To all whom it may concern:

Be it known that I, WILLIAM E. ElAM, a citizen of the United States, residing at Washington, in the District of Columbia,

5 have invented certain new and useful Improvements in Tobacco-Pipe Cleaners, of which the following is a specification, reference being had therein to the accompanying drawing.

10 The object of this invention is to provide tobacco pipes with convenient and effective cleaning and liquid absorbing devices.

In general terms, the invention involves attaching to the removable mouthpiece a spring cleaner adapted to scrape the interior of the stem and remove therefrom any foreign material whenever the scraper or cleaner is withdrawn.

In the accompanying drawings, which show the preferred construction, Figure 1 shows the pipe in axial section through the bowl and stem. Fig. 2 is a view of the stem cleaner body detached from the pipe and seen in the position it has in Fig. 1. Fig. 3 shows the same cleaner after rotation of 90° from the position it has in Fig. 2. Fig. 4 is a perspective view of the stem body. Fig. 5 is an end view of the cleaner, looking from the bowl in Fig. 1. Fig. 6 shows the opposite end of the cleaner, looking from the stem or mouthpiece end of the pipe. Fig. 7 illustrates a modified working-end portion of the cleaner. Fig. 8 shows in axial section a second modification of the same portion of the cleaner.

In these views, A represents a suitable pipe bowl, B its stem, and C its detachable mouthpiece. The smoke duct D in the stem is preferably straight, of circular cross-section, larger than in ordinary stems, and reamed at its outer end to receive the preferably smooth, closely fitting, conical inner end of the mouthpiece. Within the stem passage and preferably extending from the mouthpiece nearly to the bowl cavity, is a spring metal cleaner shown in this instance as having two equal arms or branches E, E' fixed to and projecting inwardly from the mouthpiece and each having at its free end a semicircular scraper or disk member F, F', approximately perpendicular to the stem's axis, the two members together forming a closely fitting diaphragm extending across the smoke passage. To allow smoke to pass the diaphragm, the disk formed by the two members is centrally perforated at G, or if preferred, the two parts may be slightly separated as shown at G'. Fig. 7, the perforation being then unnecessary. A convenient means for securing these arms to the mouthpiece is shown in Figs. 1, 2, 3, where the arms are the end portions of a single, flat metal strip doubled at the middle to U-shape and having at the bend a threaded perforation H through which a tubular screw I passes into the mouthpiece, the passage in the screw registering with the duct in the mouthpiece. With this construction, rotation of the mouthpiece in the proper direction, as in removing or inserting, tends rather to tighten than to loosen the attachment of the cleaner. The means for attaching, may, however be varied, and obviously the use of the invention is not restricted to cases where the mouthpiece is connected to the stem in the manner shown.

The resilient arms or branches of the cleaner are so made that the scraping members at their ends spring apart when the cleaner is detached from the stem, and the scrapers may be integral, as shown, the strip ends being suitably widened and the strip being bent sharply inward and then doubled back upon itself.

Between the branches may be placed absorbent material J, preferably so placed that it will not obstruct either end of the cleaner preventing the passage of smoke. Preferably, the branches do not equal in width the space in which they lie in the stem, and it is evident that material placed between them while the cleaner is detached may be clamped by merely inserting the cleaner in the stem and be released automatically when the cleaner is withdrawn.

It is obvious that the two scraping disk members being constantly urged apart by resiliency, withdrawal of the cleaner, by removal of the mouthpiece causes these members to scrape gently the entire interior surface of the passage over which they pass and to remove outwardly all matter accumulated therein, whether solid or not, and the members following the reamed surface necessarily clean that portion also. I may use perforate scraper members, F2, F3, Fig. 8, in different planes, each extending beyond the edge of its companion, and the upper member preferably extending well down into the lower half of the passage. Smoke will then be drawn from nearly the lowermost point of the bowl cavity and will pass below the
first member and thence upwardly over the edge of the second member. The scraping in this form will be as in the first case, except that in passing over the reamed surface the slight gap between the two members will be avoided.

What I claim is:

1. The combination with a pipe having a readily detachable mouthpiece, of a transverse member of a plurality of sections normally lying within the stem near the bowl cavity, connected to the mouthpiece and having its margin circumferentially fitting and yieldingly pressed outward against the interior surface of the stem, to scrape the same longitudinally when moved from the vicinity of the bowl cavity.

2. The combination with a pipe having a detachable mouthpiece, of a stem cleaner fixed to the mouthpiece, extending therefrom in the smoke duct nearly to the bowl cavity and provided with a yieldingly expanding transverse scraper of a plurality of sections approximately fitting peripherally, the interior of the smoke duct in the stem and adapted, when moved longitudinally to the free end of the stem, to scrape the interior thereof and carry out before it any material therein.

3. The combination with a pipe having a detachable mouthpiece, of a stem cleaner fixed to the mouthpiece and comprising normally divergent spring arms extending within the stem toward the bowl cavity and terminating in oppositely turned scraper members resiliently pressed against the opposite walls of the smoke duct.

4. The combination with a mouthpiece adapted to be detachably connected with a pipe stem, of a scraping stem cleaner comprising a flat spring metal strip doubled near its middle, to U-shape, to form two divergent spring arms each terminating at its free end in an approximately semicircular disk adapted to fit half the interior surface of the stem, and a tubular screw passing through the bend in the strip in alignment with the smoke duct in the mouthpiece and fixing the cleaner to the latter.

5. The combination with a pipe having a detachable mouthpiece of normally divergent resilient arms secured to the inner end of the latter, extending within the stem toward the bowl cavity, and provided with terminal transverse scrapers respectively together fitting approximately the entire periphery of the smoke passage in the stem.

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

WILLIAM E. ELAM.

Witnesses:
FRANCIS S. MAGUIRE,
SAMUEL M. BROSIIUS.