D. W. DIGGS.

FIRE EXTINGUISHER.

APPLICATION FILED OCT. 5, 1907.

919,552. Patented Apr. 27, 1909.

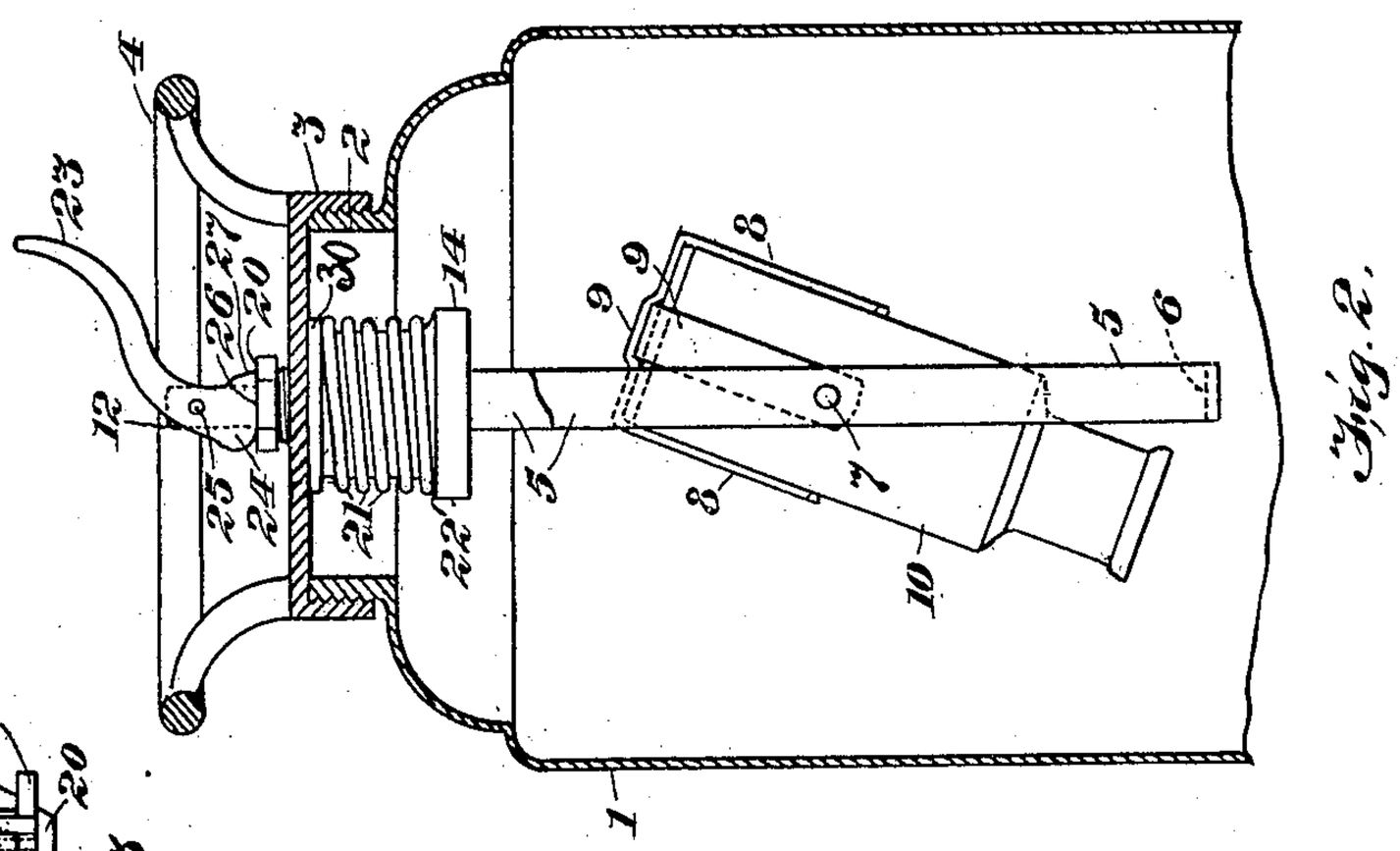

Fig. 2.

