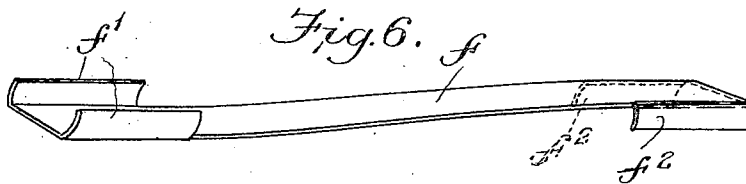
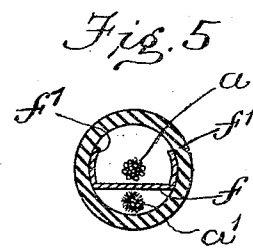
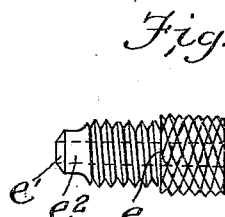
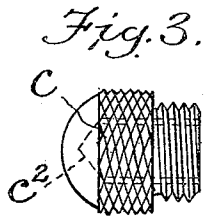
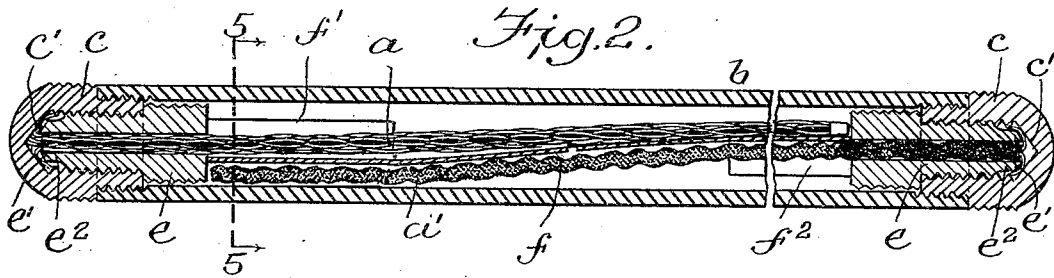
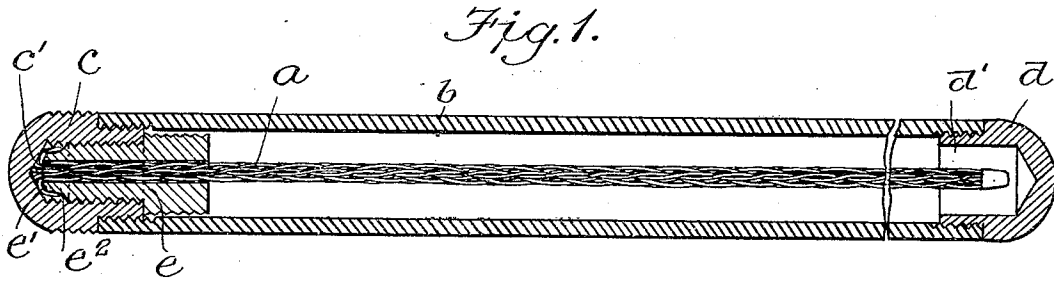


F. R. CUNNINGHAM.
PIPE CLEANER.
APPLICATION FILED FEB. 18, 1910.

961,215.

Patented June 14, 1910.



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UNITED STATES PATENT OFFICE.

FRANK R. CUNNINGHAM, OF MEDFORD, MASSACHUSETTS.

PIPE-CLEANER.

961,215.

Specification of Letters Patent. Patented June 14, 1910.

Application filed February 18, 1910. Serial No. 544,568.

To all whom it may concern:

Be it known that I, FRANK R. CUNNINGHAM, of Medford, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Pipe-Cleaners, of which the following is a specification.

This invention relates to a pipe cleaner adapted to remove obstructions from and to clean out the stems of smokers' pipes, and a casing in which the cleaner may be inclosed when not in use, to avoid soiling of external objects and prevent the emission of disagreeable odors.

