

No. 631,570.

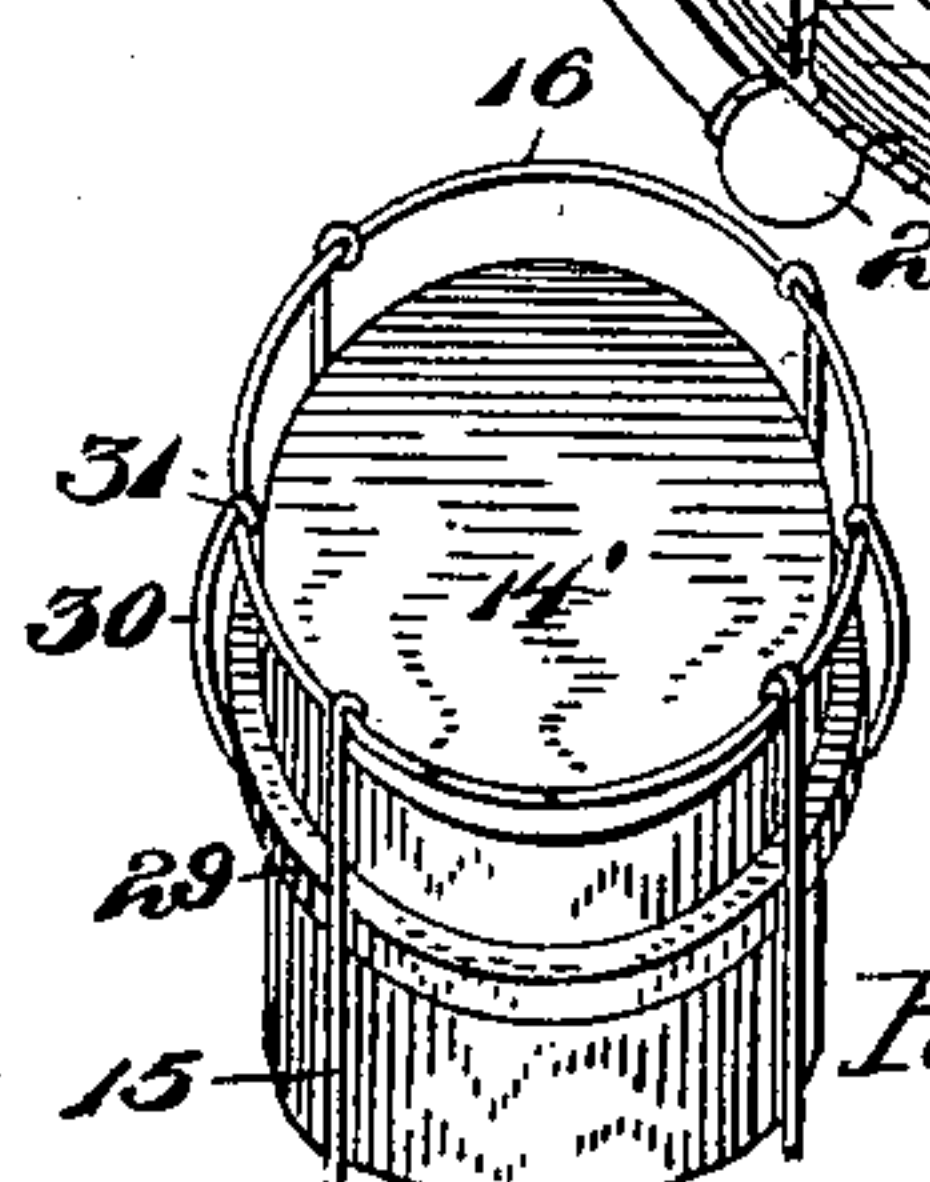
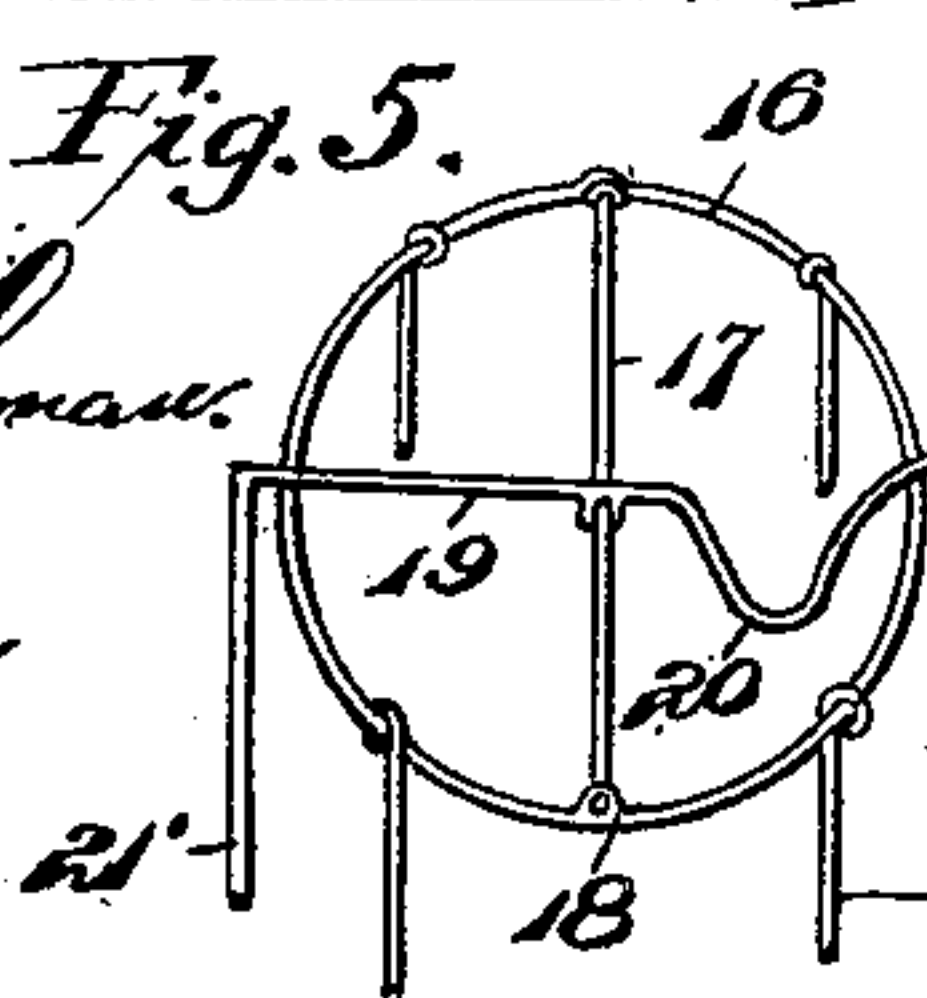
