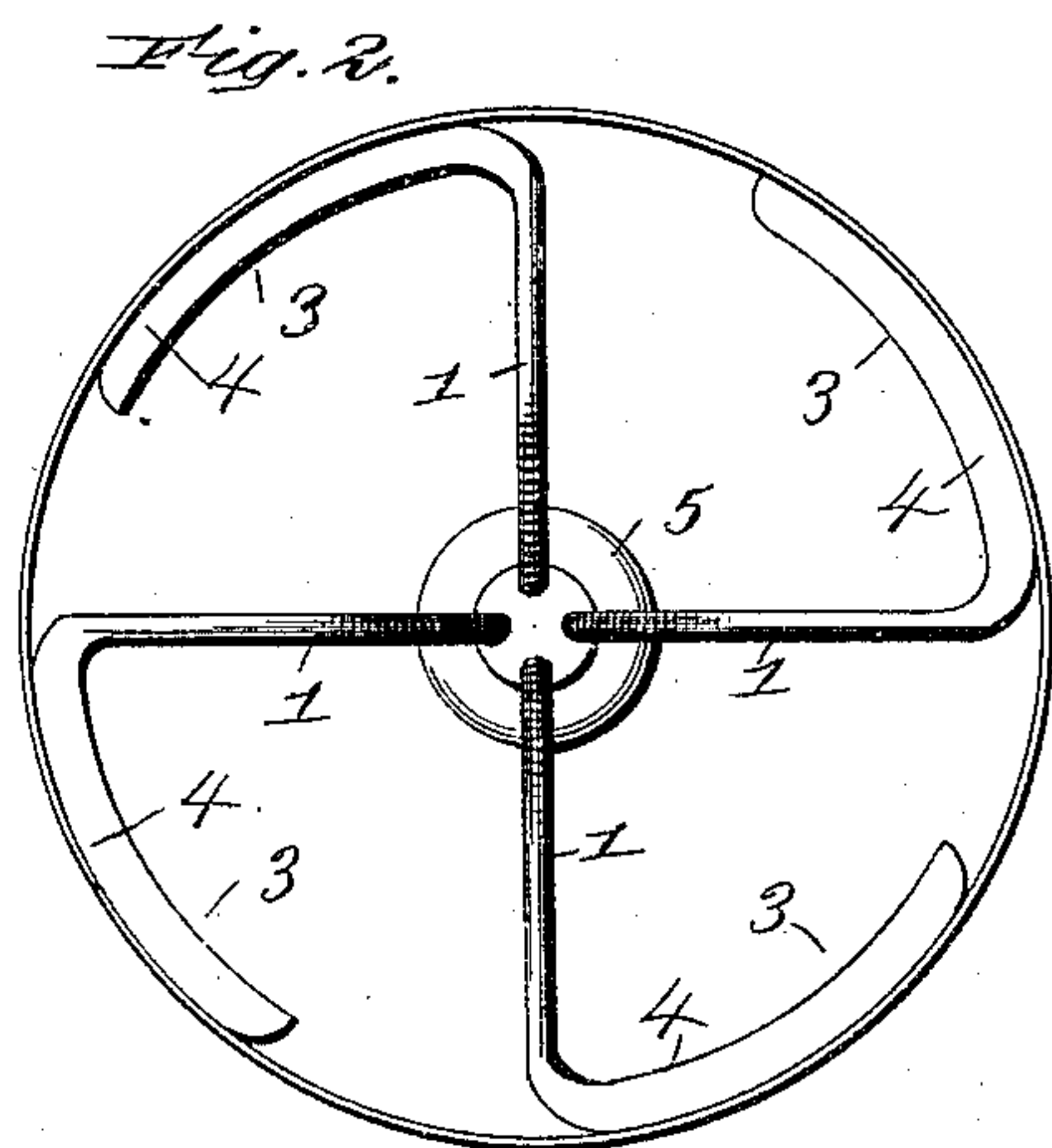
