

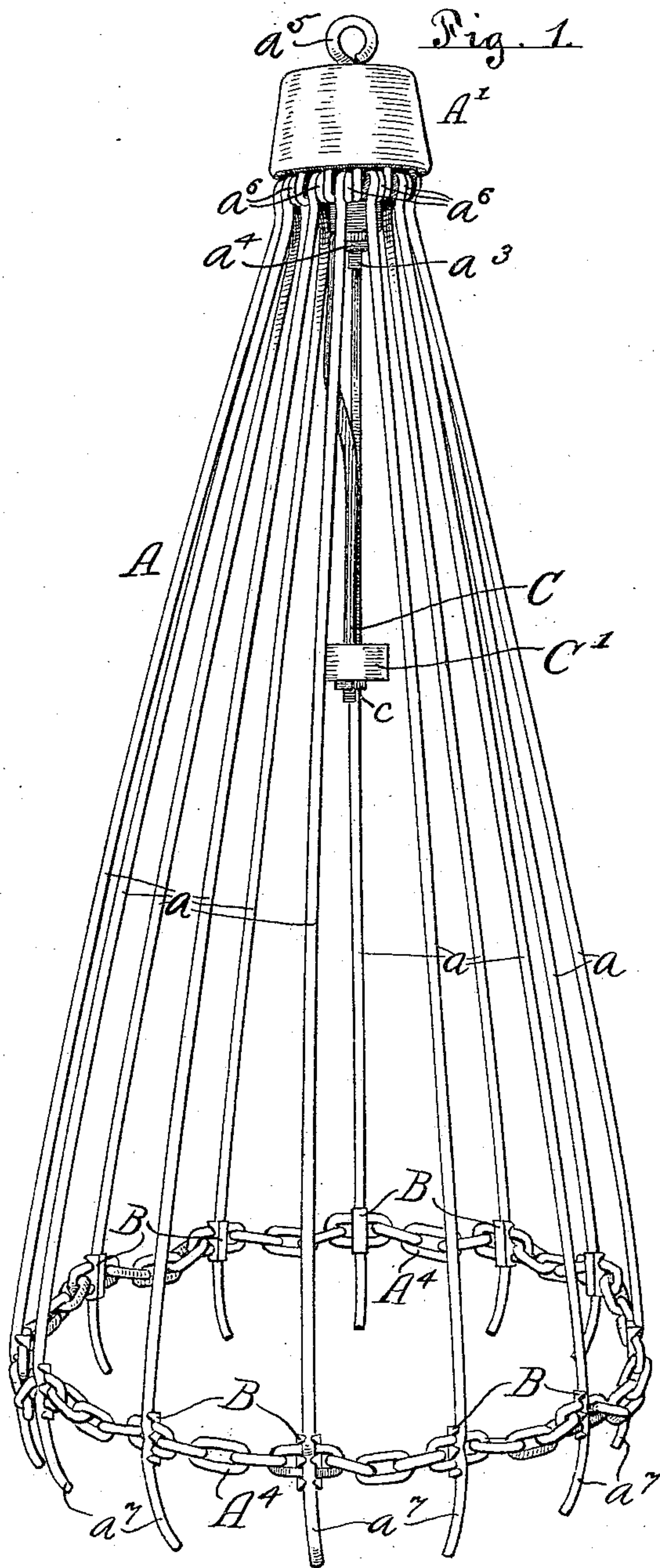
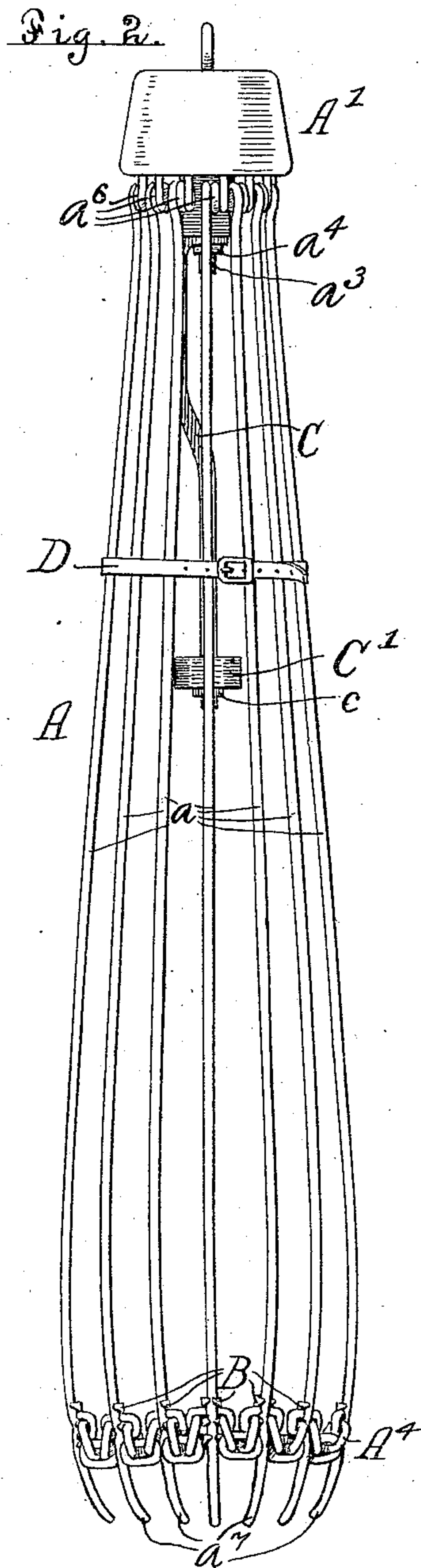
(No Model.)

