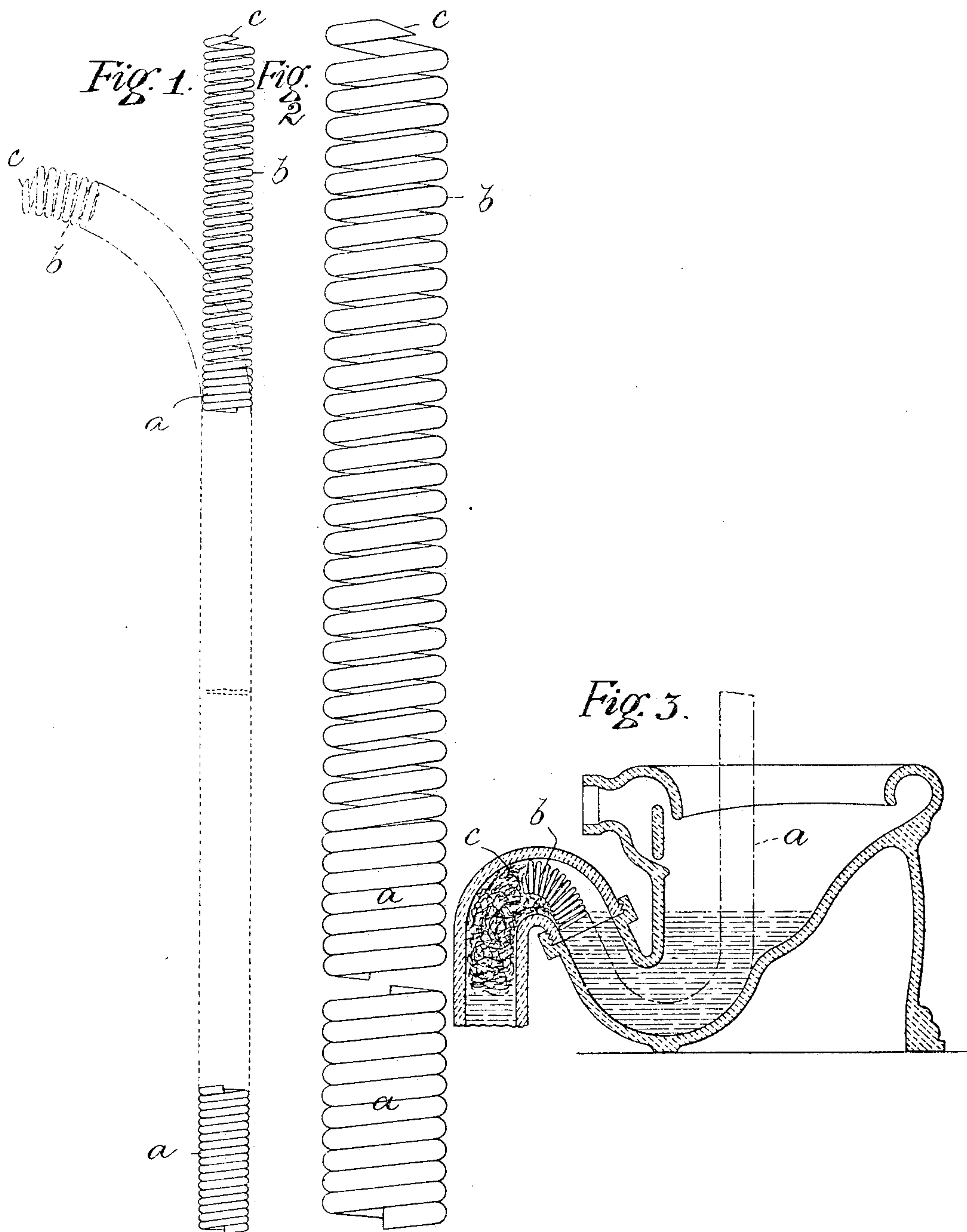


No. 801,759.

PATENTED OCT. 10, 1905.

T. A. WOOLLDRIDGE & E. A. WARD.
TOOL FOR REMOVING OBSTRUCTIONS FROM DRAINS.

APPLICATION FILED APR. 24, 1905.



WITNESSES

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UNITED STATES PATENT OFFICE.

