

(No Model.)

2 Sheets—Sheet 1.

R. C. BLACK.
METAL SOIL PIPE.

No. 465,749.

Patented Dec. 22, 1891.

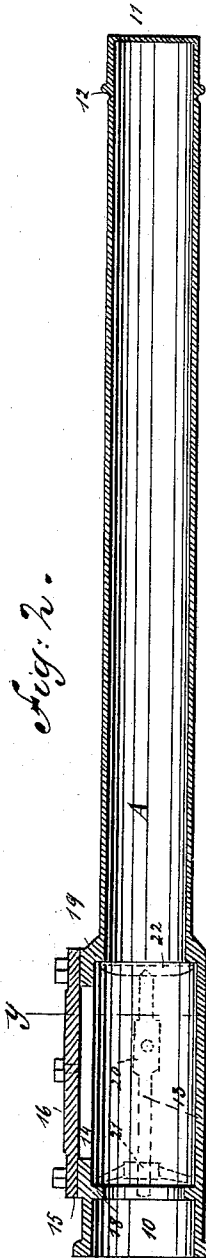
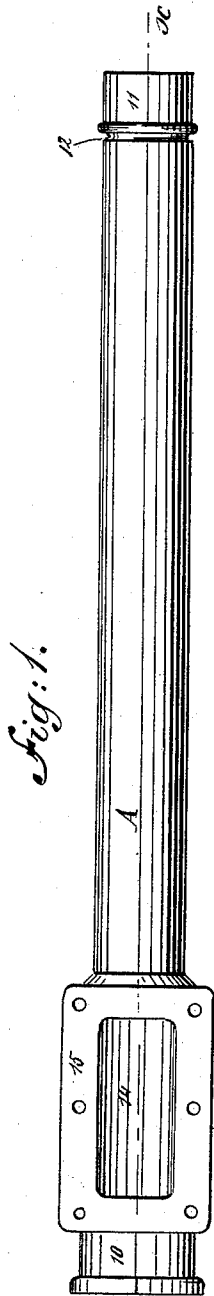


Fig. 4.

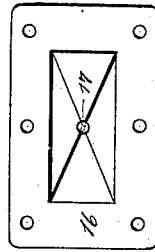


Fig. 7.

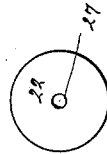


Fig. 6.

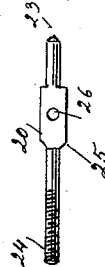


Fig. 8.

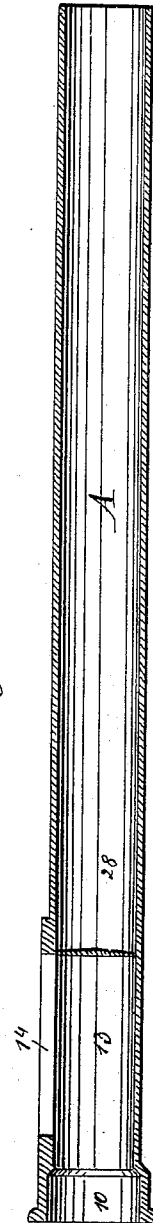
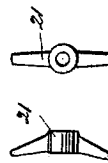
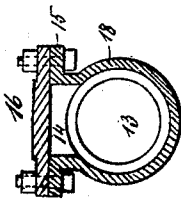


Fig. 5.



WITNESSES:
Chas. Nida.
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Fig. 3.



INVENTOR:
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BY *Munn & Co.*
ATTORNEYS

