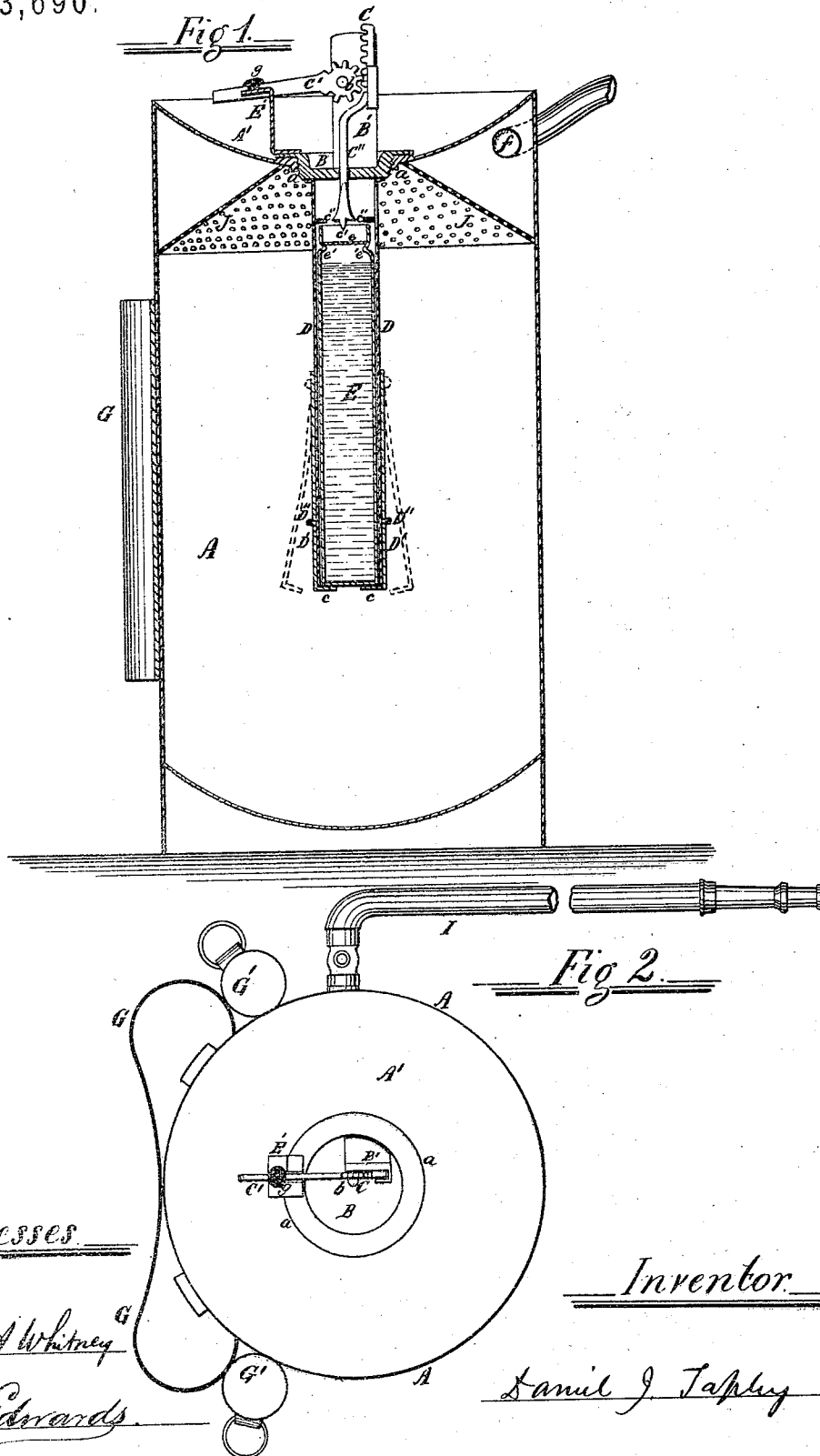


D. J. TAPLEY.
Fire-Extinguishers.

No. 153,690.

Patented Aug. 4, 1874.



Witnesses.

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IMPROVEMENT IN FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. **153,690**, dated August 4, 1874; application filed April 14, 1874.

To all whom it may concern:

Be it known that I, DANIEL J. TAPLEY, of the city, county, and State of New York, have invented certain Improvements in Fire-Extinguishers, of which the following is a specification:

This invention embraces the combination, with the cylindrical shell of a fire-extinguisher, of a bolster or bearing so formed and arranged as to serve the double purpose of pockets for holding attachments, &c., and of providing a knapsack-bearing, so termed, for the said cylindrical shell against or upon the back of the operator when the apparatus is in use. The invention further consists in a novel combination of holding-clamps and a sliding annulus with the vertical sleeve containing the acid-cartridge, whereby the cartridge is positively and rigidly held against the downward thrust necessarily exerted upon the same in the operation of breaking its upper portion when required to liberate the acid in the using of the machine, and thereby preventing that liability of the cartridge to slip from its place which would exist if the same were held in position by a simply elastic support. The invention further includes a sliding breaking-bar for fracturing the top or end of the acid-cartridge when required, constructed with a central point projecting beyond two lateral points in such manner that the entire force of the bar is first concentrated upon a single point to start the fracture, and then brought to bear more widely to effectually complete the same. The invention further consists in a foraminated funnel provided below, and concentric with the inlet or charging orifice of the cylindrical shell of the extinguisher, in such wise as to subserve the twofold function of enabling any residual substance to pass readily to and through the aforesaid opening when the apparatus is inverted for clearing out the latter, and of straining the liquid as it passes to the nozzle in the actual operation of the extinguisher. The invention further consists in a novel combination of parts, whereby express provision is made for the sealing of the moving devices used in the fracture of the acid-cartridge, in such manner that the seal may be very readily and conveniently applied, is protected from liability to accidental injury,

and is caused to indicate without fail any tampering to which the hereinbefore-mentioned moving devices may be subjected.