2 Sheets—Sheet 1.

S. A. WOOD.
CHIMNEY CLEANER.

No. 543,791.

Patented July 30, 1895.



WITNESSES.

F. W. Biedermann
Burr Barnes

INVENTOR.

Sylvester A. Wood
by Geo. E. Waldo
his Atty.

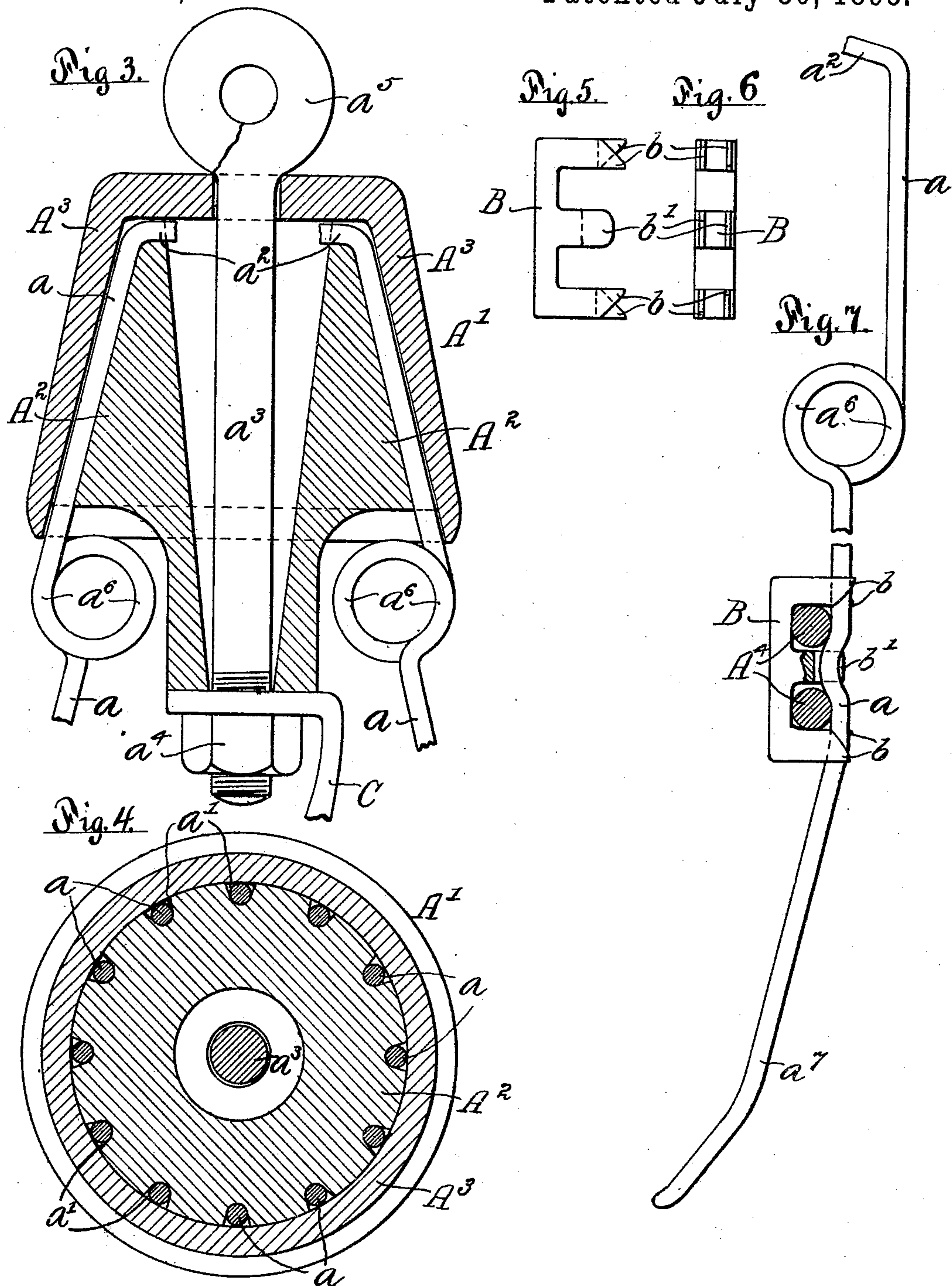
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UNITED STATES PATENT OFFICE.

