

(No Model.)

2 Sheets—Sheet 1.

C. R. MACOMBER.

CHEMICAL FIRE EXTINGUISHING APPARATUS.

No. 411,552.

Patented Sept. 24, 1889.

Fig. 2.

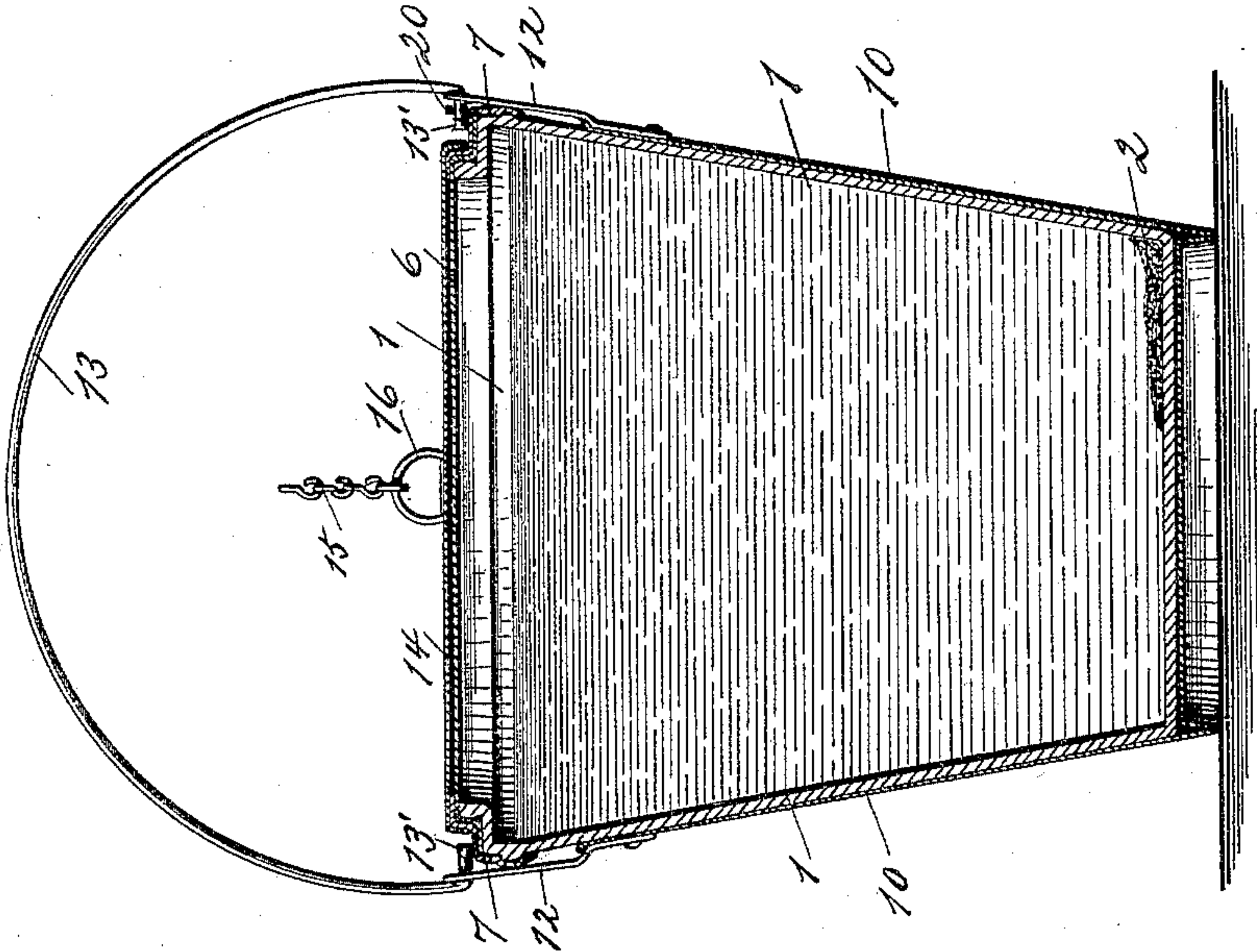
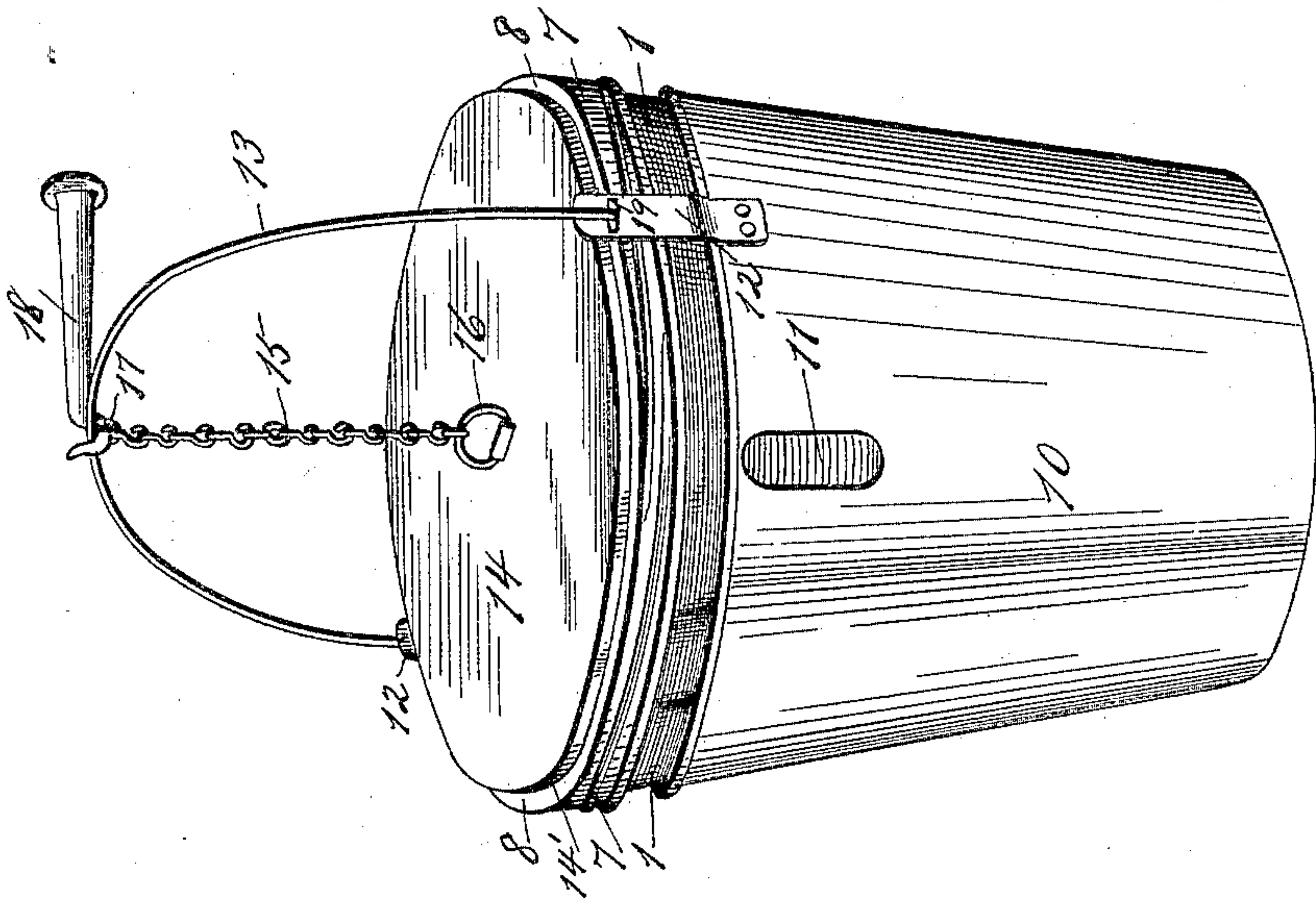