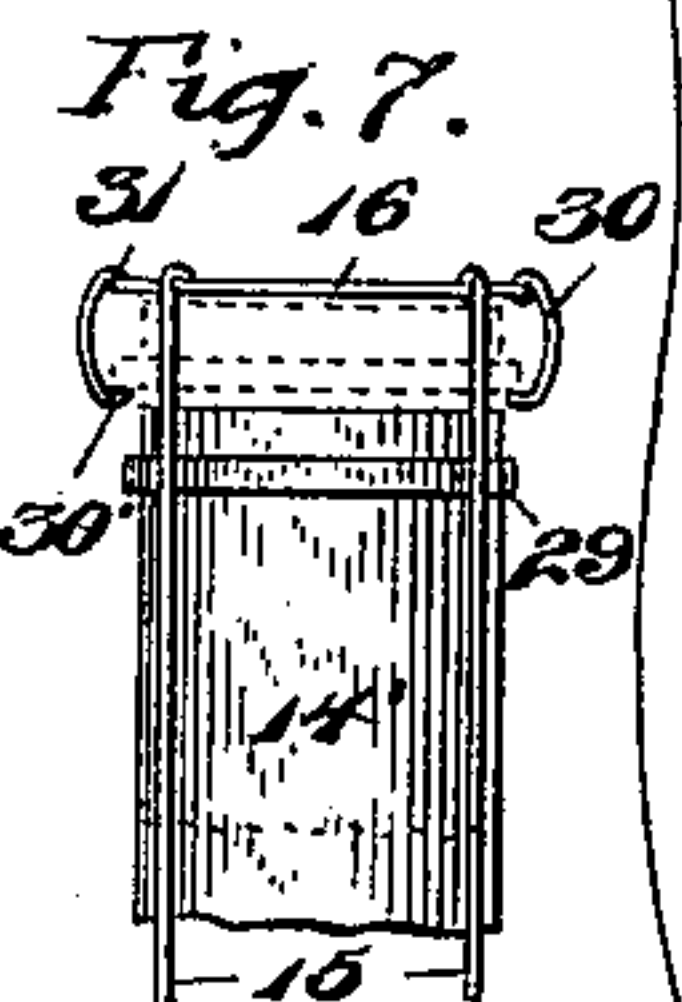
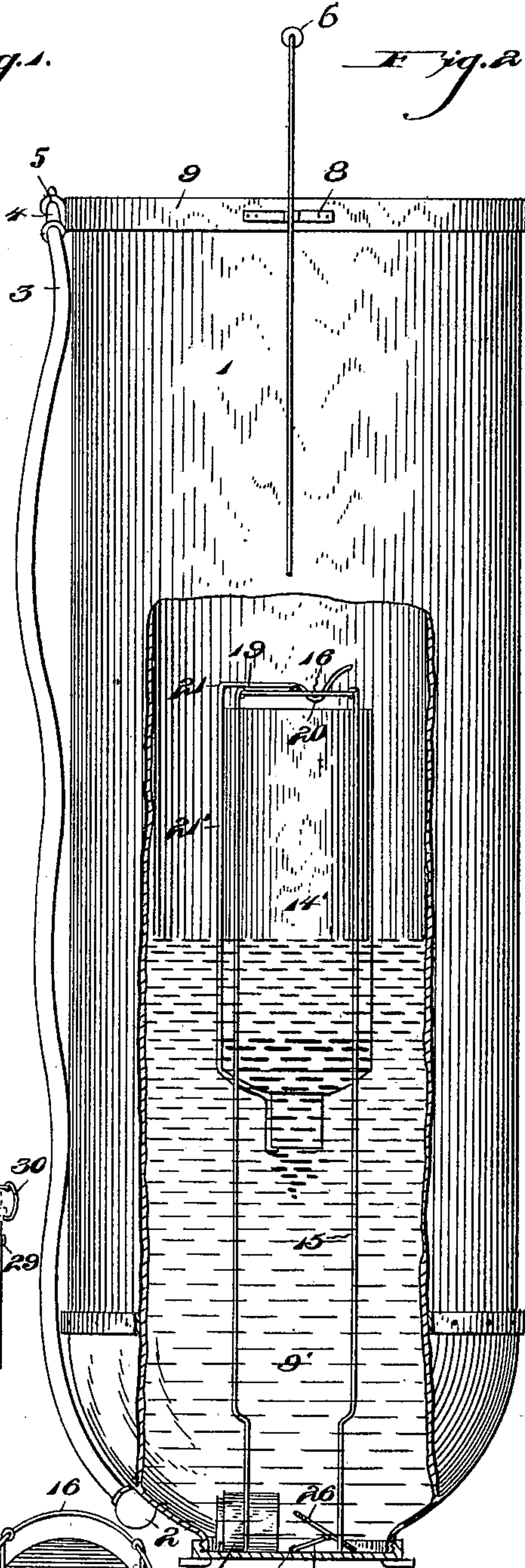
