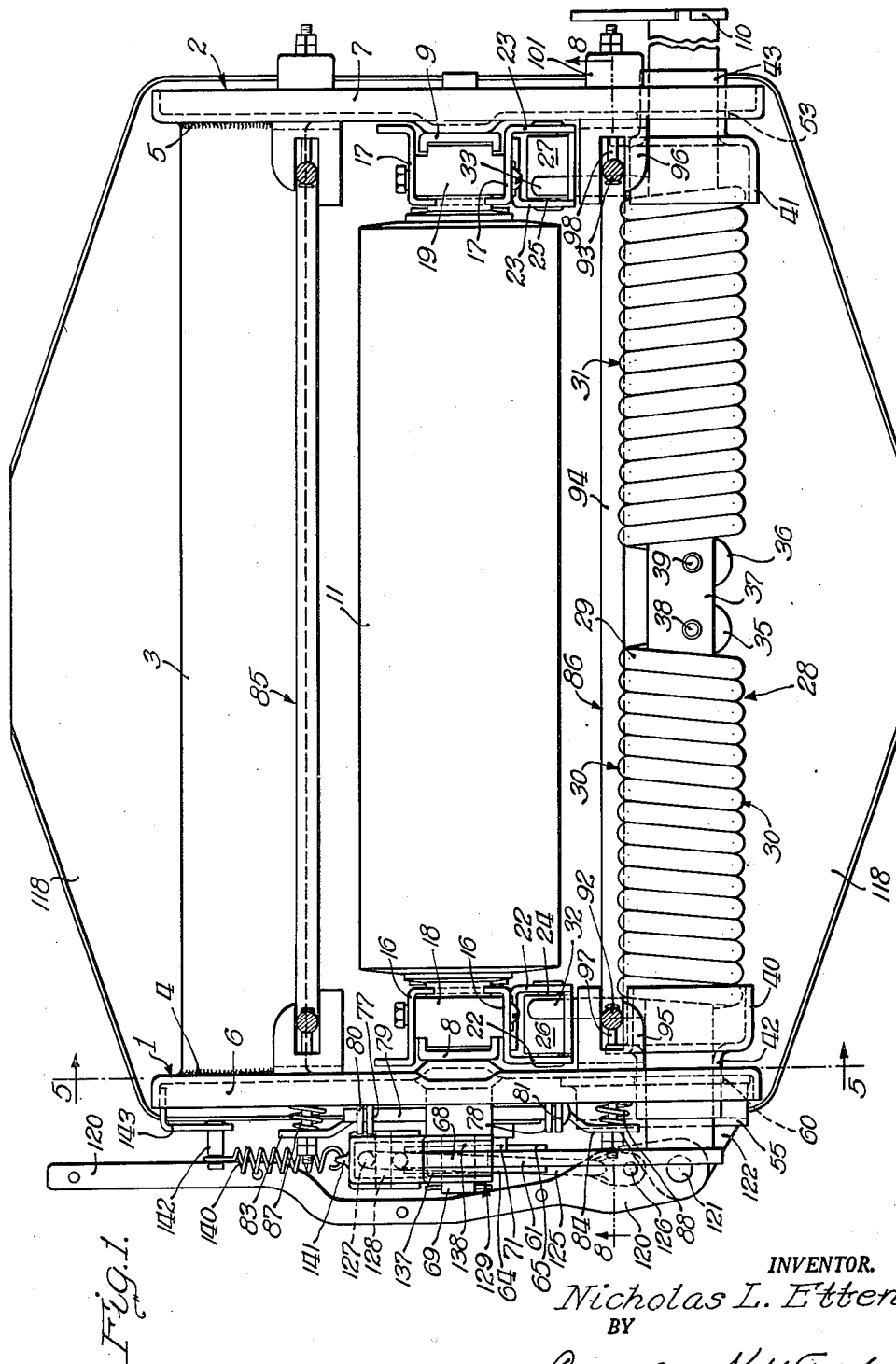
N. L. ETTEN

2,571,351

WRINGER

Filed June 19, 1947

8 Sheets-Sheet 1



Oct. 16, 1951

N. L. ETTEN

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WRINGER

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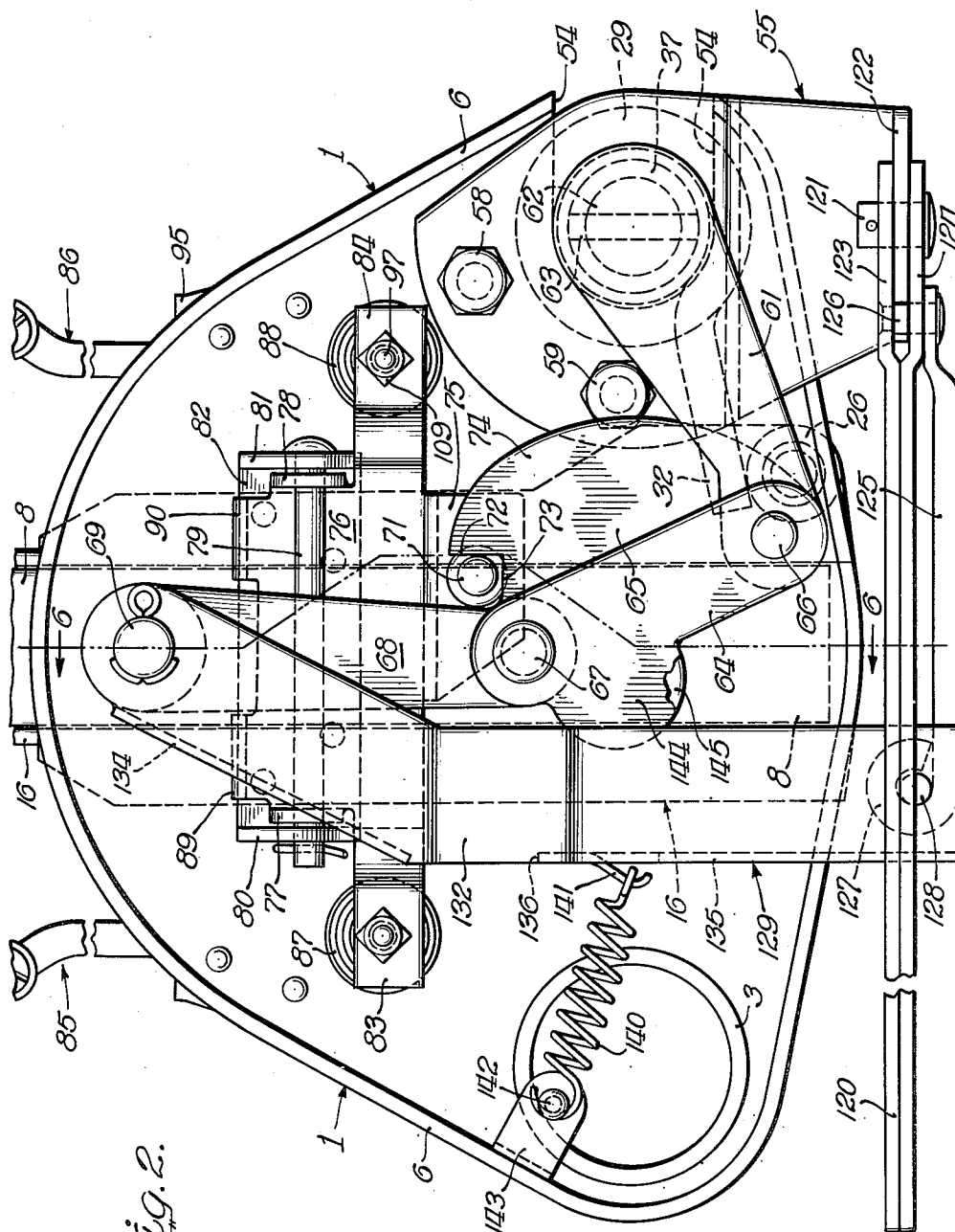


Fig. 2.

