

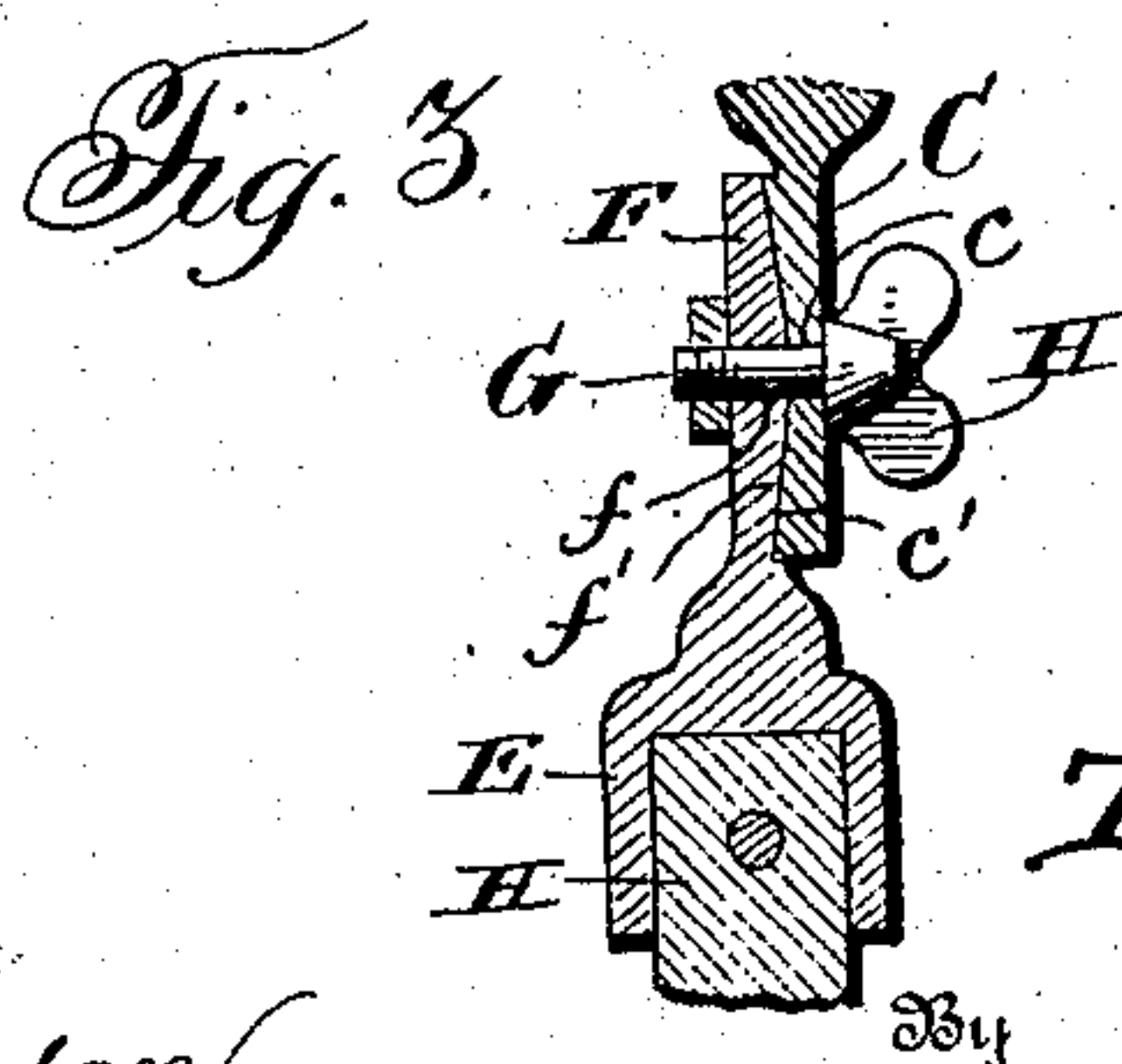
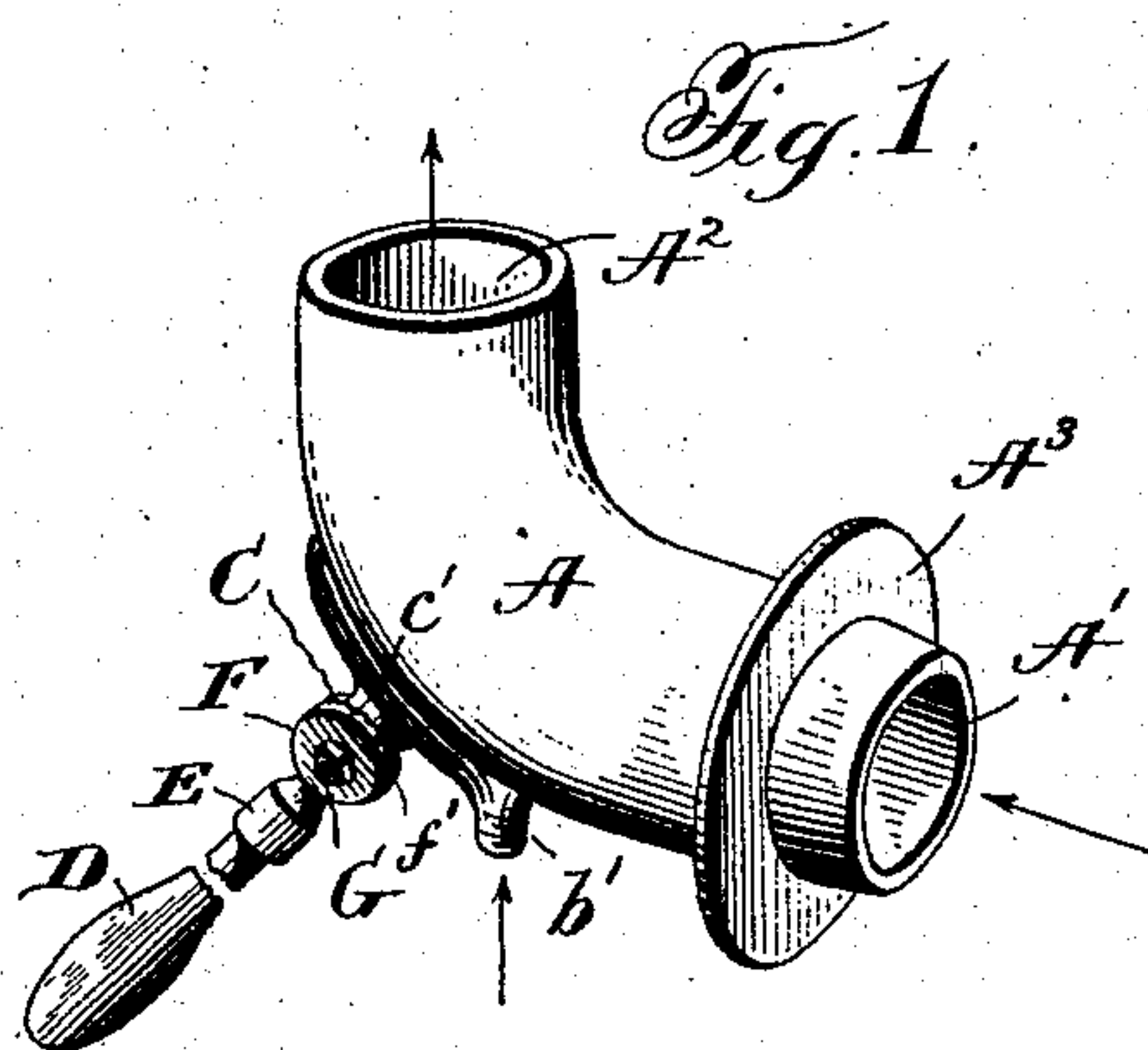