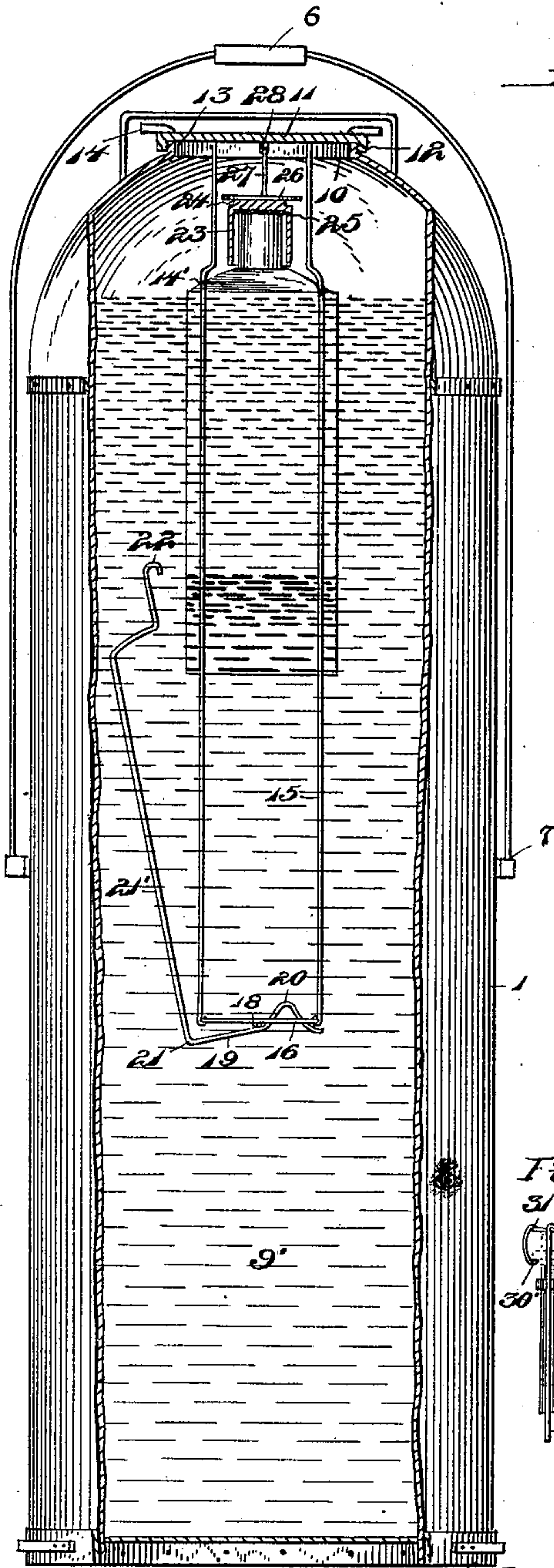
Patented Aug. 22, 1899.

