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J. JOHANNESSEN

ELECTRICALLY DRIVEN FLOOR WASHING MACHINE

Filed Jan. 4, 1923

Fig. 1.

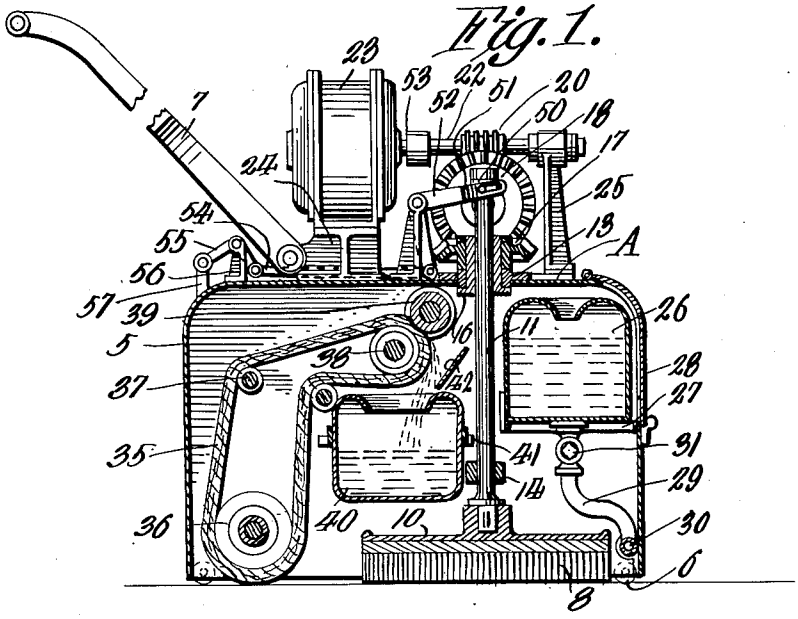
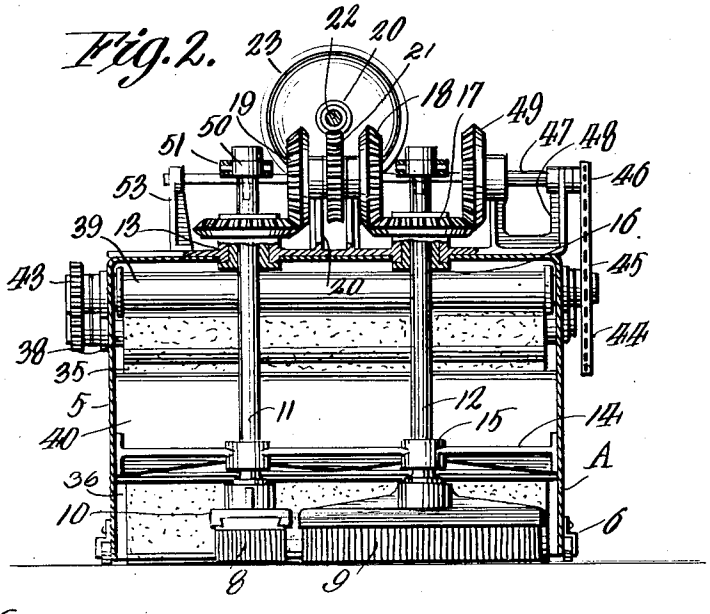


Fig. 2.



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UNITED STATES PATENT OFFICE.

JACOB JOHANNESSEN, OF HAUGESUND, NORWAY.

ELECTRICALLY-DRIVEN FLOOR-WASHING MACHINE.

Application filed January 4, 1923. Serial No. 610,641.

To all whom it may concern:

Be it known that I, JACOB JOHANNESSEN, a subject of the King of Norway, residing at Haugesund, and country of Norway, have invented certain new and useful Improvements in an Electrically-Driven Floor-Washing Machine, of which the following is a specification.

This invention relates to a floor washing and wiping machine of the type which is pushed over the surface being washed and the primary object of the invention is to provide novel scrub brushes and novel wiping means simultaneously operated by an electric motor, as the machine is being pushed over the surface being washed.

Another object of the invention is to provide means for spraying the cleaning fluid in front of the brushes, novel means for wiping the fluid up off of the floor in rear of the brushes and novel power driven means for acting on the wiping means for squeezing the cleaning fluid therefrom into a suitable receiving tank.

A further object of the invention is the provision of a pair of driven brushes rotatable in opposite directions and which are so arranged in relation to each as to act simultaneously on the surface being scrubbed.

A still further object of the invention is to provide novel means for lifting the brushes out of engagement with the surface being cleaned and novel means for cutting off the supply of the cleaning fluid to the brushes when it is desired to finally wipe up the floor.

With these and other objects in view the invention consists in the novel construction, arrangement and formation of parts, as will be hereinafter more specifically described, claimed and illustrated in the accompanying drawings, forming a part of this specification, in which drawings:

Figure 1 is a vertical longitudinal section through the improved floor scrubbing and drying machine.

