

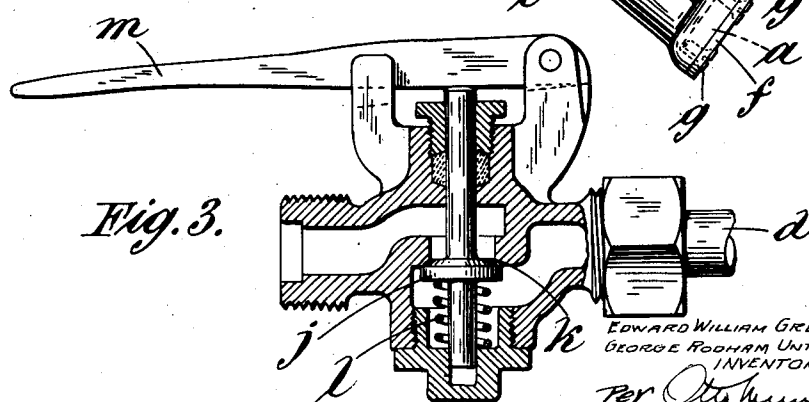
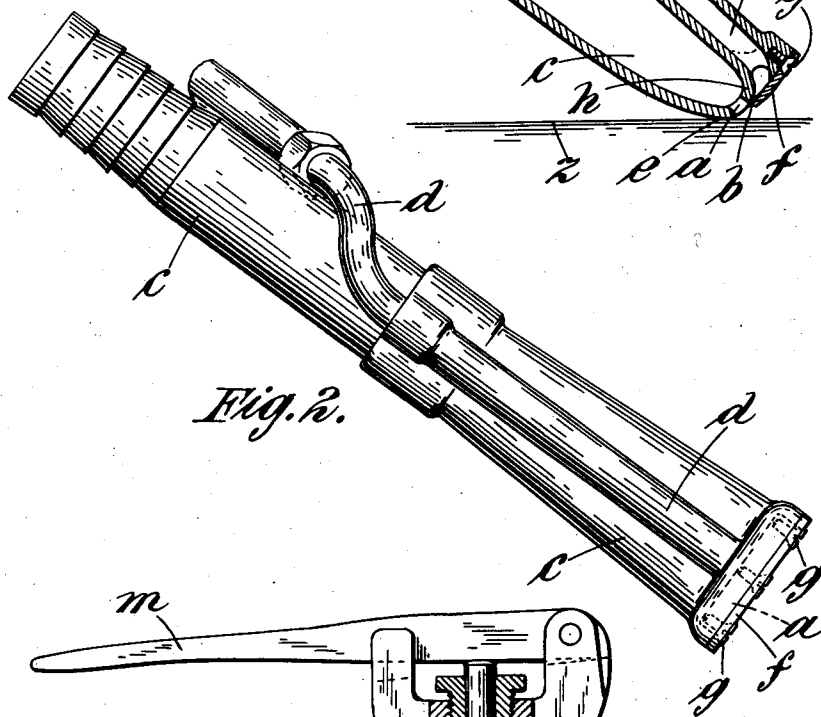
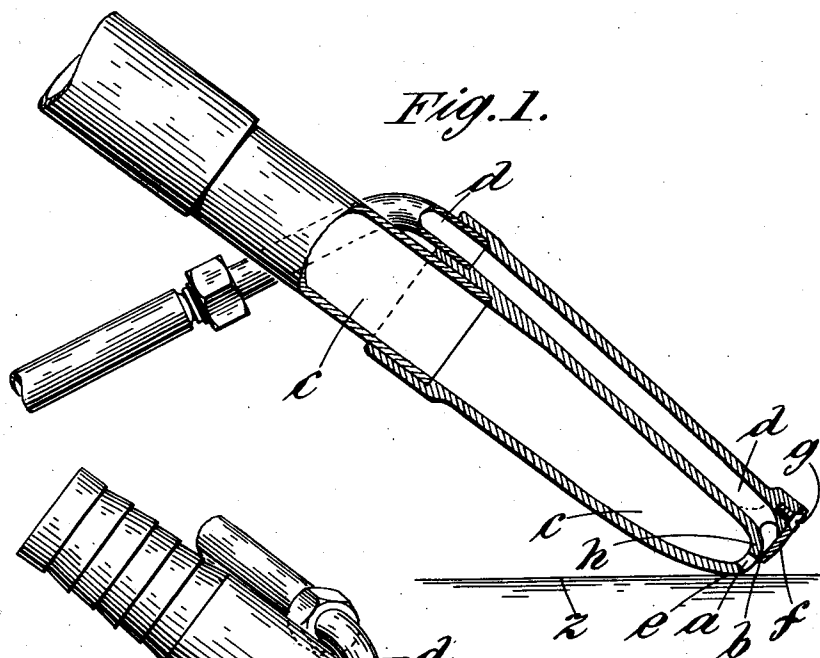
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E. W. GREEN ET AL

APPARATUS FOR REMOVING NORMALLY VISCOUS LIQUID FROM SURFACES

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EDWARD WILLIAM GREEN
GEORGE RODHAM UNTHANK
INVENTORS:

Per *Otto Hunk*
their Atty.

