April 21, 1931. H. E. HERRING 1,801,347

WASHING MACHINE

Filed March 14, 1928

Fig 1

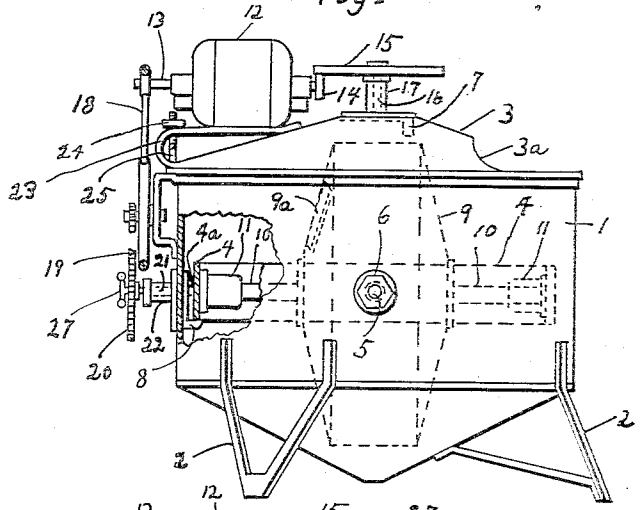


Fig 2

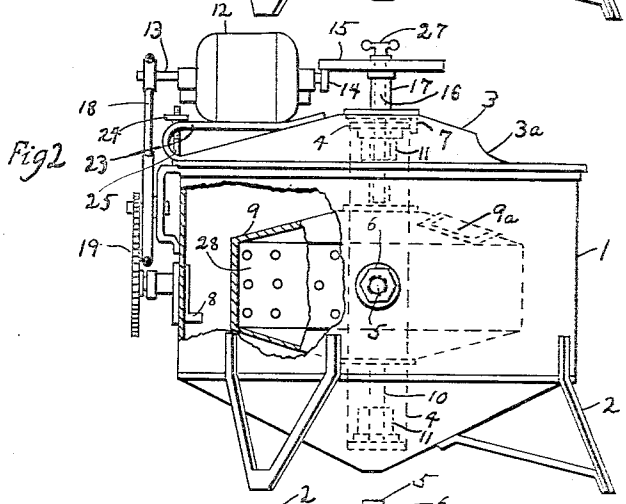
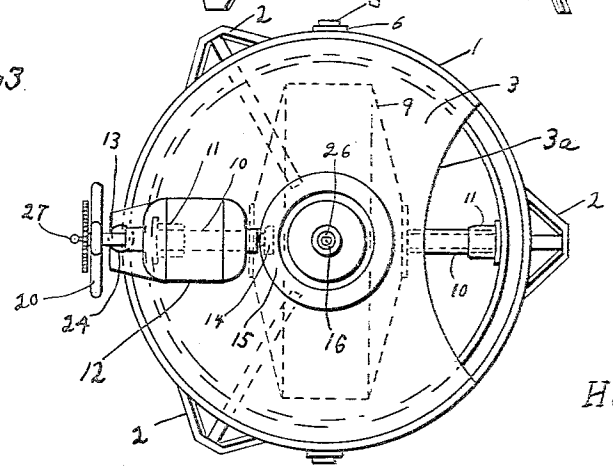


Fig 3



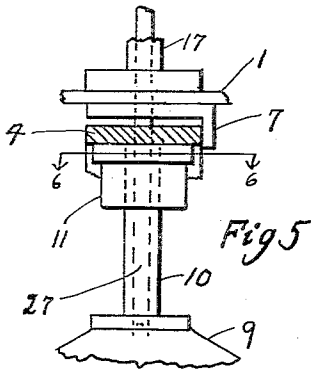


Fig 5

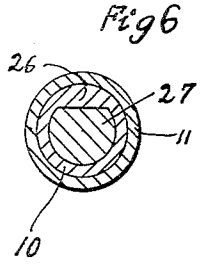


Fig 6

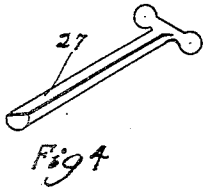


Fig 4

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Patented Apr. 21, 1931 1,801,347

UNITED STATES PATENT OFFICE

HORACE EDGAR HERRING, OF ASHBURTON, NEW ZEALAND

WASHING MACHINE

Application filed March 14, 1928, Serial No. 261,679, and in New Zealand April 5, 1927.

This invention relates to machines for washing clothes and other articles and has for its object the provision of an improved form of machine by means of which washing of articles and the removal of moisture therefrom may be conveniently performed in the same machine on making a simple adjustment of the mechanism.

According to the invention the improved machine comprises a vessel for holding a washing fluid, and having mounted therein a perforated container for the articles to be dealt with, said container being adapted for rotation through the fluid to effect washing of the articles, and also being adapted for rotation out of said fluid for the purpose of removing or forcing moisture from the articles.

The mounting of the perforated container is conveniently effected by pivotally mounting the same in a ring, the latter in turn being pivotally mounted in the vessel, so that by adjusting said ring within the latter, the perforated container can be made to occupy positions wherein it can be connected with driving gear and be rotated either through or out of the fluid as is desired.

The invention will however be more particularly described with the aid of the accompanying drawing in which:—

Figure 1 is an elevational view of the improved machine showing the perforated container in position for performing the washing operation,

Figure 2 is a similar view showing the container during the drying operation,

Figure 3 is a plan view of said machine with the perforated container in the position indicated in Figure 1, while

Figure 4 is a perspective view of the key for connecting the perforated container with the driving gear,

Figure 5 is a fragmentary detail of a pair of the alined shafts forming the drive connection for the container, and

Figure 6 is a sectional view taken on a line 6—6 of Figure 5.

