June 13, 1933. G. K. PARSONS 1,913,612

MEANS FOR AFFIXING ATTACHMENTS TO WASHING MACHINES

Filed April 14, 1931 5 Sheets-Sheet 1

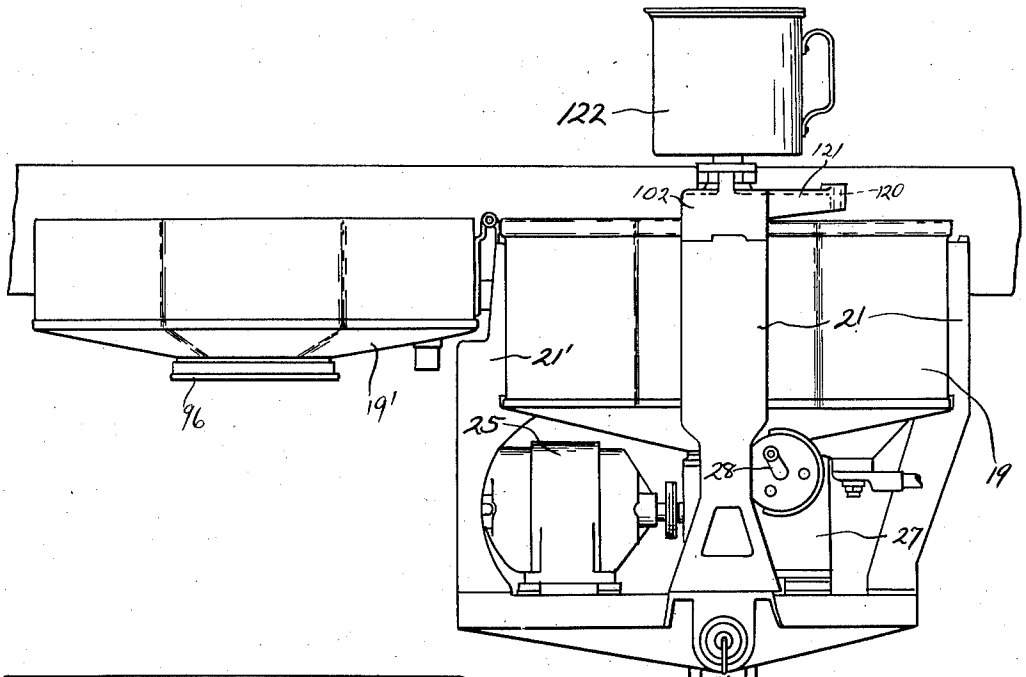


Fig. 1.

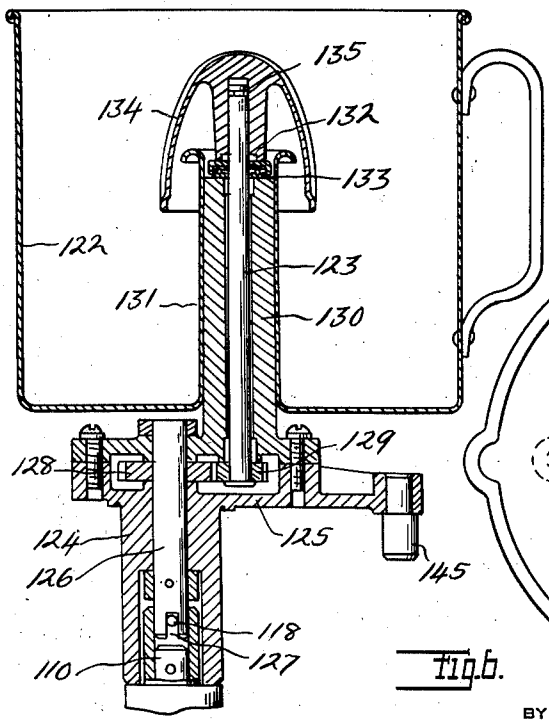


Fig. 6.

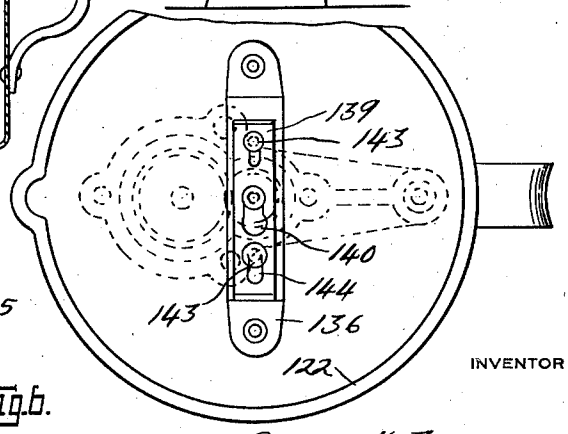


Fig. 7.