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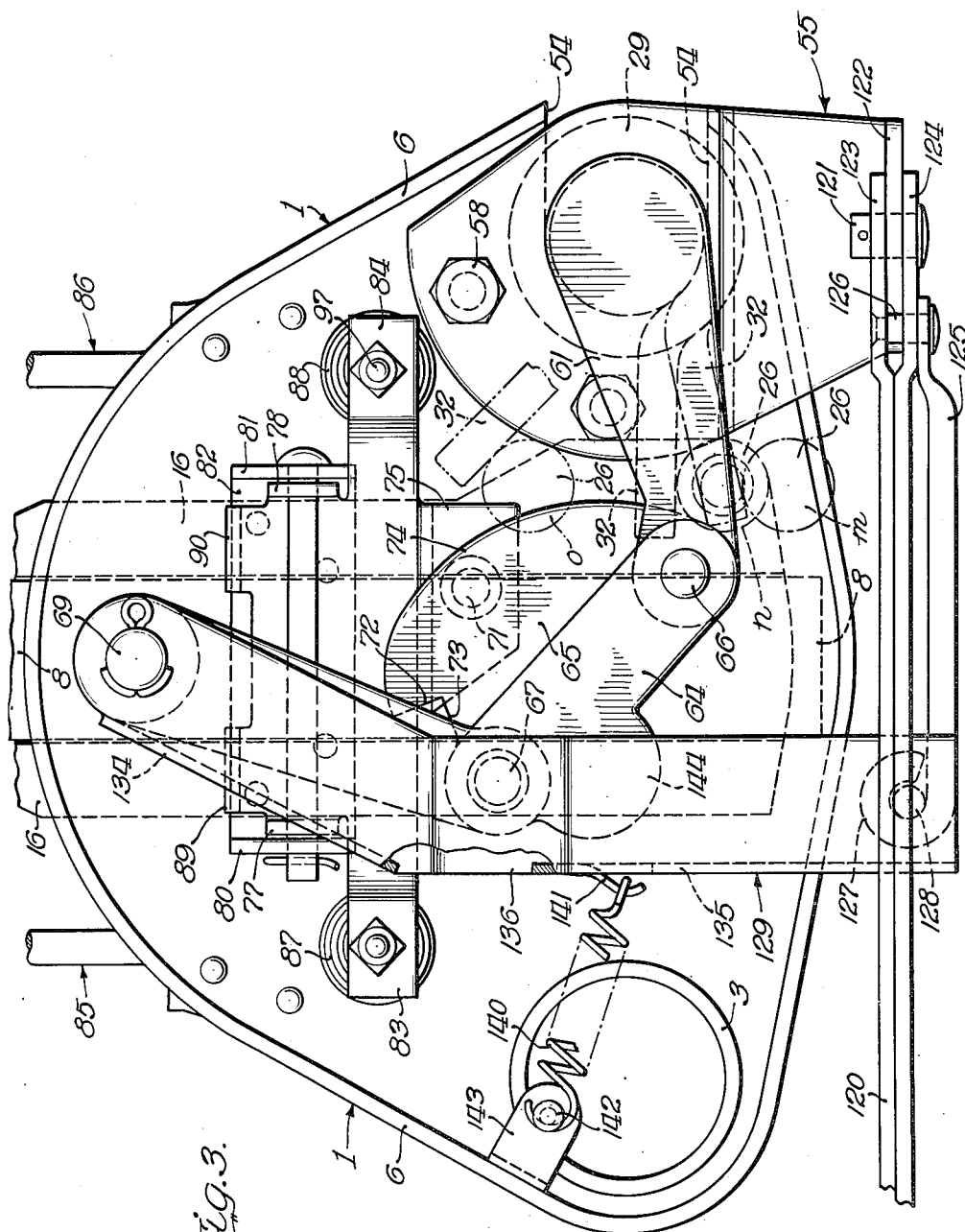


Fig. 3.