Fig. 1.



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(No Model.)

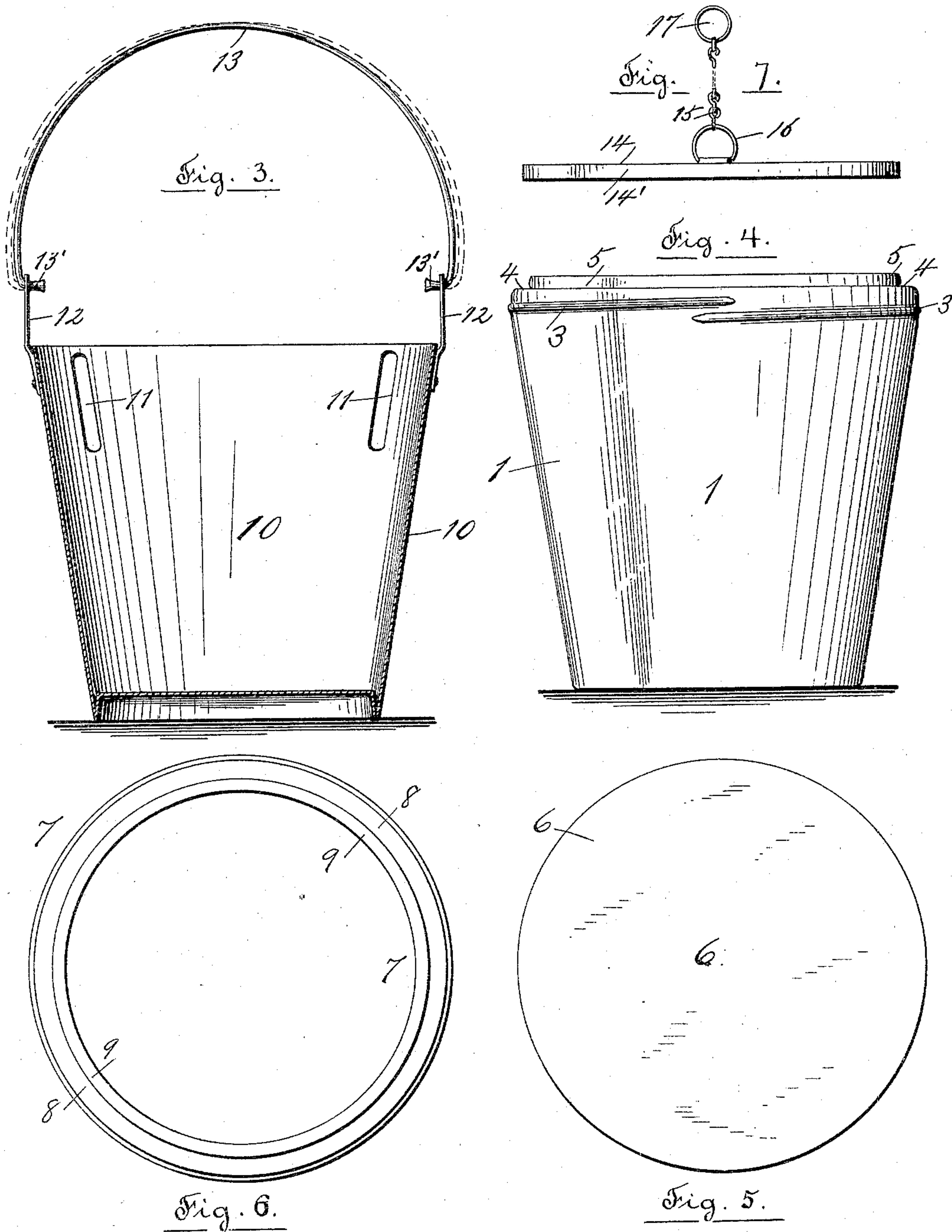
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UNITED STATES PATENT OFFICE.

CLARENCE R. MACOMBER, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO
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CHEMICAL FIRE-EXTINGUISHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 411,552, dated September 24, 1889.

Application filed May 6, 1889. Serial No. 309,779. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE R. MACOMBER, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Chemical Fire-Extinguishing Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, which, in connection with the drawings making a part of this specification, will enable others skilled in the art to which my invention belongs to make and use the same.

My invention relates to chemical fire-extinguishing apparatus, and more particularly to a hermetically-sealed receptacle which holds the chemical fire-extinguishing liquid.

