(No Model.)

G. M. ANSON.

TUBE CLEANER.

No. 355,806. Patented Jan. 11, 1887.

Fig. 1

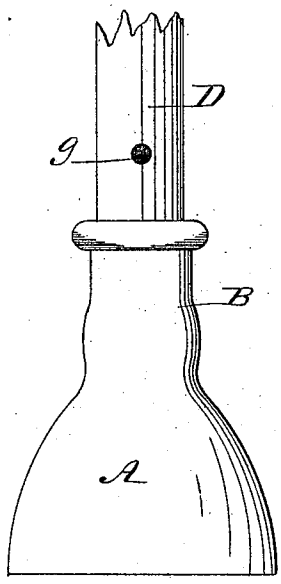


Fig. 3

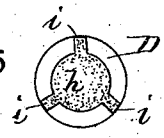
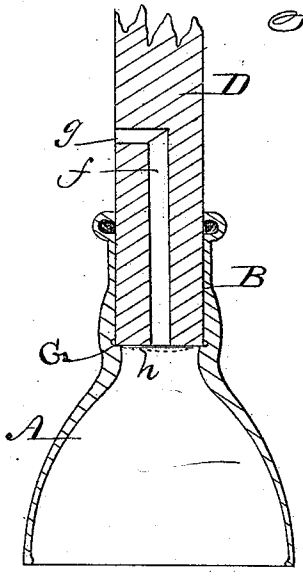


Fig. 2



Witnesses:
R. H. Orwig
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UNITED STATES PATENT OFFICE.

GUSTIN M. ANSON, OF MARSHALLTOWN, IOWA, ASSIGNOR OF TWO-THIRDS TO HARRY STODDART AND C. D. SHREVE, BOTH OF SAME PLACE.

TUBE-CLEANER.

SPECIFICATION forming part of Letters Patent No. 355,806, dated January 11, 1887.

Application filed April 9, 1886. Serial No. 198,386. (No model.)

To all whom it may concern:

Be it known that I, GUSTIN M. ANSON, a citizen of the United States of America, and a resident of Marshalltown, in the county of Marshall and State of Iowa, have invented a new and useful Improvement in Tube-Cleaners, of which the following is a specification.

Heretofore a bell-shaped rubber cup heavy and rigid at its bottom and thin and flexible at its top has had a tubular handle attached to its top in such a manner that the top portion of the cup could be doubled down into the lower portion of the cup to compress air for the purpose of cleaning a tube corresponding in size with the lower rigid end of the cup.

My object is to reduce the cost of a tube-cleaner and to adapt it for tubes of different diameters; and my invention consists in the construction and combination of a plunger and a handle, as hereinafter described and claimed, in such a manner that the lower end of the plunger will shrink and expand as required, to be inserted and operated in tubes of different sizes, while the upper portion remains firm, and will not be impaired by bending and doubling under pressure as force is applied to the handle to remove obstructions from the tube.

Figure 1 of the accompanying drawings shows the ferrule of the plunger slipped over the tubular end of a handle, to be fastened thereto by means of one or more screws, or in any suitable way. Fig. 2 is a vertical section of Fig. 1. Fig. 3 is an end view of the tubular end of the handle and a valve combined therewith.

Jointly considered, these figures clearly illustrate the construction of my complete invention.

A represents an open-ended cup-shaped flexible plunger that may vary in size as desired, and that is preferably made of vulcanized rubber.

B is a ferrule, formed integral with the top and small end of the plunger and re-enforced with an annular bead at its free end.

C is an annular shoulder at the bottom of the ferrule, against which the lower tubular end of the handle abuts.

D is a wooden handle that may vary in length as desired. It has a central bore, *f*, in its lower end and a horizontal bore, *g*, intersecting the bore *f*.

h is a disk, preferably made of rubber. It has integral projections *i*, that extend radially and are fastened against the lower end of the handle by means of tacks, or in any suitable way, so that in their normal condition they will lie flat, and also retain the disk flat against the end of the handle, as required, to keep the bore *f* closed air-tight.

In the practical use of my invention I simply insert the plunger in the open end of a clogged tube, and then press it toward the obstructions to compress the intervening air, in the manner of operating an air-gun, so that the force of the compressed air will act against the obstructing matter and loosen and remove it. If the adhering and obstructing matter in the tube is dry and hard, steam or water may be introduced into the open and accessible end of the tube in advance of the plunger to facilitate loosening and removing it. If there is a bend or deflection in the tube through which an ordinary tube-cleaner could not be passed, the compressed air will reach it just as readily as in a straight tube, to act upon and remove any obstruction in or beyond such bend or deflection.

To clean a tube that is not clogged and closed air-tight with adhering matter, but simply foul on its inner surface, I rub or swab it by a reciprocating motion of the flexible plunger. The inward motions close the valve *h* and the outward motions open it, to allow air to pass into the plunger and tube, as required, to prevent the outside atmospheric pressure from resisting the outward movements and withdrawal of the plunger.

I claim as my invention—

The improved tube-cleaner consisting of a cup-shaped plunger that is flexible at its lower end and enlarged diameter, and provided with a rigid ferrule at its stiff and contracted top, and an annular shoulder at the bottom and inside end of the ferrule, and a handle having a longitudinal bore in its bottom end, and a transverse bore intersecting the upper end of the longitudinal bore, and a valve at the bottom of the longitudinal bore.

GUSTIN M. ANSON.

Witnesses:

HENRY STODDART,

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