(No Model.)

G. B. ESSEX.

FLUE CLEANER.

No. 538,955. Patented May 7, 1895.

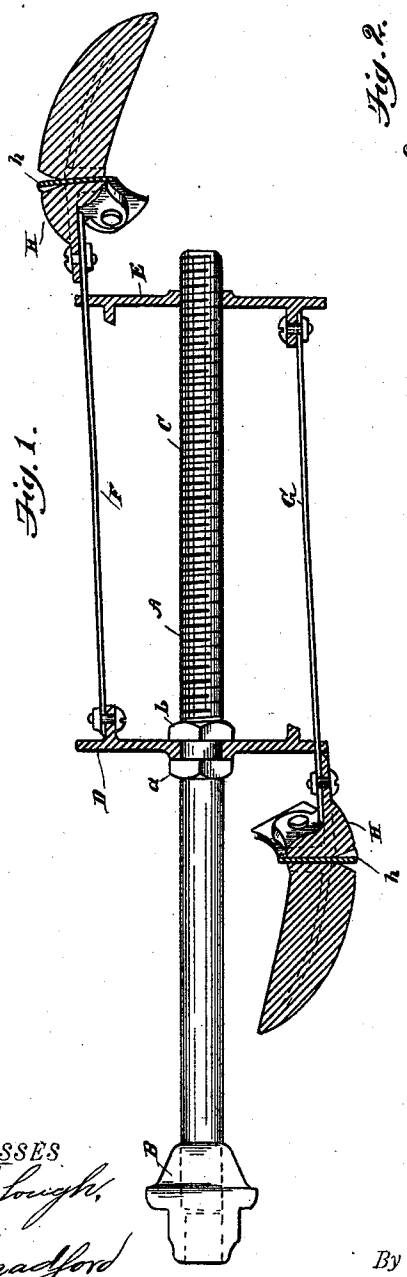

Fig. 1.

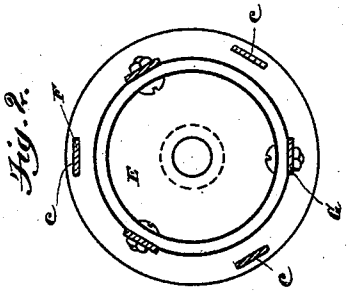

Fig. 2.

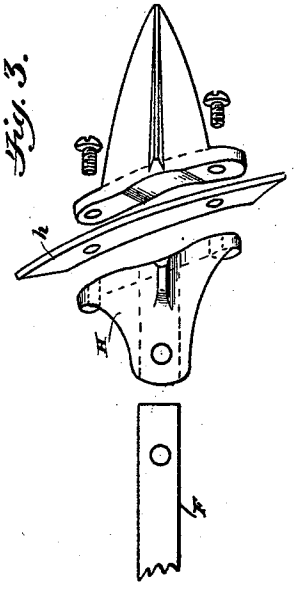

Fig. 3.

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UNITED STATES PATENT OFFICE.

GEORGE B. ESSEX, OF DETROIT, MICHIGAN.

FLUE-CLEANER.

SPECIFICATION forming part of Letters Patent No. 538,955, dated May 7, 1895.

Application filed November 12, 1894. Serial No. 528,506. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. ESSEX, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Flue-Cleaners; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

The object of this invention is to produce a pipe cleaner or flue cleaner that can be used for the purpose of cleaning out pipes or flues of different diameter, and that will readily accommodate itself to any variation within the pipes so as to bring the cutting or cleaning edge up tightly against the surface that is to be cleaned; and it is also the object of the invention to produce a cleaner in which the size can be varied before the cleaner is inserted in the tube by simply turning the handle or rod to which it is attached.

It consists of a number of flat springs, to the ends of which are attached the cleaning knives and the guards, and these flat springs are arranged in two sets, the one set being provided with cleaning knives at that end which is farthest from the operator, and the other set being provided with similar cleaning knives at the end which is nearest to the operator. The springs of each set are fixed at one end to a plate, and near the other end, being the end to which the knives are attached, pass through guide holes in a second plate, the second plate being used as the one to which the springs of the second set are attached, and the first plate being used as the one through which the guide slots for the second set of springs are perforated. The point of fixture of the springs is radially less distant from the center of the plate than is the slot in the same plate through which passes the similar spring of the other set. The two plates are capable of movement toward and away from each other, and are mounted on a rod which is threaded at its end, one of the plates being mounted behind the threads between collars so that it is free to revolve without advancing along the rod, and the other of the plates being provided with a centrally threaded perforation and mounted on the threaded part so that it advances along the rod when the rod is turned. This construction causes a spreading of the cutting ends when the plates are brought together, and a contracting of the cutting ends when the plates are separated.

In the drawings, Figure 1 is a sectional side elevation. Fig. 2 shows the plate to which is attached one set of the scraper-springs and through which pass the other ends of the second set of scraper-springs. Fig. 3 shows a scraper with its front and rear guards, the parts being separated.

A indicates a rod, on one end of which is a socket B for the reception of the long handle with which the scraper is used. On the opposite end is a portion C which is threaded for a distance, and at the rear of the threads are two collars *a* and *b*, between which is mounted one of the holding plates D. The central perforation through the holding plate D is simply a round hole. On the threaded part C of the rod A is mounted the other holding plate E, which has a central threaded perforation. Around the periphery of each plate D and E are a number of holes, *c c c*, through which are passed the springs F G. Alternate with the holes and radially nearer the center, provision is made for securing the ends of the springs F and G. These may be riveted to a flange, which takes the form of a ring, or there may be lugs projecting from the plate D or E and alternating with the holes *c*. The holes and lugs may be of any desired number. In the drawings I have indicated that there would be three scraper blades projecting each way, making six altogether, and this is a convenient number, although four may be made to project each way if desired, or even a larger number. When the scraper head is held from turning by the hand or by contact with the tube in which it is inserted, and the rod A is rotated, the scraper blades at the ends of the spring bars F and G will change their position with respect to the rod, either expanding or contracting, according to the direction in which the rod is turned. This result is produced by changing the relative position of the plates D and E, as it is evident that by bringing the plates D and E closer together, the outer ends

of the scraper springs will be expanded, and by separating the plates D and E, the outer ends will be contracted.

The scraper itself with its guards is shown in Fig. 3, and consists of a back guard H substantially in the form of a T, with its stem part provided with a suitable screw or rivet hole by which it may be attached to the end of the spring bar; and across the table part of which is placed a steel disk or scraper *h*. The outer approach or guard, also made in the form of a T, is provided only with holes through the changeable part of it, by means of which it is screwed to the corresponding outer guard H, the rivets or bolts which screw the two together passing also through the steel scraper *h* and holding the three parts all together.

What I claim is—

1. In a flue scraper, the combination of a pair of holding plates, a central rod traversing the two plates centrally adapted to rotate, through one without end motion therethrough, and through the other with end motion therethrough, whereby the distance of the two plates may be varied, a set of scraper carrying springs secured to one of said plates, and traversing guide holes in the other of said plates, substantially as described.

2. In a flue cleaner, the combination of a central holding rod, a pair of holding plates, one of which is capable of rotation on the central rod without motion along its axis, and the other of which has motion both around and along the axis of the holding rod, two sets of scraper holding springs, one set being secured to each of said plates and traversing guide holes through the other of said plates, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

GEORGE B. ESSEX.

Witnesses:
D. W. BRADFORD,
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