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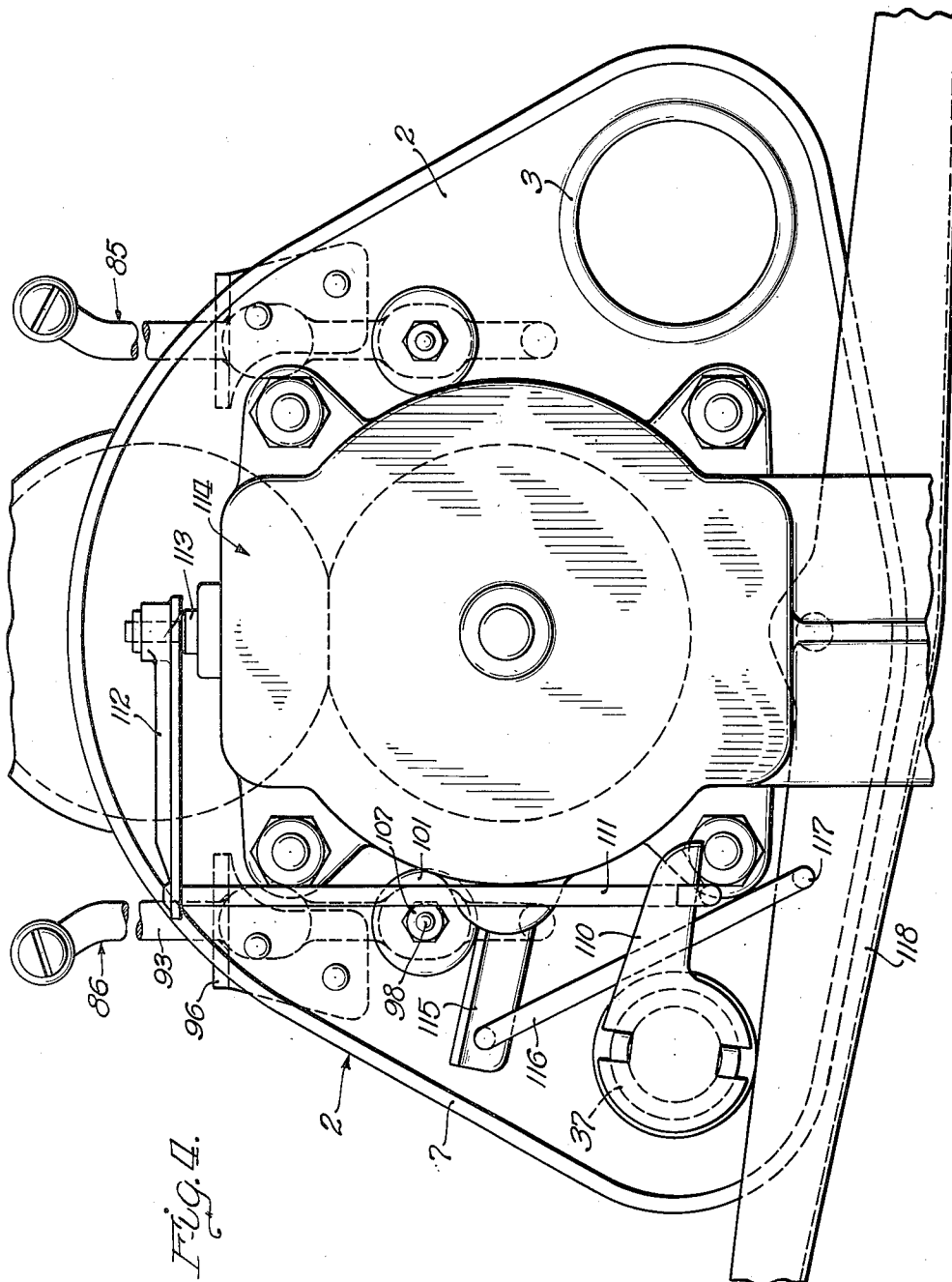
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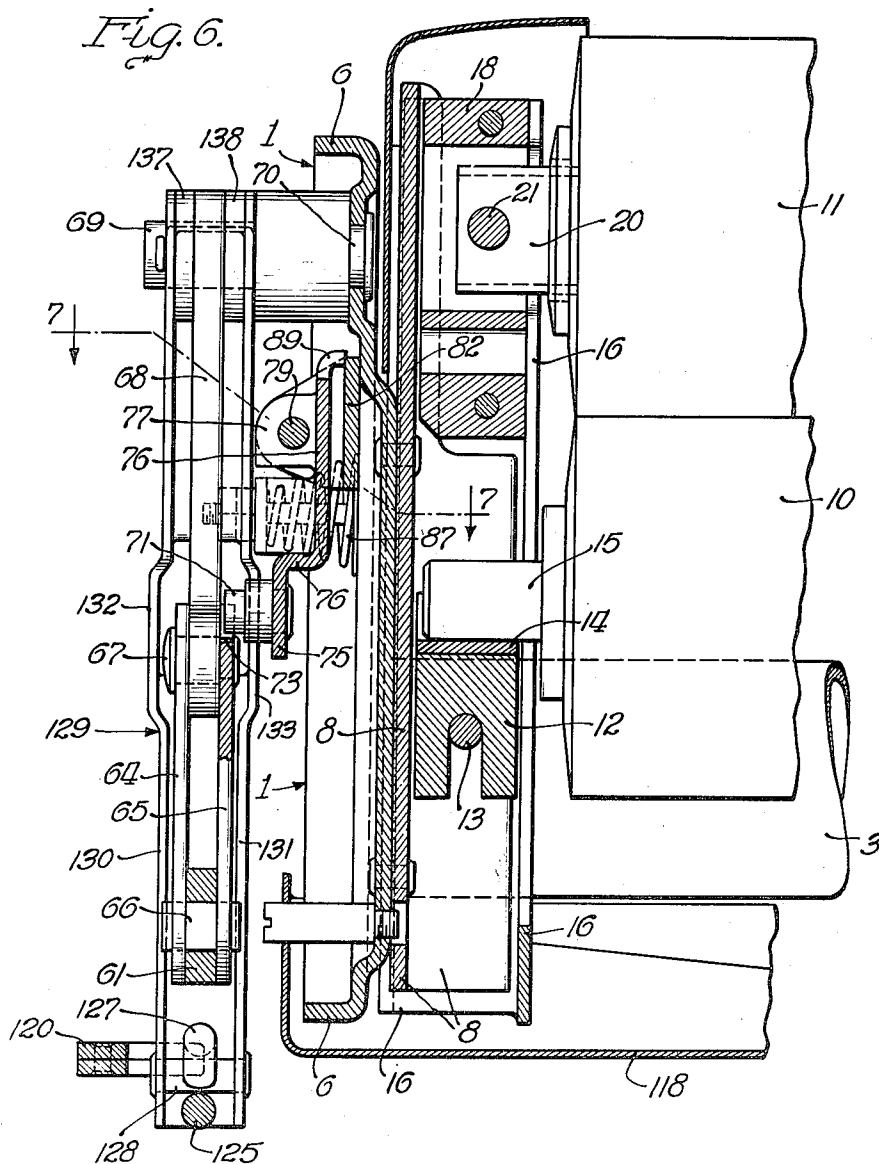
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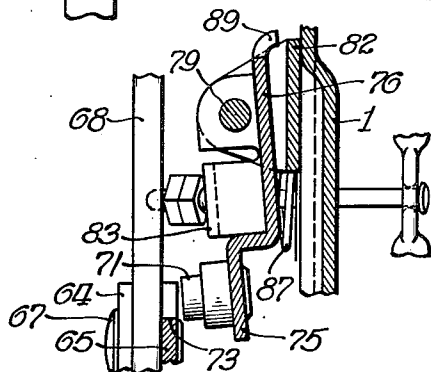
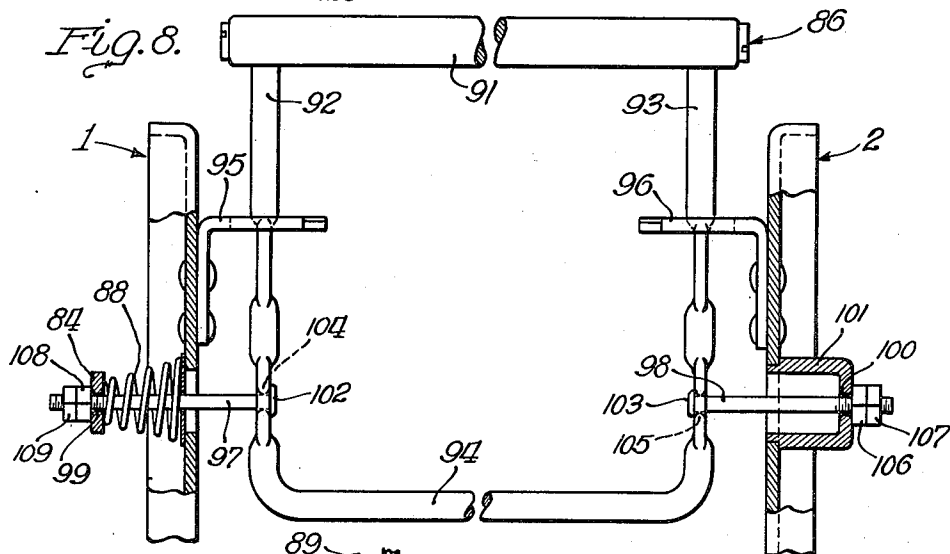
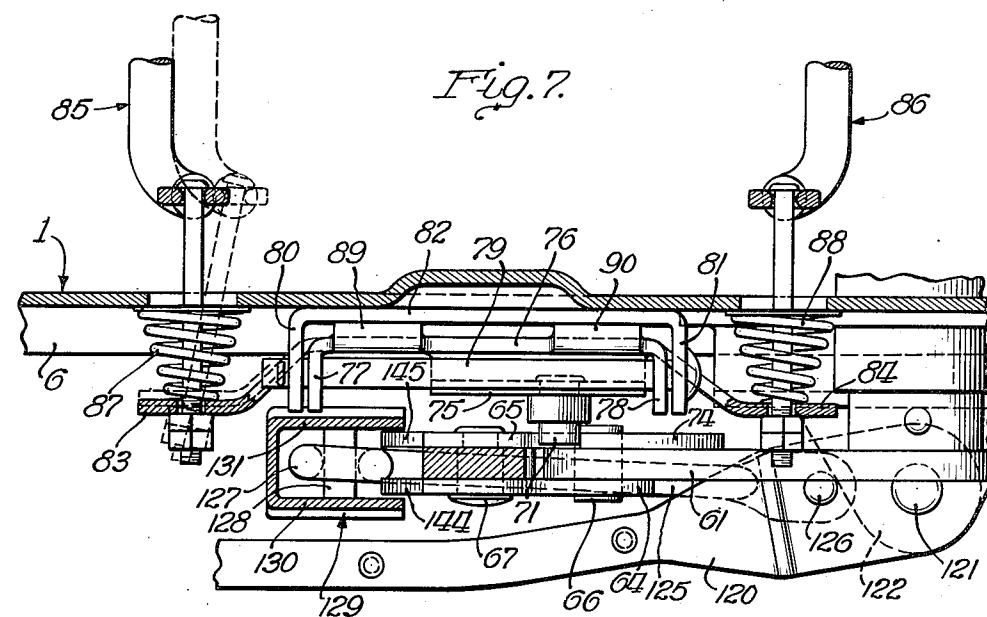