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June 13, 1933. G. K. PARSONS 1,913,612

MEANS FOR AFFIXING ATTACHMENTS TO WASHING MACHINES

Filed April 14, 1931 5 Sheets-Sheet 2

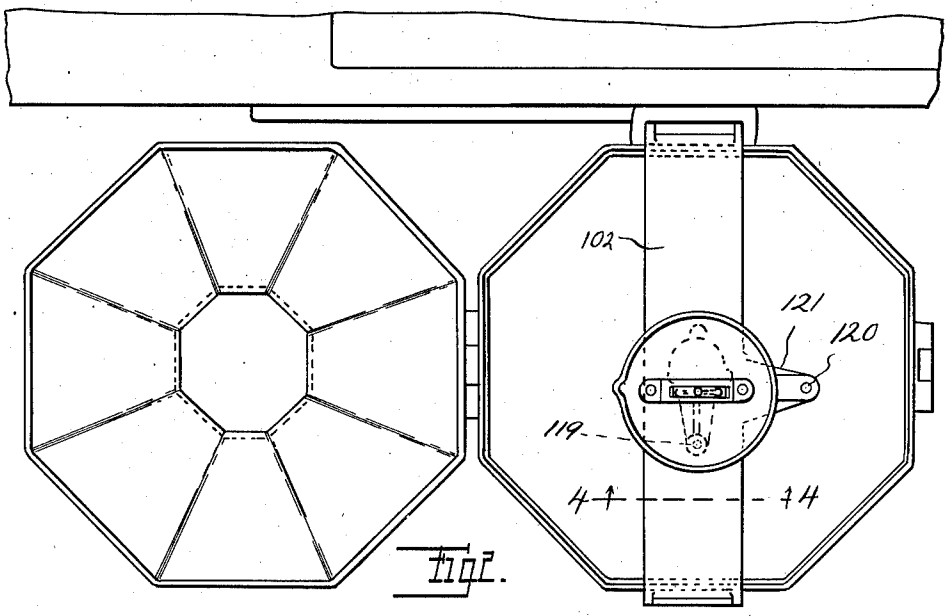


Fig. 2.

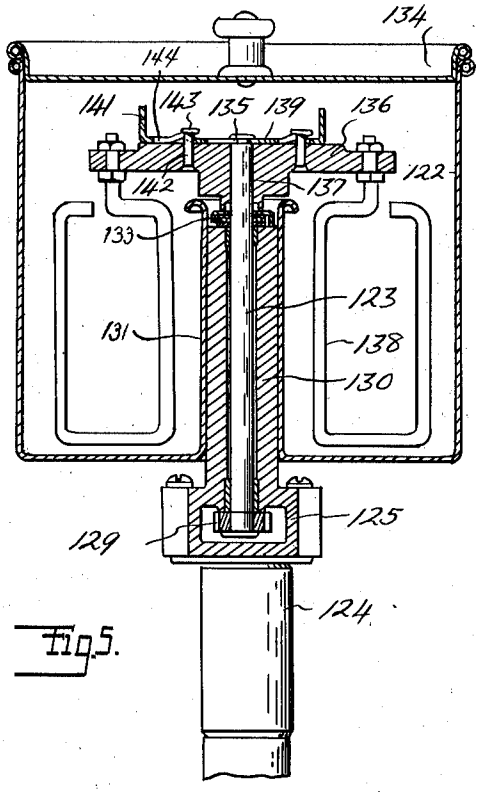


Fig. 5.

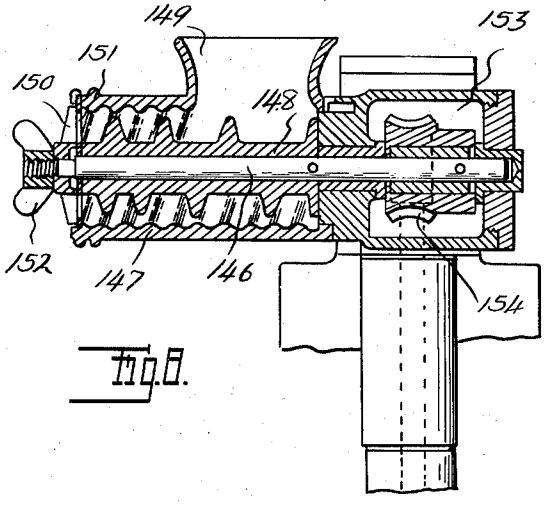


Fig. 6.

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June 13, 1933. G. K. PARSONS 1,913,612

MEANS FOR AFFIXING ATTACHMENTS TO WASHING MACHINES

Filed April 14, 1931 5 Sheets-Sheet 3

Fig. 3.

