

(No Model.)

2 Sheets—Sheet 1.

J. WRIGLEY.

CLEANING DEVICE FOR SEWERS, WATER CLOSETS, &c.

No. 599,089

Patented Feb. 15, 1898.

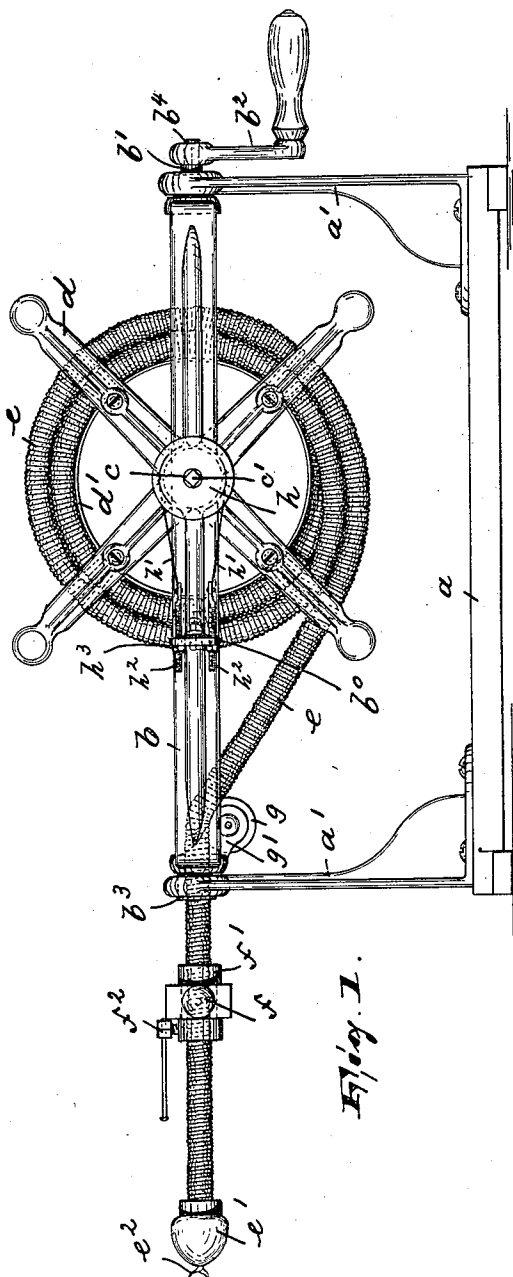


Fig. 1.

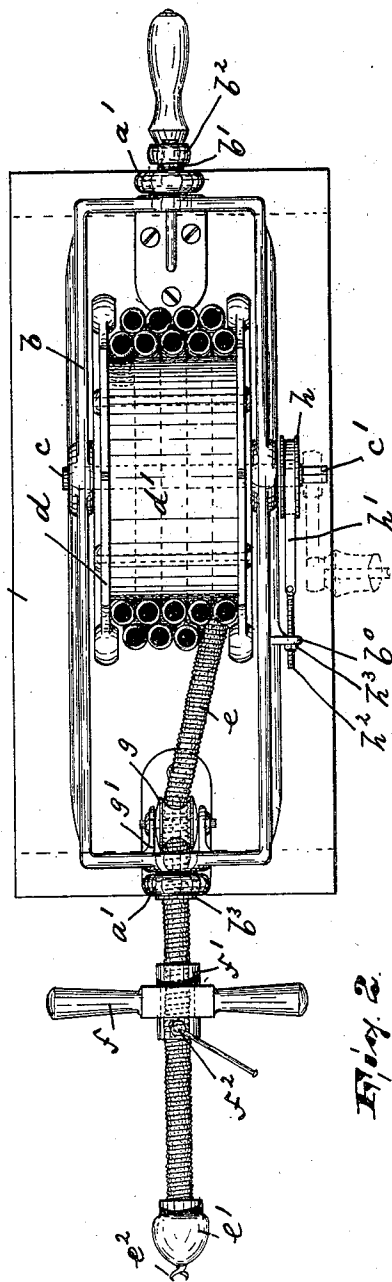


Fig. 2.

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(No Model.)

