Nov. 14, 1939. G. L. DAVIS ET AL 2,179,715

WRINGER

Filed March 21, 1935 5 Sheets-Sheet 1

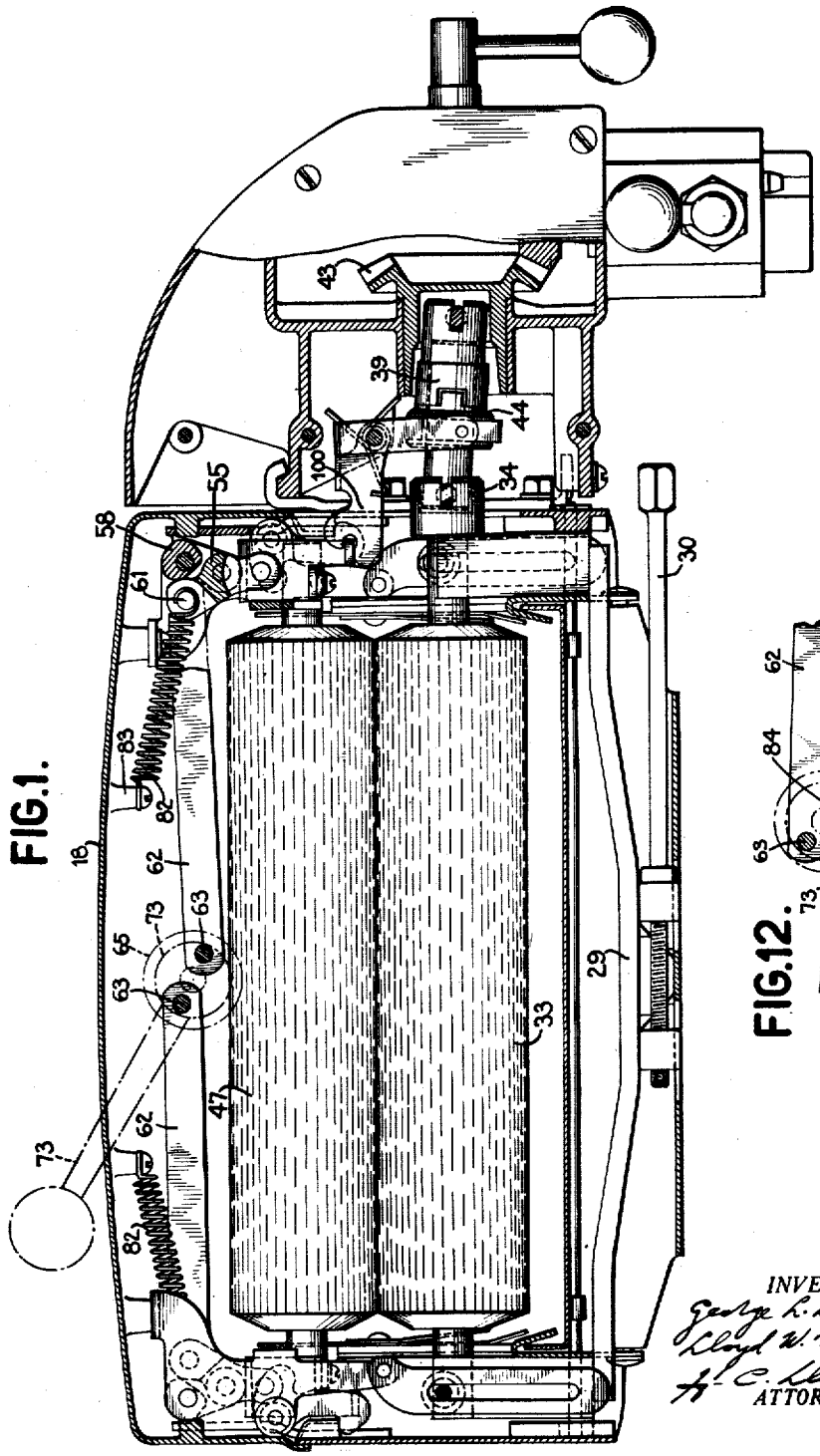


FIG.1.

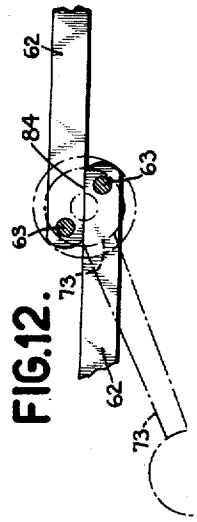


FIG.12.

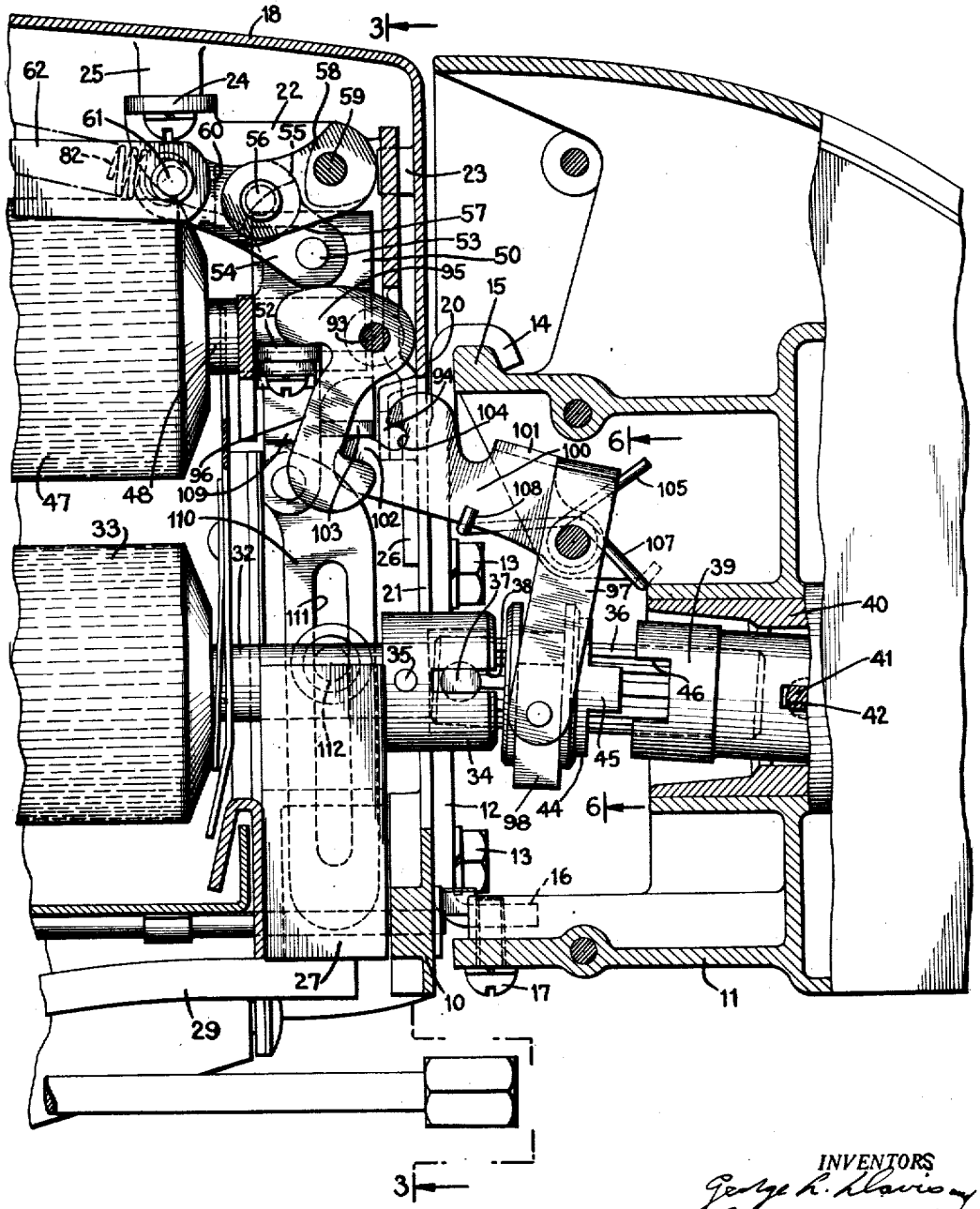
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Nov. 14, 1939. G. L. DAVIS ET AL 2,179,715