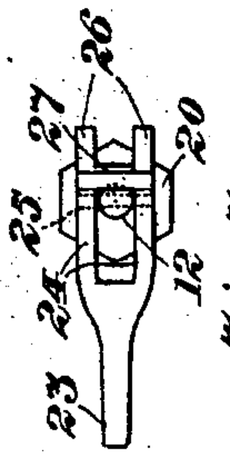

Fig. 3

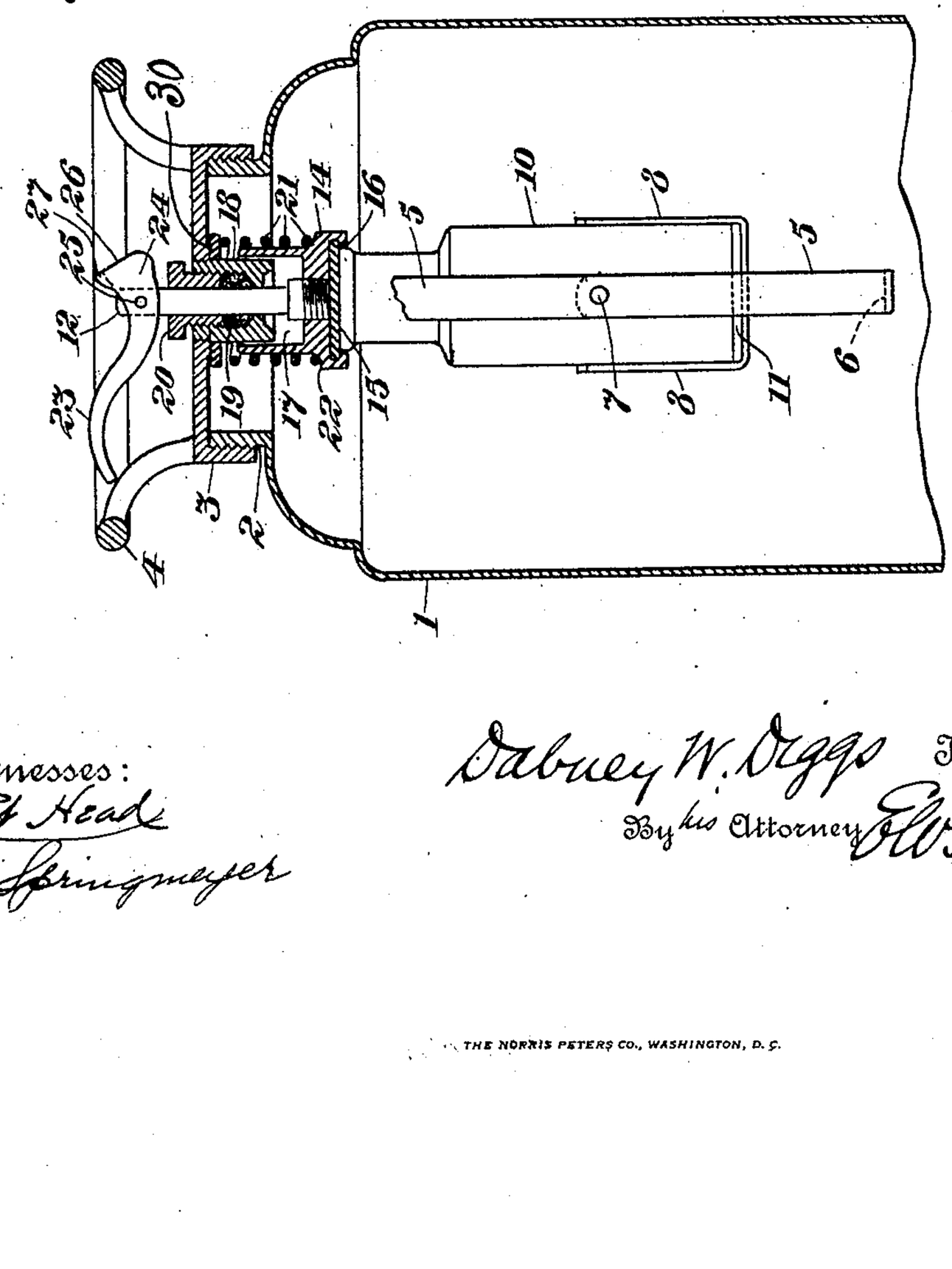

Fig. 1.

Witnesses:
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UNITED STATES PATENT OFFICE.

DABNEY W. DIGGS, OF NEW YORK, N. Y.

FIRE-EXTINGUISHER.

No. 919,552. Specification of Letters Patent. Patented April 27, 1909.

Application filed October 5, 1907. Serial No. 395,990.

To all whom it may concern:

Be it known that I, DABNEY W. DIGGS, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Fire-Extinguishers, of which the following is a specification.

My present invention is an improvement in fire extinguishers relating to the means for operating the stopper of the bottle thereof and applies both to the tilting and to the stationary-bottle form of extinguisher.

In the drawings which show my devices applied to a tilting bottle form of extinguisher, Figure 1 is a sectional view partly in elevation of the upper part of an extinguisher embodying my present inprovements; Fig. 2 is a similar view, except that the stopper is shown raised and the bottle tilted; and Fig. 3 is a top plan view of a detail, comprising the operating member and related parts.

Describing now my invention with particular reference to the devices of the drawings, and reserving it to the claim to point out the novel features, 1 is the casing of a fire extinguisher having an externally threaded collar 2 with which the internal threads of cap 3 are adapted to co-act. The cap 3 has a ring or handle 4 by which it can be conveniently operated.

Depending from the underside of the cap are arms 5—5 preferably united at the bottom by a cross piece 6, said arms being formed with holes to receive the trunnions 7—7 of the tilting bottle-frame 8. This tilting frame comprises two strips 9—9 of lead crossing at right angles underneath the bottle 10 where they are united and from which they extend upwardly next the sides of the bottle.