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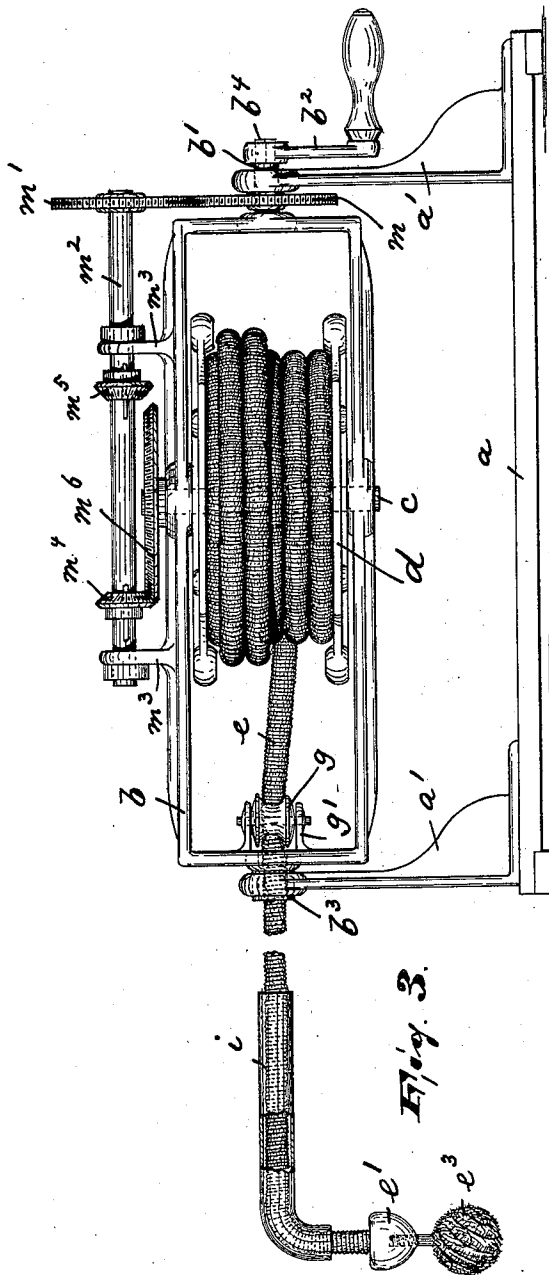


Fig. 3.

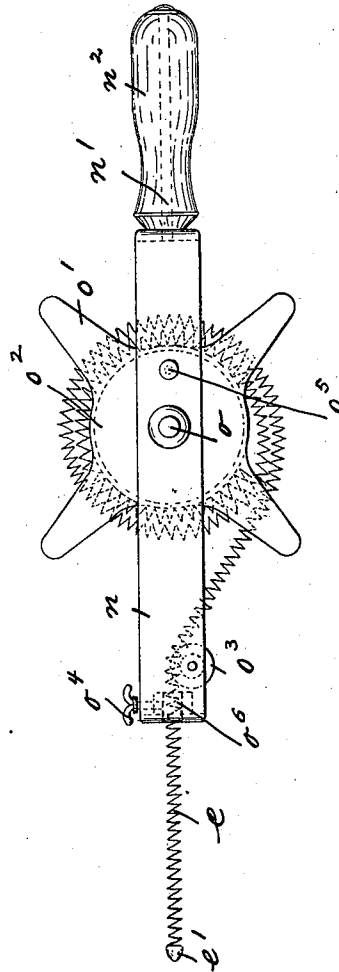


Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN WRIGLEY, OF ELMIRA, NEW YORK.

CLEANING DEVICE FOR SEWERS, WATER-CLOSETS, &c.

SPECIFICATION forming part of Letters Patent No. 599,089, dated February 15, 1898.

Application filed August 27, 1897. Serial No. 649,700. (No model.)

To all whom it may concern:

Be it known that I, JOHN WRIGLEY, a citizen of the United States, residing in Elmira, county of Chemung, and State of New York, have invented certain new and useful Improvements in Cleaning Devices for Sewers, Water-Closets, and the Like; and I do hereby 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My present invention relates to cleaning devices for sewers, water-closets, sinks, drain-pipes, chimneys, flues, city or water mains, leaders, frozen pipes, and the like, and is an improvement on the device covered by my United States Letters Patent No. 566,110, dated August 18, 1896.

The object of this invention is to provide a flexible cleaning device of the character above referred to with a reel capable of retaining increased lengths of flexible coil or of spiral, which reel is suitably supported in a revolving frame of simple, strong, and durable construction, reliable in operation, and easily handled.

The invention consists in the improved cleaning device for sewers, sinks, water-closets, chimneys, flues, and the like, its coil-carrying reel and the revolving frame supporting the same.

It further consists in the reel-operating mechanism and in the combination and arrangements of the various parts, substantially as will be hereinafter more fully described, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a side elevation of my improved cleaning device; Fig. 2, a top plan view of Fig. 1, a portion of the coil being shown in section; Fig. 3, a view similar to Fig. 1, also illustrating the reel-operating mechanism in connection with the reel-supporting frame; and Fig. 4, a top plan view of a modified form of the reel-supporting frame and of its cooperating parts.