Fig. 9.

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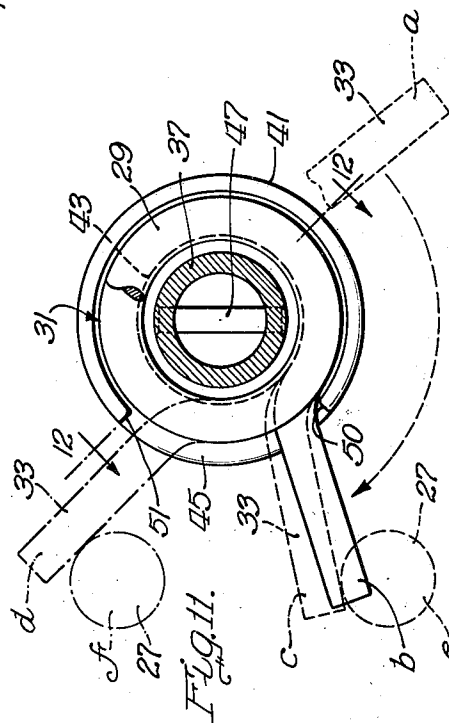
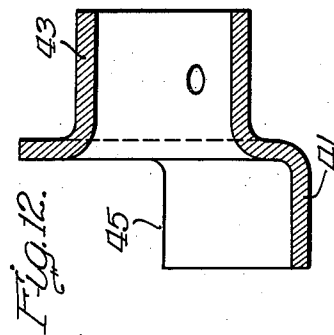
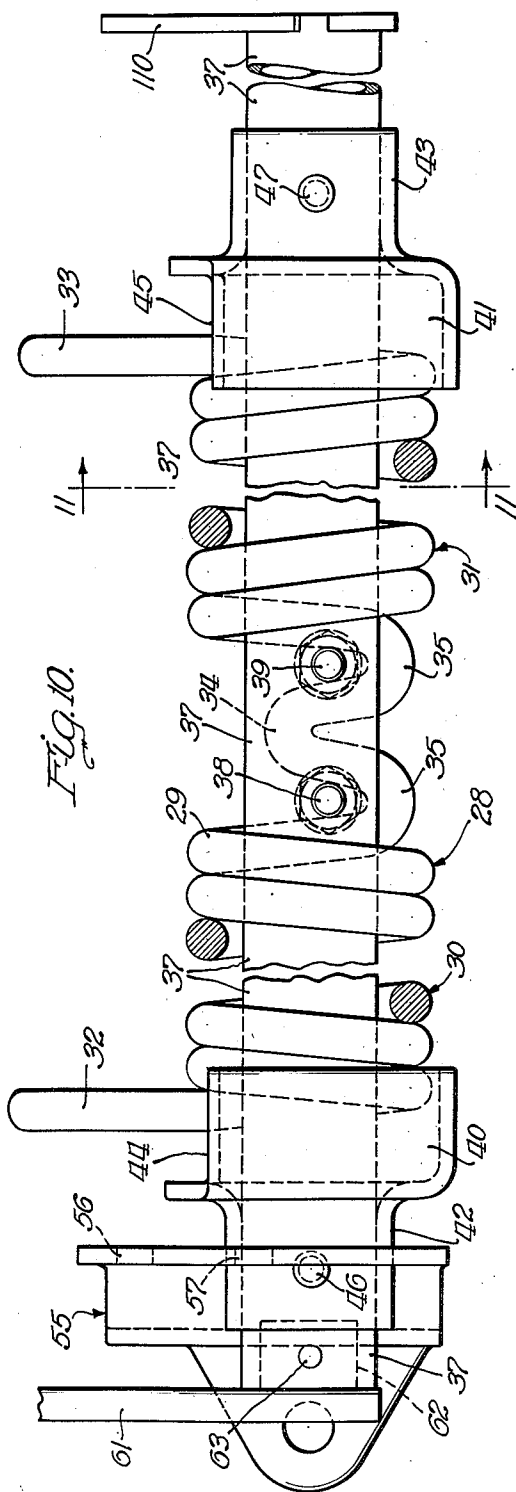
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8 Sheets-Sheet 8



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UNITED STATES PATENT OFFICE

2,571,351

WRINGER

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Application June 19, 1947, Serial No. 755,775

3 Claims. (Cl. 68—263)

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This invention relates to a wringer primarily designed for domestic washing machines incorporating a new and improved reflex action mechanism for tripping the wringer rolls to reduce or eliminate the tension between the rolls that is normally induced for obtaining the proper squeezing action under operating conditions of the wringer. The manually releasable portion of the wringer structure is shown and described in greater detail in my co-pending application Serial No. 755,774, filed of even date herewith.

