(No Model.)

A. S. DINSMORE.

GAGING TUNNEL.

No. 280,804. Patented July 10, 1883.

Fig. 1.

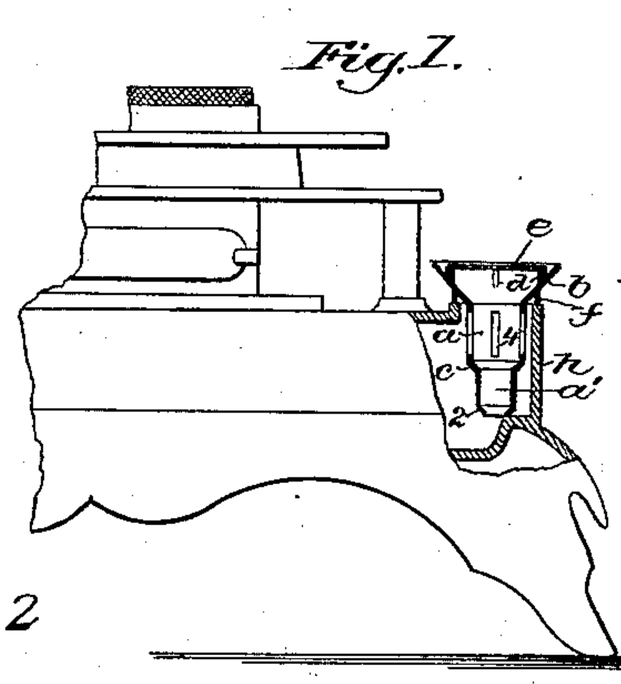
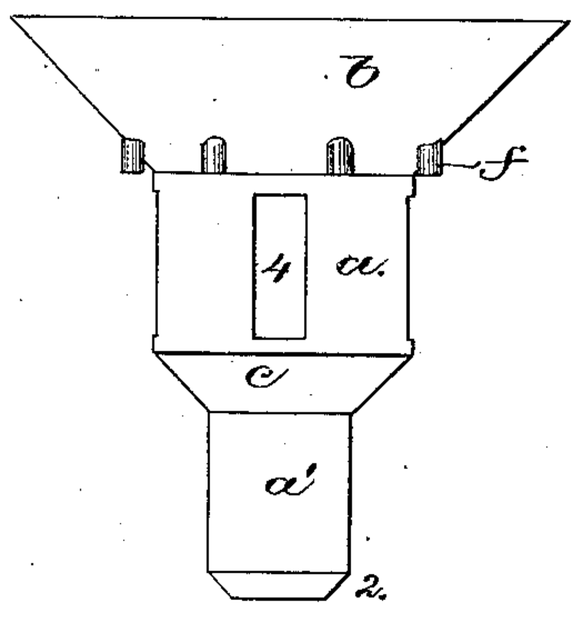


Fig. 2



Witnesses.
John F. C. Brinkerhoff
Fred A. Powell.

Inventor:
Alfred S. Dinsmore.
By Crosby & Gregory
Attys

UNITED STATES PATENT OFFICE.

ALFRED S. DINSMORE, OF BOSTON, MASSACHUSETTS.

GAGING-TUNNEL.

SPECIFICATION forming part of Letters Patent No. 280,804, dated July 10, 1883.

Application filed January 2, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALFRED S. DINSMORE, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Gaging-Tunnels, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention relates to a tunnel for pouring liquids into receptacles, it having for its object to show to the operator the rise of the liquid, so that he may know when to stop pouring, and thus prevent the overflow of the liquid, it being especially intended for filling oil-stoves. The device consists of a tube or cylinder having a flaring mouth-piece, the whole internal surface being polished or of bright metal, so as to reflect the light to the bottom of it, and thus enable the operator to see the height to which the liquid rises in the cylinder. The cylinder is provided with one or more gaging-marks (shown as tapering portions) connecting portions of the cylinder of different diameter, and serving as a guide for the operator pouring the liquid, the inclined surface of tapering portion also serving to throw the light upon the surface of the liquid as it rises to the desired level. In order to admit of the free escape of the gases from the oil-reservoir while pouring in oil, the cylindrical portion of the device is provided with longitudinal openings, and the mouth-piece is preferably provided with lugs to receive the usual perforated cover or cap.