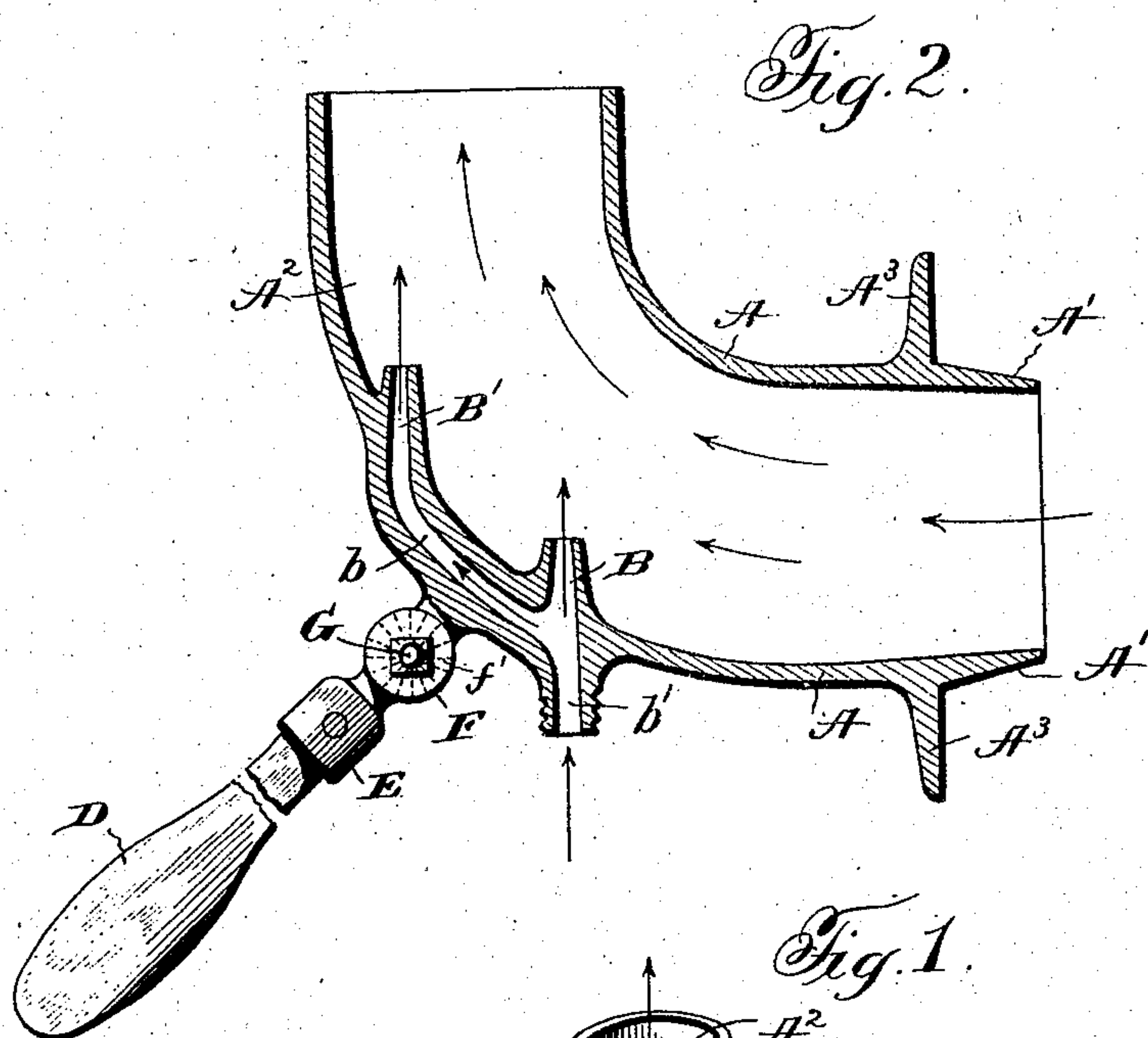
No. 751,446.