The vessel 1 for holding the washing fluid is provided with a tapered bottom, and also with equally spaced supporting legs 2 the top 3 containing an opening 3*a* through which access may be had to the interior of the said vessel.

A ring 4 provided with trunnions 5 supported by bearings 6 secured to vessel 1, is movable in the bearings 6, through a quarter circle, the movement being limited by stops 7 and 8 fixed to the top and the sides respectively of the vessel 1.

A perforated container 9 for the articles to be treated is provided with trunnions 10, which are supported by bearings 11, attached to the ring 4, the axis through the container trunnions 10, being at right angles to the axis through the ring trunnion 5.

Mounted on the top of the vessel 1, is an electric motor 12 on one end of the shaft 13 of which is secured a friction wheel 14, which engages a friction disc 15 secured on a short hollow vertical shaft, 16 held in a bearing 17 at the top of the vessel 1, so that said shaft 16 is directly over a hole 4*a* in the ring 4, and the upper trunnion 10 of the perforated container 9 when the ring 4 occupies a vertical position against the stop 7.

The other end of the motor shaft 13 drives through a reduction belt drive 18 and a reduction chain drive 19, a wheel 20 secured on a short horizontal shaft 21 held in a bearing 22 at the side of the vessel 1, so that said shaft 21 is directly opposite, or in line with the hole 4*a*, in the ring 4 and the trunnion 10 of the container 9 located between the stops 7 and 8, when the ring 4 occupies a horizontal position against the stop 8.

The motor 12 is supported by a spring platform 23 which tends to force said motor upwards, to maintain the friction wheel 14 in contact with the disc 15, the upward pressure of the platform 23 being capable of being regulated by the hand wheel 24 which screws on the rod 25 against the action of the spring.

The perforated container 9 is provided with a sliding section 9*a* to enable articles to be placed in and to be removed therefrom, and also contains a baffle 28 for causing the clothes to be picked up and dropped in the container at each revolution thereof.

The hollow shafts 16 and 21 and the hollow trunnion 10 of the container 9 adapted to be

brought into line therewith are formed with one or more internal flat sides, (26, Fig. 3) to receive a key 27, (Fig. 4) the cross-sectional shape of which corresponds with the internal cross-sectional shapes of the said shafts 16 and 21 and trunnion 10 so that when the latter is horizontal and opposite the shaft 21, the perforated container 9, which in this position is vertical can be rotated edgeways through a vertical plane, by inserting key 27 in the shaft 21 and through the ring 4 into the trunnion 10 of the container 9, to lock the shaft 21 and the trunnion 10 to each other, and the ring 4 against movement on its trunnion 5.

When the ring 4 is moved to the vertical position against the stop 7 the container 9 occupies a horizontal position, and in this position the hollow trunnion 10 of the container 9 is locked to the shaft 16 of the disc 15, and the ring 4 against turning movement on its trunnions 5, by inserting the key 27 in the shaft 16, ring 4 and trunnion 10.

In use the vessel 1 has washing fluid placed therein to fill its lower tapered portion only, and when the ring 4 is horizontal and the container 9 vertical one end of the latter dips into the fluid as said container is rotated through the vertical plane to perform the washing of the articles, the rotation of the container 9 through the vertical plane being comparatively slow on account of the reduction gearing 18 and 19.

When the ring 4 is vertical and the container 9 horizontal the latter is entirely out of the washing fluid and on being given a comparatively high speed, whirling action through the friction gear 14 and 15 moisture is forced from the articles in the container 9 through the perforations of the latter.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A washing machine comprising a liquid container, an article container arranged therein, means within the liquid container for rotatably supporting the article container upon either a vertical or a horizontal axle, stub shafts carried by the article container, driven elements carried by the liquid container and a drive connector removably positioned between one of the driven elements and one of the stub shafts for operatively connecting the same when the article container is in either of its rotating positions.

2. A washing machine comprising a liquid container, an article container arranged therein, means within the liquid container for rotatably supporting the article container upon either a vertical or a horizontal axis, hollow stub shafts carried by the article container, hollow driven shafts carried by the liquid container, and a drive connector removably positioned in a stub shaft and driving shaft for operatively connecting the same when the article container is in either of its positions.

3. A washing machine comprising a liquid container, an article container arranged therein, means within the liquid container for rotatably supporting the article container upon either a vertical or horizontal axis, hollow stub shafts carried by the article container, hollow driven shafts carried by the liquid container, a drive connector removably positioned in a pair of said shafts for operatively connecting the same when the article container is in either of its positions, a motor mounted on the liquid container having a drive shaft protruding from opposite ends thereof, and means operatively connecting the ends of the drive shaft with the respective driven shafts.

4. A washing machine comprising a liquid container, an article container, means within the liquid container for rotatably supporting the article container upon either a vertical or horizontal axis, hollow stub shafts carried by the article container, vertical and horizontal hollow driven shafts carried by the liquid container, means within the liquid container engageable with the article container for aligning a pair of said stub and driven shafts, said shafts having bores of non-circular formation, and a drive connector for fitting in said bores and removably inserted in the pair of aligned shafts for operatively connecting the same.

Dated at Auckland, this 24th day of January, 1928.

HORACE EDGAR HERRING.