Figure 1 is a vertical central section of a fire-extinguisher made according to my invention, and Fig. 2 is a plan view of the same.

A is the cylindrical shell of the extinguisher. To one side of this shell is attached the bolster G, formed of sheet metal, and so shaped that its outer surface (taken in cross-section) will more or less resemble the rear side of a knapsack, and, like such side or surface of a knapsack, will present a bearing fitting the back of the wearer, when the apparatus is carried on the person for use, and be thereby kept from an axial or rolling movement, this bolster, moreover, as plainly shown in Fig. 2, having its lateral portions pocket-shaped and closed at bottom, so that a wrench, and also other appliances, may be placed therein against the time of need, the bolster thus serving two distinct but useful functions in the use and management of the apparatus. B is a screw-cap, which closes the inlet-opening of the shell A, and from which depends the sleeve D, which latter is open at its lower end, and of such diameter as to receive easily but snugly the acid-cartridge E. D' are clamps, two or more in number, attached to the sides of the sleeve D; as shown in Fig. 1, and with their lower ends c turned inward to form studs or shoulders, which, when the clamps are brought close to the sleeve, will project inward under the lower end of the cartridge to retain the same against downward movement. The clamps have preferably a spring-like action in an outward direction, and have fitted over or upon them an annulus, D''.

When this annulus is moved upward it releases the clamps, and permits them to spread outward to permit the cartridge to be thrust upward to its place in the sleeve. When the annulus is forced downward, it brings the clamps inward, with their lower ends underneath the cartridge, to hold the same in place, as just hereinbefore explained. It will, therefore, be particularly noted that the cartridge is supported by a positive, fixed, and rigid support, which, when the cartridge is broken, as hereinafter fully set forth, holds the said cartridge against the downward thrust of the

breaking devices, thereby avoiding that liability on the part of the cartridge to slip from its place unbroken which exists when it is sustained only by an elastic or yielding support.

The top of the shell A is made concave, the purpose of which will presently herein more fully appear. Were no provision made to provide against it, the top portion of the interior of the shell A would comprise the sharply-defined circumferential portions immediately below the top A', and in this all residual matter would lodge, when, after a use of the extinguisher, the removal of such matter through the inlet-opening of the shell is sought. To provide against this a foraminated funnel, J, is fixed beneath the top A', and concentric with the aforesaid opening. When the latter is open, from the removal of the screw-cap B, and the shell A inverted, the residual matter is conducted direct to the opening by the funnel, which, in the normal use of the apparatus in extinguishing fire, serves the other and subsidiary purpose of straining the liquid as it issues to the hose or nozzle.

Extending through a slot in the screw-cap B is the breaking-bar C'', which moves in a guide supported by a standard, B', attached to the screw-cap, the said bar being furnished with a rack, C, at its upper end, into which gears a toothed sector, b, on the end of a horizontal lever, C', pivoted to the standard B', so that by lifting said lever the bar C'' will be forced downward to crush in the top of the acid-cartridge E, as required for the actual operation of the extinguisher, and the object of which, being well known, needs no particular description here. The lower extremity of the bar C'' has a central point or spur, c', which projects beyond two other and laterally-situated spurs, c'', also provided on said extremity. When the bar is forced downward, as explained, its entire power is concentrated upon the central point c', which starts the fracture of the glass, and this being done, the action following of the lateral spurs or points c'' extends the area acted upon, and spreads the fracture to permit the immediate and full outflow of the acid much more speedily and with a smaller expenditure of power than could otherwise be done. E' is a horizontal seat formed on the upper end of an arm projecting vertically from the screw-cap B. This seat E is in close proximity to the outer end of the lever C', when the latter is depressed, as shown in Fig. 1, so that a seal, g, of sealing-wax may

be applied to both, connecting them together in such wise that any tampering with the machine by lifting the lever, which would result in breaking the cartridge and charge the extinguisher to full pressure when not required, will be indicated by the fracture of the aforesaid seal. It will furthermore be seen that as the bar C'', standard B', sector b, lever C', seat E, and seal g are all carried by the screw-cap B, the aforesaid parts will act in conjunction for the purpose set forth, irrespective of the particular position of the screw-cap when screwed in its place; and, furthermore, it should be especially noted that, the said devices being arranged as described, and for the most part situate or sunken in the concave upper end of the shell A, the elevated circumferential portions of said shell are availed of to serve as a guard to materially protect the said devices from accidental injury or casual and undesigned movement of the lever.

What I claim as my invention is—

1. The combination, with the shell A, of the bolster G, formed and provided to serve the double purpose of pockets and of a knapsack-bearing, substantially as and for the purpose set forth.

2. The combination of the clamps D' and sliding annulus with the sleeve D, provided to receive the acid-cartridge, whereby the said cartridge is positively and rigidly held against the thrust of the breaking-bar, substantially as herein set forth.

3. The sliding breaking-bar C'', constructed with the central point or spur c' and the lateral points or spurs c'', whereby the fracture of the acid-cartridge is started by the former, and spread and completed by the latter, substantially as herein set forth.

4. The foraminated funnel J, fixed below and concentric with the inlet-opening of the cylindric shell A, and serving the double purpose of an outlet-funnel and a strainer, substantially as herein set forth.

5. The combination, within the concave top of the shell A, of the seat E' and seal g with the lever C', pivoted to the standard B', and actuating the breaking-bar C'' through the medium of the toothed sector b and rack C, the said parts being carried by the screw-cap B, substantially as and for the purpose set forth.

D. J. TAPLEY.

Witnesses:

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