No. 661,215. Patented Nov. 6, 1900.

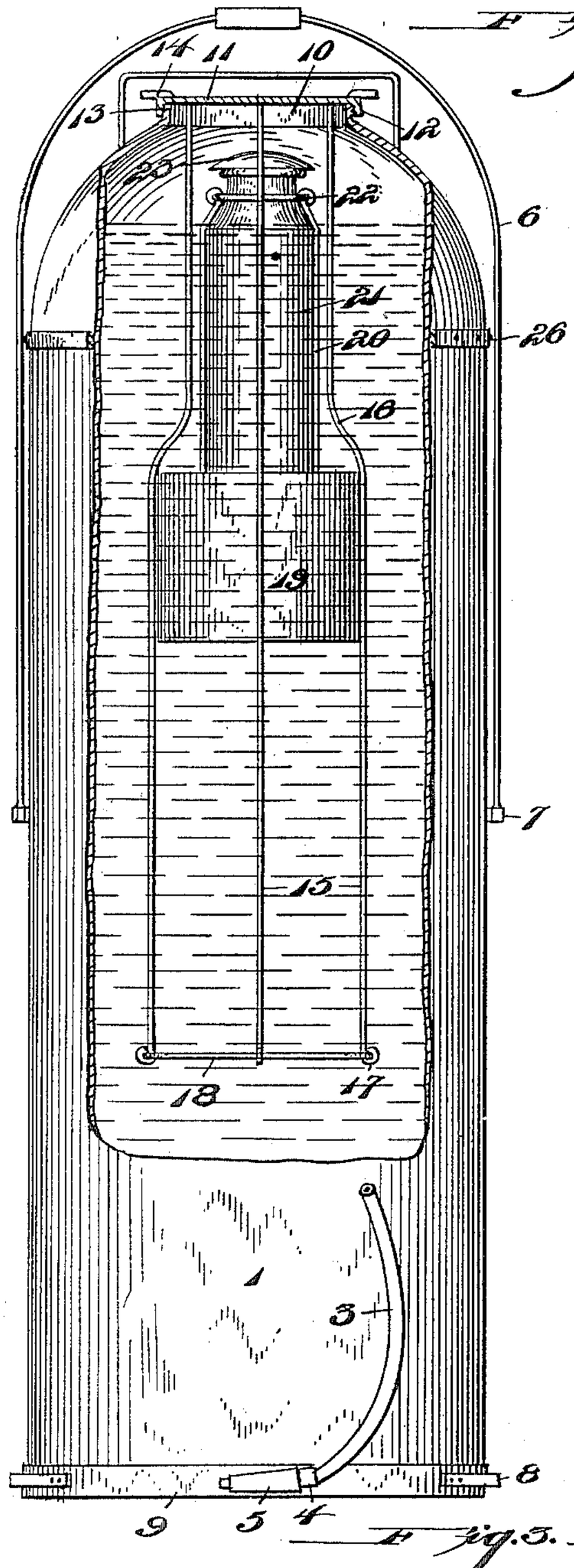
T. F. HANDLY.

FIRE EXTINGUISHER.

