

W. L. & R. C. GREGG.
 SPRAYING DEVICE.
 APPLICATION FILED MAY 16, 1912.

1,047,791.

Patented Dec. 17, 1912

2 SHEETS-SHEET 1.

Fig. 1.

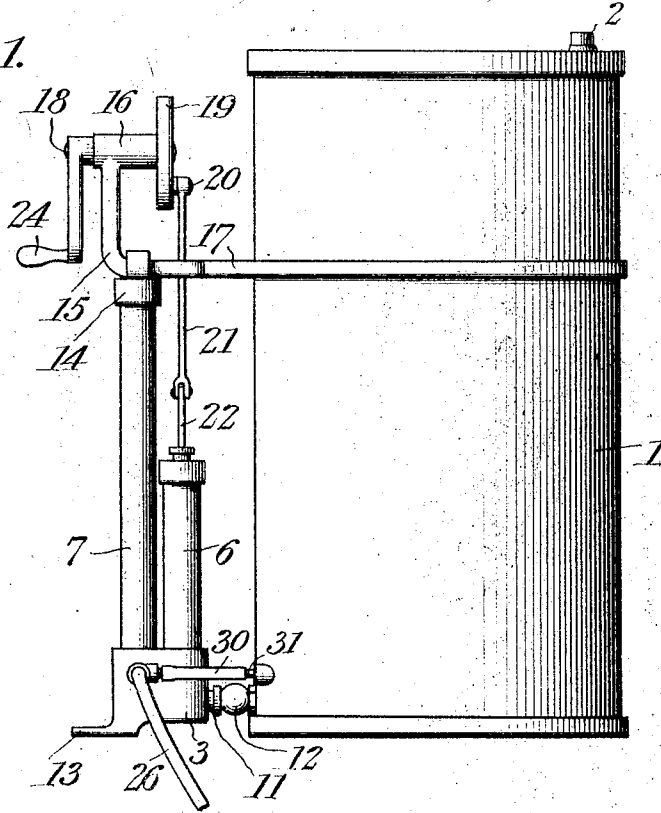
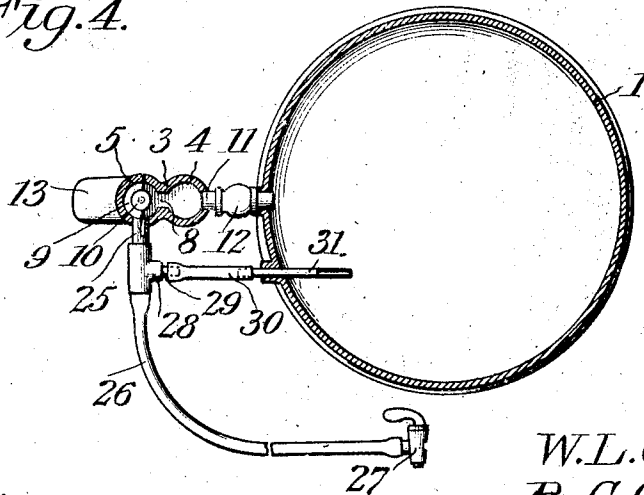


Fig. 4.



Witnesses
Fenton Stelt
C. E. Hunt

Inventors
W. L. Gregg and
R. C. Gregg
 by *A. R. Wilson* & Co.
 Attorneys

W. L. & R. C. GREGG.
 SPRAYING DEVICE.
 APPLICATION FILED MAY 16, 1912.

1,047,791.

Patented Dec. 17, 1912.

2 SHEETS-SHEET 2.

Fig. 3.