T. F. HANDLY.
FIRE EXTINGUISHER.

(Application filed July 13, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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2 Sheets—Sheet 2.

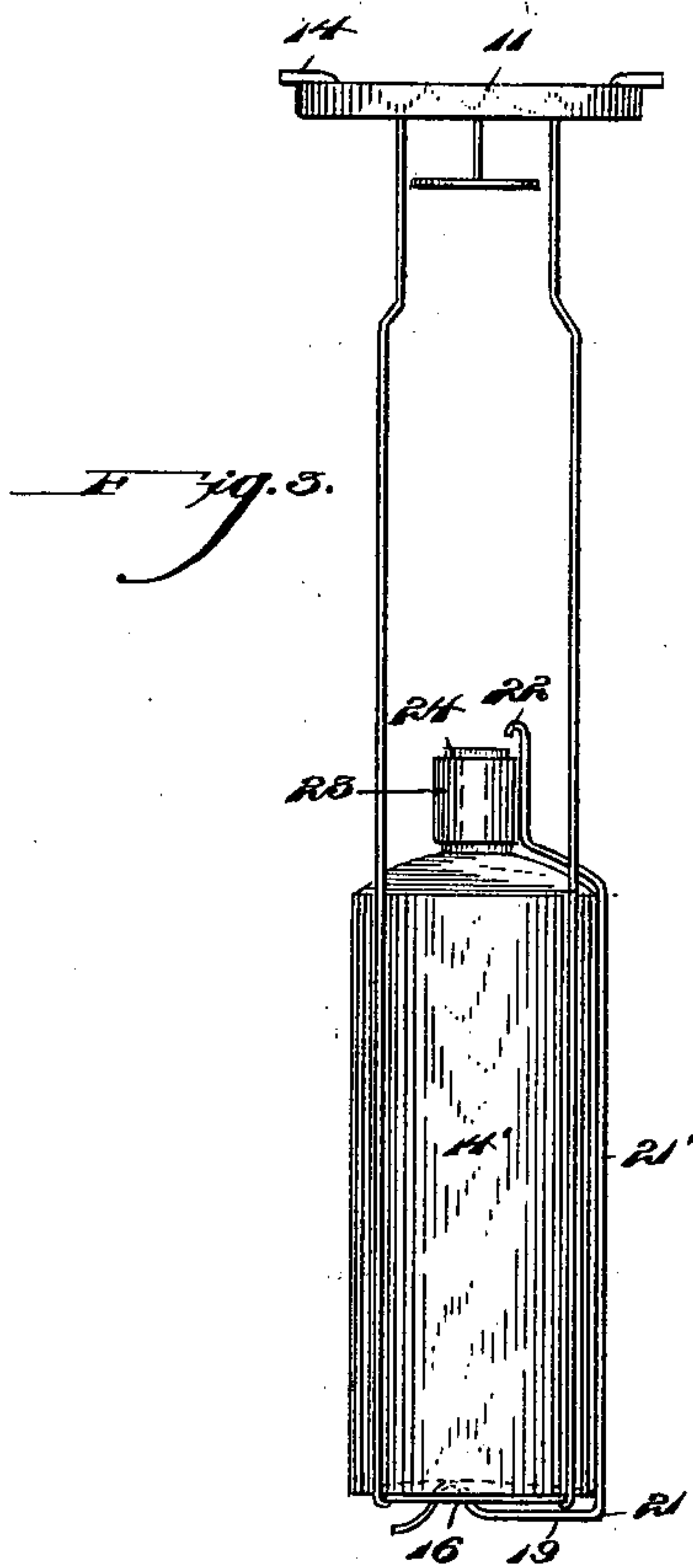


Fig. 4.

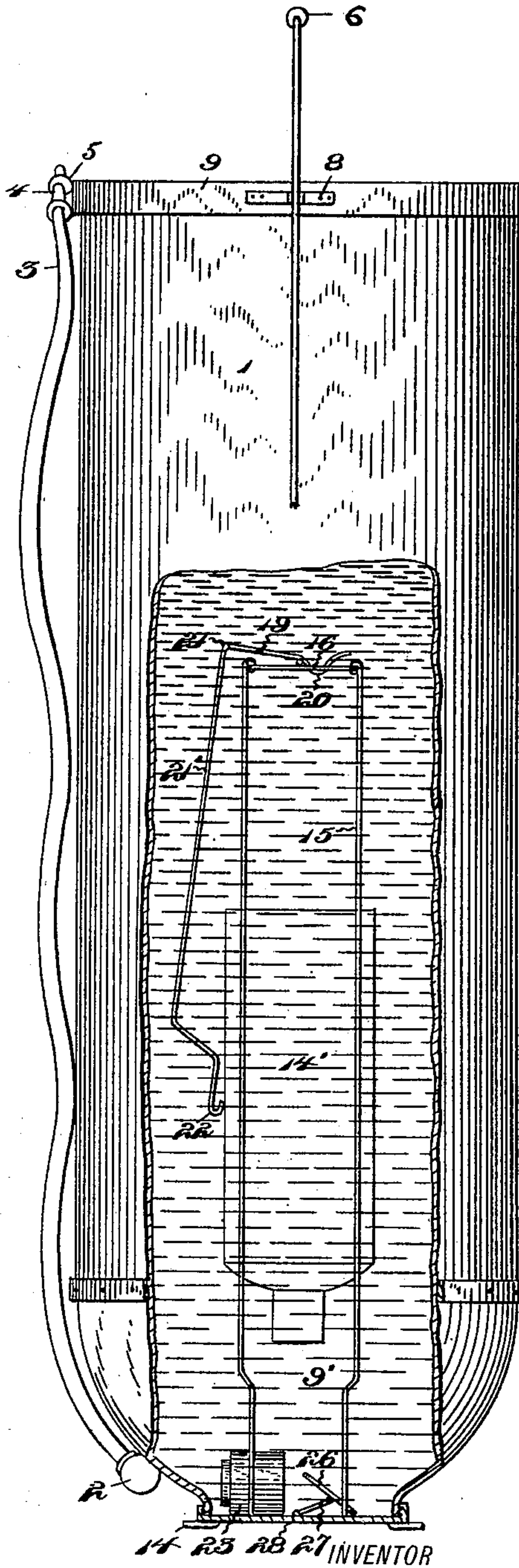
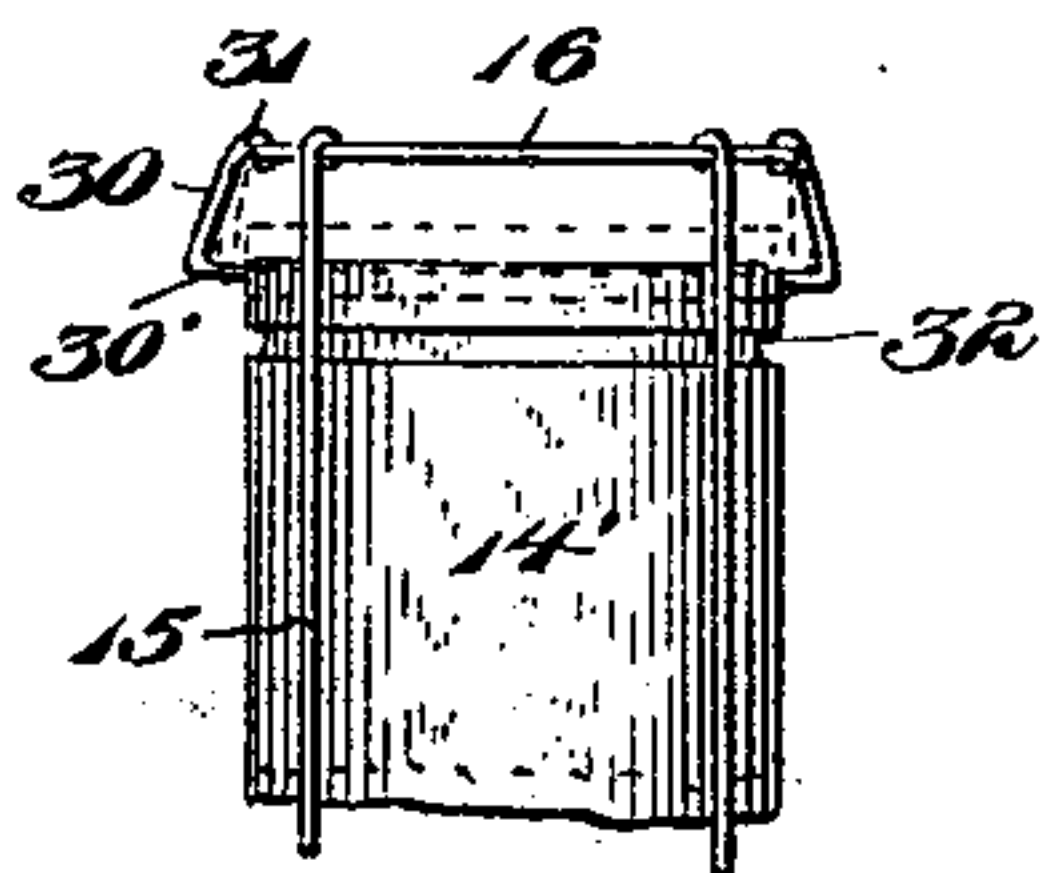