My object is to provide in combination with a pipe cleaner, a holder for the latter which may be grasped when the cleaner is to be used, and a casing or shell in which the cleaner may be placed when not in use, and for which the holder makes a tight closure to prevent emission of odors. The shell is designed to enable the cleaner to be laid down or to be placed in the pocket of the possessor without coming into contact with external objects or the clothing, thus constituting a guard against soiling such objects or the clothing.

My invention includes also the combination with a shell or casing of two cleaners of different characters, and closing plugs or caps for the opposite ends of the casing, each of which constitutes a holder for one of the cleaners.

Referring to the drawings, Figure 1 represents a longitudinal sectional view of the combination in which my invention is embodied, the same consisting of a casing, a pipe cleaner removably contained in the casing, a cap for the casing and clamping means for securing one end of the cleaner to the casing. Fig. 2 is a similar view showing a similar combination, but including two pipe cleaners of different characters. Fig. 3 is an elevation of a closing device for one end of the casing, constituting also part of a holder for the cleaning implement. Fig. 4 represents in elevation a clamping means for securing the cleaning implement to the closing device shown in Fig. 3, this closing member and clamping member together constituting the holder. Fig. 5 is a cross-section of the device on line 5—5 of Fig. 2. Fig. 6

is a perspective view of a detachable partition.

The same reference characters indicate the same parts in all the figures.

Referring to the drawings *a* represents a pipe-cleaning implement which is a narrow elongated member of a length and thickness adapting it to pass through the bore of a pipe stem. This implement may be a thin rod or wire, or it may be a composite device made of a number of fine wires braided together, or anything else having sufficient stiffness to enable it to be pushed through the stem of a pipe and to dislodge any ordinary obstruction therein, while being also sufficiently flexible or elastic to enable it to follow the curvature of bent stems.

b represents a shell or casing in which the cleaner is contained when not in use, and by which it is guarded from contact with other objects and prevented from soiling them. This case is preferably a tube of sufficiently hard and durable material, such as hard rubber, and is open at both ends. Removable closures are provided for the respective ends of the case, the same consisting of the plugs or caps *c* and *d*, having threaded nipples to engage internal threads in the ends of the casing. These caps may if desired be modified in form so as to pass over and screw externally upon the ends of the casing.

In the form of the device shown in Fig. 1 the cap *d* is of different form from the cap *c* and is merely intended as a closure for the casing, the cap *c*, however, constituting one member of a two-part holder by which one end of the cleaning implement *a* is held. The other part of the cleaner holder is a clamping plug *e* threaded into a central recess in the cap *c* and having a central bore to contain the cleaner *a*. The inner end portion of the clamping plug *e* has a surface *e'* which coöperates with the surface *c'* of the cap *c* at the bottom of the bore of the latter to clamp the end of the cleaner. When the latter is formed of a bunch of wires or of a braided wire, the members or parts thereof are bent over the clamping surface *e'* and are gripped between the latter and the internal surface *c'* of the cap. The end portion of the clamp is reduced in diameter at *e²*, whereby a recess is provided for containing

the bent-over portion or portions of the cleaner.

The cap or plug *d*, as appears from Fig. 1, has a recess *d'* into which the opposite end of the cleaner may extend.

In using the cleaner it is handled by the holder *c*, which enables it to be removed from the case, inserted into the stem of the pipe, and returned to the case, without being directly touched by the fingers of the user. When in the case, and when the holder is screwed tightly into the latter, the cleaner is entirely inclosed and protected. The case can be slipped into the pocket of the user and will at the same time protect the cleaner from being bent, and protect the clothing of the user from being soiled.

The caps or closing devices for the opposite ends of the casing may be made alike and each fitted with a clamping member *e*, as shown in Fig. 2, in which case the same casing is entitled to receive therein cleaners inserted from opposite ends. These cleaners may be of different characters such as the pusher *a* and the swab *a'*.