Projecting from two of the opposite strips are the trunnions 7—7 adapted to be received as stated in holes in the arms 5—5. A piece of rubber or other yielding material 11 is preferably interposed between the bottom of the bottle and its lead supporting frame. The cap 3 has an opening through it in line with the mouth of the bottle 10, through which a stem 12 reciprocatingly projects. This stem within the extinguisher has secured to it a preferably lead stopper member 14 which by engagement with the mouth of the bottle is adapted to seal it. Preferably the bottle engaging portion of the stopper member is provided with a disk 15 of rubber or other yielding material, first to prevent the lead stopper from breaking the bottle, and second, to make the closure tight. For this purpose the lead stopper may have its bottom recessed as shown to receive the disk 15, which is retained therein by an inwardly projecting flange 16 from the rim of the stopper.

The upper portion of the lead stopper is hollowed annularly about the stem at 17 to telescope with sliding fit over a cylindrical projection 18 on the underside of the cap, forming part of a stuffing-box through which the stem 12 projects. The aforesaid stuffing-box member 18 being preferably and almost necessarily made of other metal than lead, for example brass, and being accordingly attackable by acids is protected from such corrosion by the lead stopper into which it telescopes as previously explained. Moreover said telescoping co-action of these parts serves to aline the stopper with the mouth of the bottle by preventing the stem 12, supporting the stopper, from wabbling in its opening through the cap. The cylindrical member 18 on the cap is hollowed annularly about the stem 12 to receive packing material 19. A gland 20 screw-connects with the member 18 and constitutes therewith a stuffing-box for stem 12. A spiral spring 21 surrounds the stopper member and by engagement above with the underside of the cap and below with the outflanging portion 22 of the stopper tends normally to depress said stopper into closing position over the mouth of the bottle.

To remove the stopper off the mouth of the bottle and to hold it stationary, when in elevated position, is an operating member consisting of a handle portion 23 and a lower portion divided into two legs 24 to straddle the projecting end of the stem 12. A pin 25 pivotally unites the legs 24 in straddling position to the stem at a point above the ends of said legs, whereby upon raising the handle end 23 of the operating member, the stem is lifted by the cam action of the legs bearing against the top of the gland 20 until the stem has been lifted a distance equal to the length of the legs below the pivot-pin, whereupon being in upright position the legs will support the stem and the stopper which it carries stationarily in elevated position with the mouth of the bottle open. As it is elevated the handle end of the operating member will obviously move through an arc and depressing said handle will cause it to move through

the same arc in reverse direction and the legs 24 once they have moved out of their upright supporting position, will permit the spring 21 to carry the handle automatically into its depressed position and consequently the stem and stopper into their depressed position with the stopper closing the mouth of the bottle. Preferably the ends or foot-portions 26 of the legs 24 will be enlarged and flattened to give the legs greater stability when they support the stem in elevated position. Preferably also the bearing portions of the legs between their ends and the pivot pin will be rounded in the form of what is practically a cam. A stop 27 may be provided on the legs 24 to abut against the stem 12 when the operating member has been swung into the position where it holds the stem stationary in elevated position.

Surrounding the opening through the cap 3 through which the stem 12 projects and located next the underside of said cap, is a washer 30 of rubber or other yielding material. When the stem 12 is in the elevated position of Fig. 2 by the operation of the handle 23, this washer is pressed all around from below by the annular edge or rim of the upper end of the lead stopper member 14, thereby making a gas-tight joint which prevents escape of gas from the interior of the extinguisher out through the stem opening in the cap.

Having thus described my invention what I claim is:

In a fire extinguisher, the combination of a cap adapted to close the extinguisher, said cap having a hole therethrough, a stuffing box surrounding said hole and projecting below the underside of the cap, a stem received through said hole and stuffing box and extending above and below the cap, a lead stopper on the stem below the cap, said stopper comprising a base portion and a hollow cylindrical portion extending upwardly from the base portion to inclose the portion of the stuffing box which projects from the underside of the cap, a washer surrounding said portion of the stuffing box and adapted to be pressed between the underside of the cap and the rim of the cylindrical portion of the stopper, when the stopper has been elevated into inclosing position over the stuffing box, a spiral spring surrounding the cylindrical portion of the stopper, said spring being normally under compression and being located between the underside of the cap and the base portion of the stopper to give said stopper normal downward tendency into closing position over the mouth of the bottle, said bottle tiltingly supported within the extinguisher with its mouth in position to be closed by the bottom of the base portion of the stopper when the bottle is upright, said bottom of the stopper being recessed, the rim of said recess being underhanging to uphold within the recess a washer of yielding material adapted to be compressed between the mouth of the bottle and the base of the stopper, said washer, and manually operable means in connection with the end of the stem which is above the cap adapted to elevate said stem against the compression of the spring and to uphold the stopper to uncover the mouth of the bottle and release said bottle into tilting position.

In witness whereof, I have signed my name to the foregoing specification in the presence of two subscribing witnesses.

DABNEY W. DIGGS.

Witnesses:
Jos. F. O'Brien,
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