Fig. 8.



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UNITED STATES PATENT OFFICE.

THOMAS F. HANDLY, OF ALLEGHENY, PENNSYLVANIA.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 631,570, dated August 22, 1899.

Application filed July 13, 1898. Serial No. 685,815. (No model.)

To all whom it may concern:

Be it known that I, THOMAS F. HANDLY, a citizen of the United States of America, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Fire-Extinguishers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to certain new and useful improvements in fire-extinguishers.

My invention particularly relates to that class of fire-extinguishers wherein the expelling and extinguishing gas is generated by the inversion of the same.

The principal object of my invention is to obtain the complete neutralization of the acid in connection with the alkaline solution and the thorough commingling of the gas with the alkaline solution to obtain the desired extinguishing result when the solution is expelled from the extinguisher.

My invention consists in my novel means for suspending the acid-receptacle in the desired position when the extinguisher is inverted, so that the acid contained therein will be discharged into the alkaline solution and the desired quantity of expelling-gas and extinguishing-gas will be generated, and when the extinguishing agent is expelled from the extinguisher it will be thoroughly impregnated with the extinguishing-gas.

In my copending application, Serial No. 683,552, filed June 16, 1898, claims covering an extinguisher-receptacle provided with a floating acid-receptacle mounted in a cage, so that when the extinguisher-receptacle is inverted the acid-receptacle will float upwardly, and a suitable sealing means for the acid-receptacle are incorporated. Therefore claims including these elements only have been omitted in this application.

My invention further consists in my novel suspending means for the acid-receptacle, which, owing to its shape and the operating-bar formed integral therewith, will not prevent the floating acid-receptacle from rising through the alkaline solution to abut against the securing means for the cup stopper or seal when the extinguisher is in an upright position, but when the extinguisher is inverted will securely hold the floating acid-receptacle

in the desired position to allow the discharging of the acid therefrom contained therein.