SYLVESTER A. WOOD, OF MANITOWOC, WISCONSIN.

CHIMNEY-CLEANER.

SPECIFICATION forming part of Letters Patent No. 543,791, dated July 30, 1895.

Application filed August 4, 1894. Serial No. 519,431. (No model.)

To all whom it may concern:

Be it known that I, SYLVESTER A. WOOD, of Manitowoc, in the county of Manitowoc and State of Wisconsin, have invented certain new and useful Improvements in Chimney-Cleaners; and I do declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in apparatus or devices for cleaning the flues of chimneys and the like by removing therefrom the soot, ashes, or other substances which usually accumulate therein.

The object of this invention is to provide improved means for the purpose.

In the preferable form at present known to me a cleaner embodying my invention comprises a series of spring-rods rigidly secured at one end to a common head, from which they diverge so as to form a cone-shaped structure, and an endless chain attached to said rods adjacent to their divergent ends. The extreme ends of said rods project beyond the endless chain and are bent or curved inwardly, thereby greatly decreasing their liability to catch upon obstructions, as stove-pipe-holes and the like, in the chimney-flues.

In the accompanying drawings a cleaning apparatus embodying my invention is fully illustrated.

Figures 1 and 2 are perspective views of said device, respectively showing the same expanded and contracted. Fig. 3 is a vertical sectional view through the head thereof. Fig. 4 is a transverse sectional view of said head. Figs. 5 and 6 are details of one of the clamps by which the rods and chain are secured together, and Fig. 7 is a detail of one of the spring-rods and shows the manner of securing said rods and chain together.

Referring now to the drawings, A designates a series of spring-rods a , each of which is firmly secured at one end to a head, indicated as a whole by A' , in such manner that the outer ends thereof will diverge.

For convenience in assembling the apparatus and in order that the same may be quickly and easily taken apart to replace a broken rod or for any other purpose the rods

a are separably secured to the head A' in the following manner: The head A' is made in two parts, comprising a core A^2 and a shell A^3 , to which the said core is fitted. The contiguous sides of said core A^2 and shell A^3 are correspondingly inclined, so as to give desired divergence to the rods a , and grooves a' are formed in the inclined surface of the core A^2 , to which the rods a are fitted, one to each groove. In order to prevent the rods a from pulling out of the head A' and to prevent turning of said rods, the ends a^2 thereof are bent substantially at right angles to the main part thereof and are inserted into continuations of the grooves a' formed on the top of the core A^2 , all as clearly shown in Figs. 2 and 4 of the drawings. The core A^2 and the head A^3 are secured together, so as to form the head A' , by means of a bolt a^3 passing longitudinally through the same, to the lower end of which is threaded a clamping-nut a^4 . An eye a^5 formed at the upper end of the bolt a^3 affords convenient means for attaching a rope or line to the apparatus for operating the same.

While the foregoing method of attaching the rods a to the head A' is preferable, owing to its convenience and economy, I do not desire to limit myself thereto, as the apparatus would work equally well were said rods rigidly secured to said head, as by solder or in any other desired manner, or were a different form of head used. As shown, also, coiled springs a^6 are formed in the rods a ; but while this construction is considered to be desirable and preferable it is not essential, and I do not desire to be limited thereto. For example, the resiliency of straight rods would be sufficient for ordinary purposes.