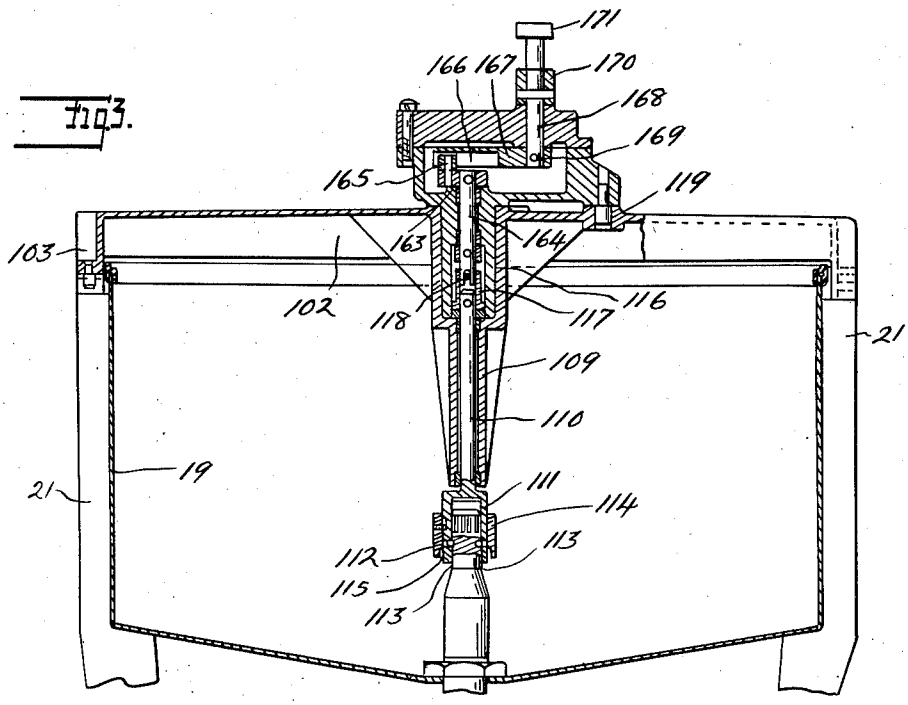


Fig. 12.

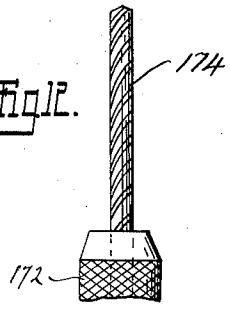


Fig. 13.

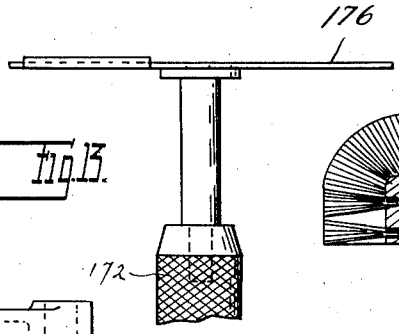


Fig. 14.

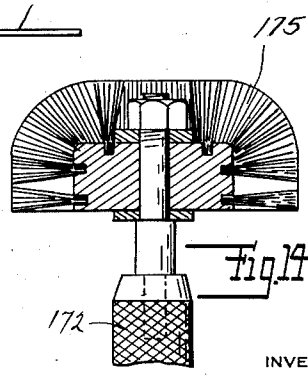
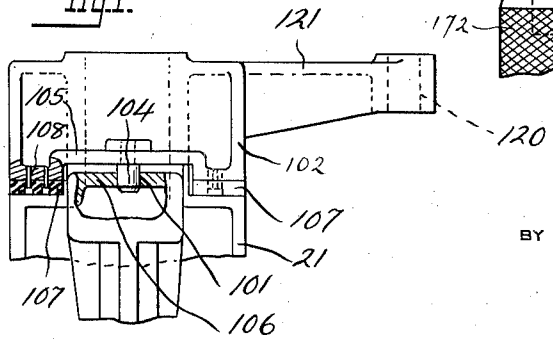


Fig. 9.



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June 13, 1933. G. K. PARSONS 1,913,612

MEANS FOR AFFIXING ATTACHMENTS TO WASHING MACHINES

Filed April 14, 1931 5 Sheets-Sheet 4

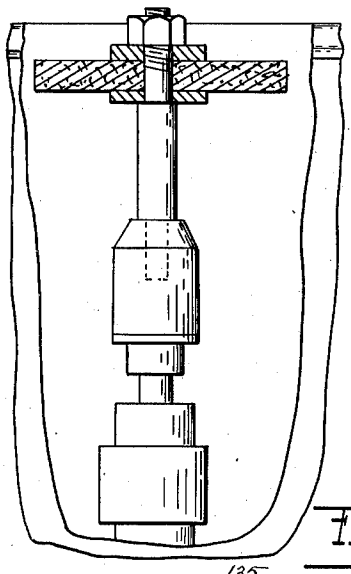


Fig. 10.