PATENTED FEB. 9, 1904.

T. J. BAKER & E. ALEXANDER.
FLUE CLEANER.

APPLICATION FILED JULY 22, 1903.

NO MODEL.



Witnesses:

Jas. Hutchinson.
Thos. C. Stearns

Inventors

T. J. Baker & E. Alexander,

N. W. Phillips
Attorney

UNITED STATES PATENT OFFICE.

THOMAS J. BAKER AND ELI ALEXANDER, OF FINDLAY, OHIO.

FLUE-CLEANER.

SPECIFICATION forming part of Letters Patent No. 751,446, dated February 9, 1904.

Application filed July 22, 1903. Serial No. 166,565. (No model.)

To all whom it may concern:

Be it known that we, THOMAS J. BAKER and ELI ALEXANDER, citizens of the United States, residing at Findlay, in the county of Hancock and State of Ohio, have invented new and useful Improvements in Flue-Cleaners, of which the following is a specification.

Our invention relates to an improvement in flue-cleaners, and more particularly to that class of flue-cleaners in which a blast of steam or air is used to create a vacuum to suck out the dirt and soot from the flue.

The object of our invention is to provide an improved flue-cleaner of this type, which can easily be manipulated by an attendant to clean all of the tubes in a boiler of any type.

In the drawings, wherein a preferable embodiment of our invention is shown and wherein like numerals of reference refer to similar parts in the several views, Figure 1 is a perspective view of our improved flue-cleaner. Fig. 2 is a longitudinal section of the same, and Fig. 3 is a detail view showing the manner of securing the handle to the cleaner.

Referring now more particularly to the drawings, A indicates the body of our cleaner, which is in the form of a hollow elbow provided at one end with the nozzle A', which is adapted to be inserted in the flue to be cleaned, and at the other end with the nozzle A'', extending at substantially right angles to the nozzle A', which forms an outlet for the soot and dirt from the flue. An annular flange A³ is formed around the end of the nozzle A'. This flange A³ abuts against the end of the boiler and forms a tight joint therewith to prevent the escape of any soot from the tube when the nozzle A' is inserted therein. In practice we prefer to make the nozzle A' quite small and the flange A³ quite wide, so that the cleaner may be used with equal facility on boilers provided with large and small tubes.

