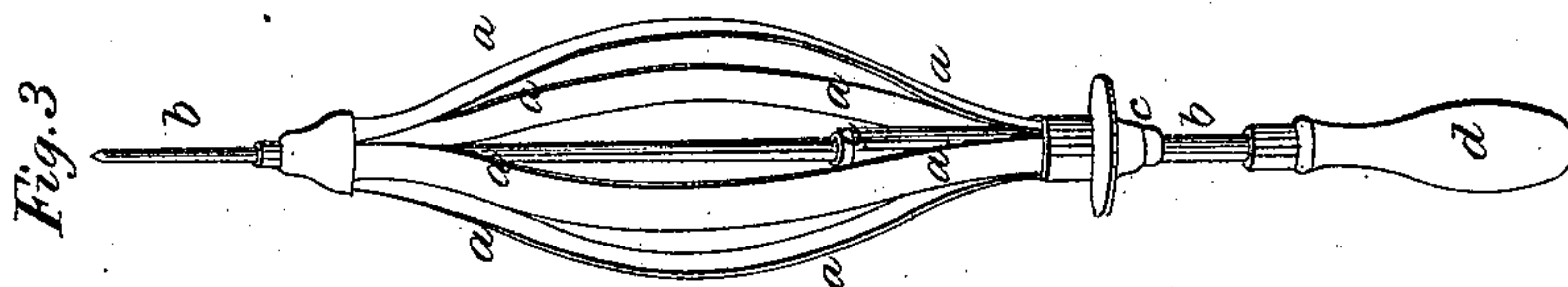
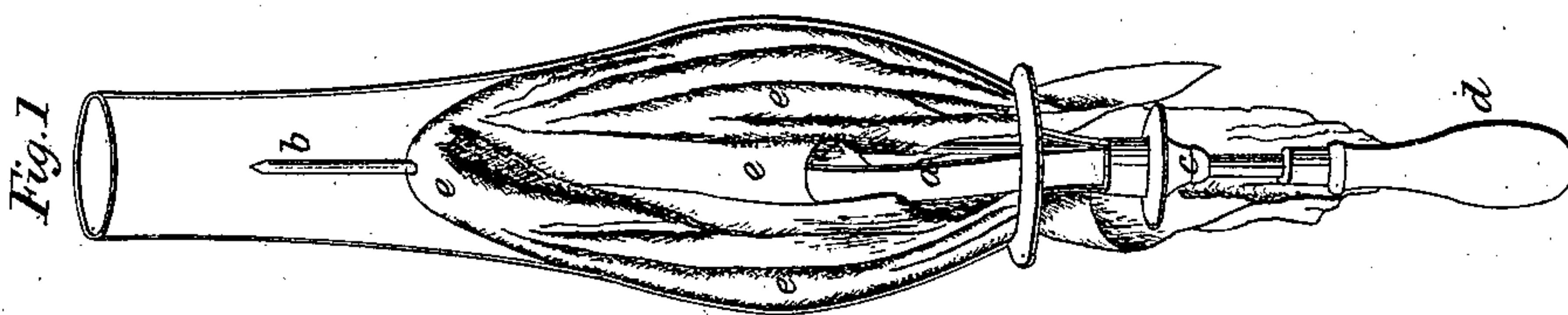
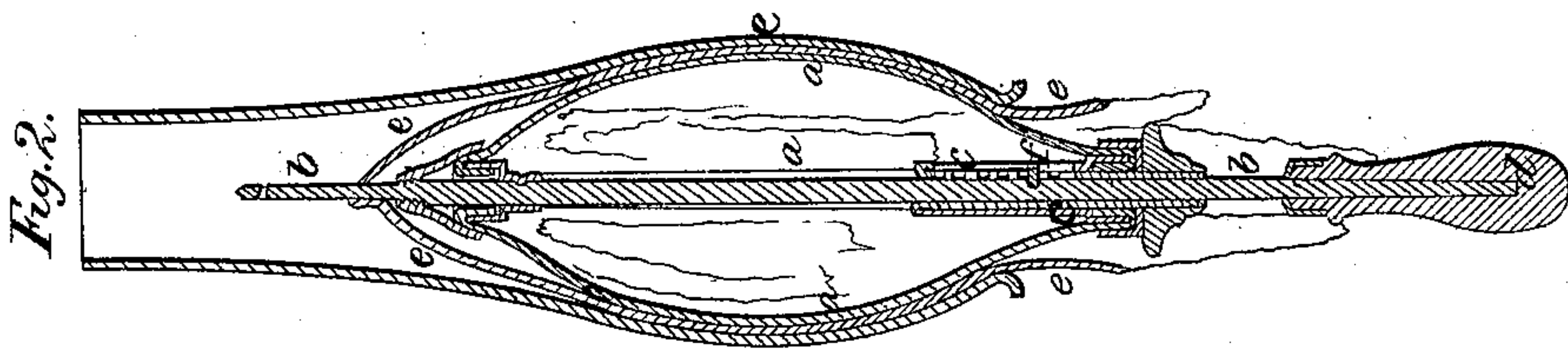
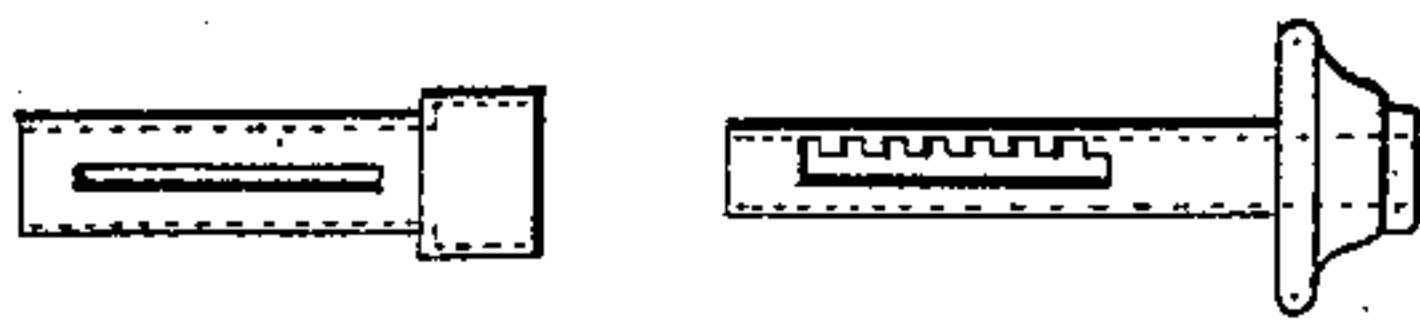