TOM ALFRED WOOLLDRIIDGE AND ERNEST ALFRED WARD, OF BIRMINGHAM, ENGLAND.

TOOL FOR REMOVING OBSTRUCTIONS FROM DRAINS.

No. 801,759.

Specification of Letters Patent.

Patented Oct. 10, 1905.

Application filed April 24, 1905. Serial No. 257,268.

To all whom it may concern:

Be it known that we, TOM ALFRED WOOLLDRIIDGE and ERNEST ALFRED WARD, subjects of the King of Great Britain, trading as the Spring Bending Company, of 101^A Alfred road, Handsworth, Birmingham, England, have invented certain new and useful Tools for Removing Obstructions from Drains, of which the following is a specification.

10 This invention consists in an improved tool or appliance for cleaning, scraping, or removing obstructions from drain, water-closet, and other pipes, boiler and like tubes, chimneys, flues, and other passages and for analogous purposes, but is particularly adapted for cleaning out or removing obstructions from the traps, siphons, bends, and the like of water-closet and drain systems.

20 The principal object of the invention is to provide a flexible tool or appliance which is capable of being made at a low cost and which will pass readily through bent or curved pipes having sharp bends or curves of small radius and yet is sufficiently strong and rigid longitudinally to admit of same being forced or driven through obstructions which may be present in a trap or bend, while still preserving such a degree of flexibility as will enable the same to readily take or conform to practically any curve.

30 Figure 1 of the accompanying drawings represents an elevation of an improved drain-cleaning tool or appliance constructed in accordance with one form of our invention. 35 Fig. 2 is an elevation of a portion of same upon an enlarged scale, and Fig. 3 is a view showing the tool or appliance being used for the purpose of removing or loosening an obstruction or stoppage in the bore of a water-closet trap.

40 The same letters of reference indicate corresponding parts in the several figures of the drawings.

45 According to this form of our invention the body *a* of the improved tool consists of a closely-wrapped coiled or spiral spring, of stout steel wire of any suitable length, the said spring being made from wire of a round, square, rectangular, wedge-like, or other section, with the coils lying closely together or one against the other, so that the spring is

capable of resisting pressure applied endwise or in its longer direction without being decreased in length and without deflecting; but, on the other hand, its flexibility is such that the same will readily bend and assume any curvilinear figure when being passed through a trap or the like. 55

In order to provide the tool with a leader or a means of directing the forward end round the curves of traps, pipes, and the like, and thus facilitate its passage through same, the wire or metal at the forward end of the closely-wrapped body-coil is continued into a pilot or nose piece *b*, which is of greater flexibility than the said body part and consists in the arrangement shown of a series of coils or convolutions which are opened out or separated to any desired extent, so that each individual coil of the said nose or pilot end has a greater play or freedom of movement than is possessed by the coils of the body-spiral, so that when the tool or appliance is in use the flexible nose or pilot will on coming to a bend in a pipe or trap strike against the walls thereof and be deflected into the path which the tool is desired to follow, and thus provides a means of leading, piloting, or directing the said tool around the bend. The flexible nose or leader is preferably made from the same metal as and as a continuation of the wire from which the body-coil is made; but, if necessary, the same may be separately formed and attached to the end of the body-coil and in line therewith in any convenient manner. It is obvious that the desired increase of flexibility of the pilot end may also be attained by making the forward coils of lighter-gage metal than the body or by forming same from tapering wire or by making its coils larger or of greater diameter than the body-coils. 60 65 70 75 80 85 90

In the case of a drain-cleaner or like tool the forward extremity of the flexible nose or pilot end may be continued into a screw-worm cutter *c* or the like for facilitating the passage of same through an obstruction. 95

Having fully described our invention, what we desire to claim and secure by Letters Patent is—

A new or improved tool or appliance for use in cleaning, scraping or removing ob-

structions from drains and other pipes and
the like, consisting of a body part made from
closely-coiled spring-wire and a leading end,
pilot or nose piece of greater flexibility than
5 the said body part, substantially as and for
the purpose herein described and set forth.

In testimony whereof we have hereunto set

our hands in presence of two subscribing wit-
nesses.

TOM ALFRED WOOLDRIDGE.
ERNEST ALFRED WARD.

Witnesses:

HENRY SKERRETT,
HENRY NORTON SKERRETT.