My invention further consists in the novel combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings, and particularly pointed out in the claims hereunto appended.

In the drawings, Figure 1 is a side elevation of my improved fire-extinguisher, partly in section, showing the position of the floating acid-receptacle and suspending device therefor when not in use. Fig. 2 is a side elevation of my improved fire-extinguisher, partly in section, showing the position of the floating acid-receptacle and suspending device therefor when the extinguisher is inverted and ready for use. Fig. 3 is a side view of the cage containing the floating acid-receptacle, showing the position of the suspending device. Fig. 4 is a side elevation of my improved fire-extinguisher when inverted, showing the float as it rises through the alkaline solution and the position of the suspending device for the receptacle during such operation. Fig. 5 is a perspective view of a portion of the cage when inverted, showing the formation of the operating-bar of the suspending device for the acid-receptacle. Fig. 6 is a perspective view of a modified form of suspending device for the acid-receptacle. Fig. 7 is a side view thereof. Fig. 8 is a side view of a modified form of suspending device for the acid-receptacle.

Like numerals of reference indicate corresponding parts throughout the several views of the drawings.

Referring to the drawings, 1 indicates my improved extinguisher-receptacle, which is constructed of any suitable metallic material and has an outlet 2 formed in the top thereof. The outlet 2 has suitably connected thereto a discharge-pipe 3, which has a suitable nozzle 4 attached to its free end. The discharge-pipe 3 is adapted to be secured when not in use in the catch 5, formed on the periphery of the extinguisher-receptacle, by insertion between the catch of the nozzle 4. The extinguisher-receptacle is also provided with a handle 6, the ends of which are pivotally secured to the sides thereof, as at 7, and the handle 6 is adapted to be secured in the spring-catch 8, formed on the periphery of the sup-

porting-rim 9 at the bottom of the extinguisher-receptacle when the same is inverted.

9' indicates the alkaline solution contained in the extinguisher-receptacle.

5 The top of the extinguisher-receptacle has a mouth or opening therein, as at 10, for the admission thereto of the alkaline solution 9'. The mouth or opening 10 is sealed by a plate 11, which has a screw-threaded collar formed
10 integral therewith, as at 12. This collar is adapted to be secured to the periphery of the wall of the extinguisher-receptacle at its mouth, as at 13, which is screw-threaded at that point.

15 14 are handles or extensions formed integral with the upper face of the plate 11 for assistance in securing and removing the same to and from the extinguisher-receptacle.

Secured to the inner face of the plate 11 is
20 the cage for holding and guiding the floating acid-receptacle 14', (the heavy broken lines indicating the acid contained therein.) The cage is constructed of a series of metallic rods 15, and the rods are of the desired length.
25 Secured to the ends of the rods 15 is a ring 16 for rigidly holding the same in the desired position.

17 is a cross-bar which is secured to the ring 16 at its center, as at 18, for bracing or
30 strengthening the ring, and it has pivotally mounted thereon the operating-bar 19 of the suspending device, a part of said operating-bar being convexed, as at 20, and the end of this convexed portion of the operating-bar
35 extends over the ring 16 to limit the movement of the operating-bar. Formed integral with the operating-bar, as at 21, is the suspending device or rod 21', which is bent to conform to the shape of the acid-receptacle
40 and extends slightly above the mouth of the same. The suspending device or rod at this point is bent in the form of a hook, as at 22, which is adapted to catch or secure the acid-receptacle at its neck to securely hold the
45 same in the desired position when the extinguisher is inverted.

The rods 15 are of such flexibility that the same can be easily sprung apart to insert the acid-receptacle, and when the receptacle has
50 been placed between the rods they immediately resume their vertical position.

Owing to the formation of the operating-bar of the suspending device, when the bottom of the receptacle comes in contact there-
55 with the suspending-rod 21' is always in alignment with the rods 15.

