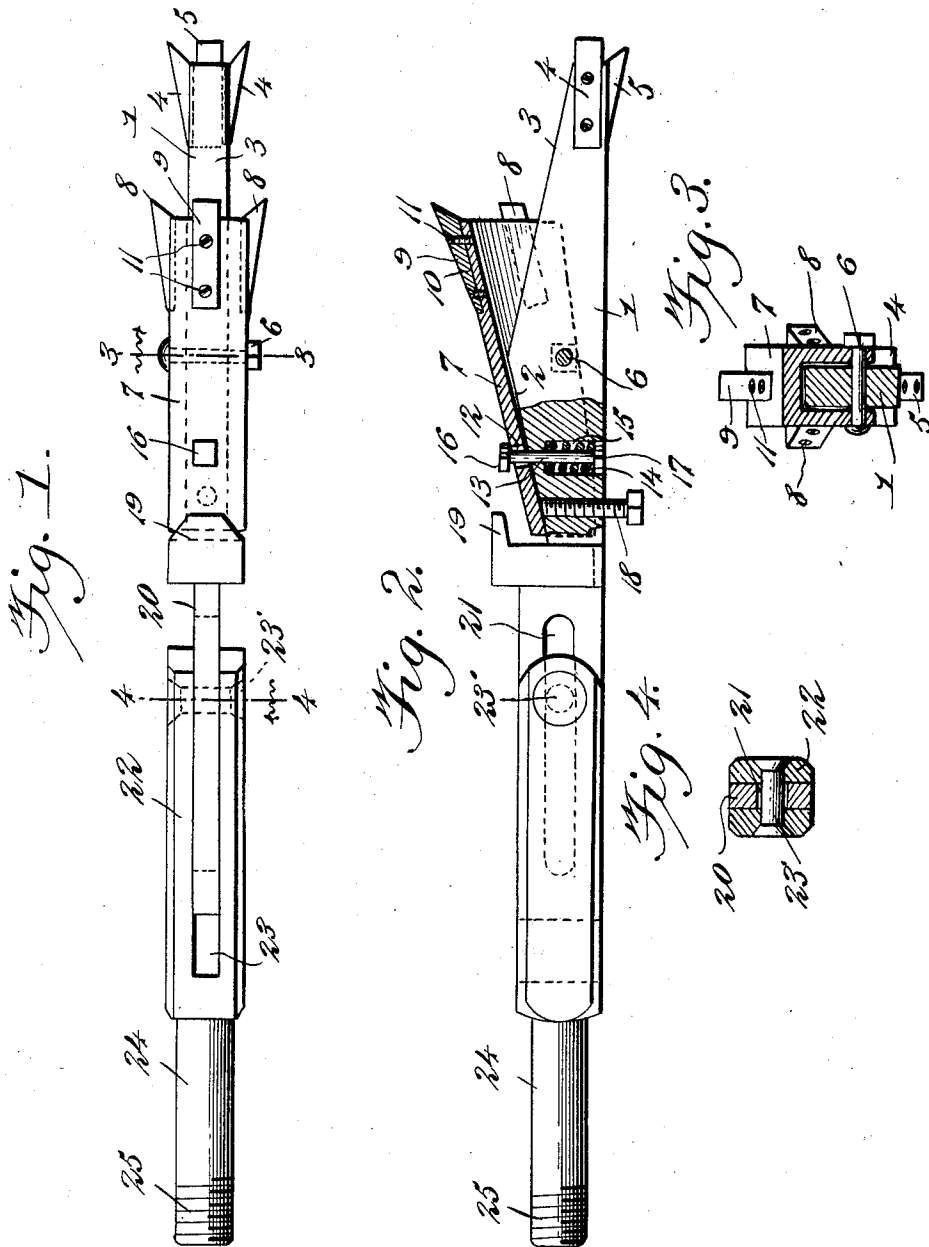


A. ASHTON.
TUBE CLEANER.

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1,058,521.

Patented Apr. 8, 1913.



Witnesses

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ALFRED ASHTON, OF PLYMOUTH, PENNSYLVANIA.

TUBE-CLEANER.

1,058,521.

Specification of Letters Patent.

Patented Apr. 8, 1913.

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To all whom it may concern:

Be it known that I, ALFRED ASHTON, a citizen of the United States, residing at Plymouth, in the county of Luzerne and State of Pennsylvania, have invented new and useful Improvements in Tube-Cleaners, of which the following is a specification.

This invention relates to tube cleaners, the object in view being to simplify and improve upon the construction set forth in my prior Patent No. 1,033,653, dated July 23, 1912.