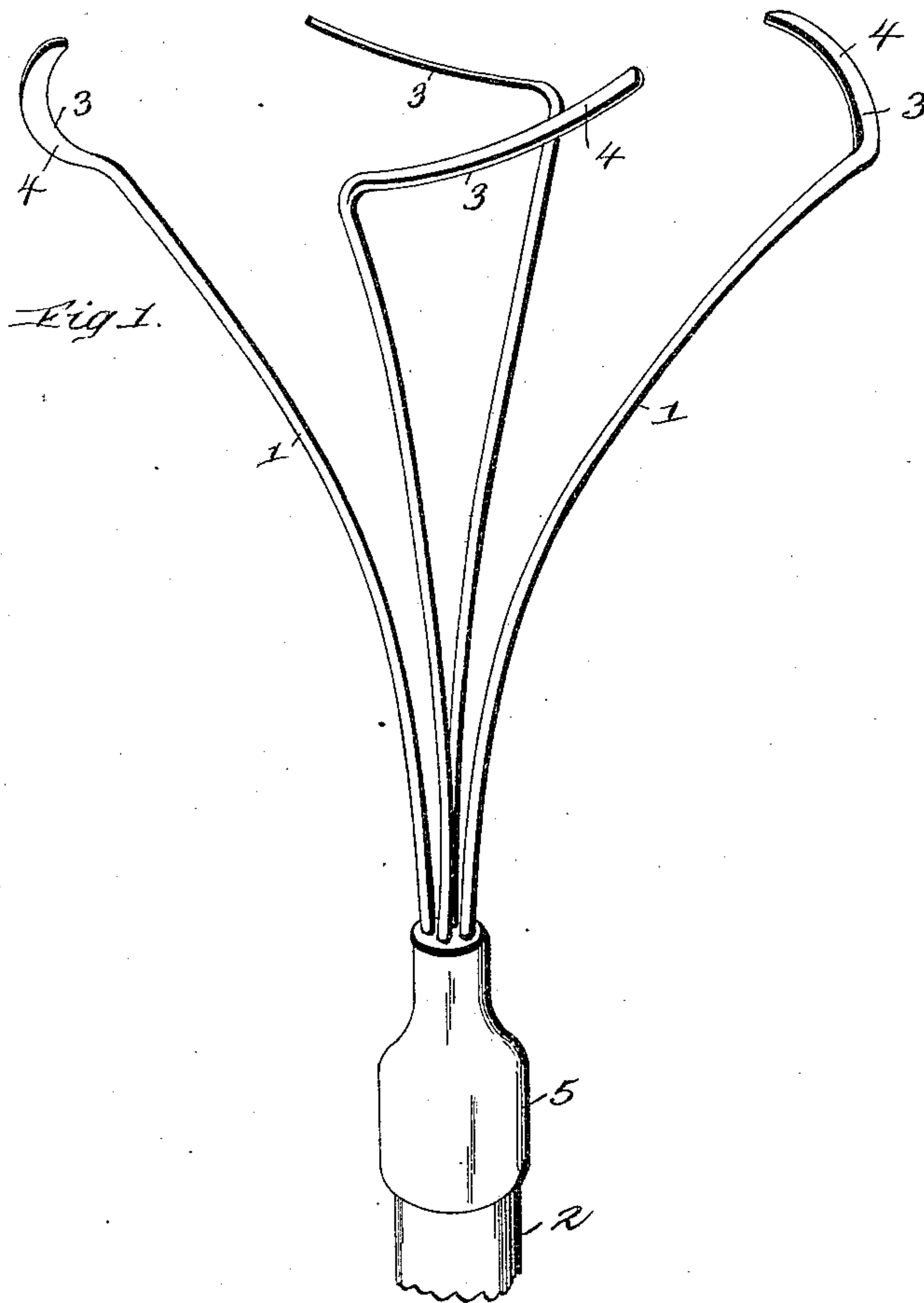