It is one of the main objects of the present invention to incorporate a complete unitarily assembled and constructed tensioning means in the form of oppositely wound portions from a continuous torsion spring and associated parts which can be assembled into the completed wringer structure through a unique design of wringer frame ends. This wringer structure incorporates the use of pre-tensioning means as a part of the spring assembly to introduce the partial tension into the spring structures which coact with the movable bearing brackets for urging the movable wringer roll in the direction and against the non-movable wringer roll during the operation of the wringer.

A further object of the present invention is to provide a spring assembly having a single torsional spring wound in opposite directions wherein each of the oppositely acting parts of the spring are provided with tails which are adapted to directly contact operative portions of the bearing brackets of the movable roll, thereby entirely eliminating any intermediate structure such as has normally been employed in the wringers of past design.

It is still a further object of the present invention to introduce a simple and economical latch structure for normally holding the wringer parts in their operative and tensioned positions but which structure is quickly released through the connected reflex release mechanism. This latch mechanism includes a latch pin for engaging a link of the reset means to normally maintain all of the reset mechanism parts in their predetermined positions, such pin being mounted for withdrawal from the coacting portion of the particular link in question allowing the entire reset linkage to assume a different position through which action the tension of the torsion spring is released permitting separation of the wringer rolls by release of the tension therebetween.

It is a further object of the present invention to provide a reset lever mechanism having a handle which is normally maintained in a housed

position adjacent and beneath one end of the wringer structure and will maintain or continue to occupy this position under all normal conditions of operation. However, upon release of the tensioning mechanism of the wringer, the reset lever mechanism may be manually moved by the handle from the position the same normally occupies to cause engagement of certain portions of the reset link mechanism to re-establish the parts thereof into a predetermined relationship to again tension the wringer rolls under the action of the dual torsion spring, and at such time the latch pin is again brought into operative position to engage and latch the link of the reset link mechanism utilized for re-establishing the tension between the wringer rolls. The latch pin will occupy this position until the manual reflex mechanism is again actuated either through the desire of the operator or under conditions of accidental insertion of other objects into the wringer rolls beside the normal washed clothing or apparel which is being fed into the wringer.

All other objects and advantages relating to and inherent in the present design of wringer to which the instant invention relates shall hereinafter appear in the following detailed description having reference to the accompanying drawings forming a part of this specification.

In the drawings:

Fig. 1 is a plan view of the wringer of the present invention generally illustrating the arrangement proposed and showing only the pertinent mechanisms of the wringer with the outer casing and the shields for the bearing brackets removed to better illustrate the details of construction thereof, and with the manual release frames shown in section;

Fig. 2 is an end elevational view of the wringer as seen from the outboard end thereof with the various parts thereof positioned as they would appear with the wringer rolls disposed in operative relation to receive and wring clothing having been washed;

Fig. 3 is an end elevational view of the wringer as seen in the same position as illustrated in Fig. 2 but Fig. 3 illustrates the various parts of the wringer in tripped and released position wherein the wringing pressure between the rolls has been eliminated by releasing the tension through the tensioning means;

Fig. 4 is an end elevational view of the wringer as viewed from the opposite end thereof in respect to Fig. 2, Fig. 4 illustrating portions of the gear housing and associated mechanisms for

operating the wringer in the usual fashion when supported upon the wringer post of a washing machine;

Fig. 5 is a vertical cross sectional view through the wringer structure as viewed substantially in the plane of the line 5—5 in Fig. 1, illustrating certain other details of construction of the wringer mechanisms;

Fig. 6 is a vertical cross sectional view taken along a longitudinal plane and substantially along the line 6—6 in Fig. 2 to further illustrate certain details of construction of the wringer mechanisms and particularly of the trip and reset means as well as the adjacent roll supporting structure;

Fig. 7 is a horizontal transverse cross sectional view taken generally through the latch mechanism and the connected reflex trip means and substantially as viewed along the line 7—7 in Fig. 6;

Fig. 8 is a fragmentary view of portions of the wringer structure to illustrate one of the reflex frames and its connected mechanisms to show the trip arrangement, portions of the wringer being partially broken away and in section substantially as viewed along the line 8—8 in Fig. 1;

Fig. 9 illustrates a fragmentary part of the mechanism shown in Fig. 6 but with the latch mechanism in release or tripped position;

Fig. 10 is a general plan view of the tensioning mechanism of the wringer illustrating the entire assembly as it appears when removed or prior to assembly with the general wringer mechanism;

Fig. 11 is a transverse cross sectional view of the assembly of the tensioning mechanism illustrated in Fig. 10, showing certain other details of construction thereof; and

Fig. 12 is a cross sectional detail view of one of the spring cups as viewed substantially along the line 12—12 in Fig. 11 to show certain details of construction of the same.

By now referring to the main assembly views of the drawings, such as 1 to 6 inclusive, the main working parts of the wringer and their respective positions and mountings with respect to the wringer frame may be best understood. The main supporting framework of the wringer is made up by the outer and inner end frames 1 and 2 sturdily connected and positioned by means of the relatively heavy tube 3 which is made to extend partially through the walls of the end frames 1 and 2 and is fixedly welded thereto at 4 and 5. This produces a frame of a U-shaped character as seen in Fig. 1 wherein the lower or rear side of the wringer is free from any cross bracing or other structural connections. Each of the end frames 1 and 2 is flanged as at 6 and 7 respectively producing rigid and sturdy frame ends which are normally maintained in parallel spaced relation by the connecting tube 3 as described.

Vertically disposed guide brackets 8 and 9 are riveted or otherwise rigidly secured to the inner faces of the end frames 1 and 2 providing fixed means for supporting the lower roll 10 in fixed axial position while guiding the mechanism which supports the upper roll 11 for movement relatively to the lower roll. As best illustrated in Fig. 6, the lower roll 10 is supported for rotation upon a fixed axis by means of the bearings 12 carried upon cross bolts 13 secured to the side flanges of the guide brackets 8 and 9. Each of the bearings 12 are arcuately lined at 14 in Fig. 6 with antifrictional material to support the ends of the shaft 15 of the roll 10.

Coacting with each of the guide brackets 8 and 9 for the roll bearing structure are the vertically movable bearing brackets 16 and 17 which coact with the brackets 8 and 9 for vertical movement relative thereto and to the winger. Such movable roll bearing brackets 16 and 17 are each adapted for carrying suitable bearings 18 and 19 (Fig. 1) to support the protruding ends of shaft 20 of the upper roll 11 by means of cross pins such as 21 illustrated in Fig. 6.

Each of the movable brackets 16 and 17 is provided with coacting pairs of laterally extending ears 22 and 23, respectively, carrying pivot pins 24 and 25 which rotatably support rollers 26 and 27 which are mounted for direct movement with the movable bearing brackets 16 and 17.