The main object of the present invention is to provide, in connection with a tube cleaner of the class referred to, a reciprocatory handle and hammer combined, which will greatly facilitate the operation of the device within the tube, and enable said device to be more readily extracted from the tube in case it becomes wedged or partially stuck therein.

A further object of the invention is to provide in connection with the body of the cutter, a novel arrangement of cutting and scraping elements which will greatly expedite the work of removing scale and other foreign matter from tubes.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts, as will be hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the claims hereunto appended.

In the drawings: Figure 1 is a plan view of a tube cleaner, embodying the present invention. Fig. 2 is a side elevation of the same, partly in section. Fig. 3 is a cross section on the line 3—3 of Fig. 1. Fig. 4 is a cross section on the line 4—4 of Fig. 1.

Referring to the drawings, 1 designates the body of the cutter or tube cleaner, the same being provided with reversely inclined faces 2 and 3 at the top thereof, and having secured to the forward gouging end thereof a pair of oppositely arranged wedge-shaped cutting bits 4, and another wedge-shaped cutting bit 5 secured to the bottom face of the body 1, as clearly shown in Figs. 1 and 2. These cutting bits extend beyond the front edge of the body 1, and terminate about in the same transverse plane, and as the body is thrust back and forth within the tube, said cutting bits operate to gouge and scrape away the scale or any other for-

eign matter which may adhere to the inner surface of the tube.

Pivotally mounted at 6 on the body 1 is a scraper 7, which is substantially U-shaped or three-sided in cross section, as shown, so as to fit over and embrace the opposite sides of the body 1. At its advance end, the scraper 7 is provided at opposite sides with wedge-shaped cutting bits 8, and a similar cutting bit 9 is secured to the top edge thereof. In the preferred embodiment of the invention, these cutting bits 8 are set into recesses 10 formed in the outer surface of the scraper 7, and are secured in place by screws 11, or the equivalent thereof.

At a point back of the pivot 6, the body of the scraper 7 is provided with an opening 12, through which passes a bolt 13 having a coiled expansion spring 14, encircling it and arranged in a recess 15 formed in the body 1, as clearly shown in Fig. 2. This bolt is provided at one end with a head 16, and at the other end with a nut 17, whereby the tension of the spring 14 may be regulated. The spring acts to hold the advance edge of the scraper outward, so that it will work in contact with the inner surface of the tube.

To limit the outward movement of the advance edge of the scraper, a set screw 18 is threaded through an opening in the body 1, the end of said set screw bearing against the rear portion and inner surface of the scraper body 7. The inward movement of the advance edge of the scraper is limited by a fixed shoulder 19 formed integrally with the rear part of the body 1 of the cleaner.

Extending backward from the body 1 is a relatively thin shank 20 substantially rectangular in cross section and provided with a longitudinal slot 21. Mounted to slide on the shank 20 is a combined handle and hammer 22 having a recess 23 therein to receive the shank 20, and provided with a limiting pin 23 which passes through the slot 21, and by coming into contact with the walls at the ends of said slot serves to limit the back and forth movement of said handle. The handle is also provided with an end extension 24 which is threaded, as at 25, to enable an extension handle in the form of a pipe to be threaded thereon.

From the foregoing description, it will be seen that by grasping the handle 22, or op-

erating the same by means of the extension
screwed onto the threaded end 25, the han-
dle forms also a hammer which slides back
and forth on the shank 20, and strikes with
5 considerable force against the rear end of
the body 1, imparting a considerable blow
thereto which carries with it the scraper 7.
The backward movement of the handle 22
also gives a blow to the whole device in the
10 opposite direction, thereby enabling the same
to be hammered from its position in the
tube, in case it should become caught or
jammed therein.

What is claimed is:

15 1. A tube cleaner, comprising a body, cut-
ting bits at the advance end thereof, a
spring pressed scraper pivotally mounted
on the cutter body, a shank extending back
from the cutter body and provided with a
20 longitudinal slot, said cutter body and

shank having a shoulder at their junction, a
sliding handle embracing the shank and
movable into contact with said shoulder, and
a pin on the handle working in said slot.

2. A tube cleaner, comprising a body, a 25
spring pressed scraper pivotally mounted on
the body, cutting bits projecting from the
advance edge of said scraper, a spring
adapted to move the advance edge of the
scraper outwardly from the body, a shank 30
extending back from the cutter body, a com-
bined handle and hammer slidable on said
shank, and means for limiting the movement
of said handle in opposite directions.

In testimony whereof I affix my signature 35
in presence of two witnesses.

ALFRED ASHTON.

Witnesses:

WM. J. WATKINS,
ALEX. FERGUSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents
Washington, D. C."