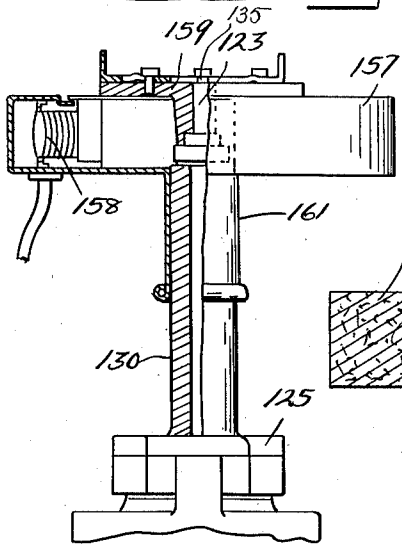


Fig. 9.

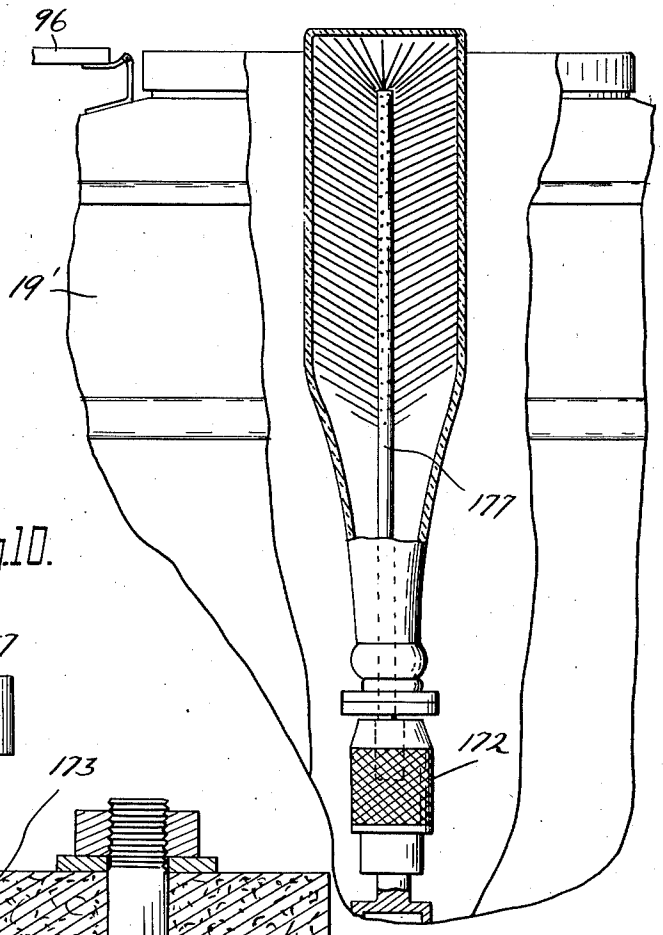


Fig. 11.

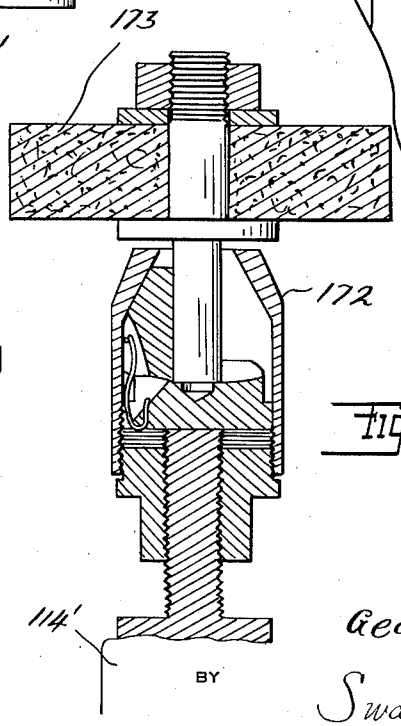


Fig. 15.

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June 13, 1933. G. K. PARSONS 1,913,612

MEANS FOR AFFIXING ATTACHMENTS TO WASHING MACHINES

Filed April 14, 1931 5 Sheets-Sheet 5

Fig 16.

