April 15, 1952 E. L. CHADWICK 2,592,857

POWER AGITATED PARTS CLEANING MACHINE

Filed Feb. 23, 1946 2 SHEETS--SHEET 1

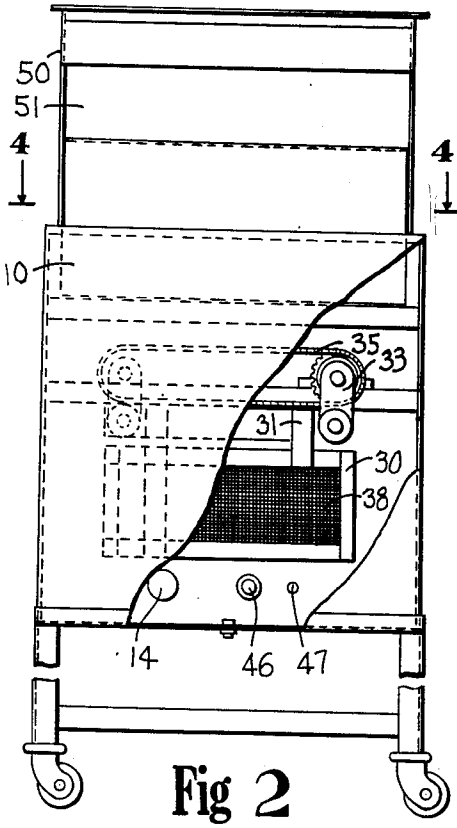


Fig 2

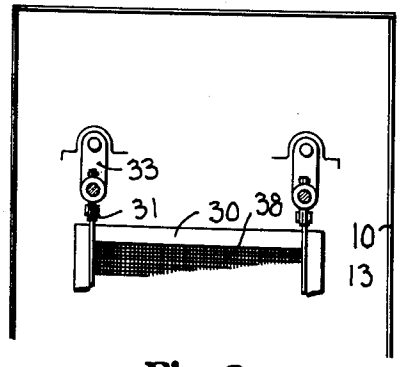


Fig 3

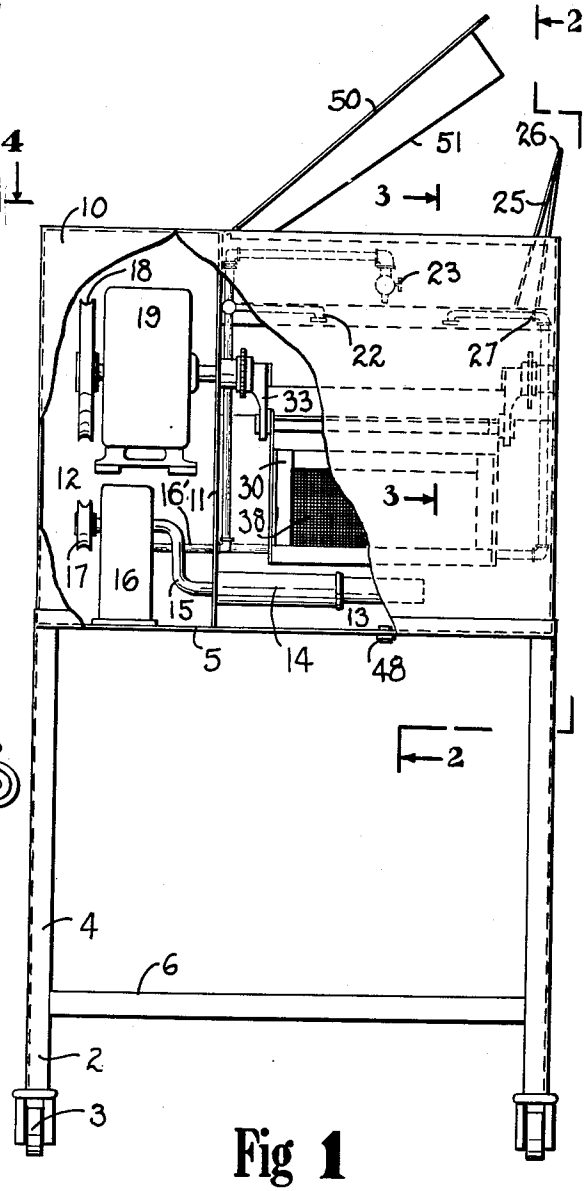


Fig 1

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2 SHEETS--SHEET 2

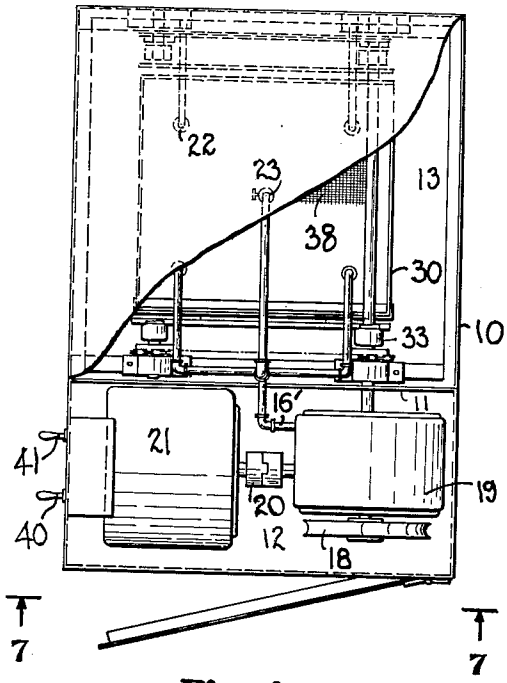


Fig 4

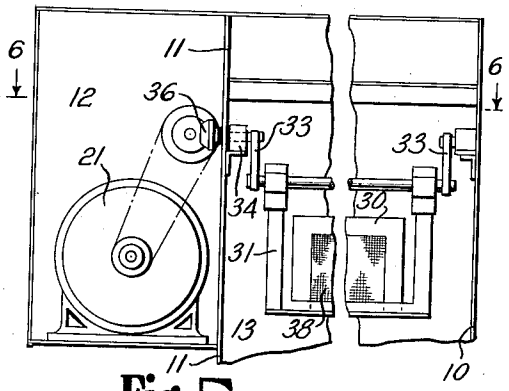


Fig 5

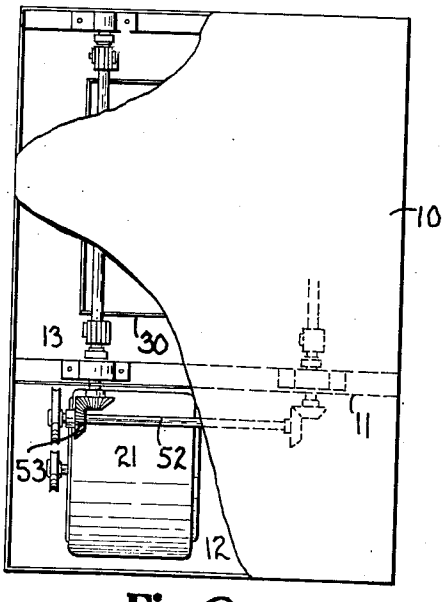


Fig 6

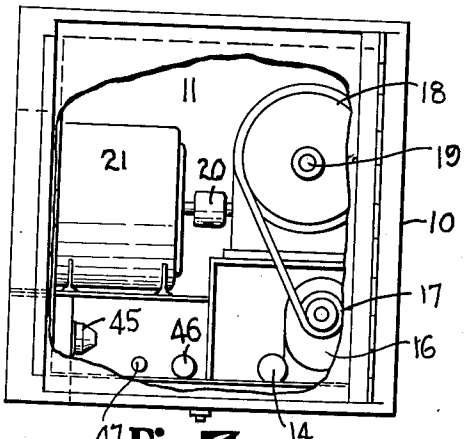


Fig 7

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POWER AGITATED PARTS CLEANING MACHINE

Earl L. Chadwick, Portland, Oreg.

Application February 23, 1946, Serial No. 649,619

1 Claim. (Cl. 134—140)

1

The invention relates to a parts cleaning machine wherein the parts are subjected to a cleaning operation by being moved about in the cleaner solution while such solution is in turn being circulated.

It is often necessary to clean various metal and other types of parts for the purpose of removing paints, coatings, grease and other foreign matter. The present machine is arranged so that it may be portable and moved about the shop where parts are to be cleaned, and provides a quick and efficient piece of mechanism for accomplishing the cleaning operation.

It is one of the objects of the invention to provide a portable parts cleaning machine wherein the parts are caused to travel in a rotary motion in a vertical plane into and out of the cleaning solution while such solution is being circulated.