The rollers 26 and 27 are positioned for engagement by the tensioning mechanism which is best illustrated in Figs. 1 and 10. This tensioning mechanism comprises a unitary assembly which can be incorporated into the wringer after the main operating parts thereof have all been assembled and this tensioning mechanism constitutes a sub-assembly which is easily installed or removed for servicing or replacement as the case may be. The complete tensioning mechanism is generally indicated by the reference numeral 28, and as seen in Figs. 1, 2 and 10 comprises a continuous spring 29 having oppositely wound coils 30 and 31 terminating in extended tails 32 and 33 respectively which are adapted to directly engage the rollers 26 and 27 of the movable bearing brackets 16 and 17 which support the upper roll 11 through the instrumentality of its shaft 20. The intermediate portion 34 of the spring 29 is looped as illustrated in Fig. 10 to provide the spaced reverse turns 35 which are directly secured to the hollow shaft 37 by means of bolts 38 and 39. Bolts 38 and 39 are therefore utilized for anchoring the center portion of the spring 29 and the adjacent ends of the oppositely wound portions 30 and 31 of the spring disposed to surround the common hollow shaft 37 to position the tails 32 and 33 in such a manner as to be active under normal conditions for urging the rollers 26 and 27 downwardly thereby transmitting this pressure through the bearing brackets 16 and 17 to the upper movable roll 11 for normally maintaining this roll in operative squeezing contact with the lower roll 10 supported as previously described.

Referring further to Figs. 1 and 2, it should be noted that suitable cups are provided for the spring ends, these cups being indicated at 40 and 41 with each having sleeve portions 42 and 43 for support upon the shaft 37 with portions of each cup cut away as at 44 and 45 through which the tails 32 and 33 may pass radially with respect to the shaft 37 as best shown in Figs. 1, 10, 11 and 12, both cups being identical but right and left hand.

The purpose of the cups 40 and 41 is to introduce a predetermined amount of tension into each of the torsional spring coils 30 and 31. This is accomplished by rotating the cups relatively to the shaft 37 prior to securing such cups in fixed position upon the shaft 37 by means of the rivets 46 and 47. As seen in Fig. 11, this initial tension of either of the coils 30 or 31 may be introduced by rotating the cup 41 in a clockwise direction to move the tail 33 from a position *a* to the full line position *b* thereafter riveting the sleeve portion of the cup to the shaft 37 by means of the rivet 47. In Fig. 11, it is seen that the edge 50 of the cut away portion 45 of the cup 41 will

5

bring the tail 33 of spring 31 into the position just described. Then by suitably securing the entire spring assembly into the wringer framework and by positioning the roller 27 and the entire bearing bracket 17 of the upper roll 11 in such a manner as to have the tail 33 further released in a clockwise direction from edge 50 as shown in Fig. 11 to occupy the position c, the initial spring tension induced into coil 31 will therefore act at all times upon the upper roll through engagement of the tail 33 with the roller 27 holding this end of the upper roll tightly against the adjacent end of the lower roll and all this may be done by making proper allowances for the resiliency of the rubber of the rolls and by making full use of the proper tension as so induced. During the operation of the wringer, it is possible for the tail 33 to operate between the positions c and d as seen in Fig. 11 to give the roller 27 an actual freedom of movement from the position e to the position f which indicates the maximum vertical movement of the upper wringer roll 11. It should be noted that as long as the tail 33 is free to move within the cut away portion 45 or between the edges 50 and 51 of the cup 41, the tension of the spring will be directly transmitted to the vertically movable bearing bracket 17. The same action and conditions prevail at the opposite end of the wringer to control the movements of bracket 16, the latter being operated by the tail 32 of the other coil spring 30. This particular tensioning relationship of the tails 32 and 33 is further maintained by the angular positioning of the shaft 37 upon its own rotational axis through the instrumentality of the reset and release mechanism to be hereinafter described.

The entire tensioning mechanism 28 is bodily assembled by slipping the sleeve 43 of the cup 41 through an appropriate opening 53 formed in the end frame 2 as best shown in Fig. 1 and by moving the sleeve 42 of the cup 40 horizontally into the slotted opening 54 in the frame end 1 as best shown in Fig. 2. The end of the shaft 37 which carries the cup 40 is also provided with a bracket 55 with appropriate openings 56 and 57 in a flanged portion thereof being adapted for receiving the bolts 58 and 59 which function to secure the bracket 55 to the outer face portion of the end frame 1. When the bracket 55 is bolted in position as shown in Fig. 2, the tensioning mechanism 28 is held in its proper relationship with respect to the end frame 1 with the opposite portion of the tensioning mechanism being retained in the opening 53 of the end frame 2, the tensioning mechanism having the sleeve portion 42 of the cup 40 resting within an appropriately formed opening 60 illustrated in Fig. 1 formed in the bracket 55. Thus, the tensioning mechanism 28 is properly and operatively positioned with respect to the balance of the wringer structure so that the tails 32 and 33 of the coil portions 30 and 31 of the spring 29 are positioned in coacting relation with respect to the rollers 26 and 27 of the wringer roll brackets 16 and 17. It should also be noted in Fig. 1 that the tails 32 and 33 are suitably spaced with respect to each other to be disposed adjacent the two ears of the pairs of ears 22 and 23 which flank the wringer roll ends so that the entire spring assembly will not shift longitudinally in either direction except within certain predetermined limits.

Referring now more particularly to Figs. 2, 6 and 10, it will be seen that the end of the shaft 37 is provided with an arm 61 having a suitable boss 62 for insertion into the end of the hollow

6

shaft 37 to be fastened to the latter shaft by means of a suitable rivet 63 shown in Figs. 2 and 10. The outer end of arm 61 is connected to a pair of links 64 and 65 by means of the pivot pin 66 and both of the links 64 and 65 are pivotally connected by means of the pivot pin 67 to the swingable end of the arm 68 which is pivotally supported upon the stud 69 fixedly carried at 70 to the outer face of the frame end 1 as best illustrated in Fig. 6.

It is the respective positions of the arm 68 and the dual acting connecting links 64 and 65 illustrated in Fig. 2 which maintain the end of the arm 61 in the desired angular position to maintain the tension of the two coil springs 31 and 30 through their central bolt connections 38 and 39 so that suitable resilient reaction of the tails 32 and 33 is transmitted to the ends of the upper wringer roll through the rollers 26 and 27 by their connections with the bearing brackets 16 and 17 respectively. This particular relationship between the linkage described is maintained by means of the latch pin 71 which is normally positioned to engage the edge 72 of a slot 73 formed in the upper portion of the link 65 of the pair of links 64 and 65 which connect arms 61 and 68. In addition, the link 65 is provided with a wing 74 shown in Fig. 2, which wing forms a part of the link 65 and projects outwardly in the plane of link 65 from the upper portion of the slot 73 in arcuate fashion down to the lower end of the link 65 adjacent the pivot pin 66. The function of the wing 74 will hereinafter be described in connection with the operation of the latch mechanism.

Since the shaft 37 through the composite action of the spring coils 30 and 31 is normally torsionally biased to move the arm 61 in a clockwise direction as viewed in Fig. 2, the link mechanism described will maintain the torsional tension of the spring elements in their proper operational function since the respective links are held in the position shown in Fig. 2 by means of the pin 71 engaging the edge 72 of the slot 73 of the link 65.