23 is a cup-stopper for sealing the acid-receptacle when not in use. This cup-stopper is formed larger than the neck of the acid-
60 receptacle, so the same can be immediately released therefrom when the extinguisher is inverted. The top 24 of the cup-shaped stopper has secured to its lower face a piece of mica 25, or other suitable material, so that
65 when the cup-shaped stopper is forced against the neck of the acid-receptacle, a perfect seal is formed, thereby preventing any moisture

commingling with the acid contained in the receptacle. The plate 26 is secured to a rod 27, which is pivotally connected, as at 28, to
70 the inner face of the plate 11. It will be readily apparent, owing to the rod 27 being pivotally secured to the plate 11, that when the extinguisher is inverted the receptacle will not carry the cup-stopper with it as it
75 rises, because as soon as the acid-receptacle leaves the cup-stopper the plate 26 will fall to one side and the cup-stopper will fall therefrom, as shown in Figs. 2 and 4.

In Figs. 6 and 7 I have shown a modified
80 form of suspending means for the acid-receptacle, which consists of forming on the acid-receptacle, near its bottom, a circular flange 29, which is adapted to be engaged by a series of rods 30, having hooks 30' formed on
85 their free ends to catch onto the upper face of the flange 29 when the receptacle rises toward the ring 16. The rods are pivotally secured to the ring 16, as at 31.

In Fig. 8 I have shown another modified
90 form of acid-receptacle, which consists in forming a groove 32 in the receptacle a suitable distance from the bottom thereof, which is adapted to receive the hook ends 30' of the rods 30, which will suspend the acid-recep-
95 tacle in the desired position.

It is readily apparent from the foregoing description, taken in connection with the accompanying drawings, that a complete neu-
100 tralization of the acid and alkaline solution will take place, owing to the operation of the floating acid-receptacle.

In devices of this character to obtain the desired result they should be charged with the exact quantity of acid and alkaline solu-
105 tion, and if the same is not thoroughly commingled the expelling and extinguishing gas will not be generated in the desired quantity to obtain satisfactory results. This proper result is obtained from the operation of my
110 acid-receptacle, as the proper amount of acid is always discharged therefrom at the desired point into the alkaline solution.

Owing to the simplicity of my improved fire-extinguisher no further explanation is
115 thought necessary.

It may be noted that various changes may be made in the details of construction with-
120 out departing from the general spirit of my invention.

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

1. In combination, an extinguisher-receptacle, a cage suitably arranged therein, a float-
125 ing acid-receptacle mounted in the said cage, and means connected to the said cage for suspending the acid-receptacle when the extinguisher-receptacle is inverted, substantially as set forth.
130

2. In combination, an extinguisher-receptacle, a cage suitably arranged therein, a float-
ing acid-receptacle mounted in the said cage, a cup-shaped stopper for the said receptacle,

means for sealing the said acid-receptacle operating against the said stopper when the acid-receptacle is in an upright position, and means for suspending the said acid-receptacle when the same is in an inverted position, substantially as set forth.

3. In combination, an extinguisher-receptacle adapted to receive an alkaline solution, a cage arranged in the said receptacle, a floating receptacle containing acid mounted in the said cage, a suspending-rod suitably connected to the said cage, and means operated by the said acid-receptacle for causing the suspending-rod to engage the acid-receptacle and suspend the same in the alkaline solution to allow of the discharge of the acid contained therein when the extinguisher-receptacle is inverted, substantially as set forth.

4. The combination of an extinguisher-receptacle adapted to receive a suitable solution, a cage arranged therein, a floating receptacle containing a suitable fluid mounted in the said cage, a stopper for the said receptacle, means operating against the said stopper for sealing the said floating receptacle when in an upright position, a suspending-rod, and means formed integral with the suspending-rod and operated by the said floating receptacle for bringing the suspending-rod into engagement with the floating receptacle

and suspend the same in the first-named solution to allow of the discharge of the solution contained therein when the extinguisher-receptacle is inverted, substantially as set forth.

5. The combination of an extinguisher-receptacle, a floating acid-receptacle suitably arranged therein, and means operated by the said acid-receptacle adapted to engage and suspend the same when the extinguisher-receptacle is inverted, substantially as set forth.

6. The combination of an extinguisher-receptacle, a cage suitably arranged therein, an acid-receptacle mounted in the said cage, sealing means for the said acid-receptacle when the extinguisher-receptacle is in an upright position, a suspending-rod for the said acid-receptacle, and an operating-bar adapted to be operated by the said acid-receptacle when the extinguisher-receptacle is inverted for causing the suspending-rod to engage the acid-receptacle and suspend the same, substantially as set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

THOMAS F. HANDLY.

Witnesses:

JOHN NOLAND,
E. W. ARTHUR.