WRINGER

Filed March 21, 1935 5 Sheets-Sheet 2

FIG. 2.



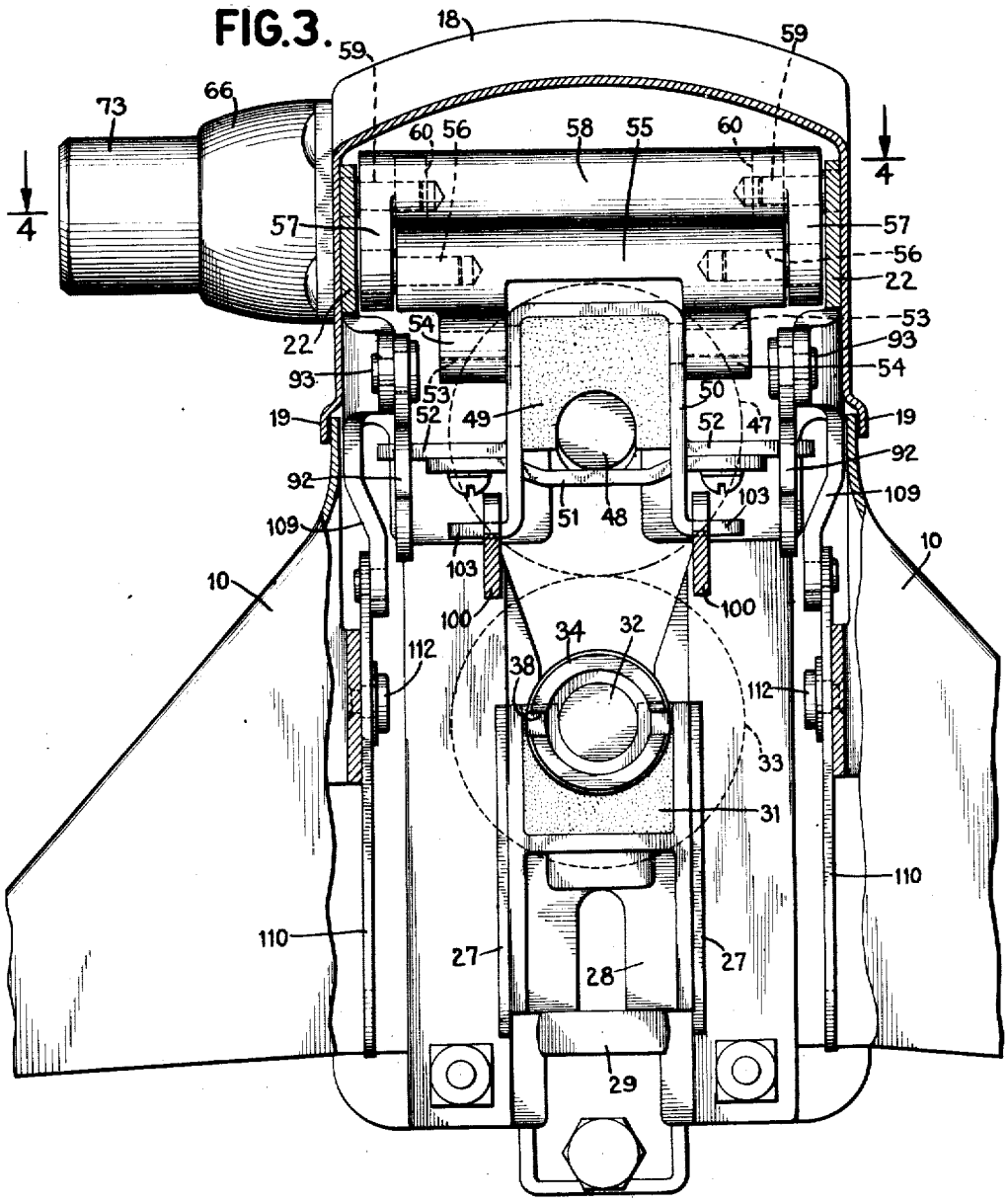
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WRINGER

Filed March 21, 1935 5 Sheets-Sheet 3

FIG.3.