In said drawings, Figs. 1, 2, and 3, *a* represents a bed-plate provided with suitable standards *a'* *a'*, forming bearings for the shafts or trunnions *b'* and *b''* of the rectangular-shaped frame or skeleton *b*.

The shaft or trunnion *b'* is provided with a squared portion *b⁴*, adapted to be engaged by a crank *b²*, while the shaft or trunnion *b³* is hollow and is penetrated by the flexible coil or spiral *e*, which latter is wound upon the drum *d'* of the reel *d*. Said reel is mounted on a shaft *c*, having its bearings in the frame or skeleton *b*, and at right angles to the center line of said frame and carrying at one end a brake-wheel *h*, engaged by the flat band *h'*, having its free ends secured to screws *h²*, loosely arranged in the bracket *b⁰* of the frame *b* and adapted to be operated by nuts *h³*, which are arranged on said screws and bear against the said bracket *b⁰*, as clearly illustrated in Figs. 1 and 2.

The shaft *c* is provided at one end with a squared portion *c'*, adapted to be engaged by the crank-handle *b²* for the purpose of operating said reel when the coil is to be wound upon its drum.

A grooved guide-wheel *g*, in alinement with the hollow shaft *b³*, is revolvably mounted in a bracket or brackets *g'*, projecting inwardly from the standard *a'*, and is adapted to guide the spiral or coil into the hollow shaft *b³* and to thus reduce the friction, as will be manifest.

On the free end of the coil *e* is arranged a block *e'*, adapted to receive any suitable implement or tool capable of being used in connection with the said cleaning device—such as a corkscrew-point *e²*, as in Figs. 1 and 2, or a brush *e³*, as in Fig. 3, or any of the implements illustrated and described in Letters Patent No. 566,110.

On the coil *e* and intermediate between the block *e'* and the hollow shaft *b³* is loosely arranged a grooved sleeve *f'*, penetrated by a set-screw *f²*, for tightening said sleeve upon the coil and carrying in its grooved portion a guide-handle *f*, by means of which the coil and its tool or implement is guided, as will be manifest.

In Fig. 3 is illustrated, in connection with the revolving frame *b*, a self-feeder for the reel *d* and the coil *e* wound upon its drum *d'*.

On the shaft c is mounted a beveled gear m^6 , meshing with the beveled pinion m^4 or m^5 , which latter are keyed on the shaft m^2 , arranged parallel with the center line of the skeleton or frame b and having its bearings in the brackets m^3 , projecting at right angles from and carried by the said skeleton or frame b . On the shaft m^2 is also mounted a gear-wheel m' , meshing with a gear-wheel m , which latter is secured on the shaft b' , all as clearly illustrated in said Fig. 3.

If desired, an elbow-tube i is placed upon the coil e , at or near its free end, which elbow-tube facilitates the guiding of the coil and its implement when the device is being used for cleaning sewers or chimneys provided with a turn or bend at or near their respective entrance or inlet openings.

When the cleaning device is used without the self-feeder, the tool or implement on the block e' is inserted into the sewer, flue, chimney, &c., and the coil is unwound from the reel d and continuously rotated by means of the handle d^2 , causing the said implement to engage any obstacle blockading the said sewer, flue, chimney, &c., and pulling the said obstacle along when the implement and coil is being withdrawn and rewound upon the drum d' of the reel by operating the shaft c , as heretofore mentioned.

It will be manifest that when the self-feeder illustrated in Fig. 3 is used the unwinding and rewinding of the coil e upon the drum d' of the reel is accomplished automatically while the coil and its reel and frame is being rotated by means of the crank b^2 . The beveled pinion m^4 when shifted into engagement with the beveled gear m^6 operates the drum in one direction, while when the beveled pinion m^5 engages the beveled gear m^6 the drum is being rotated in the opposite direction.

The device illustrated in Fig. 4 is especially applicable for cleaning bath-tub connections, and consists of a frame n , provided at one end with a pin n' , on which is loosely arranged a handle n^2 . A reel o' , with its drum o^2 , is secured on a shaft o , revolvably mounted in said frame and at right angles to the handle n^2 . The coil e , which is wound upon said drum, passes over a grooved guide-pulley o^3 and through a hole or aperture o^6 , arranged in the front central portion of the frame n , and is adapted to be engaged by a thumb-screw o^4 , by means of which latter a lateral movement of the coil is prevented. A set-screw o^5 is arranged in one side of the frame and bears against the side of the reel o' and is adapted to regulate the speed of said reel while the coil e is being unwound, as will be manifest.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A portable cleaning device for sewers, water-closets, chimneys, flues and the like, comprising a revolving frame, a reel revolvably mounted in said frame, and having its axle at right angles to the axis of the revolving

frame, a coil or spiral upon said reel and penetrating said frame approximately in the center line of its axis, and a tool or implement at the free end of said coil, substantially as and for the purposes described.

