

Feb. 12, 1929.

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1,701,864

CLEANING APPARATUS

Filed April 28, 1927

2 Sheets-Sheet 1

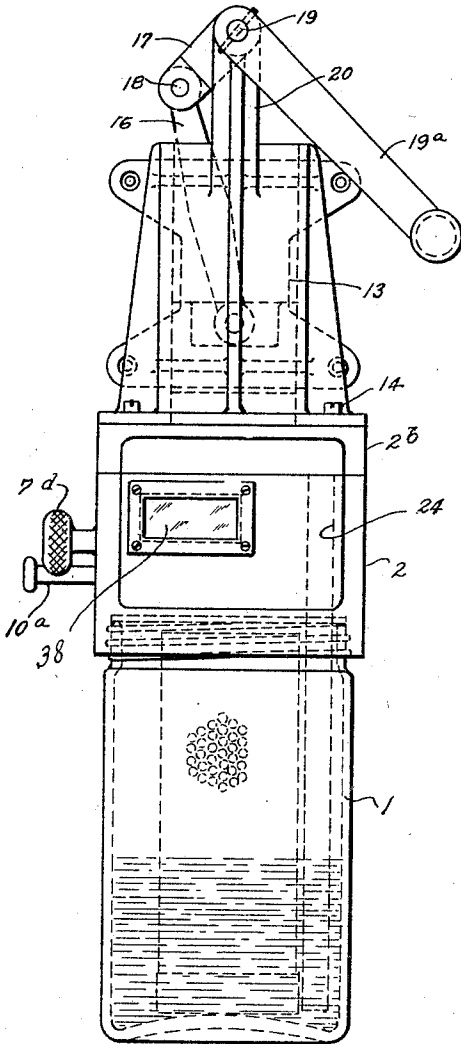


Fig. 1.

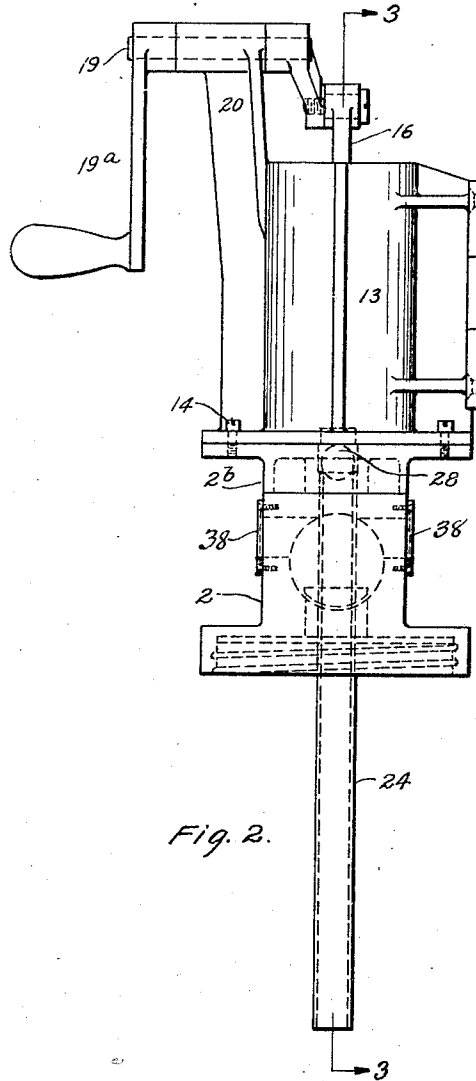


Fig. 2.

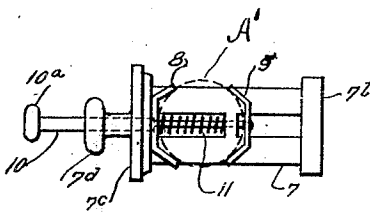


Fig. 8.