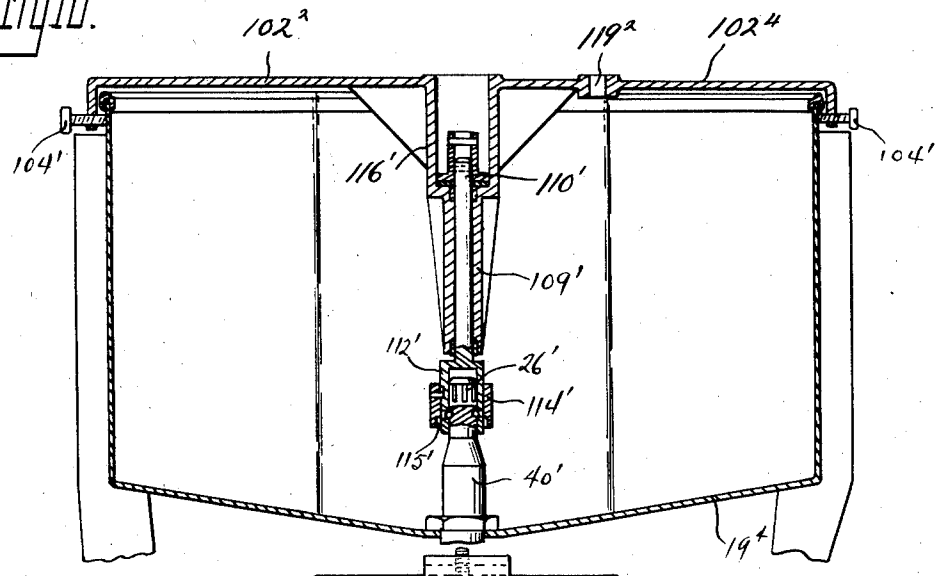
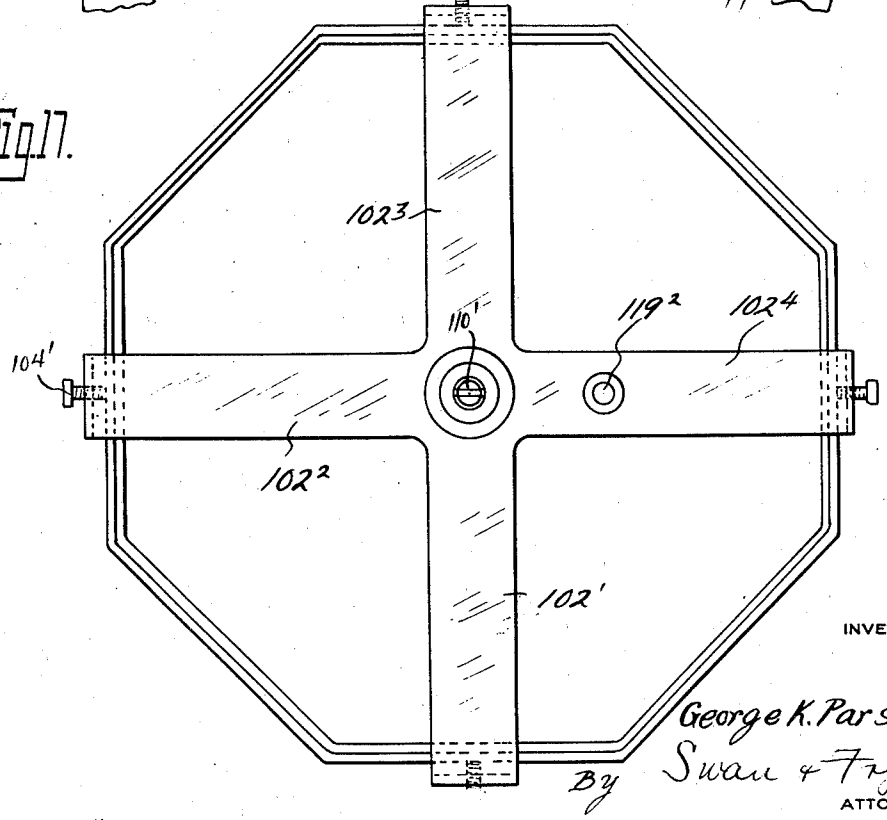


Fig 17.



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Patented June 13, 1933 1,913,612

UNITED STATES PATENT OFFICE

GEORGE K. PARSONS, OF DETROIT, MICHIGAN

MEANS FOR AFFIXING ATTACHMENTS TO WASHING MACHINES

Application filed April 14, 1931. Serial No. 530,120.

This invention relates to attachments for use with washing machines and the like, and means for securing the attachments to such machines, being more particularly designed to provide novel attachments and securing means therefor for use with my improved washing machine disclosed in my co-pending application, Serial Number 530,117, filed on the fourteenth day of April, 1931.

An important object of this invention is the provision of novel, simple and effective means for securing a wide variety of attachments to a washing machine, and for coupling the same to the drive mechanism thereof for the purpose of securing motive power from the washing machine motor.

Another object of this invention lies in the provision of attaching means enabling extremely simple and quick attachment or removal of various devices to or from the machine, in a manner enabling easy changing of the attachments to adapt the machine to a wide variety of uses, to which it has not hitherto been possible to apply the motive power contained in a washing machine; which machines, when used in most households, ordinarily stand idle most of the time.

Other objects and advantages will be apparent from the following description, wherein reference is made to the accompanying drawings illustrating preferred embodiments of my invention and wherein similar reference numerals designate similar parts throughout the several views.

In the drawings:

Figure 1 is a front elevational view of a washing machine of the type described in my aforesaid co-pending application, showing my improved attachment-securing means affixed thereto, and an attachment mounted thereon.

Figure 2 is a top plan view of the same.

Figure 3 is a cross-sectional view of the tub of the machine, showing my preferred cross-arm attachment support partly in section and partly in elevation, also showing an accessory mounted thereon and the means employed for connecting the same to the driving shaft of the washing machine.

Figure 4 is a cross-sectional view of my cross-arm support, taken substantially on the line 4—4 of Figure 2 and looking in the direction of the arrows.