I desire to emphasize the fact that the cleaning devices or implements are detachable from the holders or caps so that fresh cleaners may be substituted when those previously in use have become soiled.

In order to remove a cleaner from its holder it is necessary only, after removing the cap from the casing, to grasp the clamp portion *e* of the holder and unscrew the cap *c* therefrom. This exposes the bent-over part or portions of the cleaner, whereupon such part or portions may be bent out and the cleaner removed. Upon inserting a fresh cleaner in the clamp member, it is passed through the latter until its end projects somewhat beyond the clamping surface *e'* thereof, and such projecting part is bent over. When the cleaner consists of a number of wires, the component parts may be bent in different directions. The cap is then screwed upon the clamp until the bottom of its internal recess bears upon the bent-over part or portions of the cleaner and clamps the same firmly against the holder. It will thus be seen that the holder securely grips the cleaner, so that it can be easily handled and manipulated without requiring to be itself grasped by the fingers of the user and thus liability of soiling the fingers is avoided. The means by which the cleaner is secured in the holder affords, as previously stated, a simple and ready means for removing a soiled cleaner and substitution of a fresh one.

Another feature of the invention is a partition adapted to be inserted in the casing to keep the two cleaners, where two are employed, separate from one another. Such a

partition is shown in Fig. 6 and consists of a strip *f* having wings *f'* and *f''* at its sides near its opposite ends, which wings are bent over in opposite directions from the body of the partition and serve to bear against the inner walls of the sheath or casing *b* so as to locate the partition, as indicated in Fig. 2. The wings *f'* and *f''* position the partition so that its opposite ends are on opposite sides of the axis of the sheath or casing, whereby the cleaners when inserted into opposite ends of the casing are deflected and separated from each other by the partition. Thus the cleaners are kept from interfering with each other and are likewise prevented from soiling one another.

I claim,—

1. In combination, a narrow elongated pipe-cleaning implement, a holder means whereby one end of said implement is securely affixed to said holder in a detachable manner, and a casing adapted to receive said implement, said casing and holder having inter-engaging securing means.

2. The combination of a casing or shell, a head detachably secured to the end of said shell, and a pipe cleaner detachably secured at one end to said head and contained within the shell.

3. A pipe-cleaning implement comprising a rod or wire or the like and a holder therefor, said holder consisting of a cap member and a plug threaded into said cap member, said plug having a recess to receive an end of the wire and the cap and plug having co-acting means for clamping the end of the wire.

4. The combination of a casing, plugs detachably held on opposite ends of said casing, and cleaning implements of different characters each capable of passing through the stem of a pipe and detachably secured each at one end thereof to one of said plugs.

5. A pipe-cleaning implement comprising an elongated member and a holder therefor, said holder including clamping means by which the said member is detachably secured.

6. The combination of a casing, holders detachably secured to opposite ends of said casing, cleaning implements of different characters, secured detachably to the several holders, and a partition extending longitudinally of the casing and dividing the interior thereof into two separate parts or chambers, each receiving one of said holders.

7. The combination of a casing or shell, a partition plate extending longitudinally of said shell and having wings at its sides bearing against the inner walls of the shell to retain the partition in such a location as to divide the interior of the shell into two longitudinal chambers, cleaner holders detachably connected to opposite ends of the shell

and cleaning implements detachably secured to the several holders and adapted to lie on opposite sides of such partition.

5 8. A pocket pipe-cleaner, comprising a casing or shell having open ends, closing devices removably secured to each end of said shell, a relatively stiff pusher adapted to pass through the stem of a pipe for dislodging obstructions therein, secured to one of
10 said closing devices, and a swab secured to

the other closing device, also capable of passing through the stem of a pipe and having a soft fibrous exterior for removing finely divided matter.

In testimony whereof I have affixed my 15 signature, in presence of two witnesses.

FRANK R. CUNNINGHAM.

Witnesses:

J. H. BROCKWAY,
C. ELBERT DOLE.