The object of my invention is to make a receptacle for holding a chemical fire-extinguishing liquid which can be easily handled and which will always be ready for instant use, and one which cannot rust, corrode, or wear out or be affected by atmospheric changes, and cannot be broken or injured; also, to make a receptacle for holding chemical fire-extinguishing liquid in which the liquid will be hermetically sealed and in which it will be non-evaporating and non-freezing, and in which the liquid, though hermetically sealed, will be exposed to view, and which receptacle after one using can be immediately refilled and hermetically sealed preparatory to using again; and my invention consists in certain novel features of construction of the receptacle for holding a chemical fire-extinguishing liquid, as will be hereinafter fully described.

Referring to the drawings, Figure 1 represents in perspective my improved chemical fire-extinguishing apparatus ready for instant use. Fig. 2 is a central vertical section of the apparatus shown in Fig. 1. Figs. 3, 4, 5, 6, and 7 are detail views of the several parts of the apparatus shown in Figs. 1 and 2 detached from each other, and to be hereinafter described.

In the accompanying drawings, 1 is the receptacle proper, which holds the chemical fire-extinguishing liquid consisting of water and a chemical compound which are in a state of solution, (see Fig. 2,) except perhaps a small

portion of the compound which may remain in a solid state at the bottom, as shown at 2 in said Fig. 2.

The receptacle 1 is made of thick glass or other suitable material, preferably of the shape shown, with a screw-thread 3 around its upper part, and an inwardly-extending shoulder or flange 4, with a projection 5 extending up therefrom.

A disk 6, Fig. 5, of tin-foil or similar material which can be easily perforated or broken, and of a diameter equal to the diameter of the receptacle 1 at the outer edge of the shoulder 4, extends over the top of said receptacle and is secured to the same, so as to hermetically seal the contents thereof by means of a metal screw-threaded ring 7, which is provided at its lower part with a screw-thread adapted to engage the screw-thread 3 on the receptacle 1, and at its upper part with an inwardly-projecting extension 8, adapted to extend over and rest upon the shoulder or flange 4 of said receptacle, and also with an upward and inward extension 9, adapted to encircle and extend over the upward projection 5 of said receptacle. (See Fig. 2.)

The screw-threaded ring 7, by means of the inward extension 9, holds the tin-foil disk 6 down tightly on the top of the extension 5 of the receptacle 1, and by means of the horizontal extension 8 holds the projecting edges of the disk 6 down tight upon the shoulder or flange 4 of said receptacle, (see Fig. 2,) thus doing away entirely with the necessity of using any packing material, and at the same time making a perfectly air-tight joint and hermetically sealing the contents of the receptacle and rendering the same non-evaporating.

The glass receptacle 1, provided with a tin-foil cover secured in place by a screw-ring, as above described, is placed in and inclosed by a metal case 10, preferably made of tin, and which has one or more openings 11 near its upper edge, and is provided with two ears 12, secured upon opposite sides of the case 10, near the upper edge thereof. The ears 12 extend above the upper edge of the case 10 and have a hole or opening in their upper ends, through which extends the bent ends 13' of the handle 13, preferably made of wire, and

said ends 13' project inward beyond the ears 12. (See Figs. 2 and 3.) After the ends 13' of the wire handle 13 have been inserted through the holes in the ears 12 they are preferably enlarged or headed at the ends, so as to prevent their disengagement from the ears 12, but at the same time allow of their being moved outwardly away from each other, as indicated by dotted lines, Fig. 3.

Instead of enlarging the ends 13' of the handle 13, as above described, to prevent their disengagement from the ears 12, I may, if preferred, employ any equivalent means for preventing their disengagement from the ears 12 while permitting of their outward movement in said ears; or I may provide the ears 12 with a horizontal slot, as indicated at 19, Fig. 1, and the ends of the handle 13, not being enlarged, with a projecting pin, as shown at 20, Fig. 2, so that when the handle is in an upright position the pin 20 will be in a vertical position and the end of the handle cannot be drawn out of its holding-ear 12, the pin 20 preventing; but when the handle is moved into a horizontal position the pin 20 can pass through the slot 19, and thus be disengaged from the holding-ears for the purpose of removing the receptacle from its inclosing-case, as will be described hereinafter, and any other equivalent means may be employed in place of the pin 20 and slot 19 in the ears 12 to allow of the handle 13 when in a certain position being disengaged from the ears 12.