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2 Sheets-Sheet 2

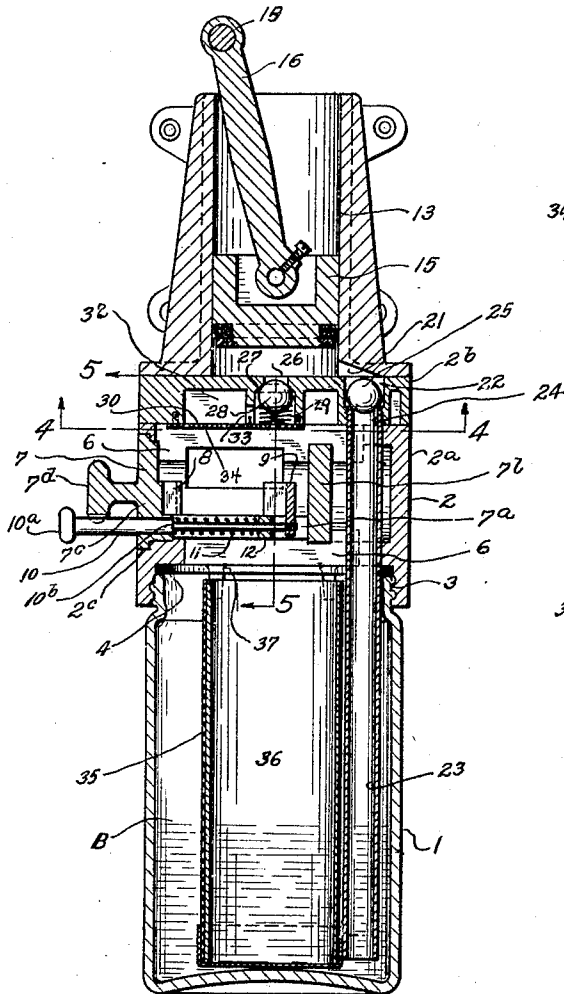


Fig. 3.

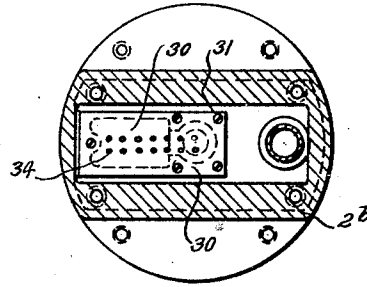


Fig. 4.

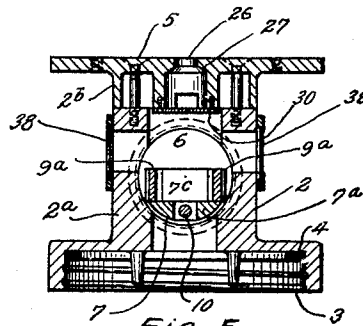


Fig. 5.

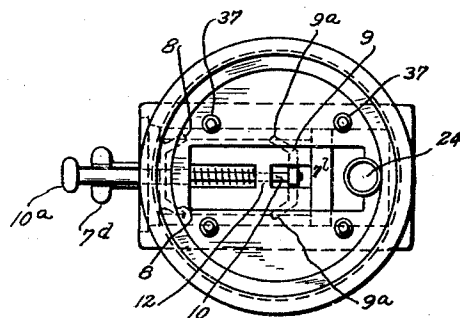


Fig. 6.

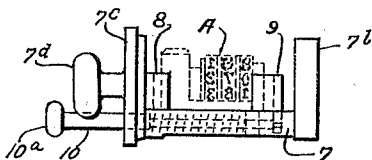


Fig. 7.

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CLEANING APPARATUS.

Application filed April 28, 1927. Serial No. 187,128.

The object of my invention is to provide an apparatus in which articles may be placed and a cleaning fluid may be forced, under pressure, against the articles to cause washing and cleaning of the same from accumulated dirt, grit, oil, etc. therein and thereon.

My invention is particularly adapted for cleaning consecutive numbering machines, such as used in the chases of printing presses, which are liable to become clogged by reason of an accumulation of dirt and oil between the surfaces of the adjacent numbering wheels and in the bearings, whereby said wheels are retarded to some extent in their rotation and frequently print an incorrect number. Golf balls and other articles may be cleaned in my machine.

In carrying out my invention I provide a container for the cleaning fluid, a casing thereon adapted to removably receive the articles to be cleaned, and a pump having a piston adapted to draw the fluid from the container and force the fluid against the articles, the fluid flowing from the articles into the container so that the fluid may be circulated repeatedly until it is desired to discard the fluid.

My invention comprises further details of improvement that will be more fully herein-after set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part hereof, wherein

Fig. 1 is a side elevation of an apparatus embodying my invention;

Fig. 2 is a view looking from the left hand side of Fig. 1;

Fig. 3 is a vertical section substantially on line 3, 3, in Fig. 2;

Fig. 4 is a cross section on line 4, 4, in Fig. 3;

Fig. 5 is a detail vertical section on line 5, 5, in Fig. 3;

Fig. 6 is an inverted plan view of the casing;

Fig. 7 is a detail view of a retainer for the articles to be cleaned, and Fig. 8 is a plan view thereof.

