

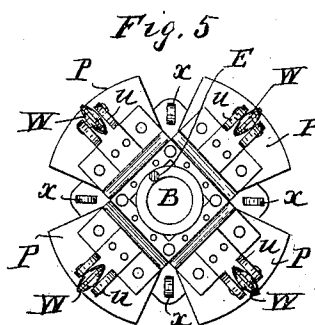
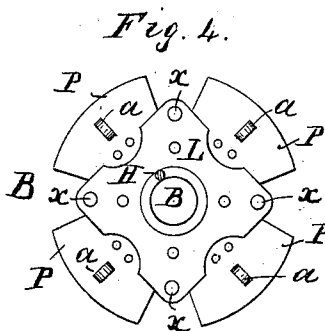
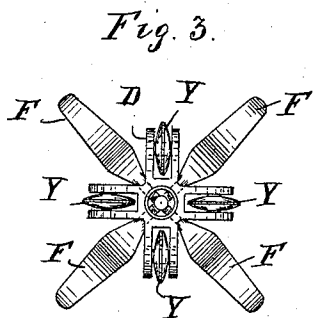
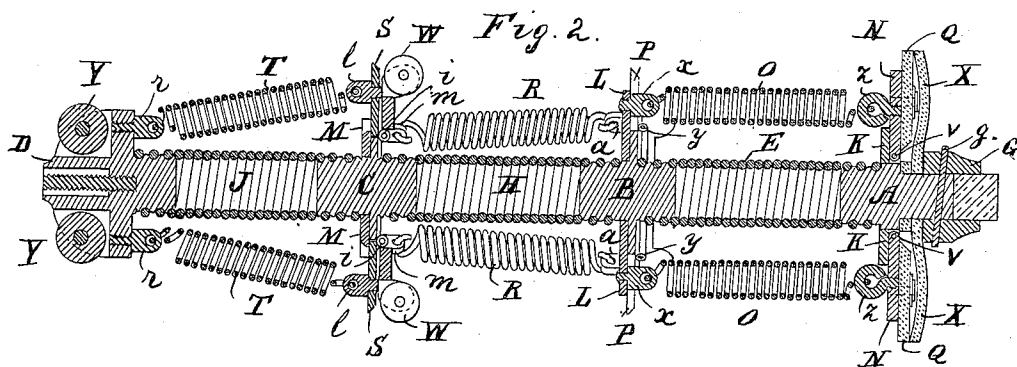
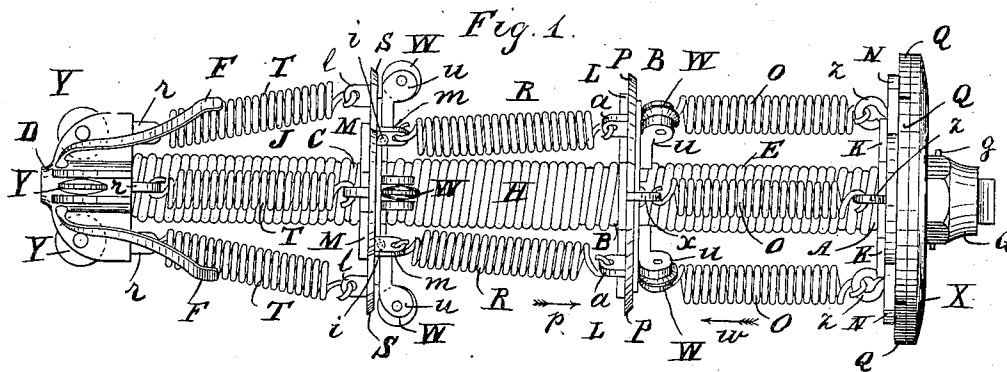
(No Model.)

D. H. SWEENEY.

SCRAPER.

No. 323,972.

Patented Aug. 11, 1885.



Witnesses.

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UNITED STATES PATENT OFFICE.

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SCRAPER.

SPECIFICATION forming part of Letters Patent No. 323,972, dated August 11, 1885.

Application filed May 20, 1885. (No model.)

To all whom it may concern:

Be it known that I, DAVID H. SWEENEY, of Fitchburg, in the county of Worcester, State of Massachusetts, have invented a certain new and useful Improvement in Scrapers, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my improved scraper; Fig. 2, a vertical longitudinal section of the same; Fig. 3, an end elevation of the head-piece detached; Fig. 4, an end elevation of the body-piece B and its flanges detached, looking in the direction of the arrow *p*; and Fig. 5, an end elevation of said body-piece, looking in the direction of the arrow *w*.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to that class of scrapers or clearers which are designed for scraping or cleaning out aqueduct or water pipes; and it consists in a novel construction and arrangement of the parts, as hereinafter more fully set forth and claimed, the object being to produce a more desirable and effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the base-piece; B C, the body-pieces, and D the head-piece. The body-pieces are cylindrical in form and exteriorly screw-threaded at either end. The inwardly-projecting ends of the head and base pieces are also cylindrical in form and exteriorly screw-threaded. A stout coiled spring, E, connects the pieces A B, these pieces being respectively screwed into the opposite ends of said spring, as shown in Fig. 2. The pieces B C and C D are also connected in substantially the same manner as the pieces A B by means of the coiled springs H J, into the ends of which springs they are respectively screwed.