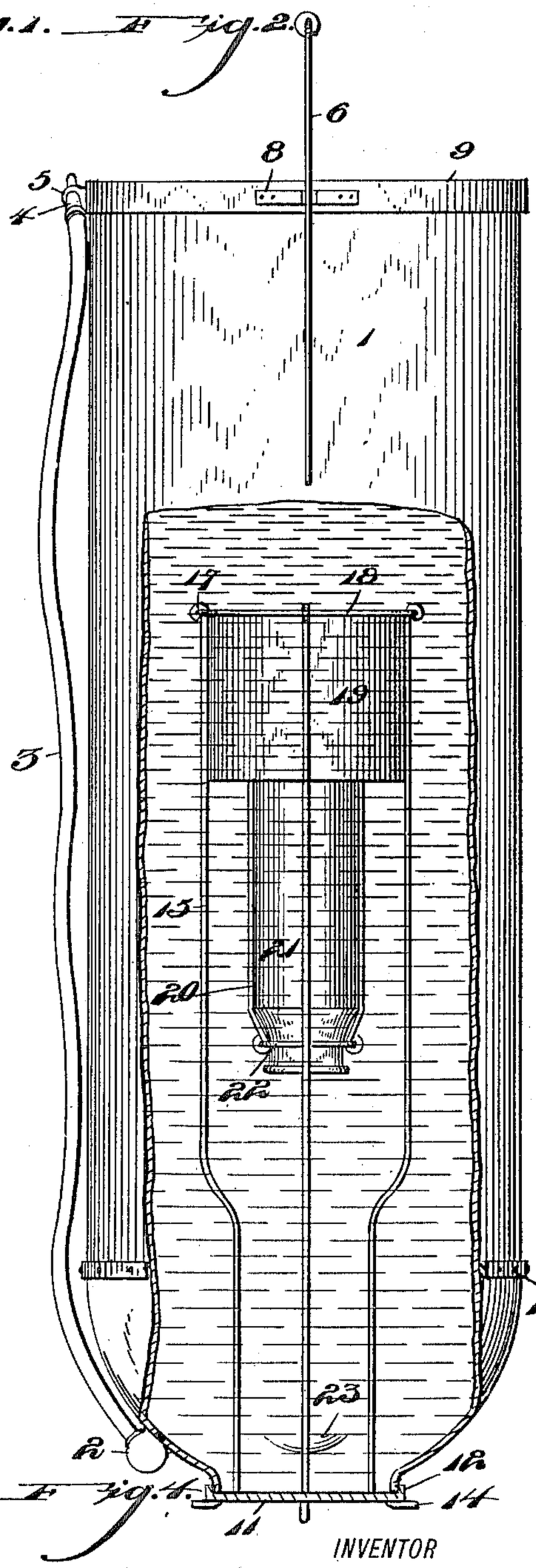
(Application filed June 16, 1898.)

(No Model.) 2 Sheets—Sheet 1.

F fig. 1.



F fig. 2.



F fig. 3.

F fig. 4.

WITNESSES:

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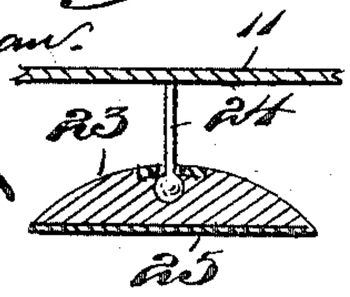

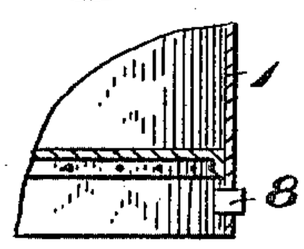

INVENTOR

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No. 661,215. Patented Nov. 6, 1900.

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FIRE EXTINGUISHER.

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(No Model.) 2 Sheets—Sheet 2.

Fig. 5.