Figure 5 shows in cross section one type of attachment which may be mounted upon the cross-arm and connected to the washing machine driving shaft.

Figure 6 is a fragmentary top plan view of the same.

Figure 7 shows another such attachment in which most of the parts shown in Figure 5 may again be employed, with the substitution of only one small interchangeable part.

Figure 8 shows in cross section another attachment which may be similarly mounted upon the cross-arm.

Figure 9 is a side view, partly in section and partly in elevation, of another type of attachment which may be mounted upon the cross bar and similarly connected to the driving shaft.

Figures 10, 11, 12, 13, and 14 show attachments of various types which may be connected directly to the washing machine driving shaft, without the use of the cross bar support.

Figure 15 is a detail cross-sectional view showing my preferred chuck for connecting such attachments to the driving shaft, and showing a grinding wheel carried thereby.

Figure 16 is a cross sectional view similar to Figure 3 but including no accessory device, and showing a modified cross arm construction, and

Figure 17 is a plan view thereof.

Referring now to the drawings:

Reference character 19 indicates the tub of my improved washing machine, the details of construction of which are described in my co-pending application, Serial Number 530,117, filed on the fourteenth day of April, 1931. The machine is provided with a driving shaft 26 extending centrally through the bottom of the tub and into the machine. The driving shaft may be driven at either of two speeds, or rocked, at will, such variation being obtainable by change speed gearing incorporated in a transmission the housing of which is shown in Figure 1, designated 27. The gear shifting lever is indicated by the

numeral 23, the motor being designated 25. The tub of the washing machine is supported by legs 21—21'. The tops of the two diametrically opposite legs 21 are contoured as shown in Figure 4, and provided each with an aperture 101. The construction of these and the other parts of the washing machine being described in detail in the aforesaid copending application, further explanation here is thought unnecessary.

A supporting cross-bar 102 is adapted to be placed across the tub and to fit over the tops of the legs, as shown in Figures 3 and 4. It will be seen that the cross-bar rests entirely on the legs and not upon the top of the tub. The downwardly projecting extremities 103 of the cross bar carry locating pins 104 adapted to accurately fit in the apertures 101 in the tops of the legs, and a recessed portion 105 is provided to engage the upstanding projecting portion 106 at the top of each leg. Rubber shock absorbing pieces 107 may be interposed between the legs and cross-bar if desired, and may be attached to the cross-bar by means of screws 108, as shown in Figure 4.

Since the driving shaft of the washing machine extends through the center of the bottom of the tub, it will be seen that when the cross-bar is positioned upon the diametrically opposed legs its middle point is axially aligned with the shaft. A downwardly projecting elongated boss 109 is carried by the cross-bar, and is in alignment with the shaft 26 when the cross-bar is positioned as above described, and a shaft 110 extends therethrough carrying at its lower extremity a ball chuck 111, or any other suitable means of securing the shaft 110 to the shaft 26. As here shown, the locking elements of the chuck comprise a pair of balls 112 which may be forced into depressions 113 in the shaft 26 by means of the slidable sleeve 114, and which may be released therefrom upon upward movement of the sleeve to the point where the balls are free to fall outwardly into the pockets 115 in the sleeve.

Within the upper portion of the boss 109 is formed a socket 116, within which a downwardly projecting portion carried by each of the various attachments is designed to fit, to secure the attachments in upright position upon the the cross-bar. The shaft 110 terminates within but adjacent the bottom of the socket 116, and carries a collar 117 pinned or otherwise suitably secured to and projecting upwardly from its extremity, thus forming a smaller socket upon the upper end of the shaft. A pin 118 traverses the socket portion of the collar 117 substantially diametrically, and downwardly projecting shafts carried by the attachments are designed to fit within the collar and engage about the pin 118 to be driven by the shaft 110. The cross-arm may be provided with locating apertures for cooperation with suitable pins or projections carried by the attachments to prevent their rotative movement with respect to the cross-bar. One such aperture 119 may be formed in the body of the cross-arm as shown in Figures 2 and 3, while another, as 120, may be formed in the laterally extending arm, as 121.

A convenient attachment which may be positioned upon the cross-bar is shown in Figures 5, 6, and 7. The attachment comprises essentially a receptacle 122 with an upstanding driving shaft 123, extending thereinto to which interchangeable heads of various types may be applied. A downwardly projecting supporting portion 124 designed to fit within the socket 116 of the cross-bar carries a support and frame 125, and a vertical shaft 126, which is slotted as at 127, at its lower extremity to engage the pin 118. The upper end of the shaft 126 carries a gear 128 within the housing, which engages a gear 129 fast upon the lower end of the shaft 123, which shaft extends upwardly through an upstanding boss 130 carried by the frame 125 and projects into the receptacle 122. The receptacle 122 is formed with an internal sleeve portion 131, upstanding from its bottom, which may be slid over the boss 130 to support the receptacle, as shown in Figures 5 and 7. The transverse pin 132 extends through and from the shaft 123 above the top of the boss 130, and beneath it a small thrust bearing as 133 may be positioned if desired. A locating pin 145 may be fixedly carried by the frame 125 for engagement with the aperture 119 in the cross-bar, to prevent turning of the frame with respect to the bar.