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Nov. 14, 1939. G. L. DAVIS ET AL 2,179,715

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Filed March 21, 1935 5 Sheets-Sheet 4

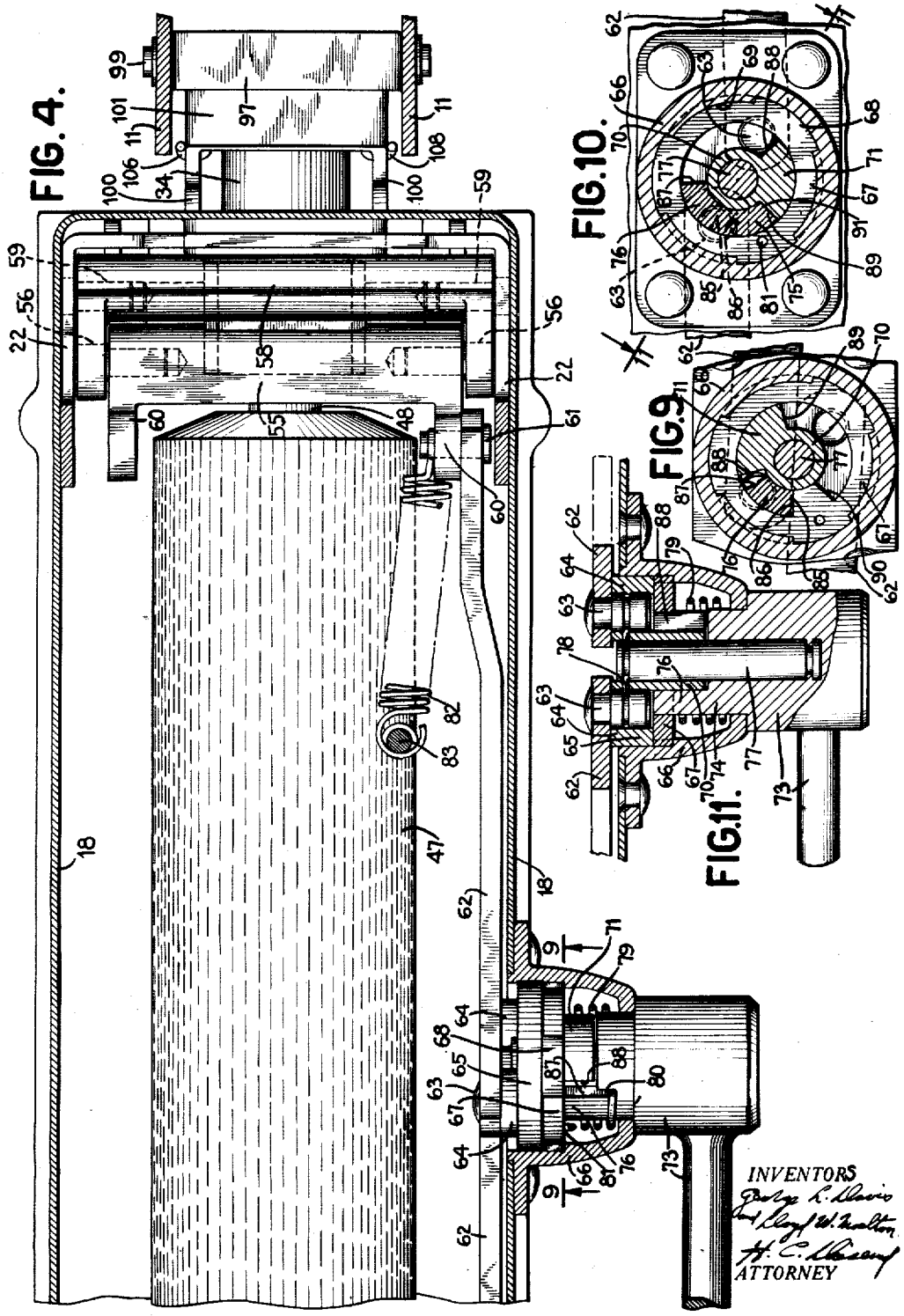


FIG. 4.

FIG. 10.

FIG. 9.

FIG. 11.

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Nov. 14, 1939. G. L. DAVIS ET AL 2,179,715

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Filed March 21, 1935 5 Sheets-Sheet 5

FIG.5.

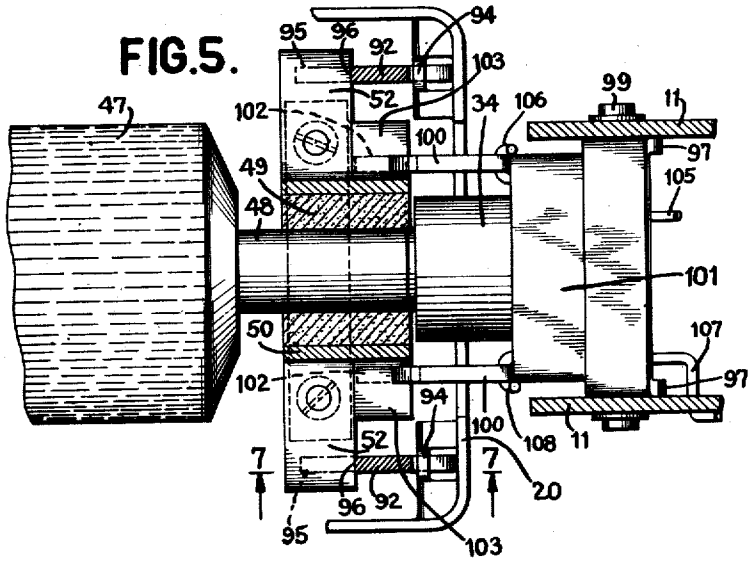


FIG.6.

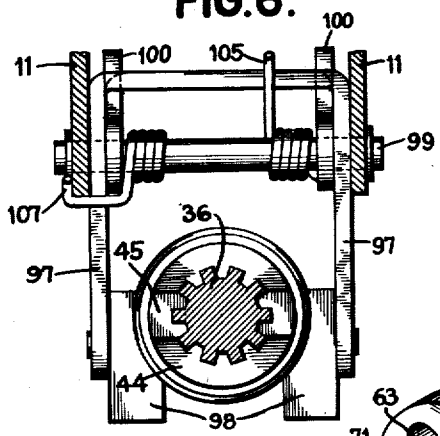


FIG.7.

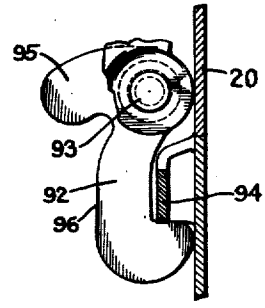
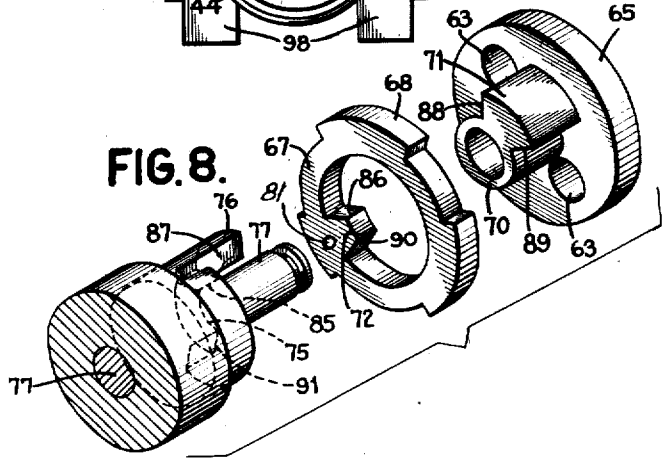


FIG.8.