In the event that pin 71 is withdrawn from within the slot 73 and away from engagement with the edge 72 of the link 65, the various links will assume the released positions indicated in Fig. 3 allowing the arm 61 to move in a clockwise direction an angular amount sufficient to release the active tension of the two coils 30 and 31 of the spring 29 thereby permitting separation of the wringer rolls to release the squeezing pressure therebetween after a day's washing or in case of accidental insertion of some foreign object or of the operator's hand or other body part as the case may be.

The latch mechanism carrying the stop pin 71 which regulates the positions of the reset link mechanism that biases the spring mechanism 28 may best be understood with reference to Figs. 2, 6 and 7. Pin 71 is rigidly secured to the depending ear 75 which forms a portion of a pivotally supported bracket 76. Bracket 76 has a pair of spaced and aligned ears 77 and 78 which are pivotally carried upon a pivot pin 79 supported by ears 80 and 81 of a bracket 82 which is secured to the outer surface of the end frame 1. Bracket 76 is also provided with oppositely extending fingers 83 and 84 that connect with the manual release mechanisms 85 and 86 which mechanisms include springs 87 and 88 that are interposed between the face of the end frame 1 and the respective fingers 83 and 84 to normally urge such fingers outwardly and away from the

7

surface of the end frame 1. Since the vertical locations of the fingers 83 and 84 are such in respect to the pivot pin 79 as to cause the bracket 76 to swing outwardly below the horizontal plane of the pin 79, the latch pin 71 will normally be urged outwardly and into the slot 73 of the link 65 to hold this link in its proper relationship to tension the entire spring tensioning mechanism 28.

In order to limit the outward movement of the pin 71 and to place the same in its proper relationship with respect to the vertical operating plane of the link 65, the bracket 76 is provided with upwardly extending limit stops 89 and 90 which are disposed above the horizontal plane of the pin 79 so that these stops may engage the outer surface portion of the bracket 82 to limit the rocking movement of bracket 76 under action of springs 87 and 88 thereby disposing this bracket in the position indicated in Fig. 6 with the stop or latch pin 71 in its proper latching relationship with respect to the link 65 of the spring tensioning linkage. Any movement of the bracket 76 in a counterclockwise direction as seen in Fig. 6 will cause the pin 71 to move out of latching engagement with the link 65 to permit the link parts to assume the positions indicated in Fig. 3, and the latch pin 71 will be unable to return to its normal position in Fig. 6 by reason of the abutting engagement of the end of the pin against the wing 74 best seen in Fig. 3. With the parts 71 and 74 in position as shown in Fig. 3, the pin 71 will be maintained in a relation to again enter the slot 73 under the action of the springs 87 and 88 whenever the wing 74 and the link 65 is brought into the position shown in Fig. 2. This latter operation is accomplished through the reset mechanism not yet described.

Referring now more particularly to Figs. 7, 8 and 9, it is seen that each side of the wringer is provided with identical manual reflex release means such as previously referred to as 85 and 86. The reflex mechanism 86 is best illustrated in Fig. 8 and involves a construction which is substantially the same as that shown and described in my co-pending application, Serial No. 755,774, filed of even date herewith. This mechanism may be briefly described with reference to Fig. 8, it being apparent that both of the reflex frames 85 and 86 are alike. Frame 85 includes a longitudinal hand bar 91 mounted upon the ends of the legs 92 and 93 of a U-shaped framework 94 which is normally guided and vertically positioned by the oppositely disposed slotted brackets 95 and 96 secured to the end frame 1 and 2 of the wringer structure. Aligned bolts 97 and 98 are carried within openings 99 and 100, the former being provided in finger 84 of the bracket 76 while the latter is formed in the end of a mounting cup 101 which is fastened to the end frame 2 as shown in Fig. 8. The tension of the spring 88 will hold these bolts in their proper alignment with their respective heads 102 and 103 acting upon the frame 94 and with the bolts suitably disposed within the relatively loose openings 104 and 105 in the frame work 94. The nut 106 and locknut 107 are so positioned as to properly engage the outer surface of the cup 101 while the nut 108 and locknut 109 are also adjusted to properly engage the outer surface of the finger 84 of the bracket 76.

Any rocking of the hand bar 91 will cause a cocking of either one or both of the bolts of the assembly thereby materially reducing the distance between the outer or left hand face

8

of the finger 84 as seen in Fig. 8 and the outer or right hand face of the cup 101. Such cocking action as shown in dotted lines in Fig. 7 with assembly 85 will cause the nuts of the bolts to swing the bracket 76 into a position as illustrated in Fig. 9 thereby withdrawing the pin 71 from within slot 73 of the link 65 causing a release of the mechanism to eliminate the normal squeezing action between the rolls which is the usual practice for roll wringers of the power driven type.

Since the shaft 37 will revolve in a clockwise direction as seen in Fig. 2 during the release of tensioning mechanism, this same shaft will move in a counterclockwise direction as viewed in Fig. 4. This same rotative action of shaft 37 has been utilized to interrupt the drive to the wringer rolls during the release of the tensioning mechanism. This is accomplished by means of the trip or dog 110 illustrated in Fig. 4 which will permit the hook rod 111 to rise upwardly releasing bracket 112 which will permit the spring tensioned plunger 113 to rise to throw out the clutch in the wringer end driving gear mechanism 114. This view also illustrates the use of a conventional flip arm 115 operating through a link 116 connected at 117 with the usual drain pan 118 of the wringer. This latter mechanism operates with the direction of rotation of the wringer rolls to drop the drain pan into its proper discharge relation to the wringer rolls to properly drain the water being squeezed out of the clothing during the operation of the wringer.

The reset mechanism designed for use in this particular construction of wringer comprises few and simple elements and is easy to operate since it requires very little physical effort to actually reset the wringer parts after release of the mechanism and the torsional spring structure 28 which stresses the wringer rolls. The reset mechanism is best understood by referring to Figs. 1, 2, 6 and 7 and comprises a relatively long handle 120, shown in its entirety in Fig. 1, and this handle is pivotally supported by the pin 121 from the ear 122 which forms an integral portion of the bracket 55 that is utilized for assembly of the torsional tension spring structure 28 previously described. The handle 120 is mounted for swinging movement in a horizontal plane adjacent the outer end of the wringer and below the end thereof and this handle has been made in two parts conveniently riveted or otherwise secured together having a bifurcated end formed by the division of the two parts and indicated at 123 and 124 for straddling the ear 122 of the bracket 55 which construction well stabilizes the horizontal swinging movement of the handle about its pivot pin 121 and in a truly horizontal plane.

A link 125 is connected to the handle 120 by means of the pivot pin 126 which is disposed in off center relation with respect to the axial center of the pin 121, while the other end of the link 125 is looped at 127 to fit about the pin 128 which is carried on the lower end of the reset arm 129. The reset arm 129 is made in the form of a U-shaped stamping having parallel and continuous side walls 130 and 131 as best seen in Figs. 6 and 7, each being slightly outwardly displaced with respect to each other at 132 and 133, Fig. 6, to provide certain clearances. The side walls 130 and 131 are connected by the base walls 134 and 135 leaving the space or open-

ing 136 between such base walls to provide clearance for the ends of the links 64 and 65 connected to the swingable arm 68 whenever such links overtravel the particular released positions occupied in Fig. 3.