Figure 2 is a vertical transverse section through the same.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the various views, the letter A generally indicates the improved machine which includes a housing 5 formed of sheet metal or the like open at its lower end and mounted upon suitable rollers or the like 6, whereby the said housing can be conveniently pushed over the surface to be cleaned. A pivoted handle 7 is carried by the rear end of the casing to facilitate the pushing of the housing over the surface to be cleaned. Disposed within the housing 5 adjacent to the forward end thereof is a pair of companion brushes 8 and 9, which can be removably carried by heads 10 which are in turn connected in any preferred manner to the vertically disposed shafts 11 and 12, which are slidably and rotatably carried by upper bearings 13 formed on the housing. The shafts 11 and 12 are further supported by a cross brace 14 which also supports suitable bearings 15 therefor. The upper ends of the shafts are feathered or splined to suitable sleeves 16, which are rotatably mounted in the bearings 13 and these sleeves have secured thereto suitable beveled gears 17, which mesh with beveled gears 18 keyed or otherwise secured to a driven shaft 19. This driven shaft 19 is supported by suitable bearings 20. The shaft 19 intermediate the beveled gears 18 has keyed thereto a worm wheel 21 which meshes with a worm 20 keyed or otherwise secured to the armature shaft 22 of the electric motor 23. This electric motor 23 is secured to a suitable bracket 24 bolted or held on the housing 5 in any suitable manner. The forward end of the armature shaft 22 can be supported by a suitable bearing bracket 25 carried by the housing adjacent to the upper end thereof. By this construction it can be seen that the brushes 8 and 9 will be oppositely rotated and that the same will have an over-wiping or scrubbing action on the floor being cleaned. Disposed within the housing 5 is a tank 26 for receiving the cleaning fluid and this tank can be held in place by suitable supporting brackets 27. The housing 5 can be provided at its forward end with a pivoted door 28 in order to permit ready access to be had to the said tank. The tank is provided with a depending outlet pipe 29 which communicates with a transversely extending spraying nozzle 30 which is disposed directly in front of the brushes 8 and 9. A suitable control valve 31 can be interposed within the pipe 29 in order to control the flow of water to the spraying nozzle 30.

Disposed within the housing 5 in rear of the brushes 8 and 9 is the wiping cloth 35, the lower end of which is trained about a

lower roller 36 which holds the cloth into wiping contact with the floor being washed. The cloth 35 is of the endless variety and is trained about guide or idler rollers 37 and between a pair of squeezing rollers 38 and 39 which are adapted to squeeze the water therefrom into a suitable transversely extending receiving tank 40. This tank 40 is held in place by a bracket 41. If so desired a guide plate 42 can be provided for preventing the splashing of the water incident to the flowing of the water into the tank 40. The pintles of the rollers 38 and 39 extend outwardly of the housing 5 and are connected together by suitable gears 43. The pintle of one roller is also provided with a sprocket wheel 44 around which is trained a sprocket chain 45. This sprocket chain is also trained about a sprocket wheel 46 which is keyed to a driven shaft 47. This driven shaft is supported by a suitable bearing bracket 48 secured to the upper surface of the housing 5. The inner end of the shaft 47 is connected with one of the beveled gears 17 by means of a beveled gear 49.

In order to permit the raising of the brushes 8 and 9 above the surface being cleaned, the upper terminals of the shafts 11 and 12 are provided with rotatable collars 50 which are engaged by the yoke-shaped ends 51 of bell crank levers 52 which are pivoted at their angles upon suitable bearing brackets 53. The lower end of one of the bell crank levers 52 has connected thereto a link 54 which is in turn connected with a rear bell crank 55 that is pivoted at its angle by a suitable bearing bracket 56. The rear arm of the bell crank 55 has connected thereto a suitable operating rod 57. It is obvious that by operating the rod 57 that the shafts 11 and 12 can be raised or lowered as desired. When the brushes 8 and 9 are raised the valve 31 is also operated so as to cut off the supply of water or other cleaning fluid to the brushes.

In use of the improved machine, the same is pushed over the surface to be cleaned and the motor 23 is set in operation. During the travel of the machine over the surface to be cleaned, the brushes 8 and 9 will effectively scrub the surface and the cloth 35 will wipe up the water from the brushes in rear thereof.

Changes in details may be made without departing from the spirit or scope of this invention.

What I claim as new is:—

In a scrubbing machine for floors, a wheeled casing having a lower opened end, a handle connected with the casing, a motor secured to the upper surface of the casing including a forwardly extending armature shaft, a pair of rotatable and slidable shafts disposed in the casing and projecting through the upper end thereof, removable brushes carried by the lower ends of the shafts, a transversely disposed driven shaft carried by the upper face of the casing disposed in front of the armature shaft and provided with a worm gear, a worm carried by the armature shaft meshing with the worm gear, beveled gears secured to the driven shaft on each side of the worm gear for driving the brush shafts, means for raising and lowering the brushes and shafts, and means for supplying a cleaning fluid in front of the brushes arranged in the casing adjacent to the lower open end thereof.

In testimony whereof I affix my signature in presence of two witnesses.

JACOB JOHANNESSEN.

Witnesses:

JAKOB JOHNSON,

F. BJORNSTAD.