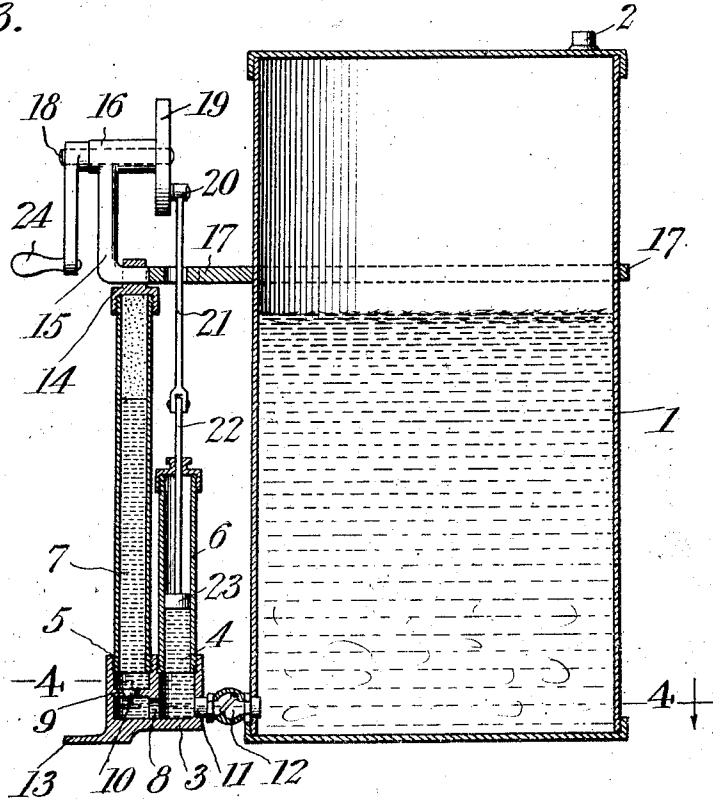
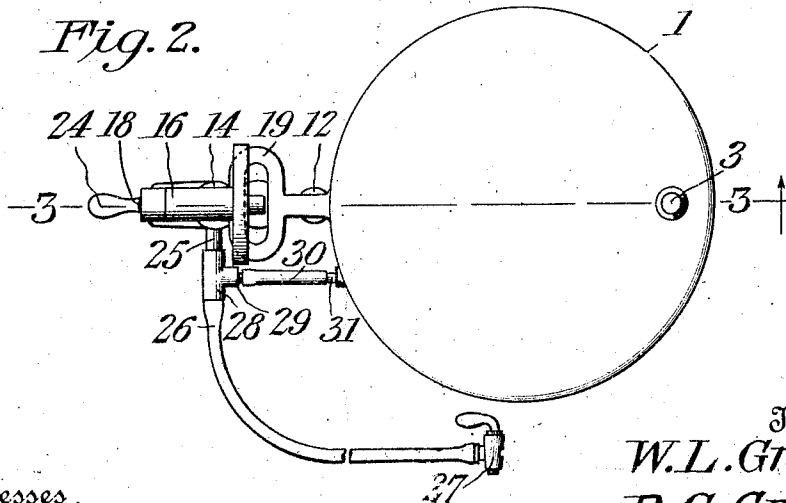


Fig. 2.



Witnesses
Anton Stolt
C. E. Hunt.

Inventors:
W. L. Gregg and
R. C. Gregg
 by *A. B. Wilson & Co*
 Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM LOYD GREGG AND ROSCOE C. GREGG, OF FREDERICKTOWN, OHIO.

SPRAYING DEVICE.

1,047,791.

Specification of Letters Patent. Patented Dec. 17, 1912.

Application filed May 16, 1912. Serial No. 687,696.

To all whom it may concern:

Be it known that we, WILLIAM LOYD GREGG and ROSCOE C. GREGG, citizens of the United States, residing at Fredericktown, in the county of Knox and State of Ohio, have invented certain new and useful Improvements in Spraying Devices; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in spraying devices.

One object of the invention is to provide a device of this character having an improved construction of liquid pumping and discharging mechanism whereby liquid may be drawn from a tank and forcibly ejected in a continuous stream.

Another object is to provide means whereby the contents of the tank are automatically and continuously agitated throughout the spraying operation.

With these and other objects in view, the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings; Figure 1 is a side view of our improved spraying device; Fig. 2 is a top plan view thereof; Fig. 3 is a vertical sectional view taken on the line 3-3 of Fig. 2; Fig. 4 is a horizontal sectional view taken on the line 4-4 of Fig. 3.

Referring more particularly to the drawings, 1 denotes the tank which contains the spraying liquid or solution and which may be of any suitable size and shape, said tank being here shown in the form of a cylindrical container having in its upper end a filling opening which is normally closed by a screw cap 2 or other suitable closure. Secured to the tank 1 and spaced a suitable distance therefrom is a combined pump and air chamber comprising a base section 3 consisting of two sockets 4 and 5 formed integrally with each other and having their upper ends internally threaded as shown. Into the threaded upper end of the socket 4 is screwed the threaded lower end of a pump barrel 6, while in the threaded upper end of the socket 5 is screwed the lower end of an upwardly projecting air chamber 7.