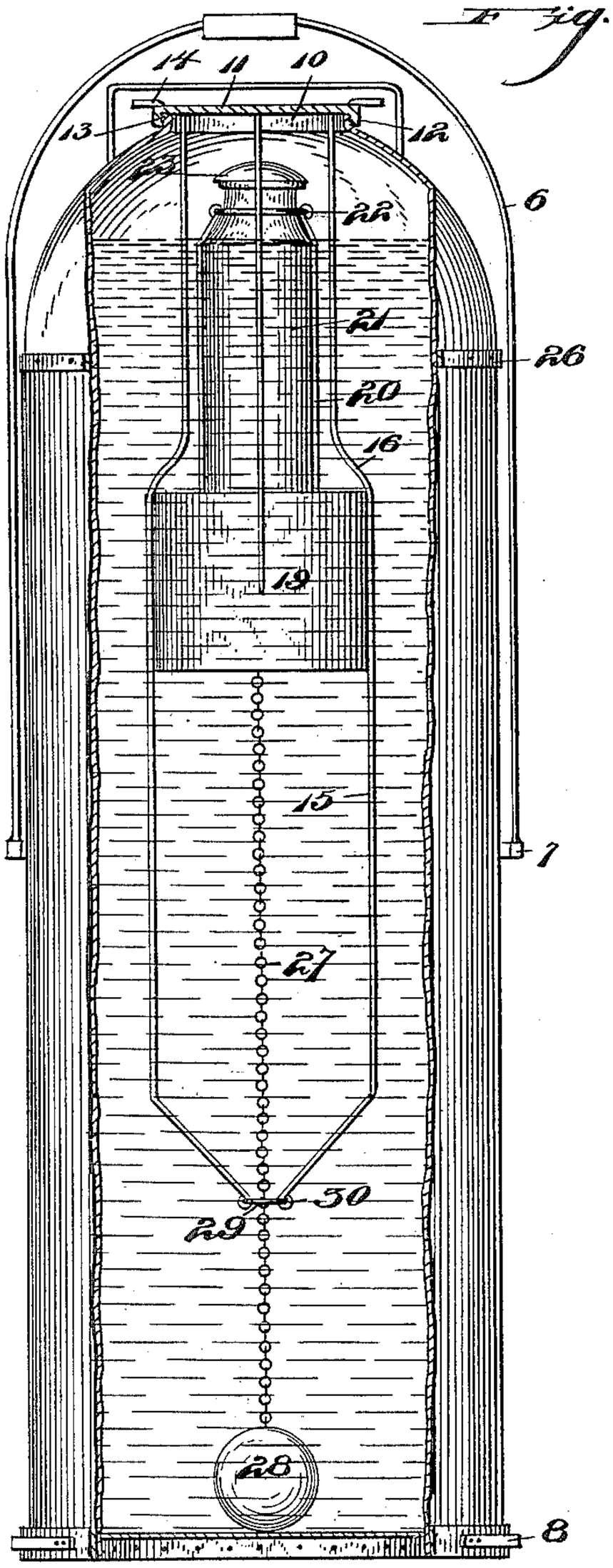

Fig. 6.

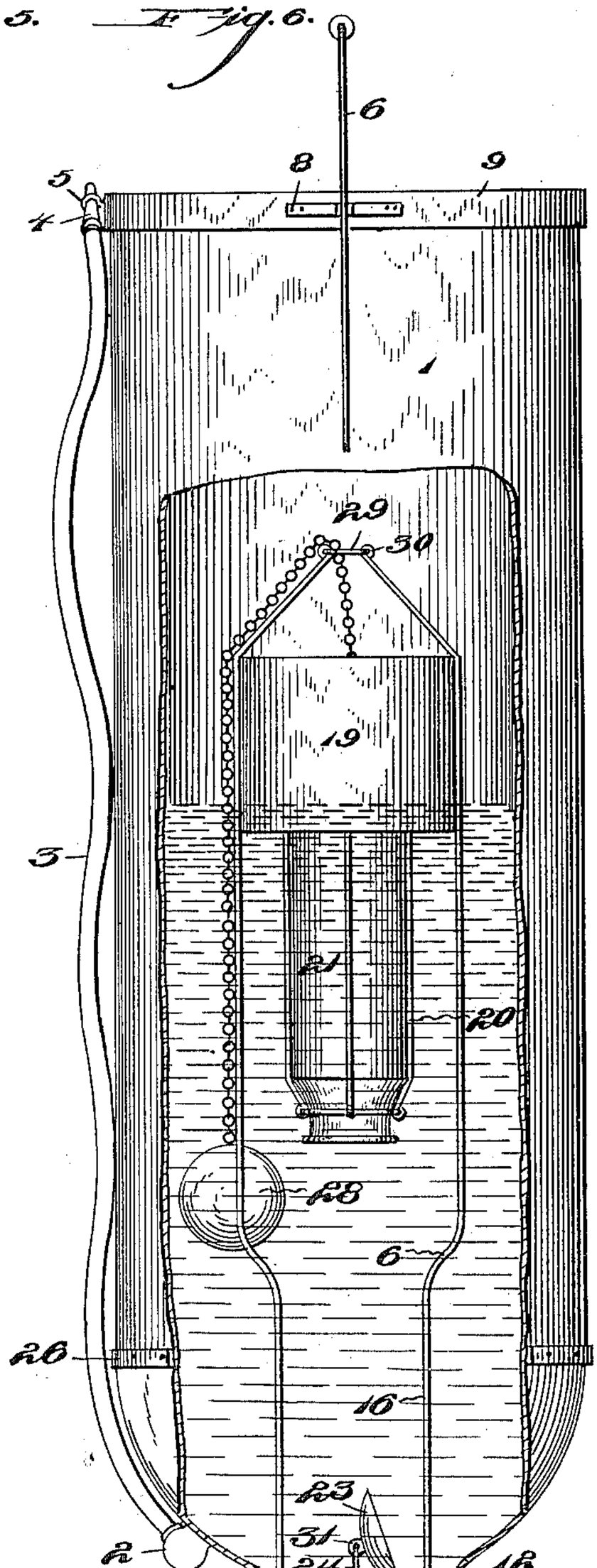

Fig. 7.

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UNITED STATES PATENT OFFICE.