Figure 1 shows in section a device embodying this invention applied to an oil-stove, it being intended to indicate when the stove requires refilling, and also serving as a gage by which the operator may know when to stop pouring in oil; and Fig. 2 is a side elevation of the tunnel detached.

The filling and gaging device or tunnel consists, essentially, of a tube or cylinder, *a a'*, provided with a flaring mouth-piece, *b*, and having its internal surface polished or of bright metal, so as to enable the operator to readily see the bottom of the portion *a'* of the tube, the extremity of which is tapering, as shown at 2, to throw the light toward the middle of the tube, which is of such length that when the oil does not rise to its bottom the reservoir shortly requires filling. The portions *a a'* of the tube, that of smallest diameter being lowest, are connected by a tapering portion, *c*, which serves as a gage for the height to which it is desired to have the liquid rise, so that when, in pouring in the liquid, it covers the portion *c* and begins to rise into the tube *a*, the operator will understand that no more is to be poured in. The sides of the portion *a* of the tube are shown as provided with longitudinal openings 4, to permit the air or the gases generated in the reservoir to pass into the tube, and thus have an escape into the atmosphere, and the mouth-piece *b* is preferably provided with internal lugs, *d*, to sustain the usual perforated cover or cap, *e*, and with external projections, *f*, by which the apparatus is supported upon the upper edge of the inlet-passage *h* to the reservoir.

The apparatus thus constructed is adapted to remain permanently in the inlet-passage of the oil-stove reservoir.

Without this device it is very difficult to see into the opening of the oil-stove, so as to tell whether the oil is so low that the reservoir requires refilling, or to tell when, in filling, the oil has risen to the proper point, and a tunnel of common construction having a large flaring mouth and slender tapering tube leading therefrom affords no assistance in determining either the too low level of the liquid or when it has risen to the proper level.

While the apparatus is especially applicable to the reservoirs of oil-stoves or other similar closed receptacles, as readily indicating when the liquid is too low, it may also be employed with good effect in filling barrels or other large receptacles to enable the operator to determine when the liquid has risen to the proper level.

The portions *a a'* of the cylinder are so proportioned in size that in pouring the liquid through them it will not rise into the portion *a* until the entire body of the liquid, both within and without the said tubes, rises above the upper end of the portion *a'*, and to insure the rapid discharge from the lower portion, *a'*, of the tube, its sides may also have openings, like those of the portion *a*, and its lower end might then be wholly closed, if desired.

The openings 4 serve as a vent to permit the escape of air displaced by the liquid, as well as the gases which may be generated.

The herein-described gaging-tunnel is pref-

erably cast in a single piece, and may be of any desired shape in transverse section, the round shape being best adapted for general use.

I claim—

1. As an improved article of manufacture, the herein-described gaging-tunnel, consisting of a tubular portion provided with a gage and a flaring mouth-piece connected therewith, the said parts having a bright internal surface, whereby the surface of the liquid rising in the tubular portions may be readily seen, substantially as and for the purpose described.

2. The device for pouring and gaging liquids, composed of the connected tubular portions *a* *a'*, of different diameter, and a flaring mouth-piece connected with the cylindrical portion of largest diameter, the whole having its internal surface bright for reflecting light to its lower end, and the junction of the said tubular portions serving as a gage, substantially as described.

3. The funnel composed of the flaring mouth-piece and the tubular portion connected therewith, having openings through its sides, substantially as and for the purpose set forth.

4. The funnel composed of the flaring mouth-piece having internal lugs and external projections, and the tubular or cylindrical portion, bright inside, substantially as and for the purpose described.

5. A funnel composed of a tubular portion, *a'*, contracted or tapering at its lower end, the tubular portion *a*, and the tapering portion *c*, constituting a gage, and the flaring mouth-piece *b*, all to operate substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALFRED S. DINSMORE.

Witnesses:

JOS. P. LIVERMORE,

FRED A. POWELL.