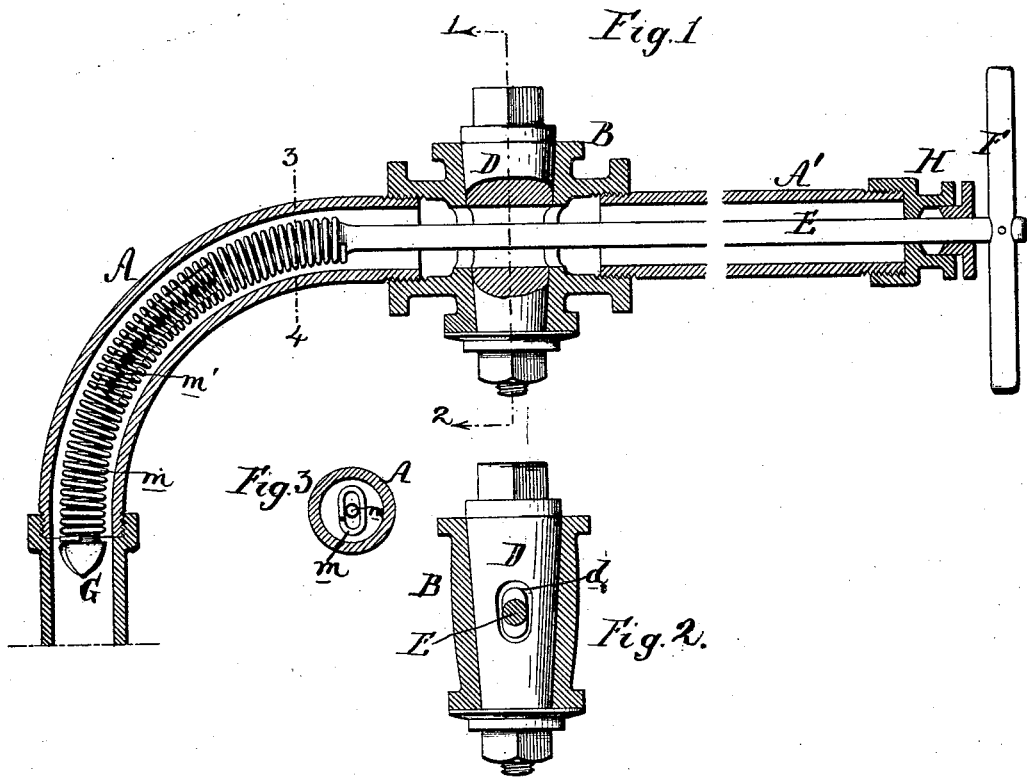


S. D. STROHM.  
PIPE-CLEANING TOOLS.

No. 195,181.

Patented Sept. 11, 1877.



Witnesses,

*John M. Deane.*  
*Henry Bowser.*

*Inventor*  
*Samuel D. Strohm*  
*by his attorneys,*  
*Howson and Co.*

# UNITED STATES PATENT OFFICE.

SAMUEL D. STROHM, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN PIPE-CLEANING TOOLS.

Specification forming part of Letters Patent No. 195,181, dated September 11, 1877; application filed August 11, 1877.

*To all whom it may concern :*

Be it known that I, SAMUEL D. STROHM, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Pipe-Cleaning Tools, of which the following is a specification:

The object of my invention is to construct an instrument for cleaning the interior of pipes, and especially of bent pipes, the instrument being so constructed that it can be passed through the plug of a cock attached to a pipe.

In the accompanying drawing, Figure 1 is a view of the instrument as it appears when applied to a bent pipe, which is shown in section; Fig. 2, a section on the line 1 2, Fig. 1; and Fig. 3, a section on the line 3 4.

A represents a bent pipe, onto one end of which is, in the present instance, screwed one branch of a cock, B, the plug D of the latter having the usual elongated opening *d*. (Shown in Fig. 2.)

E is the rigid stem of the instrument, and provided at the end with a suitable handle, F, and secured at the opposite end to two spirals, *m m'*, of wire, one spiral being contained within the other.

A cutting-bit, G, of a form somewhat similar to that of the cutting end of a drilling-tool, is secured to the outer ends of the two spirals.

When the instrument has to be used for cleansing gas and water pipes I prefer to combine it with a tube, A', having a detachable stuffing-box, H, adapted to the stem of the instrument, the tube being of such a length that it will contain the spirals, so that it can be screwed to the cock before the plug of the latter is opened, thereby preventing the escape of fluids.

After the tube has been secured to the cock, the plug is opened, the instrument passed through the elongated opening in the plug, as shown in Fig. 1, and pushed backward and forward, and turned round by means of the handle.

In order that the instrument may pass freely through the elongated opening of the plug, the outer spiral is flattened, as shown in Fig. 3.

The instrument may be used without the cutting-tool, in which case dependence will be placed upon the coils of the spirals for removing all obstructing matter, the latter being lodged within the coils which are washed after the removal of the instrument from the pipe.

When the interior of the pipe, however, is incrustated with hard or comparatively hard substances, the use of the cutting-tool is advisable, as its cutting-edges will remove more or less of the incrustation when the instrument is turned and pushed backward and forward.

While one spiral may be sufficient if made of strong wire, I prefer two spirals, one within the other, as shown, the wire of one being coiled to the right, and that of the other to the left, so that the flexible portion of the instrument may be the better able to resist the torsion to which it must be necessarily subjected. I prefer to connect the stem and bit by a straight but flexible strip of metal, in addition to the spirals, so as to strengthen the flexible connection and insure the attachment of the bit to the stem, even in case the spirals break.

I claim as my invention—

1. The within-described pipe-cleaner composed of a spiral or spirals and a stem combined, substantially in the manner described.

2. A pipe-cleaner in which a stem is combined with a flattened spiral, substantially as set forth.

3. A pipe-cleaner in which a rigid stem and cutting-bit are connected together by, and combined with, a flexible connection, as set forth.

4. The combination of the spiral and its stem with the tube A' and its detachable stuffing-box H.

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

SAMUEL D. STROHM.

Witnesses:

HUBERT HOWSON,  
JNO. A. BELL.