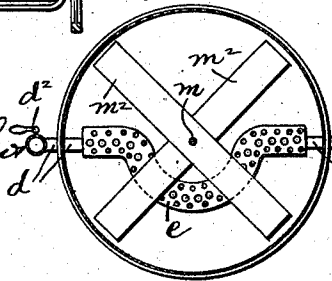
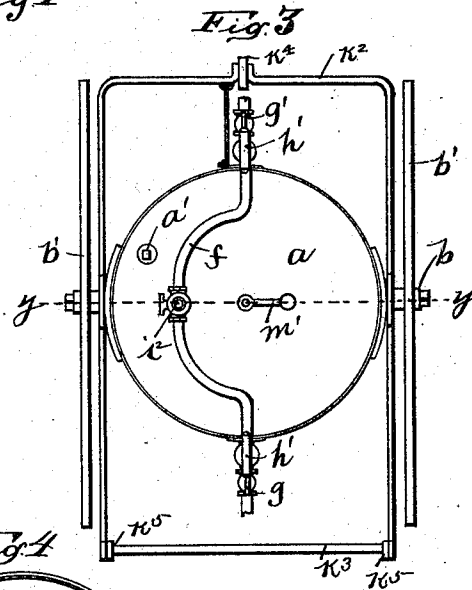
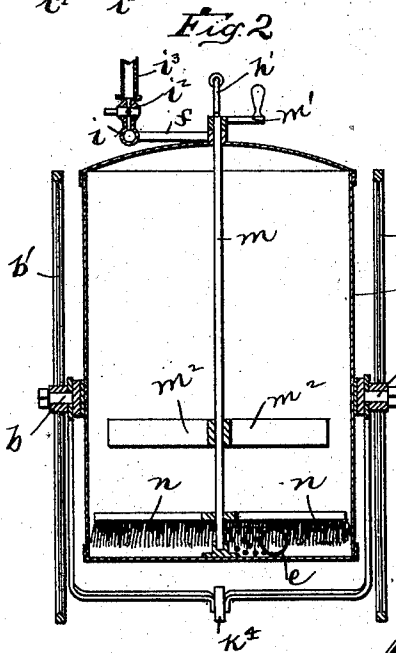
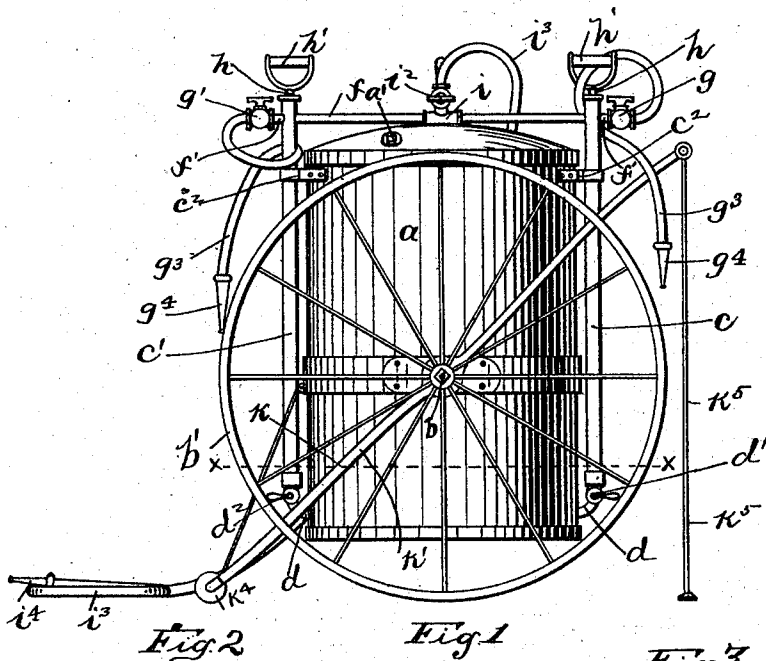


(No Model.)

H. BUSH.
FIRE EXTINGUISHER.

No. 574,019.

Patented Dec. 29, 1896.



WITNESSES:

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HENRY BUSH, OF COLUMBUS, OHIO.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 574,019, dated December 29, 1896.

Application filed August 11, 1893. Renewed May 8, 1896. Serial No. 590,783. (No model.)

To all whom it may concern:

Be it known that I, HENRY BUSH, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Fire-Extinguishers, of which the following is a specification.

My invention relates to the improvement of fire-extinguishers of that class in which a chemical fire-extinguishing mixture is employed.

The objects of my invention are to provide a fire-extinguisher of this class of simple and reliable construction, to admit of the same being so operated as to produce one or more streams of extinguishing fluid, to so construct said device as to admit of its being handled and operated in a convenient and safe manner, to combine with said extinguishing device superior means for cleansing and keeping in working order the openings of the internal discharge or outlet pipe, and to produce other improvements, which will be more specifically pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved fire-extinguisher. Fig. 2 is a central vertical section of the same on line $y y$ of Fig. 3. Fig. 3 is a plan view. Fig. 4 is a transverse section on line $x x$ of Fig. 1.

Similar letters refer to similar parts throughout the several views.

a represents a vertical tank, which is normally closed at its upper and lower ends, said upper end being provided with a suitable supply-opening (indicated at a'). The tank a is, as shown in the drawings, provided on opposite sides with outwardly-projecting trunnions b , the latter having mounted thereon suitable ground-wheels b' , which, as shown in the drawings, serve to support said tank above the ground. At the front and back side of the tank are provided vertical pipes $c c'$, adjacent to and parallel with the tank a , from which they are supported by suitable brackets, as indicated at c^2 .