The object of the construction of the handle 13 and the ears 12, as above described, is to furnish in a very simple and effective manner means by which the receptacle 1 can be held and secured within the case 10 and prevented from being disconnected therefrom, except at the proper time, when by spreading apart the ends 13' of the handle 13, as indicated by dotted lines, Fig. 3, or removing the handle, as above described, the receptacle 1 may be freely lifted out of its inclosing-case 10.

The relative height of the case 10 with its ears 12 and the inwardly-projecting ends 13' of its handle 13, and the receptacle 1 with its screw-ring 7, is such that when the receptacle 1 is seated on the bottom of the case 10 the ends 13' of the handle 13 will extend over and bear upon the top surface of the horizontal extension 8 of the screw-ring 7 and firmly hold the receptacle 1 down within its inclosing-case 10 without interfering with the free movement of the handle 13.

When it is desired to remove the receptacle 1 from its inclosing-case 10 for any purpose, it is only necessary, as above described, to spread out the ends 13' of the handle 13, or to disengage the ends of the handle from the holding-ears 12.

I prefer to make the receptacle 1 higher than its inclosing-case 10, so that when they are combined together, as above described, there will be an open space, as shown in Fig. 1, extending around the top part of the recep-

table, to permit of freely seeing the interior of the same.

A metal slip-cover 14, preferably made of tin, with its outer edge 14' turned down, fits over the top of the screw-ring 7 and rests upon the same. The cover 14 has a cord or chain 15 secured to the central part thereof—in this instance by a ring 16—and said chain is provided with a ring 17 at its other end, which is adapted to fit onto the end of a hook, as 18. (See Fig. 1.)

I prefer to suspend my improved chemical fire-extinguishing apparatus from a hook, as shown in Fig. 1, by the handle 13, and the action of the chain 15, secured to the cover 14 and connected with the hook 18, is to automatically remove the cover 14 from the receptacle 1 when the apparatus is taken down for use, thus exposing the tin-foil cover, which is instantly perforated or broken by the hand of the user and the contents of the receptacle thrown upon the fire.

The slip-cover 14 acts as a protection for the tin-foil cover 6 and prevents any accidental breaking of the same, and the automatic removal of said slip-cover in taking down the apparatus from its supporting-hook, as above described, prevents any loss of time and leaves both hands of the operator free, with one to grasp the handle and with the other to break through the tin-foil cover to get at the contents of the receptacle and throw the same upon the fire without an instant's delay.

The slip-cover 14 may be dispensed with and the apparatus used without it, if preferred.

I have shown and described a screw-ring for securing the tin-foil or easily-perforated cover upon the top of the receptacle 1, said ring engaging a screw-thread on said receptacle; but any other equivalent means for securing the tin-foil cover in place may be used in lieu of said screw-ring. For instance, the receptacle 1 may be provided with separate lugs or projections extending out therefrom, and the ring 7 with corresponding recesses adapted to extend over and engage the same, when the ring is moved around on top of the receptacle, in the ordinary way employed in preserving-jars, &c.

The operation of my improved chemical fire-extinguishing apparatus will be readily understood by those skilled in the art from the above description, in connection with the drawings, and is as follows: Into the glass receptacle 1, Fig. 4, is first placed the chemical compound 2, and then the same is filled with water, as shown in Fig. 2. The chemical compound and the water combine together and produce a chemical fire-extinguishing liquid. The tin-foil disk 6, first cut into suitable size, is then placed on the top of the receptacle 1, and the screw 7 fitted onto the top of said receptacle and screwed down to press upon and tightly secure the tin-foil cover 6 upon the receptacle 1, so as to hermetically

seal the water and chemical compound contained therein and prevent any evaporation of the same. The ends 13' of the handle 13 of the inclosing-case 10 are drawn apart or
 5 disengaged from the ears 12, and the receptacle 1, filled and charged, as above described, is placed in said case, and the ends 13' of the handle 13, when released, spring in and extend over the upper part of said receptacle,
 10 as shown in Fig. 2, or are inserted through the slot 19, as above described, and hold the receptacle securely in the case 10. The slip-cover 14 is placed upon the top of the receptacle 1, and the apparatus, by means of the han-
 15 dle 13, is suspended from the hook 18 or its equivalent, and the ring 17 on the chain 15 of the cover 14 is placed on said hook under or on the inside of the handle 13, as shown in Fig. 1.