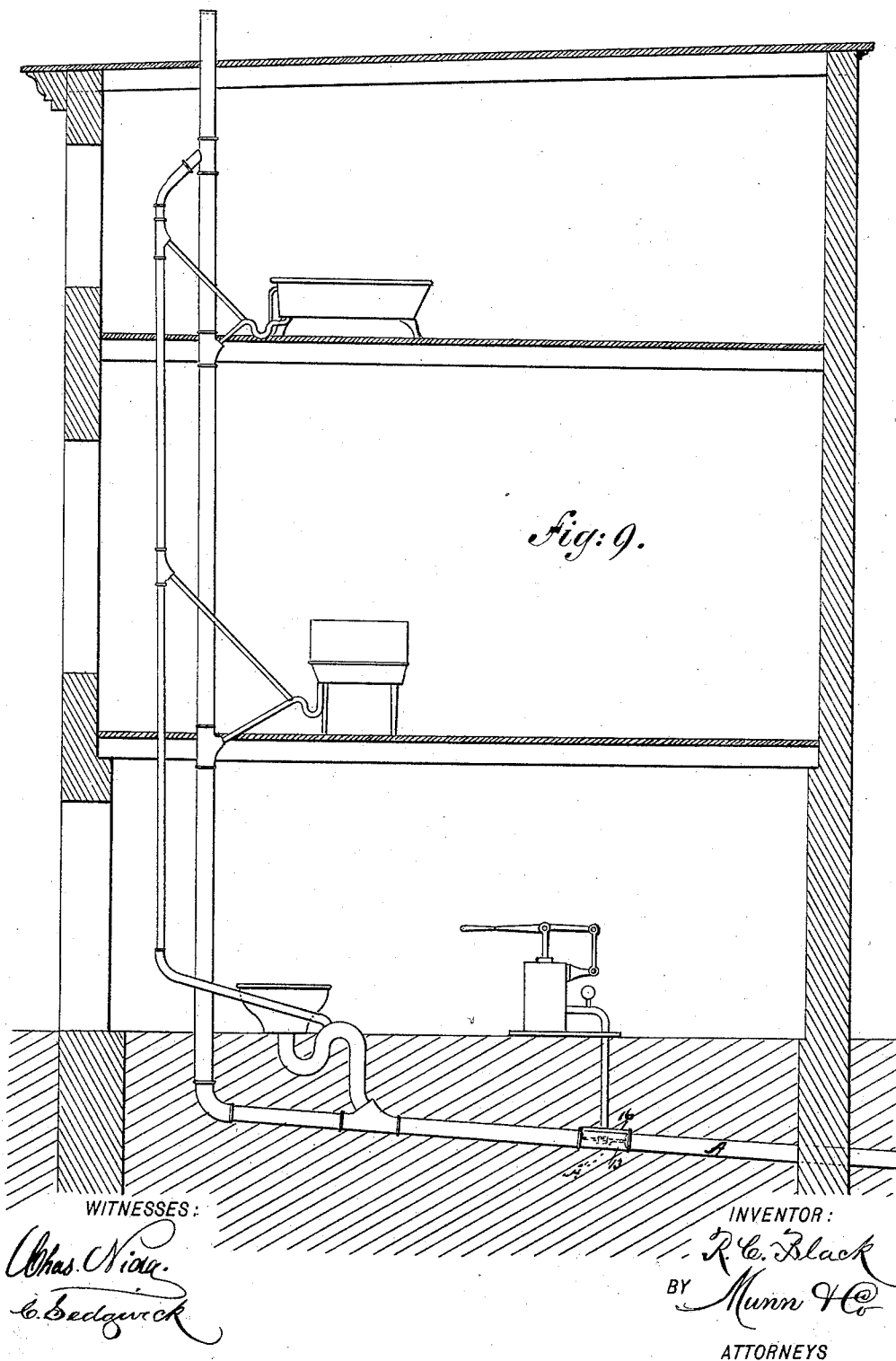
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2 Sheets—Sheet 2.

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Patented Dec. 22, 1891.



UNITED STATES PATENT OFFICE.

ROBERT C. BLACK, OF ST. PAUL, MINNESOTA.

METAL SOIL-PIPE.

SPECIFICATION forming part of Letters Patent No. 465,749, dated December 22, 1891.

Application filed December 18, 1890. Serial No. 375,063. (No model.)

To all whom it may concern:

Be it known that I, ROBERT C. BLACK, of St. Paul, in the county of Ramsey and State of Minnesota, have invented a new and Improved Metal Soil-Pipe, of which the following is a full, clear, and exact description.

My invention relates to an improvement in soil-pipes, especially metal pipes, and has for its object to provide a pipe capable of being thoroughly, conveniently, and expeditiously cleaned, and in connection with which heavier rods and scrapers may be employed than heretofore.

A further object of the invention is to so construct the pipe that accurate tests may be quickly and readily made.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of my improved pipe with the cover-plate removed from the cleaning-chamber. Fig. 2 is a longitudinal section through the pipe on the line *x x* of Fig. 1 with the plate in position. Fig. 3 is a transverse section on the line *y y* of Fig. 2. Fig. 4 is a plan view of the cover-plate detached. Figs. 5, 6, and 7 are detail views of the adjustable plug, and Fig. 8 is a longitudinal section through a modified form of the pipe. Fig. 9 is a sectional elevation of a building having all of its plumbing fixtures in place and provided with my pipe A, having the cleaning-out chamber, to which has been applied the stopper A', and to the cover-plate 16 of which chamber an air-pump is connected, so as to test for leakage without the necessity of removing any of the tub, sink, or closet fixtures.