Whippers, beaters, extractors, and similar devices of various sorts may be affixed to the end of the shaft 123 within the receptacle, to be driven by the shaft through the pin 132. An extractor head 134 so positioned is shown in Figure 7. This need not be secured to the shaft otherwise than by having a notched extremity engaging the pin 132, as the downward pressure which is applied to it in use assures its remaining upon the shaft. If a whipper or the like is to be used, however, it is desirable that further securing means be employed to prevent any possibility of its becoming disengaged from the shaft. For this purpose the top of the shaft may be circumferentially slotted, as at 135. The whipper, which may take any of various forms, is shown as comprising a cross-arm 136, which is centrally apertured as at 137 to fit over the shaft 123, and which carries downwardly projecting beating arms 138 here shown as formed of wire. A slidable locking strip 139 may be secured to the top of the cross-arm 136, as shown in Figures 5 and 6, and formed with a key-hole slot 140, the larger portion of which is of sufficient size to fit over the shaft 123, while the smaller portion can only

fit about the shaft at the slotted point (135). Thus when the larger end of the key-hole slot is substantially aligned with the aperture 137 in the cross-arm, the arm may be slipped upon the shaft, and locked in position by sliding the member 139 until the narrower portion of its key-hole slot engages the slot in the shaft 123. The ends of the strip 139 may be upturned as at 141 for convenient manipulation, and the strip may be slidably secured to the cross-arm by rivets 142 with enlarged heads 143, the stems of the rivets passing freely through slots 144 in the strip 139. It will be noted that with my device the whipper or extractor is very easily removable, and the receptacle 122 is also easily slid off the boss 130 and may thereafter be stored or put in any convenient place, as in an ice box to cool its contents, or in a closet to store them, until needed.

A drying attachment, especially suitable for hair drying and also affixable to the cross-bar, is shown in Figure 9, and may be positioned upon the same post 130 which supports and furnishes the step-up gearing for the whipper and extractor just described. This may comprise a centrifugal blower 157, which may be of the usual or any desired construction, and adjacent the outlet of which an electrical heating element 158 may be provided to warm the air. In the form here shown, a small cross-bar 159 is affixed to the rotatable blower member and projects from the top of the blower housing to be affixable to the driving shaft 123 in a manner similar to that used in affixing the cross-arm 136 of the whipper attachment thereto. A downwardly projecting sleeve 161 may frictionally engage about the post 130, as shown in Figure 9, and such frictional engagement is sufficient to prevent rotation of the blower housing, since the impeller is very freely rotatable. The electrical power for the heating element may be furnished through a flexible cord and plug of the usual or any desired form, which may be plugged into any electrical outlet, although I preferably provide a suitable receptacle for such purpose in one of the tub-supporting legs (21′) of my improved washing machine, as described in my co-pending application, Serial Number 530,117, filed on the fourteenth day of April, 1931.

A meat chopper suitable for attachment to the cross-bar to be driven by the driving shaft 26 is shown in Figure 8. Its construction and operation are more or less conventional except for the driving means, most of which has already been explained in connection with the attachments first described, for the driving means is similar, and will accordingly be readily understood from the drawings. A horizontal worm shaft 146 extends through the housing 147 and carries the usual feeding worm 148, which is drivable thereby. A hopper 149, which may also be of conventional construction, is provided in the top of the housing; and rotatable and fixed cutters 150—151 may be positioned in the outlet end of the housing, the former affixed to the shaft, as by the wing nut 152, and the latter non-rotatably carried by the end of the frame. The shaft 146 extends rearwardly into an isolated compartment 153 of the housing, where the worm wheel 154 is fast upon it. The worm wheel may be drivable by a worm 155 carried at the upper extremity of a vertical shaft 156, which may in construction be similar to shaft 126, to enable coupling the same to the shaft 110.

A mechanical exerciser attachment may also be affixed to the cross bar in a similar manner, as shown in Figure 3. The mechanism may comprise a crank 163 drivable by the shaft 110 through a shaft 164, which may be constructed similarly to shaft 126, to enable coupling the same in a similar manner. The crank carries a crank pin 165 engageable in a slot 166 in a yoke member 167 to oscillate the same about the axis of the shaft 168, to which shaft it is rigidly affixed as by the pin 169. Affixed to the upper end of the shaft 168 is a cross-arm 170 which comprises the agitator member and which carries upstanding posts 171 to which a belt or the like may be affixed to employ the device as a vibratory exerciser in the well known manner.