B and B' are two steam or air nozzles secured in the curved portion of the elbow-shaped body A. The nozzles B and B' are so disposed that they are in alinement with the nozzle A'', so that a jet of steam or air coming therefrom would pass directly through said nozzle A'' and create a strong suction through the nozzle A' and the boiler-tube. The nozzle

B' is secured at the topmost portion of the curved part of the elbow-shaped body A, while the nozzle B is secured in as low a position in said curved portion as is possible for it to be and still be in alinement with the nozzle A''. 55

In the cleaners of this type heretofore in use difficulty has been experienced owing to the fact that there was a tendency for the soot to accumulate in the bend of the elbow around the base of the steam or air nozzle. We have overcome this difficulty by placing a plurality of nozzles in the body of the cleaner at different heights on the curved portion of the elbow. A channel or pipe b connects the nozzles B and B' with a steam or air inlet b', which is adapted to be connected by a flexible tubing with a suitable supply of steam or air. Integrally secured to the back of the channel or pipe b is an approximately circular-shaped ear C, provided at its center with an aperture c and having one of its sides formed with radial corrugations c'. The handle D of the cleaner has secured upon one end a ferrule E, which is provided with an integrally-formed ear F, provided with a central aperture f and having on one of its sides radial corrugations f', similar to those on the ear C on the body of the cleaner. 60 65 70 75

G is a bolt adapted to pass through the apertures c and f in the ears C and F, and H is a thumb-nut adapted to screw on the end of the bolt G to clamp the ears E and F together. 80

It will be seen from the above description that by loosening the thumb-nut H the handle D can be adjusted to any desired angle relative to the body A of the cleaner and that when the thumb-nut H is tightened the corrugated portions on the ears C and F engage with each other and hold the handle securely in its adjusted position. 85 90

By providing our cleaner with an adjustable handle we have greatly enlarged the field of work for which it can be used, as it can by adjusting the handle to the desired position be used with equal ease on a boiler of any height or on boilers of either the vertical or horizontal type. 95

In constructing our improved cleaner we prefer to form the body A, the nozzles B and B', the connecting channel or pipe b, the inlet-pipe 100

6', and the ear C integral, although it is not essential that we should do so.

We do not desire to limit ourselves to the precise form and construction shown in the drawings, as it is obvious that many minor changes might be made to the construction shown therein without departing from the spirit of the invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. A flue-cleaner comprising a hollow elbow-shaped body open at the ends, and a handle secured to said body and adjustable in a plane longitudinal of said body.

2. A flue-cleaner comprising a hollow elbow-shaped body open at the ends and a plurality of nozzles secured at different heights in the curved portion of said body.

3. A flue-cleaner comprising a hollow elbow-shaped body provided at one end with a nozzle adapted to enter the boiler-flue and at the other end with an outlet-nozzle extending substantially at right angles to said nozzle, and a plurality of steam-nozzles secured at different heights in the curved portion of the body and in alinement with said outlet-nozzle.

4. A flue-cleaner comprising a hollow elbow-shaped body provided at one end with a nozzle adapted to enter the boiler-flue and at the other end with an outlet-nozzle extending substantially at right angles to said nozzle, and a plurality of steam-nozzles secured at different heights along the curved portion of the elbow-shaped body.

5. A flue-cleaner comprising a hollow elbow-shaped body provided at one end with a nozzle adapted to enter the boiler-flue and at the other end with an outlet-nozzle extending substantially at right angles to said nozzle, and

two upwardly-extending steam-nozzles secured in the upper and lower portions of the curved portion of the body and in alinement with the outlet-nozzle.

6. A flue-cleaner comprising a hollow elbow-shaped body provided at one end with a nozzle adapted to enter the boiler-flue and at the other end with an outlet-nozzle extending substantially at right angles to said nozzle, a steam-nozzle secured in said body, an ear secured to said body, and a handle adjustably secured to said ear.

7. A flue-cleaner comprising a hollow elbow-shaped body provided at one end with a nozzle adapted to enter the boiler-flue and at the other end with an outlet-nozzle extending substantially at right angles to said nozzle, a steam-nozzle secured in said body, an ear secured to said body provided with a central aperture and having one side radially corrugated, a handle having at one end an ear provided with a central aperture and having one side radially corrugated, a bolt arranged to pass through the apertures in said ears and a nut on the end of said bolt.

8. A flue-cleaner comprising a hollow elbow-shaped body open at the ends, a plurality of nozzles secured at different heights in the curved portion of said body, a steam-inlet in said body, and a channel connecting said steam-inlet with said steam-nozzles.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

THOMAS J. BAKER.
ELI ALEXANDER.

Witnesses:

HARRY W. BAKER,
MERLE D. SOURS.