Secured to the rods a , at a short distance from their divergent ends—say four inches—is an endless chain A^4 or other suitable band having desired weight and flexibility. The ends a^7 of the rods a , which project beyond the chain A^4 , are bent or curved inwardly that they will more easily and securely pass obstructions in the flues.

As shown, the chain A^4 is secured to the rods a by means of clamps B in the following manner, (clearly shown in Figs. 5 and 6:) The clamps B are provided with sets of lateral prongs or projections b and b' , of which the prongs b embrace the links of the chain

on the outside and the prongs b' project through said links, and both sets of prongs are clinched upon the rods a , which are inserted between the prongs of each set. Preferably, also, the rods a are bent or deflected at the points where the chain is to be attached thereto to form lateral projections thereon adapted to engage the openings in the links of the chain, whereby longitudinal movement of said chain relatively to said rods will be prevented, as also twisting of the rods. By means of the described construction said rods a , chain A^4 , and clamps B will obviously be maintained in fixed relation to each other.

As the apparatus is commonly constructed entirely of metal, it will ordinarily be sufficiently heavy to operate successfully; but provision is made for attaching additional weights thereto, as follows: A rod C is secured to the lower end of the bolt a^3 , to which any desired number of weights C' are removably secured by means of a nut c threaded to the lower end of said rod C .

In order that the apparatus shall work effectively, it is obvious that the flared end thereof, where the chain A^4 is attached to the rods a , must be larger than the flues which it is designed to clean. The method of operating it is simple and is as follows: First, a line is attached to the eye a^5 , whereby to handle said cleaner. The divergent ends of the rods a are then brought together until they will enter the flue to be cleaned. Said rods are then released, whereupon the resiliency thereof causes them to expand, so that they and the chain attached thereto will conform exactly to the shape of said flue, whether round, square, or irregular in form. The cleaner is then raised and lowered by means of the line attached to the eye a^5 , whereby the soot, ashes, and other accumulations will be loosened and fall down, so that they may be removed from below. For convenience in drawing the divergent ends of said rods together a strap D is used, which may be raised to release said rods as soon as the end of the cleaner is inserted within the flue.

I claim—

1. In a chimney cleaner, the combination with an endless chain, of means to maintain said chain, normally, yieldingly expanded, said means comprising spring rods, relatively long as compared with the size of the flues to be cleaned by said cleaner, so that said rods will extend substantially lengthwise of said flues, when the cleaner is inserted therein, a

head to which one end of each of said rods is rigidly secured and the said endless chain being secured adjacent to the opposite ends of said rods, substantially as described.

2. In a chimney cleaner, the combination with an endless chain, of means to maintain said chain, normally, yieldingly expanded, said means comprising spring rods, relatively long as compared with the size of the flues to be cleaned by said cleaner, so that said rods will extend, substantially, lengthwise of said flues, when the cleaner is inserted therein, a head to which one end of each of said rods is rigidly secured, the endless chain being secured to said rods at a short distance from their opposite ends and the extreme ends of said rods, which project beyond said chain, being inwardly bent or curved, substantially as described.

3. In a chimney cleaner, the combination of an endless chain, spring rods, adjacent to one end of which said chain is secured and a head in which the opposite ends of said rods are secured, said head comprising a core and an inclosing shell, between which said rods are inserted, substantially as described.

4. In a chimney cleaner, the combination of an endless chain, spring rods adjacent to one end of which said chain is secured and a head in which the opposite ends of said rods are secured, said head comprising a core and an inclosing shell between which said spring rods are inserted, the extreme inner ends of said rods being bent, substantially at right angles and engaging grooves formed in the inclosed end of said core, substantially as described.

5. In a chimney cleaner, the combination of an endless chain, spring rods adjacent to one end of which said chain is secured and a head in which the opposite ends of said rods are confined, said head comprising a core and an inclosing shell between which said rods are inserted, said rods being adjusted to grooves formed in the sides of said core and the extreme inner ends of said rods being bent, substantially at right angles, and engaging continuations of said grooves formed in the inclosed end of said core, substantially as described.

In testimony that I claim the foregoing as my invention I hereunto set my hand this 14th day of May, 1894.

SYLVESTER A. WOOD.

Witnesses:

FRED HARRIS,
A. J. ENDRESS.