Similar numerals of reference indicate corresponding parts in the several views.

The numeral 1 indicates a container for fluid, which container may be in the form of a glass jar, and at 2 is a casing mounted upon the container. The container and the casing may be detachably secured together, as by means of screw threads at 3, preferably being provided with an interposed gasket at

4 to provide a tight joint, (Fig. 3). The casing I have illustrated comprises two sections 2^a and 2^b, shown detachably secured together by means of screws 5. The section 2^a of the casing is provided with an interior chamber 6 opening through the upper and lower walls of the section, in which chamber the articles to be cleaned, such as numbering machine A, are adapted to be removably located. The section 2^a of the casing is provided with an opening 2^c in one side to admit a retainer 7 for the articles A. The retainer shown comprises an open frame having a base portion 7^a and end members 7^b, 7^c, the latter being shown provided with a knob 7^d for manipulating the retainer. The member 7^c is shown provided with angularly disposed spaced projections in the form of jaws, at 8, to bear against an end or side of the article A, and a movable jaw 9 opposes the jaws 8, (Fig. 6). The jaw 9 is shown provided with angularly disposed end portions 9^a adapted to engage an end or side of the article A. The jaw 9 is secured to a slidable rod 10 that is guided in suitable bearings in the retainer, the outer end of the rod being shown projecting from the retainer in the form of a knob at 10^a for manipulating the rod. A coiled spring 11 on rod 10 bears at one end against a shoulder 10^b on the rod, and the opposite end bears against a cross bar 12 at the bottom of the retainer, (Figs. 3 and 6), whereby the rod with its jaw 9 is normally forced outwardly respecting the apparatus for gripping the article A detachably between the jaws 8 and 9. When the article A is to be cleaned the retainer 7 is pulled out of the casing, the rod 10^a is pushed inwardly to spread the jaws apart, the article is placed upon the retainer between the jaws and the rod is released, whereby the spring 11 causes the jaws to grip the article. The retainer and the article are then inserted in the casing in position for cleaning the article.

Above the casing is a pump for the cleaning fluid B. Said pump is shown comprising a cylinder 13 detachably secured upon the casing section 2^b by means of screws 14, and a piston 15 reciprocative within the cylinder, the piston being shown operative by a link 16 pivotally attached to the piston and actuated by a crank arm 17 pivoted to the link at 18 and carried by a shaft 19 journaled on an arm or bracket 20 projecting from the pump cylinder. The shaft 19 may be rocked or rotated by a crank arm 19^a attached there-

to. The bore of the cylinder communicates through a passage 21 with bore 22 in casing section 2^a, to which bore 22 a tube 23 is attached, as by screw threads at 24, which tube passes through the chamber 6 of casing section 2^a into container 1 near its bottom. A valve 25 normally closes communication between the cylinder and tube 23 and permits the piston to suck fluid up into the cylinder through the tube and the passageway 21 and resists pressure and back flow of fluid from the piston. The valve 25 is shown in the form of a ball fitting against the upper end of the tube 23 as a seat. The casing section 2^b is provided with a bore 26 having a seat 27 against which a valve 28 is adapted to fit, the valve being normally pressed to its seat by a spring 29, (Fig. 3). The valve 28 and the spring are located within the enlarged lower portion of bore 26, and a plate 30, detachably secured to casing member 2^b by screws 31, opposes the spring and supports the latter and the valve 28, (Figs. 3 and 4). The plate 30 also opposes a chamber-like portion 32 of section member 2^b, and a port 33 in the side wall of bore 26 permits the flow of fluid into said chamber during the inward stroke of the piston. The plate 30 is perforated to permit the flow of cleaning fluid from the pump. By means of a suitable number of perforations, at 34, positioned over the article A within the casing relatively small streams of cleaning fluid may be forced, under relatively high pressure, against the article A by the pump.