The lower end portions of these pipes $c c'$ terminate a short distance above the lower end of the tank a , and are connected through the bottom portion of said tank by means of transverse pipes d and an intermediate per-

forated cylindrical chamber e of greater circumference than the pipes d . At the points of connection with the pipes or cylinders $c c'$ and the pipes d I provide suitable cut-off valves $d' d^2$. The pipes or pump-tubes $c c'$ are connected a short distance below their upper ends by means of a transverse pipe f , and on the outer sides of said tubes c are formed short continuations f' of said pipe f , and said extensions are provided with valves $g g'$. These short pipes $f f'$ are also provided on the outer sides of said valves with suitable hose or flexible pipe extensions $g^2 g^3$, the latter having suitable end nozzles.

In each of the pump-cylinders $c c'$ is inserted a suitable pumping-piston or plunger-rod h , the latter being provided in its upper end with a suitable handle h' and with a suitable plunger-head or sucker on its lower end. These pump-cylinders are also provided with any desirable or known form of pump-valves.

In the pipe f I provide a central T-joint- i , in the upturned stem of which is provided a valve i^2 , and on the outer side of said valve is connected one end of a suitable flexible tubing or hose i^3 , having an end nozzle i^4 .

k represents a combined guide and handle frame, which consists, as shown, of two parallel side rods k' , the central portions of which are fulcrumed on the trunnions b and the ends of which are connected by end rods $k^2 k^3$. On the lower end k^2 is mounted one or more small ground-wheels k^4 , while from the upper end k^3 of said frame is swung one or more supporting-rods k^5 , which when dropped to a vertical position and thus caused to rest upon the ground serve to retain the side rods k' of the frame k in the inclined position shown.

As indicated in Fig. 1 of the drawings, the small ground-wheel k^4 is adapted to run upon the ground in front of the machine, while the rod or rods k^5 are adapted to be swung over, when not in use, upon the trunnions between the tank and ground-wheels b' .

As shown more clearly in Fig. 2 of the drawings, the tank a is provided with a central vertical shaft m , the lower end of which is pivotally supported in the tank-bottom, the upper end of which projects through said tank-top and is provided on the outer side of the latter with a suitable crank-handle m' .

Upon this vertical shaft m within the tank is mounted the desired number of radial agitating arms or paddles m^2 , while upon the lower end portion of said shaft m is mounted
 5 the framework of crossed brushes n , the brush fibers or straws of which are adapted when said brushes are rotated, as hereinafter described, to come into contact with the surface of the perforated cylinder or chamber e ,
 10 which is contained within said tank, as hereinbefore described.

The manner of operating and utilizing my device is substantially as follows: The tank a is supplied with any suitable chemical and
 15 liquid mixture which is adapted for use in extinguishing fire, the same being supplied through the opening a' in said tank.

Assuming that the valve connection between the pipes c and d and the valve g is
 20 open, it will be seen that an upward and downward pumping movement of the plunger h' is attained within said pipe c , which will result in a forced discharge of the contents of the tank through the nozzle g^4 of the hose g^2 .
 25 It is also evident that a similar discharge may be made through the hose g^3 by opening the valves d^2 and g' and operating the plunger of the pipe c' . In case it is desired to discharge the fluid from the central hose i^3 the valve
 30 i^2 may be open, thus forming a connection between said hose and the pipe f , which is fed from said pump-cylinders.

It is obvious that I may employ all of the various connections at one time for the discharge of the fluid, if necessary, and that the
 35 power for forcing said fluid from the hose will be attained through the operation of the pumps.

In chemical mixtures for extinguishing
 40 fires it is well known that pipes or similar parts contained within the mixture are often subjected to a coating or deposit from said chemicals, and in order to prevent the openings of the perforated chamber or strainer e
 45 from becoming clogged I provide the brushes n . The method of operating these brushes consists in rotating the shaft m by means of the handle m' , which results, as will readily

be seen, in the flexible brush material being brushed over said perforated chamber in such
 50 manner as to free the perforations thereof from any deposits with which they may have become clogged. By producing this operation of said brushes before the fire-extinguisher is put into use it will be seen that the
 55 perforated cylinder or strainer will be placed in an operative condition, while the material contained in the tank will be thoroughly mixed or agitated through the action of the arms m^2 .
 60

From the construction which I have shown and described it will be seen that a simple, reliable, and effective device is produced for keeping the internal strainer in operative condition and that means are provided for the
 65 discharge of one or more streams of extinguishing fluid from the machine at one time.

It is evident that a machine such as herein described may be produced at a reasonable cost of manufacture and in such a light and
 70 convenient form as to admit of its being readily moved from place to place with but slight power.

Having now fully described my invention, what I claim, and desire to secure by Letters
 75 Patent, is—

In a chemical fire-extinguisher the combination with the tank a , a perforated strainer-cylinder contained therein, pump-cylinders c c' connected with said strainer-cylinder as
 80 described, valves intervening between said pump and strainer cylinders and pumping plunger-rods in said pump-cylinders, of a transverse pipe f connecting the upper portions of said pump-cylinders, hose connections
 85 with the upper portions of said pump-cylinders opposite said pipe f , intervening valves g g' , a central valve in said pipe f and a hose connection with said pipe f on the outer side of said valve, substantially as and for
 90 the purpose specified.

HENRY BUSH.

In presence of—

C. C. SHEPHERD,
 F. A. SIEGEL.