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UNITED STATES PATENT OFFICE

2,179,715

WRINGER

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Application March 21, 1935, Serial No. 12,124

19 Claims. (Cl. 68—253)

This invention relates to improvements in clothes wringers of the type commonly employed on domestic washing machines. It has particular reference to wringers having a pair of squeezing rolls arranged to be driven by power supplied from the motor which drives the moving parts of a washing machine.

It has been a primary object of the invention to provide a wringer of the character specified that is simple of construction, efficient, safe and reliable in its operation and capable of use with a minimum of effort on the part of the operator.

In its preferred form the improved wringer comprises a main frame carrying yielding, spring urged bearings for the lower roller and a separable cover member carrying the bearings for the upper roller. A lever is provided which with one movement will serve to shift the upper roller to a fixed position against the lower roller and establish a yielding pressure between them. At the same time latching means associated with the cover are operated to retain the latter in fixed relation to the main frame. Preferably also, provision is made for connecting one of the rolls with the driving mechanism as the pressure is established between them. When it is desired to release the tension on the rollers the same lever may be operated by either a steady pressure or a quick blow depressing the end through a small angle. A blow of sufficient force may be quickly and readily struck with either hand which is desirable in the event one hand has become caught in clothes entering the wringer or has been drawn between the rolls. Operation of the lever in this way serves to instantly release the cover from the frame, relieve the pressure between the rolls, and disconnect the rolls from the driving mechanism.

By providing bearings for the upper roll in a cover separable from the main frame and controlling the latching of the cover by the roller tensioning means an arrangement is produced which enables separation of the rolls a considerable distance when not tensioned without requiring a frame of any great height. This materially enhances the appearance of the device and presents other advantages.

Other features and objects of the invention will appear from the detailed description of an illustrative form of the same which will now be given in conjunction with the accompanying drawings in which:

Fig. 1 is a longitudinal, vertical section through a wringer and associated wringer head embodying the invention, the wringer head being shown partly in elevation and the parts being in the position assumed when the rolls are under tension.

Fig. 2 is an enlarged, detail view of the devices at the end of the wringer connected with the wringer head, the parts being shown in the position assumed when the tension on the rolls is relieved.

Fig. 3 is a vertical, transverse section through the wringer on line 3—3 of Figure 2.

Fig. 4 is a horizontal section through one end of the wringer on the line 4—4 of Figure 3.

Fig. 5 is a detail view, partly in plan and partly in horizontal section, of the devices associated with one end of the upper roll.

Fig. 6 is a detail view in vertical section along the line 6—6 of Figure 2.

Fig. 7 is a sectional view along the line 7—7 of Figure 5, showing one of the cover latching means.

Fig. 8 is an exploded perspective view of parts associated with the control lever.

Fig. 9 is a section along the line 9—9 of Figure 4 showing the parts associated with the control lever in the positions assumed when the rolls are separated.

Fig. 10 is a view similar to Figure 9 showing the parts in the positions assumed when the rolls are under tension.

Fig. 11 is a section through the control lever and associated parts taken on line 11—11 of Figure 10; and

Fig. 12 is a detailed view of certain toggle links associated with the control lever in the positions they assume when the rolls are separated.

Referring now to the drawings, the illustrative wringer is provided with a main frame 10 of suitable form and construction to support the various operative elements of the structure. As best shown in Fig. 3, this frame may be formed with laterally extending portions arranged to provide supporting and guiding surfaces for the clothes as they are fed into the wringer. Securely attached to the main frame is a frame 11, of what may be designated the wringer head, which houses the driving connections for the rolls of the wringer and provides for the attachment of the wringer to a washing machine. The connection between the frames 10 and 11 may be effected in any suitable and convenient way. As shown, a pair of strap members 12 may be secured to one end of frame 10 by means of bolts 13. The upper ends of these straps are bent over and downwardly, as indicated at 14, to receive a projection 15 integral with the wringer head frame. This firmly anchors the two frames above the

horizontal center line. The lower ends of the strap members are bent outwardly as indicated at 16 and are connected with the bottom of the frame 11 by means of screws 17.

Over the top of the main frame 10 is provided a cover member 18 having a belled portion 19 around three sides of its lower edge fitting over the upper end of the frame 10. The fourth wall of the cover member, lying adjacent the wringer head, is straight, as indicated at 20, and rests upon the upper edge of the corresponding wall 21 of the frame 10. Within the cover 18 there is provided at each end an auxiliary frame 22 adapted to support various elements to be hereinafter described. These auxiliary frames may be secured to the cover in any convenient way. As shown, each may be provided with an elongated slot in a vertically extending portion arranged to snugly fit over a projection 23 integral with the adjacent end wall of the cover. The attachment may then be completed by securing outwardly extending feet 24 of the frame, by means of screws or the like, to bosses 25 integral with the top of the cover member. Vertical, downwardly extending portions 26 of the auxiliary frames lie closely adjacent to the end walls of the main frame and thus serve to maintain proper alinement between the cover and the main frame as the cover is lifted and lowered. As will later appear more clearly, the auxiliary frames provide a convenient subassembly of parts associated with the upper roller.

At each end of the main frame suitable guideways 27 (Fig. 3) are provided for retaining and guiding the vertical movements of bearing supports 28. The lower ends of the latter rest upon the ends of a spring bar 29, which extends longitudinally of the frame beneath the rollers. The vertical position of the spring bar may be made adjustable, in a manner well known in the art, the adjustment being effected by the turning of a rod 30. It will be understood that the vertical adjustment of the spring bar serves to vary the pressure between the rollers when tension is established in the manner to be explained. In the upper end of each of the bearing supports 28 there is mounted a bearing block 31, preferably formed of oil-saturated wood providing continuous lubrication for a shaft 32 extending from the opposite ends of the lower roller 33 and arranged to be supported by the blocks 31.