(No Model.)

H. G. BOOZ & J. C. VANDEGRIFT.
PIPE OR FLUE CLEANER.

No. 427,963.

Patented May 13, 1890.



Witnesses
A. A. Haeder
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Inventors
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UNITED STATES PATENT OFFICE.

HARVEY G. BOOZ AND JOHN C. VANDEGRIFT, OF DOYLESTOWN, PENNSYLVANIA.

PIPE OR FLUE CLEANER.

SPECIFICATION forming part of Letters Patent No. 427,963, dated May 13, 1890.

Application filed February 13, 1890. Serial No. 340,318. (No model.)

To all whom it may concern:

Be it known that we, HARVEY G. BOOZ and JOHN C. VANDEGRIFT, citizens of the United States, residing at Doylestown, in the county of Bucks and State of Pennsylvania, have invented certain new and useful Improvements in Pipe and Flue Cleaners; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to flue-cleaners; and it consists of such a device as shall be simple, cheap, and effective, as will be hereinafter more fully set forth.

Referring to the accompanying drawings, in which the same reference-numerals indicate corresponding parts in each of the views, Figure 1 is a perspective view of our cleaner, and Fig. 2 is an end view showing it applied to a stove-pipe.

In cleaning flues and stove-pipes it is necessary to provide the cleaner with blunt cutting-edges or scrapers, which must be forced against the interior of the object being cleaned with sufficient force to remove whatever dust or scale may have collected in it, and at the same time it must be so constructed that it can be applied to flues or pipes of different diameters and be put into them easily and pass joints and such like obstructions without injury to either the cleaner or to the pipe or flue. These features we have embodied in one invention, which consists of a series of elastic arms 1 1, which are secured in a handle 2 at the one end and have their opposite ends expanded, and each provided with a segmental spiral or curved portion 3. These curved portions diverge slightly outward and form scrapers for cleaning the interior of the pipe. The point of each scraper is rounded to avoid catching upon the joints or other obstructions, and the bend at the opposite end of each scraper, where it is joined with the arm, is obtuse, so that they will not catch upon the end of the pipe or flue when being drawn into it for operating purposes. The arms, of which there can be any desired number, are preferably bent or curved toward each other at their intermediate portion, so

that no part of the cleaner can possibly come in contact with the interior of the pipe or flue except the outer edges of the blades or scrapers, and thus all unnecessary friction is avoided.

As the cleaner is drawn into the flue, the scrapers substantially form a complete circle, as shown in Fig. 2, so that the blades are readily brought into contact with every portion of the interior of the flue or pipe, as by giving it a slight rotation the portions of the pipe which were between the ends of the blades when the cleaner was being drawn through in one position are subjected to the action of the blades when the cleaner is partly rotated and drawn back and forth in the new position.

For cleaning flues we form an edge upon each scraper by flattening the sides, as shown at 4 4, and beveling or inclining the faces of the flattened portions toward each other, or the arms and scrapers can be made of square or other angled rods to secure a cutting on the scrapers. This gives a better cutting-edge for removing the scale or incrustations which form upon the interior of the flues, and is more difficult to remove than the soot upon the interior of stove-pipes. We make the arms and scrapers out of stronger and stiffer material for cleaning flues than for cleaning stove-pipes. The scrapers are flattened for cleaning pipes, although it is not absolutely necessary, as a round surface can be used to remove the soot in the pipe.

Instead of securing the arms directly in the end of the handle, they can be secured in a head 5, which can be permanently or detachably secured to the end of the handle.

As the arms can be made out of bars of iron or wire, with the outer ends flattened and stamped into shape, the cleaner can be made very cheaply; and as it can be drawn into a pipe or flue considerably smaller than the diameter of ten scrapers when the wings or scrapers are expanded to their limit the device can be used upon different-sized pipes without any change or alteration.

Having described our invention, we claim—

1. As an improved article of manufacture, a flue-cleaner comprising a handle and a

series of flexible arms secured thereto, the arms being composed of wire curved outwardly and having their outer disconnected ends bent at an obtuse angle and curved to
5 form segments of a circle, substantially as and for the purpose specified.

2. In a flue-cleaner, the combination, with a handle, of a series of flexible arms secured thereto, the outer end of each of which is
10 formed into or provided with a curved portion forming the segment of a circle and

having its sides flattened, the faces of which are inclined toward each other to form an edge, substantially as described.

In testimony whereof we affix our signatures 15
in presence of two witnesses.

HARVEY G. BOOZ.

JOHN C. VANDEGRIFT.

Witnesses:

SAMUEL M. YATES,
HENRY LEAR.