20 When it is desired to use the apparatus, the handle is removed from the hook, leaving the slip-cover 14 suspended thereon, and the tin-foil cover is broken, as above described. After the contents of the receptacle have been
 25 discharged it is removed from the case 10 by drawing out the ends of the handle 13 or disengaging them from the ears 12. The screw-ring 7 is removed and the broken tin-foil is removed, and then the receptacle is refilled
 30 with the chemical compound and water and a new tin-foil cover substituted for the broken one, and the screw-ring 7 replaced, and the parts combined together, as above described.

It will thus be seen that my improved chemical fire-extinguishing apparatus can be used
 35 over and over again by refilling it with the chemical fire-extinguishing liquid and substituting a new tin-foil cover for the broken one.

40 The receptacle 1, which holds the chemical fire-extinguishing liquid, being made of glass, is substantially indestructible and will not corrode or rust or be affected by any atmospheric changes.

45 By combining with the glass receptacle which holds the chemical fire-extinguishing liquid the metallic case 10, for inclosing the same, any injury to or breaking of the glass is prevented, and this is of especial value in
 50 packing and transporting the apparatus. At the same time the inclosing-case 10 does not interfere in any way with the filling and discharging of the contents of the receptacle or with a free view of said contents for any pur-
 55 pose.

In case of need, the case 10 when disconnected from the receptacle 1 can be used as a receptacle for holding water or other material, if desired.

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

1. In a fire-extinguishing apparatus, the combination, with a receptacle for holding fire-extinguishing liquid, provided with a
 65 screw-thread upon its upper exterior surface, an inwardly-projecting flange or shoulder, and an upward projection, and a tin-foil or easily-perforated cover adapted to extend over the top of said receptacle, and a screw-
 70 ring to screw onto the top of the same to secure the easily-perforated cover on the receptacle and hermetically seal the contents thereof, of a metal case for inclosing said re-
 75 ceptacle and detachable therefrom and provided with ears, and a wire handle with bent ends to move out and in in said ears, for the purpose stated, substantially as set forth.

2. In a fire-extinguishing apparatus, the combination, with a receptacle for holding a
 80 fire-extinguishing liquid, having a screw-thread upon its upper exterior surface, and an inwardly-projecting flange or shoulder, and a tin-foil or easily-perforated cover, and a screw-ring for securing said cover to the re-
 85 ceptacle to hermetically seal the contents thereof, of a metal case for inclosing said receptacle and detachable therefrom and provided with a handle and means for holding the receptacle in said case, and a slip-cover
 90 adapted to extend over the easily-perforated cover, and means for automatically removing said slip-cover preparatory to using the apparatus, substantially as set forth.

3. In a fire-extinguishing apparatus, the combination, with a receptacle, and a fire-extinguishing liquid hermetically sealed within
 95 said receptacle by a tin-foil or easily-perforated cover, and a screw-ring for securing said cover on the top of the receptacle, and a metallic slip-cover to fit over and protect the easily-perforated cover, of a metallic pro-
 100 tecting-case for inclosing said receptacle and provided with a handle, and means for securing said receptacle within said protecting-
 105 case, substantially as set forth.

4. In a fire-extinguishing apparatus, the combination, with a receptacle, and a fire-extinguishing liquid hermetically sealed within
 110 said receptacle by a tin-foil or easily-perforated cover, and a screw-ring for securing said cover on the top of said receptacle, and a metallic slip-cover provided with a chain or cord for engagement with a hook or its equivalent to automatically remove said cover, of a
 115 metallic protecting-case for inclosing said receptacle and detachable therefrom and provided with a handle, and means for securing said receptacle within said protecting-case, substantially as set forth.

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Witnesses:

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