At the end of the shaft 32 adjacent the wringer head there is provided a collar 34 which is secured to the shaft by means of a pin 35. The collar 34 extends beyond the end of the shaft and provides a socket to freely receive the end of a splined connector 36 which is connected with the collar 34 through any suitable form of universal joint. For this purpose a pin 37 extending through the connector 36 has its projecting ends provided with flat sides capable of slidingly cooperating with slots 38 in the collar 34. As shown, the axis of the connector 36 is at an angle to that of the shaft 32, the degree of this angle varying with the position of the lower roller as the wringer is operated. It will be understood that in the rotation of the shaft 32 and connector 36 the latter will be free to rock in all directions relative to the shaft due to its ability to pivot about the pin 37 and due to the movement of the ends of the pin 37 in the slots 38. The opposite end of the connector 36 is freely supported by a member 39 carried by a sleeve 40 journaled in a bearing provided in the frame 11. A universal connection is provided between the member 39 and sleeve 40 so that rotation may be transmitted from the latter to the member even though these parts are not axially alined. For this purpose there is shown a pin 41 carried by the sleeve 40 and having flattened portions arranged to slide freely in slots 42 provided in the wall of the member 39. At the end of the sleeve 40 there is secured or integrally formed a bevelled gear 43 arranged to be driven in either direction through connections not shown but well known in the art. It will be understood that the power for driving the rolls of the wringer is normally derived from a shaft extending vertically along the side of a washing machine and is transmitted through the gear 43 and the remaining connections explained. However, the connection with the rolls is controlled by a clutch whose operation will be more fully explained hereinafter. For the present it may simply be explained that the connector 36 is not arranged to be directly driven by the member 39 but may be coupled with the latter through a slidable collar member 44 having one or more projections 45 arranged to be engaged with corresponding notches 46 in the member 39. The collar 44 is splined to the connector and is arranged to be shifted by devices later to be explained to effect the coupling action mentioned.

Cooperating with the roller 33 is an upper roller 47 which, like the lower roller, may be formed of any of the usual materials, such as rubber. This roller is carried by a shaft 48 which extends beyond the ends of the roller and cooperates with bearing blocks 49, preferably formed of oil-saturated wood. These bearing blocks which receive the upward pressure of the shaft are retained by U-shaped, yoke members 50. It will be understood that the construction at the two ends of the roller is the same and therefore only that at one end is shown in detail. To retain the roller in the bearing assembly, when it is lifted away from the lower roller, a strap 51, secured in any suitable way, as by the screws shown, to outwardly extending portions 52 of the yoke 50, is passed beneath the end of the shaft.

Each yoke 50 is pivotally mounted, by means of pins 53, in downwardly extending arms 54 of a member 55. The latter is in turn pivotally connected by pins 56 with arms 57 of a yoke member 58 pivotally supported by the auxiliary frame 22 by means of pins 59. It will be seen from the foregoing that the movable bearings for the ends of the roller shaft 48 are carried by the auxiliary frame 22 and may therefore be attached to and detached from the cover as a unitary assembly. The member 55 is provided with an arm 60 extending away from the opposite side of the pivot 56 from the arms 54. As shown in Figure 4, each member 55 may be provided with two arms 60 so as to permit use of the member at either end of the cover. A pin 61 mounted in the utilized arm 60 carries one end of a link 62 whose opposite end is attached to a pin 63 inserted in a boss 64 extending from a disc 65. It will be understood that two links 62 are connected with the member 65, extending from the bearings supported at the two ends of the shaft 48. Disc 65 is rotatably mounted in a small housing 66 rigidly secured in any suitable way to the front of the cover 18.

Adjacent the disc 65 there is mounted within the housing 66 a ring 67 which is held against rotation within the housing by the inter-engagement of projections 68 on ring 67 with projections 69 extending inwardly from the walls of the housing. At the center of the disc 65 there is provided an integral, axially extending sleeve 70 having a lug or projection 71 forming a radial

extension thereof over a suitable arc of about 90°. This projection, as will be explained more fully hereinafter, is arranged to cooperate with a projection 72 extending radially inward from the ring 67. A lever 73 having a handle portion normally extending substantially horizontally in of the cover is provided with a reduced portion 74 around the pivotal axis having a bearing in the outer end of the housing 66. From the edge of the reduced portion 74 there is provided an inward projection, a part 75 of which, covering an arc of about 90°, extends only into the plane of the projection 71 of disc 65 and not into the plane of the ring 67. The remaining part 76 of the handle projection, covering an arc of about 60°, extends through the opening at the center of the ring 67 substantially to the inner surface of the disc 65. A stud 77 anchored within the handle 73 in any suitable way, as by having the metal of the handle cast around the stud and into a groove adjacent the end of the latter, extends through the opening in the sleeve 76 and projects a slight distance beyond the opposite face of the disc 65. A groove adjacent the outer end of the stud 77 is arranged to receive a spring ring or washer which, upon the projection of the stud beyond the surface of the disc 65, expands into recesses provided in the pins 63. The bosses 64, it will be understood, are undercut to permit this cooperation of the lock ring with the pins. This provides a simple and convenient method of simultaneously locking the handle and pivot pins in assembled relation.

A spring 79, having one end engaged in a notch 80 cut into the reduced portion 74 of the handle and having its other end inserted in an opening 81 in the projection 72 of ring 67 serves to constantly urge the handle in a counter-clockwise direction, as viewed from the front of the wringer. A spring 82 attached at one end to the pin 61 and at its other end to a boss 83 extending downwardly from the top of the cover member 18 tends to constantly urge the link 62 in the direction of the disc 65. Referring to Fig. 2, it will be seen that the arm 57 of member 58 and the arm 54 of member 55 constitutes a toggle. Movement of the link 62 toward the right (Fig. 2) in the manner to be explained serves to straighten the toggle and thereby force the yoke 50 with the bearing block 49 downwardly. Movement of the link 62 toward the left, on the other hand, serves to break the toggle and lift the bearing into the position indicated in Fig. 2. The spring 82 always tends to break the toggle in this manner. When the links 62 are in the position shown in Figure 12, which corresponds with the position of the parts indicated in Fig. 2, the movement of the links under the influence of the spring 82 is limited by the engagement of the surfaces 84 of the pair of links. When the links are in the position indicated in Fig. 1, their ends connected with the pins 63 are slightly beyond the dead-center position and the springs 82 tend to continue the clockwise rotation of the disc 65. Movement of the parts in this direction beyond the position indicated in Figure 1, however, is prevented by the engagement of certain shoulders, as will now be explained.