I preferably provide a strainer within the container to receive the fluid that is pumped against the article A, which strains particles of dirt, etc. from such fluid and permits the latter to pass into the container 1 for reuse and circulation. I have illustrated a strainer in the form of an open-top perforated shell 35 closed at the bottom and provided with an inner fabric, shown in the form of a tube 36, through which the fluid will strain, leaving the residue within the tube and strainer. The fabric tube may be removed and replaced when necessary. The strainer is shown adapted to be fitted against the bottom of the container and the upper end of the strainer is retained in position between spaced pins 37 depending from the casing section 2^a. One or more sides of the casing section 2^a may be provided with windows 38 for observation of article A while being cleaned.

When an article A, such as a numbering machine is to be cleaned it is placed within the apparatus in the manner previously described and the piston is operated by rotating or rocking the shaft 19, whereupon the fluid from the container is drawn up through tube 23 into the cylinder and forced downwardly past valve 26 against plate 30, so that the fluid will pass in several streams under pressure downwardly against the numbering machine

and will flow therefrom into the strainer within the container. By reason of the cleaning fluid engaging the numbering machine under pressure the fluid is forced into the spaces and crevices of the numbering machine to cause washing out of accumulated dirt, grit, oil, etc. in the machine, the flow of the fluid from the machine carrying the dirt, etc. with it, whereby the machine will be thoroughly cleaned by reciprocating the piston. Since the fluid will be strained and be drawn from the container into the cylinder through the tube 23 that is located exterior to the strainer the cleaning fluid may be circulated against successive numbering machines until such time as it is desired to remove and replace the fluid. My improved cleaning pump may be used for washing and cleaning various articles, the retainer being suitably arranged to support the latter. A golf ball A' may be cleaned by resting it on the retainer (Fig. 8) and pumping an appropriate fluid against it. Any suitable cleaning fluid may be used, such as gasoline, naphtha, benzine, soapy or alkaline water and the like, according to the articles to be cleaned.

My invention is not limited to the details of construction set forth as the same may be varied, within the scope of the appended claims, without departing from the spirit of my invention.

Having now described my invention what I claim is:—

1. An apparatus of the character set forth comprising a casing provided with a pump on one side, a container for fluid on the side of the casing opposite the pump and communicating with the casing, means for detachably connecting the casing and the container, the casing having a chamber for articles between the pump and the container and communicating with the container, the pump being provided with a valve-controlled inlet communicating with the container and also having a valve-controlled outlet for directing fluid into said chamber, means to detachably sustain an article in the chamber in position to receive cleaning fluid pumped thereto through said outlet and a perforated plate between the pump outlet and the casing chamber above the articles therein for the flow of small streams of cleaning fluid under pressure against the article to be cleaned within the chamber.

2. An apparatus as set forth in claim 1, in which the casing has a chamber located over the perforated plate and communicating with the fluid outlet from the pump.

3. An apparatus of the character set forth comprising a casing provided with a pump on one side, a container on the side of the casing opposite the pump and communicating with the casing, means for detachably connecting the casing and the container, the casing having a chamber communicating with

the container, the pump being provided with a valve-controlled inlet communicating with the container and also having a valve-controlled outlet for directing fluid into said chamber, the chamber being provided with a side opening, and a retainer for articles adapted to be passed through said opening and located within said chamber for retaining articles in position to receive fluid under pressure through the outlet from the pump.

4. An apparatus as set forth in claim 3, in which the retainer is provided with clamping jaws to engage an article to be cleaned.

5. An apparatus as set forth in claim 3, in which the retainer is provided with clamping jaws to engage an article to be cleaned, one of said jaws being movable, a rod slidably carried by the retainer and attached to the movable jaw, and a spring for resiliently pressing the movable jaw toward the other jaw for retaining the article in position to receive fluid from the pump.

6. A cleaning apparatus of the character set forth comprising a pump, a container to

supply the pump with cleaning fluid, means to detachably connect the container with the pump, and means to retain an article to be cleaned in position to receive fluid from the pump for passage of said fluid with accumulated dirt from the articles to the container, and a strainer within the container and having an open top to receive fluid and accumulated dirt from the article being cleaned.

7. A cleaning apparatus of the character set forth comprising a pump, a container to supply the pump with cleaning fluid, means to retain an article to be cleaned in position to receive fluid from the pump for passage of said fluid with accumulated dirt from the articles to the container, and a tubular strainer within the container and having an open top to receive fluid and accumulated dirt from the article being cleaned, the casing being provided with means retaining the upper end of the strainer in position in the container.

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