UNITED STATES PATENT OFFICE.

EDWARD WILLIAM GREEN AND GEORGE RODHAM UNTHANK, OF LONDON, ENGLAND.

APPARATUS FOR REMOVING NORMALLY VISCOUS LIQUID FROM SURFACES.

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This invention relates to improvements in apparatus for removing normally viscous liquid from surfaces and has for its object the provision of means whereby the viscous liquid can be removed from any surface in a more effective, expeditious and safe manner than has been possible heretofore.

This invention consists in the arrangement in combination of a mouth piece connected to a vacuum suction line and adapted to be angularly applied to the surface from which viscous liquid is to be removed; a pressure nozzle for obliquely applying a broad and comparatively thin jet of steam or like heated fluid under pressure to said surface to thin the liquid on said surface and direct such thinned fluid into said mouth piece through which it is removed by the suction.

In the drawings:—

Fig. 1 illustrates in elevation one form of device constructed in accordance with this invention parts being shown in section for clarity of explanation.

Fig. 2 is a plan view of the device illustrated in Fig. 1.

Fig. 3 is a detail view of a special form of valve which may be inserted in the steam line when deemed necessary.

The improved apparatus as illustrated in Figs. 1 and 2 of the drawing is particularly suitable for cleaning out the fuel oil tanks on board ship but may be employed for other purposes and may be constructively modified as found necessary without departing from the invention.

A mouth piece *a* and pressure nozzle *b* are formed in a single casting having suitable conduits *c* and *d* therein, the mouth piece *a* being connected by the conduits *c* with a suitable suction apparatus whilst the pressure nozzle *b* is connected by the conduit *d* with any source of supply of steam or like heated fluid adapted to deliver at the requisite pressure. The orifice of the mouth piece *a* may be about two and one half inches long and about one quarter of an inch in width, whilst the pressure nozzle may be of similar length but only about one fiftieth of an inch in width.

The apparatus is used with the part *e* of the mouth piece *a* resting on the surface *z* to be cleaned, the lower part *e* of said mouth piece *a* being curved in order that the actual

orifice is suitably dispositioned relatively to the surface.

The orifice of the pressure nozzle *b* is formed by a plate *f* which is mounted on the casting by suitable screws such as *g* and disposed over the opening of the conduit *d* for the heated fluid which is closed thereby except for the slit about one fiftieth of an inch wide between the plate *f* and the curved end *h* of the wall separating the pressure conduit *d* from the suction conduit *c*.

By this arrangement a jet of heated fluid from the nozzle *b* is directed on to the oily surface *z* immediately below the suction orifice *a*, thinning the oil by its heat and forcing such thinned oil under the mouth piece *a* so that it can be easily sucked up.

To enable the passage of heated fluid through the pressure nozzle *b* to be controlled and immediately interrupted in the event of the suction ceasing or the operator being physically overcome for any reason, a valve *j* which is stressed to return to its seat *k* by a spring *l* may be located in the conduit *d* for the heated fluid in such convenient position that said valve *j* may be retained in open position by the operator when necessary by means of a lever *m*.

We claim:—

1. Improved apparatus for removing normally viscous liquid from surfaces comprising a mouth piece connected to a vacuum suction line and having an inlet opening to be angularly applied to the surface from which the viscous liquid is to be removed; a pressure nozzle having an outlet opening in advance of the inlet opening and discharging rearwardly toward the inlet and at an incline to said inlet for obliquely applying a broad and comparatively thin jet of steam or like heated fluid under pressure to said surface to thin the liquid on said surface and direct such thinned fluid into said mouth piece through which it is removed by the suction.

2. An apparatus, as claimed in claim 1, including a valve associated with the pressure nozzle comprising a spring normally tending to hold the valve closed against pressure, and means for opening the valve while the apparatus is in use.

EDWARD WILLIAM GREEN.
GEORGE RODHAM UNTHANK.