Referring to Figs. 8, 9, and 10, when the rollers are separated and the links 62 are in the position indicated in Fig. 12, a shoulder 85 formed by the projection 76 of the handle is normally held in engagement with a surface 86 on the projection 72 of the fixed ring. The spring 79 serves to hold the handle in this position while, as previously explained, the springs 82 serve to hold the roller shifting mechanism, including the links 62, in the position determined by the engagement of surfaces 84 of the links. At this time a slight clearance is provided between a surface 87 on the projection 76 of the handle and a surface 88 on the projection 71 of disc 65. Now, when it is desired to shift the upper roller into engagement with the lower roller, the end of the handle 73 is lifted and the handle is rotated in a clockwise direction, as viewed from the front of the wringer, through an angle of about 150 degrees. After a very slight idle movement, the surface 87 is brought into engagement with surface 88 and hence the projection 71 and disc 65 will be rotated with the handle through most of the arc of movement of the handle. This rotation of the disc 65 will be resisted by the springs 82 until the pins 63 are carried to the dead-center position, beyond which the springs will assist in the further movement of the disc. The movement of the parts will be arrested when they have reached the position indicated in Fig. 1 by the engagement of a shoulder 89 on projection 71 with a shoulder 90 on the fixed projection 72. The handle 73 may now be returned to substantially but not quite its initial position or if released it will automatically return under the influence of the spring 79. The links 62 and the associated parts, however, will remain in their newly set positions due to the tendency of the springs 82 to continue the rotation of the disc 65 and hence to hold the shoulders 89 and 90 in engagement. In the shifting of the parts in the manner explained, the upper roller will be forced against the lower roller and will depress the latter slightly against the action of the spring bar 29. Accordingly, the rollers will be pressed together under a yielding force, the magnitude of which may be determined by proper adjustment of the bar 29. As clothes are fed through the wringer, when in this condition, the lower roller will be depressed slightly further and will be restored in the usual manner by the spring bar as the clothes pass out from between the rollers.

Now when it is desired to release the tension between the rollers at the end of a desired ironing operation, or in an emergency, as when the hand of the operator becomes entangled in the clothes entering the wringer, it is simply necessary to depress the free end of the handle 73 through a slight distance by either a steady pressure or a sudden blow. It should be observed in this connection that when the handle is restored by the spring 79, following the tensioning of the rollers, it does not return to its initial position but is arrested about 30 to 45 degrees prior to reaching its initial position by the engagement of a shoulder 91 formed at the end of the projection 75 with a portion of the surface 89 of the projection 71. A suitable clearance remains between the shoulders 85 and 86 at this time. Accordingly it will be seen that when the handle is depressed in the manner explained, through an angle of 30 to 45 degrees, the disc 65 is rocked through the same angle as the handle and this is sufficient to carry the pins 63 beyond the dead center position. As soon as the pins pass dead center, the springs 82 become effective to quickly restore the parts to the position indicated in Fig. 2, thus elevating the upper roller and releasing the tension between the rolls. Surface 85 on the handle projection is now engaged with the surface 86 on the fixed projection and the parts are

again in position for a repetition of the tensioning operation.

In the foregoing, the fact that the cover 18 is normally separable from the frame 10 has been ignored. Obviously it would be impossible to establish pressure between the rollers by the mechanism explained so long as the cover is free to be lifted from the frame. Provision is accordingly made for attaching the cover to the frame whenever pressure is to be applied between the rollers. For this purpose a series of four latch dogs 92 is provided, one adjacent each corner of the cover member, these dogs being pivotally carried by pins 93 extending from portions of the auxiliary frames 22. In line with the hooked ends of the latch dogs the frame 10 is provided with inwardly extending projections 94 presenting shoulders with which the dogs may become engaged. Each dog has a tail portion 95 which extends over the laterally projecting portions 52 of the yoke 50. This arrangement is such that when the yoke 50 is elevated, the tails 95 will be engaged to rock the dogs into the position indicated in Fig. 2, out of engagement with the projections 94. However, when the yokes 50 are lowered to carry the upper roller against the lower roller, the dogs are permitted to swing by gravity into engagement with the projections 94. If the force of gravity is insufficient to carry the dogs into latching position, the action may be made positive by the engagement of the projections 52 with camming surfaces 96 on the dogs. The cooperation of these parts, furthermore, serves to hold the dogs positively in latched position so long as the upper roller is in its tensioning position.

As previously indicated, means are provided for coupling and uncoupling the lower roller with relation to the driving mechanism by means of the clutch element 44. The mechanism for shifting this clutch element comprises a yoke 97 carrying at each of its free ends a block 98 arranged to cooperate with a groove extending around the element 44. The blocks 98 are pivotally mounted on the yoke arms to permit them to tilt into the proper positions. The yoke 97 is carried by a rod 99 mounted in portions of the wringer head frame 11. Also mounted upon the rod 99 is a rockable frame 100 having a cross member 101 adapted to engage the cross member of the yoke 97. The forward end of each arm of the rockable frame is formed into a rounded projection 102 each engaging the under side of a laterally extending foot 103 formed on the yoke 50. As this yoke is depressed, in the manner previously explained, it will rock the frame 100 in a counter-clockwise direction (Fig. 2). The arms of the frame 100 are cut out, as indicated at 104, to receive the feet 103 of the yoke 50 as the latter is moved downwardly. A spring 105 looped around the pin 99 and having one end engaged with the back edge of the cross member of yoke 97 and its other end hooked under an arm of the frame 100 serves to normally hold the yoke and frame in the position indicated. A second spring 107, coiled about the pin 99 and having one end hooked under a portion of the frame 11 and its end 108 hooked under an arm of the frame 100, serves to rock the latter as well as the yoke 97 in a clockwise direction (Fig. 2) to maintain the projections 102 in engagement with the feet 103. Should the bearing yoke 50 be moved downwardly at a time when the projections 45 of the clutch element 44 are not alined with the notches 46, the frame 100 may be depressed and exert a yielding pressure upon the yoke 97 so that the latter will be shifted by the spring 105 as soon as the clutch elements are brought into proper registration.

In order to prevent complete disengagement of the cover 18 from the main frame, links 110 are preferably provided, one at each of the corners of the cover. Each links is pivotally connected with a downwardly extending portion of the auxiliary frame 22 and each is provided with an elongated slot 111 arranged to cooperate with a stud 112 extending from the main frame 10. Thus, while the cover is normally separable from the main frame, the extent of separation is limited by these links.