Another object of the invention is to provide a cleaning machine wherein a basket is caused to travel with a rotary motion in a cleaning solution which can be automatically heated and strained while being circulated.

Another object of the invention is to provide a cradle for parts in a parts cleaning machine which is arranged to removably receive a parts carrying basket.

Another object of the invention is to provide a folding splash and safety lid construction for a parts cleaning machine.

Another object of the invention is to provide an arrangement for spraying the parts as they are being moved in the cleaner where such spraying equipment may be folded so as to be completely enclosed within the machine when not in use.

Other and further objects of the invention will be readily apparent when the following description is considered in connection with the accompanying drawings wherein:

Fig. 1 is a side elevation of the machine, certain parts being broken away so as to illustrate the general arrangement thereof;

Fig. 2 is an end view of the machine taken on the line 2—2 of Fig. 1;

Fig. 3 is a section taken on the line 3—3 of Fig. 1 and illustrating the manner of supporting the cradle and basket upon the rotating cranks;

Fig. 4 is a section taken on the line 4—4 of Fig. 2 and illustrating the arrangement of the motor speed reducer and the other parts of the machine;

Fig. 5 is an end view of a modification of the machine taken inside thereof and illustrating the arrangement for driving the mechanism directly from the motor without a speed reducer;

2

Fig. 6 is a plan view taken along line 6—6 of Fig. 5;

Fig. 7 is a view on the line 7—7 of Fig. 4 to illustrate the general assembly of the power connections.