I may also apply attachments affixable to the driving shaft 26 of the machine which do not require the additional support furnished by the cross bar 102, for which purpose a ball chuck 114′, which may be identical with the chuck 114 previously described, may be employed to couple another chuck 172 to the driving shaft, to enable driving thereby a grinding wheel, as 173, a drill as 174, brush or buffer, as 175, vegetable peeler, as 176, or any of various other attachments which it may be desired to actuate by the shaft.

As shown in Figures 1 and 11, and as described in greater detail in my aforementioned co-pending application, a smaller hatch or cover 96, preferably formed of transparent material, is provided in the main cover 19′ of the machine. This may be opened when some of the attachments, such as the bottle-cleaning brush 177, are in use, (the same being connected to the driving shaft 26 by means of the chucks 114′ and 172) enabling a more convenient use of devices of this type, as shown in Figure 11.

Provision of the change speed gearing enables driving the attachments at either low or high speed, as desired, in accordance with the best operating speed of the particular device being used and work being done. If desired also a rocking or oscillating movement may be imparted to the main drive shaft 26, which movement may be used with certain of the attachments, such as the exerciser, extractor, etc.

Other attachments adaptable for use with my improved connecting and securing means for applying such devices to the washing machine driving shaft will occur to those desiring to provide for their installation.

If it is desired to provide a support for attachments such as are herein described, or any other attachments, to enable their use in conjunction with a machine not having legs designed for a crossbar of the type above described—or in any event—a modified form of cross bar may be employed which may be clamped directly to the tub, as shown in Figures 16 and 17. This may be formed with a plurality of radially extending arms, as 102′, 102^2, 102^3, and 102^4, one or more of which, as 102^4, may be provided with a locating aperture, 119^2. Each of the arms may be provided with a downturned extremity 103′, and a clamping thumbscrew 104′ by means of which the support may be secured to the tub. A central socket portion 116′ may be formed centrally in the support and similarly to the socket 116 of the crossbar first described. The remainder of the coupling and supporting portions may also be similarly formed to those embodied in the first described crossbar, and the corresponding parts are similarly numbered, but the reference characters are provided with different exponents. By means of such a crossbar, a dishwashing and other suitable machines may be made to furnish motive power for driving various attachments.

While it will be apparent that the illustrated embodiments of my invention herein disclosed are well caluculated to adequately fulfill the objects and advantages primarily stated, it is to be understood that the invention is susceptible to variation, modification and change within the spirit and scope of the subjoined claims.

What I claim is:

1. A combined support and coupling, attachable to a tub having a driving shaft extending thereinto, and legs extending up the sides thereof, comprising a cross bar affixable to the upper ends of the legs and extending across the tub, a shaft journaled in substantially vertical position in a portion of the cross bar and extending into the tub, coupling means carried by the shaft adjacent its lower extremity to engage the driving shaft, and coupling means carried by the upper extremity of the shaft.

2. In combination with a tub, a driving shaft extending thereinto, and supporting legs extending up the sides of the tub to a point adjacent its top, a combined support and coupling comprising a bar extending across the top of the tub and having downturned extremities, means for coupling the downturned ends of the cross bar to the legs, a shaft journaled in the cross bar and extending into the tub, means for connecting said shaft to the driving shaft, and coupling means carried by the upper extremity of said shaft.

3. In combination with a tub, a driving shaft extending thereinto, and supporting legs extending up the sides of the tub to a point adjacent but slightly below its top, combined support and coupling means for affixing attachments to said shaft, comprising a cross bar having downturned extremities, means for positioning the cross bar with respect to and supporting the same upon said legs independently of the tub, comprising means for coupling the downturned extremities of the crossbar to the upper ends of the legs of the tub in such manner that the bar extends across the tub, a shaft journaled in the cross bar and extending partly within the tub, a chuck carried by the lower extremity of the shaft for coupling the same to the driving shaft, and coupling means carried by the upper extremity of the shaft.

4. In combination with a tub, a driving shaft extending thereinto, and supporting legs extending up the sides of the tub to a point adjacent but slightly below its top, combined support and coupling means for affixing desired attachments to said shaft, comprising a cross bar having downturned extremities, means for positioning the cross bar with respect to and supporting the same upon said legs in such manner that the cross bar extends across the tub, comprising coupling means carried by the downturned ends of the bar for securing the same to the tops of the legs, a shaft journaled in the cross bar and partly within the tub, said cross bar having a socket surrounding the upper extremity of the shaft, coupling means carried by the upper extremity of said shaft within the socket, and means carried by the lower extremity of the shaft for coupling the same to the driving shaft.

5. A combined support and coupling, attachable to a tub having a driving shaft extending thereinto and having relatively rigid supporting portions on opposite sides thereof, comprising a cross bar affixable to the supporting portions to extend across the tub, a shaft journaled in substantially vertical position in a portion of the cross bar and extending into the tub, coupling means carried by the shaft adjacent its lower extremity to engage the driving shaft, and coupling means carried by the upper extremity of the shaft.

In testimony whereof I sign this specification.

GEORGE K. PARSONS.