The mode of operation of the various portions of the improved mechanism has been explained in considerable detail as the description has progressed. Accordingly a general summary of operation is believed to be unnecessary. Suffice it to say that when the rollers are separated, as indicated in Fig. 2, the latch dogs 92 are disengaged from the projections 94 on the main frame so that the cover may be lifted to the extent permitted by the links 110. At the same time the rollers will be disconnected from the driving mechanism by the disengagement of the clutch elements 39 and 44. When it is desired to render the wringer effective, the handle 73 is grasped and rocked in a clockwise direction, as viewed from the front of the wringer, through an angle of about 150 degrees. This serves to straighten the toggle mechanism at the two ends of the upper roller, thereby lowering this roller into engagement with the lower roller and forcing the latter downwardly slightly to place the rollers under the yielding pressure of the spring bar 28. At the same time the downward movement of the bearings for the upper roller causes the dogs 92 to be engaged with the projections 94 on the frame and thus prevent the lifting of the cover so long as the rollers are under tension. Moreover, the downward movement of the right hand bearing for the upper roller causes the sliding of the clutch element 44 through the action of the frame 100 and yoke 97 to connect the lower roll with the driving source. The upper roller is simply driven by frictional engagement with the lower roll. Handle 73 is restored to a position in which its shoulder 91 engages the shoulder 89 of disc 65. When the wringer is to be rendered ineffective the handle is simply depressed or rocked counter-clockwise through an angle of 30 to 45 degrees, this being sufficient to carry the disc 65 past dead center so that springs 82 may restore the parts to their original positions. The latch dogs 92 are withdrawn by this operation to permit lifting of the cover and the clutch 39, 44 is disengaged.

While an illustrative form of the invention has been described in considerable detail, it will be understood that various changes may be made in the construction and arrangement of the various portions of the device without departing from the general principles and scope of the invention. Certain parts of the construction disclosed may be omitted altogether or replaced by modified devices. The invention is not to be considered as limited other than in accordance with the terms of the appended claims.

We claim:

1. In a clothes wringer a main frame, a cover bodily separable therefrom to at least a limited extent, a roller mounted in said frame, a roller mounted in said cover, means for yieldingly resisting downward movement of said first men-

tioned roller, means for shifting the second mentioned roller bodily and substantially rectilinearly to either of two positions with relation to the cover, said shifting means placing said rollers under tension when said second mentioned roller is shifted to one position, and means controlled by said shifting means for latching said cover to said frame when said rollers are placed under tension.

2. In a clothes wringer a main frame, a cover member having a limited bodily, rectilinear movement with relation to said frame, a roller mounted in said frame, a second roller mounted in said cover and movable relative thereto, and means for shifting said roller relative to said cover and thereby establishing a yielding pressure between said rollers and concurrently preventing relative movement between said cover and frame.

3. In a clothes wringer a main frame, a cover bodily separable therefrom to at least a limited extent, a pair of rollers housed within said frame and cover, one of said rollers being mounted in the cover, and manually operable means for latching said cover to said frame and concurrently shifting said one of said rollers rectilinearly with relation to said cover to establish a yielding pressure between said rollers.

4. In a clothes wringer a main frame, a cover bodily separable therefrom to at least a limited extent, a roller mounted in said frame, a roller mounted in said cover, means for driving said rollers, a clutch including an axially slidable member for connecting and disconnecting one of said rollers from said driving means, latching means for attaching end of said cover to a fixed portion of said frame, and a single manually operable means for concurrently controlling the application of pressure between said rollers and controlling the operation of all of said latching means and said clutch.

5. In a clothes wringer a main frame, a cover bodily separable therefrom to at least a limited extent, a pair of rollers housed within said frame and cover, means for driving said rollers, a clutch including an axially slidable member for connecting and disconnecting said rollers from said driving means, latching means for attaching said cover to said frame at a plurality of points, and a single manually operable means for concurrently controlling the application of pressure between said rollers and controlling the operation of all of said latching means and said clutch.

6. In a clothes wringer a main frame, a cover bodily separable therefrom to at least a limited extent, a roller mounted in said frame, a roller mounted in said cover, latching means for attaching said cover to said frame at a plurality of points, a manually operable lever for controlling all of said latching means, means for driving one of said rollers, and a clutch including a slidable member mounted independently of said rollers and controlled by said lever for connecting said driving means with said roller.

7. In a clothes wringer a main frame, a cover bodily separable from said frame to at least a limited extent, means for latching said cover to said frame at a plurality of points, a pair of rollers, one of said rollers being mounted in the main frame and the other in said cover, means for yieldingly urging one roller toward the other, means for shifting the other roller to either of two definite positions in one of which it is pressed against said one roller, and manually operable means for controlling said shifting means and concurrently controlling said latching means.

8. In a clothes wringer a main frame, a cover bodily separable from said frame to at least a limited extent, means for latching said cover to said frame, a pair of rollers, means for yieldingly urging one roller toward the other, means for shifting the other roller to either of two definite positions in one of which it is pressed against said one roller, said shifting means including a spring arranged to urge the same into either of two definite positions with respect to a dead center position, and manually operable means for controlling said shifting means and concurrently controlling said latching means.

9. In a clothes wringer a main frame, a cover bodily separable from said frame to at least a limited extent, means for latching said cover to said frame, a pair of rollers, means for yieldingly urging one roller toward the other, means for shifting the other roller to either of two definite positions in one of which it is pressed against said one roller, said shifting means including a rotary member and connections therefrom to the ends of said other roller, said member and connections having two extreme positions and a dead-center position, spring means urging said member and connections into either extreme position, and manually operable means for controlling said shifting means and concurrently controlling said latching means.

10. In a clothes wringer a main frame, a cover bodily separable from said frame to at least a limited extent, means for latching said cover to said frame, a pair of rollers, means for yieldingly urging one roller toward the other, means for shifting the other roller to either of two definite positions in one of which it is pressed against said one roller, said shifting means including a rotary member and connections therefrom to the ends of said other roller, said member and connections having two extreme positions and a dead-center position, spring means urging said member and connections into either extreme position, and manually operable means for shifting said member from either extreme position to and beyond dead-center position and concurrently controlling said latching means.

11. In a clothes wringer a main frame, a cover bodily separable from said frame to at least a limited extent, latching means at each end of said cover for attaching the same to said frame, a pair of rollers partially enclosed by said frame and cover, means for yieldingly urging one roller toward the other, shiftable means for supporting the ends of the other roller, and means including a manually operable lever for shifting said shiftable means relative to said cover to carry said other roller to and away from a position in engagement with the one roller, said shiftable means operating said latching means.

12. In a clothes wringer a main frame, a cover bodily separable from said frame to at least a limited extent, latching means at each end of said cover for attaching the same to said frame, a pair of rollers partially enclosed by said frame and cover, means for yieldingly urging one roller toward the other, shiftable means for supporting the ends of the other roller, a drive member, means including a slidable clutch element for connecting said drive member with one of said rollers, and means including a manually operable lever for shifting said shiftable means relative to said cover to carry said other roller to and away from a position in engagement with the one roller,

said shiftable means operating said latching means and controlling said clutch element.