The upper ends of the side walls 130 and 131 are pivotally connected to rock upon the stud 69 as best shown in Figs. 2 and 6, with suitable washers 137 and 138 interposed to centralize the arm 68 with respect to the walls 130 and 131 of the reset arm 129.

A suitable spring 140 or other resilient means is connected to an ear 141 formed into the central portion of the base wall 135 of the link 129 and this spring 140 connects with a fixed pin 142 secured to a bracket 143 which is suitably attached to the flange 6 of the wringer end frame 1. The function of the spring 140 is to maintain the reset lever 129 in its maximum retarded position which is to the left as viewed in Fig. 2 thereby maintaining the position of the pin 128 in substantial dead center relationship with respect to the loop 127 of link 125 and pin 121 as best illustrated in Figs. 1 and 7. This holds the reset link assembly dormant and in retarded position.

To further complete the mechanism necessary for resetting the release and holding linkage, each of the links 64 and 65 are provided with abutment ears 144 and 145 as illustrated in Figs. 2 and 7. The reset operation is accomplished by moving the handle 120 about its pivot 121 which displaces the pivot 126 to move the latter in a concentric arc about the pivot 121 thereby drawing the link 125 to the right as seen in Figs. 2 and 7. Since the length of the handle 120 is such as to create a relatively powerful rotational force under the action of physical actuation, this force is considerably multiplied through the small mechanical radius existing between the axial centers of the pins 121 and 126 so that considerable force may be transmitted to the lower end of the reset arm 129 through this operation as will be apparent to those skilled in the art. The rotational operation of the handle 120 moves the lower end of link 129 in a counterclockwise rotation as seen in Figs. 2 and 3, in the latter figure where the mechanism has been shown in released relationship, it is seen that the wall 135 of the reset arm will simultaneously strike the abutment ears 144 and 145 of the links 64 and 65, respectively, bodily moving the pivot pin 67 in a clockwise direction to straighten out the arm 68 and the links 64 and 65 into their original positions as indicated in Fig. 2. Obviously, this action rotates the arm 61 in a counterclockwise direction in Figs. 2 and 3 to again increase and establish the tension introduced by the torsional spring arrangement 28 to again bring the rolls into operative squeezing engagement for the usual operation of the wringer.

During the resetting of the link mechanism, the wing 74 passes off of the end of the latch pin 71 permitting the latter to move into the slot 73 in the link 65 for latching engagement with the edge 72 of the slot 73. This action also permits the bracket 76 to swing into its normal vertical relationship with the stops 89 and 90 engaging the surface of the supporting bracket 92 to dispose the pin in its proper horizontal position with respect to the slot 73 as best seen in Fig. 6. When the bracket 76 assumes the Fig. 6 position, the bolts of the manual reflex release mechanism will again be drawn into alignment after operation to dispose this mechanism in its proper operative

relation to be subsequently actuated by the operator. It should be noted that either of the reflex release mechanisms 85 and 86 may be operated by pushing the same toward the wringer rolls or away therefrom and the action is also accomplished by pushing downwardly thereon. Any combination of the motions of the foregoing will also release the tensioning mechanism of the wringer and this particular action is well explained in my co-pending application hereinbefore referred to.

When the reset handle has been used for re-establishing the mechanism into its operative relationship to tension the wringer rolls, the spring 140 will then act to return the actual reset parts to their normal inoperative positions as shown in Figs. 2 and 3 bringing the handle close to the wringer structure as seen in Fig. 1. Spring 140 will also hold the same under normal operating condition to prevent any movement of the handle 120 out of its normal inoperative position.

Referring to Fig. 3, it should be noted that the maximum possible separation of the wringer rolls may best be seen by referring to the changed positions of the roller 26 connected with and utilized for controlling the vertical movements of the bearing bracket 16. The lower position *m*, Fig. 3, indicates its normal operating relationship as also seen in Fig. 2. The intermediate position *n* is the normal released position into which the parts will naturally fall when the two wringer rolls are merely in vertical contact with each other and without tension upon such rolls. The upper position *o* of the roller 26 indicates the maximum position to which the rolls of the wringer may be separated under extreme released conditions. If this latter position is reached through accidental insertion of some large object or of a person's body part, the removal of such object or body part will permit the upper wringer roll to again drop downwardly upon the lower roll through the weight of the upper wringer roll mechanism which is negligible under these particular conditions. However, it should also be noted that when the wringer rolls are in stressed relation that the same amount of vertical movement may be had under the action of bulky clothes feeding inasmuch as the tails 32 and 33 of the torsion springs 30 and 31 will then merely flex upwardly to accommodate this particular set of conditions proportionately increasing the pressure upon the greater thickness of clothing.

It is to be understood that other equivalent structures may be substituted for those specifically described to perform the particular functions of the mechanisms disclosed in the drawings representing a preferred construction of the present wringer design. All changes and modifications together with substitutions of equivalent means shall be governed by the breadth and scope of the appended claims directed to the preferred embodiment of the present wringer disclosure.

What I claim is:

1. In a wringer, a frame, a movable roll, slidable supports in said frame for supporting said roll, a shaft removably supported by said frame in parallel relation with said roll, coil springs wound upon said shaft and having tails engaging said supports, an arm secured to one end of said shaft, a pivot stud upon one end of said frame, toggle mechanism connecting said pivot stud and arm, said toggle mechanism having a latching notch, a rockable arm having a locking pin in engagement with said notch for maintaining said toggle mechanism in operative po-

11

sition, release mechanism having a connection with said rockable arm for withdrawing said locking pin and a reset mechanism comprising a lever pivoted to said pivot stud, and having means for engaging said toggle mechanism for operating the same to tension applying position and means for operating said lever.

2. In a wringer, a frame having upon one side open bearing spaces, a shaft removably mounted in said spaces, coil springs wound upon said shaft, slidable bearings in said frame, a roll carried by said slidable bearings, said springs having extending tails normally bearing upon said slidable bearings, an arm secured to one end of said shaft, a pivot stud upon one end of said frame, toggle links connecting said arm and pivot stud, one of said links having a latch notch, a rockable arm having a latching pin normally engaging said notch, release mechanism having a connection with said rockable arm for withdrawing said pin, and reset mechanism comprising a lever pivoted upon said pivot stud and having means for engaging said toggle links and means for operating said lever for moving said toggle links to tension applying position.

3. In a wringer, a frame, slidable bearing brackets mounted upon said frame, a roll supported by said brackets, a shaft supported lengthwise of the frame, coil springs upon said shaft having extending tails bearing upon said bearing brackets, an arm secured to one end of said shaft,

12

a pivot stud upon said frame, toggle links connecting said stud and arm, one of said links having a notch, a latch pin normally extending into said notch for locking said toggle links in tension applying position, a rockable member supporting said latch pin, means for rocking said member for releasing said latch pin, reset mechanism for said toggle links comprising a lever pivoted upon said pivot stud and having means for engaging one of said toggle links and means for operating said lever.

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