T. B. DeForest,
Lamp Chimney Cleaner.

N^o 31111.

Patented Jan/5/1861.



Witnesses
H. H. Colwell
C. B. Peckard,

Inventor
Thomas. B. DeForest

UNITED STATES PATENT OFFICE.

THOMAS B. DE FOREST, OF BIRMINGHAM, CONNECTICUT.

INSTRUMENT FOR CLEANING LAMP-CHIMNEYS.

Specification of Letters Patent No. 31,111, dated January 15, 1861.

To all whom it may concern:

Be it known that I, THOMAS B. DE FOREST, of Birmingham, in the county of New Haven and State of Connecticut, have invented a new and useful Instrument for Cleaning Lamp-Chimneys, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 represents a perspective view of the instrument introduced into a lamp chimney: Fig. 2 is a sectional elevation of the same: Fig. 3 shows a perspective view of the instrument with its envelop removed.

Similar letters of reference denote the same part in the several figures.

My invention relates to a new article of manufacture, having for its object a simple apparatus whereby the interior of lamp chimneys, or lantern glasses may be conveniently and thoroughly wiped, and to this end my said invention consists in the combination with a laterally expanding frame of a removable fibrous envelop. And my said invention also consists in forming the aforesaid expanding frame of curved springs with a handle attached, as hereinafter set forth.

To enable others skilled in the arts, to make and use my invention, I will proceed to describe its construction and mode of use.

In the accompanying drawings, Fig. 3 shows a "spindle shaped" frame formed of four curved springs *a* of flattened wire or other material elastic under flexure. The upper ends of these four springs (*a*) are secured by soldering, or otherwise, to a stout wire or shaft *b*, while their lower ends are attached to a tube or ferrule *c*, which is concentric with the wire *b*, and free to move in the direction of its axis. The shaft *b* is prolonged below the tube *c*, where it is furnished with a wooden handle *d*. It can be readily understood, that by pushing up the ferrule *c* toward the fixed ends of the springs *a*, a greater bending out of the free parts of the said springs will be produced, and a consequently greater bulging of the frame—or in other words: The approach of the ends of the frame toward each other will occasion an expansion of its diameter.

An envelop of cloth, paper, or other soft fibrous texture, covers the described expanding frame, as shown in Figs. 1 and 2 at *e*. This envelop *e* may be made of a square

piece of cloth, which can be applied to the frame by being pierced centrally by the upper end of the shaft *b*, or otherwise secured to it, and allowed to hang down around the frame about which it will be drawn when the instrument is thrust into the chimney to be cleaned.

The envelop *e* may be of any form which would permit it to inclose the frame in a manner to allow its expansion, at the same time allowing its ready removal from the frame for the substitution of a clean one.

The mode of using my invention is as follows: The apparatus is pushed into a lamp chimney, as illustrated by Figs. 1 and 2, in which it is represented as applied to the bulging chimney of a "coal oil lamp"; when so introduced the frame may be expanded, by pushing up the tube *c*, so that the soft envelop will be forced out quite rigidly against the surface of the glass, when by turning or twisting the instrument at the same time forcing it up through the chimney the said surface can be thoroughly cleaned.

If the springs *a* forming the expanding frame be sufficiently flexible, they can be bent out, by pushing up the ferrule *c*, into quite abrupt bulges of the chimney. They will also accommodate themselves to its cylindrical parts, and in fact will fit nearly all ordinary forms of lamp chimneys. It would be necessary to use a larger instrument for lantern glasses, than would be convenient for lamp chimneys. I have found that pieces of clock springs about one fourth of an inch wide are suitable for the springs *a*.

The curvature of the springs *a* need only be sufficient to insure their bending outward, by the approach of their opposite ends. I prefer, however, to make them of such curvature, that the frame formed by them, shall, when in its normal condition, be larger in diameter midway between its ends, than the smaller parts of any chimney for which it may be used, so that when pushed up into such smaller parts, the elasticity of the frame will keep its cloth envelop forced against the surface of the glass.

I have shown at (Fig. 2), a pin projecting from the shaft *b*, into a straight slit in the tube *c*, to prevent the turning of the said tube relatively to the upper end of the frame. This device, however, will not be

necessary, unless the springs *a* are quite narrow.

I do not wish it to be understood, that my invention is limited to the precise form, or
5 number of the springs forming the expanding frame, nor to the form of the removable fibrous envelop for the same; but

What I claim as a new article of manufacture of my invention, and desire to secure by Letters Patent, is,

10 A wiping instrument for lamp chimneys,

formed by the combination with a laterally expanding frame of a removable, fibrous envelop; operating substantially as hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 30th day of October 1860.

15

THOMAS B. DE FOREST.

In presence of—

C. B. RICHARDS,

H. I. SCOTT GOOD.