The pieces A B C are respectively provided

with flanges or plates K L M, and the flanges L M respectively provided with four rearwardly-projecting eyes, *x m*, arranged at regular intervals near their corners, as shown in Figs. 4 and 5.

Hinged at *v* by their lower or inner ends to the outer face of the flange K there are four arms, N, arranged at regular intervals around the piece A, each arm being provided with an inwardly-projecting eye, *z*, and said eyes connected with the eyes *x* on the flange L by stout coiled springs O, which act contractively to keep the arms N against the flange K.

Disposed between the edges *x*, and hinged at *y* by their inner ends to that side of the flange L which is nearest the piece A, there are four scrapers, P, provided on their sides nearest the head-piece D with eyes *a*, said eyes being connected by stout coiled springs R with eyes *m* on the flange M, and said springs acting contractively to draw the scrapers P against the flange L.

Hinged at *i* to that side of the flange M which is nearest the flange L there are four scrapers, S, provided on their sides next the head D with eyes *l*, said eyes being connected with eyes *r* on the head D by stout coiled springs T, acting contractively to keep the scrapers S against the flange M. A guard-wheel, W, is journaled in a bracket, *u*, attached to each of the scrapers S P on the side nearest the base A, the peripheries of said wheels projecting slightly beyond the ends of said scrapers to keep said ends out of close contact with the pipe and prevent the scraper from catching or binding on the interior of the same, and also, in case of necessity, to enable the scraper to be withdrawn. Four wheels, Y, are also journaled in the head D, one opposite each of the eyes *r*, to prevent said head from coming into contact with the pipe, in substantially the same manner as the wheels W keep the scrapers S P out of contact therewith. The head D is also provided with four backwardly-inclined curved springs, F, one being disposed between each pair of the wheels Y, said springs serving as guides to "center" the scraper and direct it properly through the pipe. A rubber scraper, Q, is attached to the outer side of each of the arms N, said scrapers being curved on their ends or outer edges and large enough to touch each other at their

sides, thus, when united as shown in Fig. 1, forming a circular packing or flange adapted to fit closely in the pipe. An annular rubber disk, X, having a central perforation through which the outer end of the base-piece A passes, is mounted thereon and secured by the nut G, which is locked by the pin g, the disk acting as an auxiliary scraper, and also as a packing. The scrapers S are so arranged as to stand opposite the spaces between the scrapers P.

In the use of my improvement the scraper is inserted in the pipe and pushed through the same by the force of the water, which for that purpose is let on in the rear of the base A, and presses against the packing X, the scrapers S P Q acting to remove the scale, rust, mud, &c., and other obstructions in a manner which will be readily obvious without a more explicit description.

It will be obvious that the springs E H J and O R T render the body of the scraper flexible and enable it to pass through saddle-pipes and around ordinary curves or bends in the pipe whether the same are vertical or lateral; also, that the scrapers S P Q will yield to enable them to pass any inequality of surface or fixed obstructions in the pipe.

It will be understood that different sizes of scrapers are to be used, according to the sizes of the pipes to be scraped or cleaned, and that after the scraper has passed through the pipe the pipe should be "flushed" to wash out the matter detached thereby.

If desired, one of the body-pieces B C may be omitted. The wheels W Y may also be omitted, although it is preferable to use them.

Having thus explained my invention, what I claim is—

1. In a scraper for scraping or cleaning the interior of a water-pipe, the combination of the following instrumentalities, to wit: a flexible body consisting of a base-piece, a head-piece, and one or more flanged body-pieces connected by coiled springs, a series of hinged scrapers arranged radially around the body-piece or pieces, springs adapted to draw or keep the hinged scrapers at right angles to the body when in use, guard-wheels for keeping the scrapers out of close contact with the interior of the pipe, guide-springs attached to the head-piece for centering the same, and a suitable packing disposed at the rear of the scraper, against which the water presses in forcing the scraper through the pipe, substantially as described.

2. In a scraper for scraping or cleaning the interior of a water-pipe, the base-piece A, provided with the flange K, hinged arms N, scrapers Q, and packing-disk X, the flanged body-pieces B C, provided with the hinged scrapers S P, the head piece D, and springs O R T E H J, combined and arranged to operate substantially as set forth.

3. In a scraper for scraping or cleaning the interior of a water-pipe, the wheels W, journaled in brackets on the hinged scrapers P, in combination with the pieces A B D, springs for flexibly connecting said pieces, and a suitable packing for the scraper, substantially as described.

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