THOMAS F. HANDLY, OF ALLEGHENY, PENNSYLVANIA.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 661,215, dated November 6, 1900.

Application filed June 16, 1898. Serial No. 683,552. (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 chemical fire-extinguishers.

The invention aims to provide an extinguisher-receptacle charged with a suitable fluid with a floating vessel carrying acid or other suitable chemical and which is mounted in such a manner that on the inversion of the receptacle the acid will be discharged into the fluid, thoroughly impregnating the same, and form an extinguishing solution. It is well known that different acids and alkaline solutions when commingled will form a gas which is suitable for use in fire-extinguishers of this class and which is used for the expelling force for the solution and also the extinguishing-gas when carried to the seat of combustion. In many devices which have been designed for this purpose trouble has been experienced in securing a discharge of the acid into the alkaline solution in a manner to obtain a thorough neutralization of the acid and solution and the generating of the requisite amount of gas to accomplish the result desired.

My invention aims to overcome the heretofore-mentioned unsatisfactory results by providing the extinguisher with a float of sufficient buoyancy having secured thereto an acid-receptacle, which when the extinguisher is not in use is sealed by a suitable sealing means, hereinafter more fully described. When the extinguisher is inverted, the float will rise with the receptacle through the alkaline solution to the desired position, which fully insures the discharging of the acid into the alkaline solution, thoroughly neutralizing the same and generating the necessary amount of gas, and as the solution is discharged from the extinguisher the same will have attained its desired efficiency owing to containing the full quota of the necessary extinguishing-gas.

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.

In the drawings, Figure 1 is a side elevation of my improved fire-extinguisher, partly in section, showing the float and acid-receptacle in position when not in use. Fig. 2 is a side elevation of my improved fire-extinguisher, partly in section, showing the float and acid-receptacle in position for use when the extinguisher is inverted. Fig. 3 is a longitudinal sectional view of one form of sealing-cap for the acid-receptacle. Fig. 4 is a vertical sectional view of a portion of the casing, showing the spring-catch for the handle when the extinguisher is inverted. Fig. 5 is a side elevation of my improved fire-extinguisher, partly in section, showing a modified form of cage, with the chain and weight attached to the float in position when not in use. Fig. 6 is an inverted view, in side elevation, of the form of extinguisher shown in Fig. 5, showing the acid-receptacle in the elevated position. Fig. 7 is a modified form of sealing-cap for the acid-receptacle.

Like numerals of reference indicate corresponding parts throughout the several views of the drawings, in which—

1 indicates my improved fire-extinguisher receptacle, which is constructed of any suitable metallic material and has an outlet 2 formed in the top thereof and has connected thereto a suitable discharge-pipe 3, with a nozzle 4 attached to its free end, and is adapted to be secured in the catch 5, formed on the periphery of the extinguisher when not in use. The extinguisher is provided with a handle 6, the ends of which are pivotally secured to the side thereof, as at 7, and the handle 6 is adapted to be secured in the spring-catches 8, formed on the periphery of the supporting-rim 9, which is secured to the bottom of the extinguisher.

The top of the extinguisher has a mouth or opening formed therein, as at 10, for the admission thereto of the alkaline solution, and the mouth or opening is sealed by a plate 11, which has a screw-threaded collar formed integral therewith, and the collar 12 is adapted to be secured to the periphery of the walls or

mouth of the extinguisher, as at 13, which is screw-threaded at that point. The reference-numeral 14 denotes handles or extensions formed integral on the upper face of the plate 11 for assistance in securing and removing the same to and from the extinguisher.

Secured to the inner face of the plate 11 is the cage for holding and guiding the float and acid-receptacle in position, and it comprises a series of wire rods 15, extending into the extinguisher. These rods are suitably spaced apart to receive the acid-receptacle and to hold the same in position when not in use and are also suitably spaced apart to allow the float to hold the same in position. I attain this double use by bending the wires outwardly, as at 16, a suitable distance below the plate 11 and have their ends 17 connected to a ring 18 of proper size to maintain the wire rods in proper position for the float.

The reference-numeral 19 indicates the float carrying an auxiliary wire cage 20, secured to the upper face thereof, and this auxiliary cage has mounted therein the acid-receptacle 21. The auxiliary cage 20 is secured to the top of the acid-receptacle by means of the ring 22 to prevent the displacement therein of the acid-receptacle when the extinguisher is in operation.