2. A portable cleaning device for sewers, water-closets, chimneys, flues and the like, comprising a revolving frame, a reel revolvably mounted in said frame, and having its axle at right angles to the axis of the revolving frame, a coil or spiral upon said reel and penetrating said frame approximately in the center line of its axis, a tool or implement at the free end of said coil, and a guide-wheel for the coil and carried by the revolving frame, substantially as and for the purposes described.

3. A portable cleaning device for sewers, water-closets, chimneys, flues and the like, comprising a revolving frame, a reel revolvably mounted in said frame, and having its axle at right angles to the axis of the revolving frame, a coil or spiral upon said reel and penetrating said frame approximately in the center line of its axis, a tool or implement at the free end of said coil, and a brake for the reel and carried by the revolving frame, substantially as and for the purposes described.

4. A portable cleaning device for sewers, water-closets, chimneys, flues and the like, comprising a revolving frame, a reel revolvably mounted in said frame, and having its axle at right angles to the axis of the revolving frame, a coil or spiral upon said reel and penetrating said frame approximately in the center line of its axis, a tool or implement at the free end of said coil, a guide-wheel for said coil and carried by the revolving frame, and a brake also carried by said frame and adapted to regulate the speed of the reel, substantially as and for the purposes described.

5. A portable cleaning device for sewers, water-closets, chimneys, flues and the like, comprising a revolving frame, a reel revolvably mounted in said frame, and having its axle at right angles to the axis of the revolving frame, a coil or spiral upon said reel and penetrating said frame approximately in the center line of its axis, a tool or implement at the free end of the coil, a sleeve loosely arranged on said coil, a set-screw in said sleeve, and a handle revolvably mounted on said sleeve, substantially as and for the purposes described.

6. A portable cleaning device for sewers, water-closets, chimneys, flues and the like, comprising a revolving frame, a reel revolvably mounted in said frame, and having its axle at right angles to the axis of the revolving frame, a coil or spiral upon said reel and penetrating said frame approximately in the center line of its axis, a tool or implement at the free end of the coil, and a frame for suitably supporting the revolving frame, substantially as and for the purposes described.

7. A cleaning device for sewers, water-closets, chimneys, flues and the like, con-

sisting of a frame or standard, a skeleton or frame revolubly mounted in said standard, a shaft in said revolving frame and at right angles to its axle, a reel on said shaft, a spiral or coil on said reel and penetrating the revolving frame and its standard in the center line of the axis of said revolving frame, a tool or implement on the free end of said coil, and a train of gear-wheels transmitting the motion from the axle of the revolving frame to the shaft of the reel, substantially as and for the purposes described.

8. A cleaning device for sewers, water-closets, chimneys, flues and the like, consisting of a frame or standard, a skeleton or frame revolubly mounted in said standard, a shaft in said revolving frame and at right angles to its axle, a reel mounted on said shaft, a spiral or coil on said reel and penetrating the revolving frame and its standard in the center line of the axis of said revolving frame, a tool or implement on the free end of said coil, a shaft carried by the revolving frame and parallel to its axle, beveled pinions adjustably arranged on said shaft, a beveled gear on the shaft of the reel and adapted to be engaged by one of said beveled pinions, and means for transmitting

the motion from the axle of the revolving frame to the pinion-carrying shaft, substantially as and for the purposes described.

9. A cleaning device for sewers, city or water mains, leaders, frozen pipes, chimneys, flues and the like, consisting of a frame or standard, a skeleton or frame revolubly mounted in said standard, a shaft in said revolving frame and at right angles to its axle, a reel on said shaft, a spiral or coil on said reel and penetrating the revolving frame and its standard in the center line of the axis of said revolving frame, a tool or implement on the free end of said coil, a train of gear-wheels transmitting motion from the axle of the revolving frame to the shaft of the reel, and means on said spiral or coil and intermediately arranged between the tool or implement and the standard for guiding said coil or spiral, substantially as and for the purposes described.

In testimony that I claim the foregoing I have hereunto set my hand this 13th day of August, 1897.

JOHN WRIGLEY.

Witnesses:

ALFRED GARTNER,
WM. D. BELL.