13. In a clothes wringer a main frame, a cover bodily separable from said frame to at least a limited extent, latching means at each end of said cover for rigidly attaching the same to said frame, an auxiliary frame mounted within said cover at each end of the same, a roller carried by said auxiliary frames, a second roller carried by the main frame, means associated with the auxiliary frames for shifting the first mentioned roller into engagement with the second roller and creating pressure between the same, means for operating the last mentioned means, and means operated upon the shifting of said first mentioned roller for operating said latching means.

14. In a clothes wringer a main frame, a cover bodily separable from said frame to at least a limited extent, latching means at each end of said cover for attaching the same to said frame, a roller carried by said frame, a second roller carried by said cover, said second roller being connected with said cover through a toggle at each end, manually operated means for straightening and breaking said toggles to establish and release pressure between said rollers, and connections from said manually operated means for controlling said latching means.

15. In a clothes wringer a frame, a cover member extending across the top of said frame and separable therefrom to at least a limited extent, a roller mounted in said frame, a roller mounted in said member, means for shifting said last mentioned roller rectilinearly with respect to said member, latching means controlled by said shifting means for attaching the ends of said member to said frame, and tensioning means for yieldingly urging said rollers together and urging said frame and member apart when said second mentioned roller is in one position.

16. In a clothes wringer a frame, a member extending across the top of said frame and separable therefrom to at least a limited extent, a roller mounted in said frame, a roller carried by said member, means for shifting said second mentioned roller into either of two definite positions with respect to said member, latching means for attaching the ends of said member to said frame, tensioning means for yieldingly urging said rollers together and urging said frame and member apart when said second mentioned roller is in one of said positions, and means for concurrently operating said latching means to attach said member to the frame and for operating said tensioning means to establish tension between the parts.

17. In a clothes wringer a main frame having a lower section and an upper cover section bodily separable therefrom to at least a limited extent, a roller mounted in said lower section, a roller mounted in said cover section, and means pivotally mounted on said cover section on a horizontally disposed pivot for applying pressure between said rollers and concurrently latching said cover section to said frame by the pivotal movement of said means.

18. In a clothes wringer a main lower frame section, an upper cover section bodily separable therefrom to at least a limited extent, a pair of rollers one mounted in said lower frame section and the other mounted in said upper cover section, means including a pivotally mounted member movable in a vertical plane for establishing a yielding pressure between said rollers, and latch means controlled by the pivotal movement of said member in said plane for latching said cover to said frame.

19. In a clothes wringer a main frame, a cover bodily separable therefrom to at least a limited extent, a roller mounted in said frame, a roller mounted in said cover, means for driving said rollers, a clutch including an axially slidable member for connecting and disconnecting said rollers from said driving means, latching means for attaching each end of said cover to said frame, spring means constantly engaging one of said rollers, and manually operable means shiftable with respect to said cover for concurrently causing said spring means to apply a pressure between said rollers and controlling the operation of said latching means and said clutch.

GEORGE L. DAVIS.
LLOYD W. MOULTON.

DISCLAIMER

2,179,715.—*George L. Davis*, Binghamton, and *Lloyd W. Moulton*, Syracuse, N. Y. WRINGER. Patent dated November 14, 1939. Disclaimer filed June 11, 1943, by the assignee, *Nineteen Hundred Corporation.*

Hereby enters this disclaimer to claims 4, 5, 6, and 19 of said patent.

[*Official Gazette July 6, 1943.*]

said shiftable means operating said latching means and controlling said clutch element.

13. In a clothes wringer a main frame, a cover bodily separable from said frame to at least a limited extent, latching means at each end of said cover for rigidly attaching the same to said frame, an auxiliary frame mounted within said cover at each end of the same, a roller carried by said auxiliary frames, a second roller carried by the main frame, means associated with the auxiliary frames for shifting the first mentioned roller into engagement with the second roller and creating pressure between the same, means for operating the last mentioned means, and means operated upon the shifting of said first mentioned roller for operating said latching means.

14. In a clothes wringer a main frame, a cover bodily separable from said frame to at least a limited extent, latching means at each end of said cover for attaching the same to said frame, a roller carried by said frame, a second roller carried by said cover, said second roller being connected with said cover through a toggle at each end, manually operated means for straightening and breaking said toggles to establish and release pressure between said rollers, and connections from said manually operated means for controlling said latching means.

15. In a clothes wringer a frame, a cover member extending across the top of said frame and separable therefrom to at least a limited extent, a roller mounted in said frame, a roller mounted in said member, means for shifting said last mentioned roller rectilinearly with respect to said member, latching means controlled by said shifting means for attaching the ends of said member to said frame, and tensioning means for yieldingly urging said rollers together and urging said frame and member apart when said second mentioned roller is in one position.

16. In a clothes wringer a frame, a member extending across the top of said frame and separable therefrom to at least a limited extent, a roller mounted in said frame, a roller carried by said member, means for shifting said second mentioned roller into either of two definite positions with respect to said member, latching means for attaching the ends of said member to said frame, tensioning means for yieldingly urging said rollers together and urging said frame and member apart when said second mentioned roller is in one of said positions, and means for concurrently operating said latching means to attach said member to the frame and for operating said tensioning means to establish tension between the parts.

17. In a clothes wringer a main frame having a lower section and an upper cover section bodily separable therefrom to at least a limited extent, a roller mounted in said lower section, a roller mounted in said cover section, and means pivotally mounted on said cover section on a horizontally disposed pivot for applying pressure between said rollers and concurrently latching said cover section to said frame by the pivotal movement of said means.

18. In a clothes wringer a main lower frame section, an upper cover section bodily separable therefrom to at least a limited extent, a pair of rollers one mounted in said lower frame section and the other mounted in said upper cover section, means including a pivotally mounted member movable in a vertical plane for establishing a yielding pressure between said rollers, and latch means controlled by the pivotal movement of said member in said plane for latching said cover to said frame.

19. In a clothes wringer a main frame, a cover bodily separable therefrom to at least a limited extent, a roller mounted in said frame, a roller mounted in said cover, means for driving said rollers, a clutch including an axially slidable member for connecting and disconnecting said rollers from said driving means, latching means for attaching each end of said cover to said frame, spring means constantly engaging one of said rollers, and manually operable means shiftable with respect to said cover for concurrently causing said spring means to apply a pressure between said rollers and controlling the operation of said latching means and said clutch.

GEORGE L. DAVIS.
LLOYD W. MOULTON.

DISCLAIMER

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