The reference-numeral 23 denotes a sealing-cap which is secured to a suspending-strip 24, the opposite end of which is secured to the plate 11. The cap 23 has secured thereto a strip of mica or other suitable material 25, which is adapted to be engaged by the mouth of the acid-receptacle to seal the latter when the extinguisher-receptacle is in an upright position. The extinguisher-receptacle is provided with a suitable brace or band 26, which entirely surrounds the same for strengthening purposes.

In Fig. 5 I have shown a chain 27 secured at one end to the bottom of the float and having a ball 28 secured thereto at its opposite end, the chain operating through the ring 29, which is secured to the ends of the wire rods of the cage, as at 30. The rods converge inwardly at this point. The function of this chain and ball is to rapidly draw the float and acid-receptacle through the alkaline solution, owing to the ball falling downwardly of the extinguisher when the same is inverted, as shown in Fig. 6.

In Fig. 7 I have shown the cap connected by means of an eyebolt, as at 31.

From the foregoing description it is apparent that when the extinguisher is inverted the float will immediately rise, carrying the acid-receptacle therewith through the alkaline solution, and distribute during its passage the acid contained in the receptacle into the solution, thereby thoroughly impregnating the same, generating the necessary gas, so that when the solution is discharged or forced from the extinguisher it will contain the necessary extinguishing-gas.

It is thought that, owing to the simplicity of my device, no further explanation is deemed necessary.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. An extinguisher-receptacle, charged with suitable fluid, with a floating vessel carrying acid or other suitable chemical and floating in the fluid, and mounted in a manner that on the inversion of the receptacle the vessel will float up through the fluid and discharge the acid as it floats, substantially as shown and described.

2. The combination with an extinguisher-receptacle, of a cage suitably secured therein, and a floating acid-receptacle arranged in the said cage.

3. The combination with an extinguisher-receptacle, of a cage suitably secured therein, an acid-receptacle mounted in the said cage, and a float arranged in the said extinguisher-receptacle adapted to operate the acid-receptacle.

4. The combination of an extinguisher-receptacle, guides suitably arranged therein, a float-operated acid-receptacle operated between the said guides, and means for sealing the acid-receptacle when in an upright position, substantially as shown and described.

5. An extinguisher-receptacle provided with a cage suitably arranged therein, a float operating in said cage, and an acid-receptacle formed integral with said float, substantially as shown and described.

6. In a fire-extinguisher, the combination with an extinguisher-receptacle, of a cage suitably secured therein, a float operating in said cage and carrying an acid-receptacle and an auxiliary cage secured to said float and surrounding said acid-receptacle, substantially as set forth.

7. In a fire-extinguisher, the combination with an extinguisher-receptacle, of a cage suitably arranged therein, a float operating in said cage, an auxiliary cage secured to said float, an acid-receptacle arranged in said auxiliary cage and a sealing-cap for said acid-receptacle, substantially as herein shown and described.

8. In a fire-extinguisher, the combination with an extinguisher-receptacle, of a cage suitably secured therein, a float operating in said cage, an acid-receptacle secured to said float and suitable means for rapidly drawing said float and acid-receptacle through the alkaline solution contained in the extinguisher thereby discharging the acid from the acid-receptacle in the alkaline solution, substantially as herein shown and described.

9. In a fire-extinguisher, the combination with an extinguisher-receptacle, of a sealing-plate suitably secured to the mouth thereof, a cage secured to said plate, and extending

into said extinguisher, a float operating in said cage, and an acid-receptacle secured to said float, substantially as herein shown and described.

10. In a fire-extinguisher, the combination with an extinguisher-receptacle, of a downwardly-extending cage suitably secured to the mouth of the receptacle and formed with two different diameters, a float arranged in the larger diameter of said cage, and an acid-receptacle suitably secured to said float and adapted to be operated thereby, as and for the purpose set forth.

11. In combination, an extinguisher-receptacle, a cage suitably secured therein, a float arranged in the said cage, an auxiliary cage connected to the said float, and an acid-receptacle of smaller diameter than the said float mounted in the said auxiliary cage, substantially as shown and described.

12. In combination, an extinguisher-receptacle, a cage suitably secured therein, a float arranged in the said cage, an auxiliary cage connected to the said float, an acid-receptacle of smaller diameter than the said float mounted in the said auxiliary cage, and means for sealing said acid-receptacle when in an upright position, substantially as described.

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

THOMAS F. HANDLY.

Witnesses:
JOHN NOLAND,
H. H. PATTERSON.