In Fig. 1 a dolly 2 is arranged with wheels 3 on the legs 4 thereof so as to support the cleaning machine 5. A shelf 6 in the dolly serves to support tools or other equipment.

The cleaning machine 5 is disposed entirely within a housing 10 which is rectangular in shape, and is divided into two portions by a partition 11. This partition forms a chamber 12 to receive the power equipment and a tank 13 in which the cleaning operation is conducted.

A suitable cleaning solvent will be disposed in the tank 13 and will be drawn in through a strainer 14 to the inlet 15 of a pump 16. This pump may be driven by the wheel 17 from the wheel 18 of a speed reducer 19 which is in turn driven by a shaft 20 from a motor 21 as seen in Fig. 7.

The pump 16 has an outlet 16' thereon which is in the form of a pipe passing through the partition 11 into the tank 13 and having the spray nozzles 22 thereon and the pressure nozzle 23. Both of these nozzles are so supported that the pipes may be pivoted to bring them down inside of the machine or to adjust them at different angles so that the cleaning solvent being discharged therefrom will strike the parts being cleaned.

In order to prevent splashing and loss of cleaning solution, a safety and splash lid 25 is shown as hinged at 26 and pivoted at 27 inside of the housing 10 so that it may be dropped down to a horizontal position when the device is in use so as to prevent the cleaning or chemical solution from splashing out of the machine.

In order to clean the parts by effecting a movement thereof, a cradle 30 is best seen in several of the figures as being supported on the arms 31 which are carried by the bearings 32 on the crank arms 33. These arms are in turn rotatable in the bearings 34 and as seen in Fig. 1 will be driven by a gear 36 from the speed reducer 19. These cranks 33 will rotate in a vertical plane so as to carry the cradle 30 around in the tank 13 with a circular motion. The two cranks 33 will be driven by the chain 35.

The amount of chemical solution in the tank will, of course, determine whether the parts are elevated out of the solution or in, during this rotary motion. If the tank is full the entire movement may occur while the parts are submerged in the solution, but if the tank is only

partly filled the parts may be immersed and withdrawn during each revolution. In this latter procedure the spray nozzles will, of course, drive streams of the cleaning solution upon the parts when they are elevated out of the body of liquid in the tank.

In order that the parts may be readily inserted and removed, a basket portion **38** is shown as having been deposited in the cradle **30**. This basket **38** is made of screen material and is arranged to contain the parts. Several baskets may be used of course, so that a mechanic or user can be filling one basket with parts while another basket is being cleaned, then the basket of cleaned parts can be readily removed.

In order to control the circulation of the solution and operation of the machine, the switches **40** and **41** are arranged on the side of the housing **10**. The motor **21** may be of any desired type, and may be operated at different speeds.

Fig. 7 shows a thermostatic control **45** which may be adjusted to control the temperature of the heater **46** which is disposed in the liquid. A thermostat **47** controls the heat to be applied as it is adjusted by the control **45**. The plug **48** permits draining of the tank to remove any accumulation of sludge or sediment.

Fig. 6 shows a shaft **52** and gears **53** as driving the cranks **33** in lieu of the chain **35**.

A closure lid **50** for the entire machine is shown in Fig. 2 as being tilted back away from the machine so that parts may be positioned upon the surface **51** thereof in order to allow the cleaning solution to drain back into the tank, or of course, the basket **38** may be removed from the machine and placed upon this drain tray **50**.

Broadly the invention contemplates a parts cleaning machine wherein the parts will be rotated in a cleaning solution and may also be sprayed with the solution under a desired pressure.

The invention claimed is:

A parts cleaning apparatus comprising a dolly, a tank thereon for cleaning solution, a pump on said dolly adjacent said tank to circulate such cleaning solution into and out of said tank, a piping system from said pump into said tank including spray means in said tank to spray cleaning solution from the top of said tank downwardly thereinto, a motor carried by said dolly outside of said tank, a drive shaft therefrom extending into said tank, pairs of spaced eccentric crank arms mounted in said tank on each of the opposite sides, a sprocket connected to each of the crank arms on each side, a chain connecting the sprockets of each side, cross shafts joining the opposite crank arms, said drive shaft being connected to one of said sprockets to drive said crank arms and cross shafts, a parts carrying screened basket hanging on said cross shafts to be raised and lowered to dip into as said arms are rotated by said motor and out of the cleaning solution in said tank to raise the basket and parts to be sprayed, and to dip the basket and parts back into the solution.

EARL L. CHADWICK.

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