The lower portions of the sockets are connected or communicate with each other by

a connecting port or passage 8 and in the socket 5 above said port is arranged a valve seat 9 with which is engaged a check valve 10. The lower portion of the pump socket 4 is connected by a short pipe 11 with the lower end of the tank 1, and in said pipe 11 is arranged a check valve 12. Cast integrally with the lower end of the socket 5 of the air chamber is a foot plate 13 with which the foot of the operator is engaged for holding the device steady during the pumping and spraying operation. Thus it will be seen that the base 3 not only supports the pump barrel 6 and air chamber 7 in a vertical position in respect to the tank 1 for containing the spraying liquid, but, by its construction the application of the foot of the operator upon the projecting plate 13 the entire apparatus is properly held in position when the same is operated.

The upper end of the air chamber 7 is closed by a suitable cap 14 which is securely fastened on the barrel of the chamber and has formed thereon or securely fastened thereto an upwardly projecting bearing bracket 15 on the upper end of which is a bearing sleeve 16. The cap 14 of the air chamber is securely fastened to the tank 1 by a horizontally disposed bracing band or strap 17 which is engaged with the tank and connected with the cap 14 as shown. Revolvably mounted in the sleeve 16 of the bracket 15 is a pump operating shaft 18 on the inner end of which is fixedly mounted a crank wheel or disk 19 having an eccentrically arranged wrist pin 20 to which is pivotally connected the upper end of an operating rod 21. The lower end of the rod 21 is pivotally connected to the upper end of a piston rod 22 on the lower end of which is fixed the piston 23 of the pump barrel 6. On the outer end of the shaft 18 is fixedly mounted a crank handle or other suitable operating mechanism 24.

Connected with the socket 5 of the air chamber 7 is a discharge pipe or nipple 25 to the outer end of which is adapted to be connected the flexible liquid conducting or spraying pipe 26 which may be of any desired length and has on its outer end a spraying nozzle 27 of any suitable form. Arranged in the discharge pipe or nipple 25 is a T-coupling 28 having a nipple 29 which is connected by a short flexible pipe 30 with an injector nozzle 31 arranged in the lower portion of the tank whereby a portion of the

liquid pumped from the tank is forced back into the same for the purpose of stirring or agitating the contents of the tank as will be hereinafter more fully described.

5 In using the device the pump is operated in the manner described thereby drawing the liquid from the tank through the check valve 12 and forcing said liquid up past the check valve 10 into the air chamber 7, 10 thus compressing the air in the upper portion of the chamber. After the air has been sufficiently compressed by a few revolutions of the pumping mechanism the spraying nozzle 27 may be opened, thus permitting 15 the air compressed in the chamber 7 to force the liquid out through the discharge nipple and spraying pipe and through the nozzle. During this discharge of the liquid it will be understood that the pumping operation is 20 continued, thereby continuously forcing more liquid into the air chamber which will maintain the required pressure therein for expelling the liquid in a continuous stream through the spraying mechanism. A portion 25 of the liquid when thus forced from the air chamber to the spraying mechanism passes through the T-coupling 28 and pipe 30 to the injecting nozzle 31 through which it is forcibly injected in a fine stream into 30 the contents of the tank thus keeping the latter thoroughly agitated as long as the pumping and spraying operation continues. It will be understood that the liquid is forced into the air chamber by the pumping oper- 35 ating much more rapidly than it is expelled therefrom to the spraying mechanism and agitating mechanism so that the pressure of air in the air tank is always maintained and a plentiful supply of liquid is main- 40 tained in the lower portion of the air chamber to provide a continuous discharge of liquid through the spraying mechanism when the spraying nozzle is opened.

From the foregoing description taken in

connection with the accompanying drawings, 45 the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may 50 be resorted to without departing from the principle or sacrificing any of the advantages of the invention as claimed.

Having thus described our invention, what we claim is;

55

A spraying device comprising a tank adapted to contain a liquid, a base comprising two communicating sockets and provided with a foot plate, a tubular member rigidly securing said base to said tank and affording 60 communication therebetween, a check valve in said tubular member, a pump barrel secured in one of said sockets and projecting upwardly therefrom, a compression chamber secured in the other socket and disposed in 65 parallel relation to and extending above the pump barrel, a check valve controlling the communication between said sockets and opening toward the compression chamber, an outlet pipe provided with spraying 70 mechanism connected with said compression chamber, a connection between said pipe and said tank comprising an ejecting nozzle adapted in the operation of the 75 device to deliver a portion of the fluid from said outlet pipe back into the tank, and operating mechanism for said pump having supporting connection with said compression chamber.

In testimony whereof we have hereunto 80 set our hands in presence of two subscribing witnesses.

WILLIAM LOYD GREGG.
ROSCOE C. GREGG.

Witnesses:

G. A. WALTERS,
C. A. BRIGGS.