The pipe A is provided with a hub 10 at one end, the opposite end being closed by a cap 11, which is cast or otherwise formed integral with the pipe. This cap is adapted to be removed after a test has been made and may then be utilized as a plug for the hub, as it neatly fits therein. In order that the cap may be readily detached, it is preferably strength-

ened at its inner end by a rib, as shown in Figs. 1 and 2, and the metal in the pipe adjacent to the rib is reduced by forming an annular channel 12 therein.

Near the hub the body of the pipe is enlarged to practically correspond to its diameter, forming thereby a chamber 13, which I denominate a "cleaning-chamber." This chamber is provided with an opening 14 at its top or on one side surrounded by a horizontal flange 15, upon which a cover-plate 16 is adapted to rest, the said plate being bolted to the flange or secured thereto in any approved manner. The cover-plate is provided with an aperture 17, preferably located at or near the center, normally closed by a plug which is removed to receive a testing apparatus when a test is to be made.

An annular flange 18 is formed in the pipe, which constitutes a partial partition between the hub and the cleaning-chamber, and serves also to limit the entrance of one pipe-section into another. The opposite end wall of the chamber consists of a shoulder 19, as shown in Fig. 2.

A' is an adjustable plug, (shown in detail in Figs. 5, 6, and 7,) and consisting in a body-section 20, a winged nut 21, and a disk 22. The body-section consists of a rod or bar having one conical extremity 23, the opposite end 24 being threaded, and an intermediate enlarged portion 25, provided with an aperture 26 to receive a pin or other instrument, whereby the body-section may be revolved. The winged nut is screwed upon the threaded end of the body-section, and the disk in one face is provided with a cavity or socket 27 to receive the conical end of the body-section.

When a test is to be made requiring this plug A' to be used, the disk 22 is made to engage with the wall 19 of the cleaning-chamber, and the nut 21, connected with the body-section, is placed in contact with the flange 18, and the conical end of the body-section is introduced into the cavity 27 of the disk, as shown in dotted lines in Fig. 2. When the stop-plug has been thus placed in position, the body-section is manipulated until the disk and nut bear closely against their respective supports.

In Fig. 8 I have shown a slightly-modified form of the pipe, in which the cleaning-cham-

ber is not as large in diameter as the hub and the adjustable plug is dispensed with, being substituted by a disk 28, which is cast in the pipe, the said disk being very thin at the edges to enable it to be readily displaced by a hammer or other instrument when its presence is not required. The cap 11 in this form of pipe may also be employed; but when the cap is employed the disk 28 need not be used unless especially desired.

The pipe is used, tested, and cleaned in the following manner: Where newly - applied plumbing has been provided and before the lower pipe A has been connected with the terra-cotta sewer-pipes, which are outside of the building, one of the pipes—for instance, the one shown in Fig. 8—either with the cap or with the disk, is used for the upper section or that section extending beyond the roof, or an ordinary pipe-section having a cap at one end may be used. For the last lower section, or the one extending through the wall of the building, the form of pipe shown in Figs. 1 and 2 is preferably employed, the chambered end of the pipe being located in a pit constructed beneath the cellar-floor. The plug is removed from the aperture 17 of the cover-plate and one end of an air-pipe is introduced therein. The pipes may now be readily tested by any amount of pressure, as the upper end of the line of pipe is closed and the lower end also. After the proper test has been made the cap of the upper pipe is broken off and may be employed to close one member of a Y-fitting located in the cellar, if such fitting is used, the other end of the member of the fitting being connected with the upright line of pipe. After the pump is removed the obstructions in the chamber of the lower pipe are taken out and the cover-plate is secured in position, the opening 17 therein being closed, and if the lower pipe is a capped one the cap is broken off and connections are made with the sewer or ground pipe.

It is evident that any obstructions in the pipe may be readily removed therefrom through the medium of the lower pipe of the building, as the fall is in the direction of said chamber.

After the plumbing has been in use and the pipes become obstructed the cover-plate 16 of any section may be removed and a stout cleaning-rod inserted and worked back and forth in the pipe until the obstruction has been dislodged. Should it be necessary to test the piping after it has been in use, then the adjustable plug is inserted in the lower or soil pipe, as shown in dotted lines, Fig. 2, the top or roof pipe being plugged in any suitable manner.

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

1. A soil-pipe provided with a cleaning-chamber having a lateral opening, a removable cover for said opening, provided with a threaded aperture for connection with a test-pipe, a threaded plug for said aperture, and means for closing the bore of the pipe beyond said lateral opening, substantially as set forth.

2. A soil-pipe having a cleaning-chamber provided with annular shoulders at its ends and with a lateral opening, a removable cover having a threaded aperture for connection with a test-pipe, a threaded plug for said aperture, and a removable plug in the chamber, consisting in the disk, the nut, and the bar threaded to engage the nut and bearing at its opposite end on the disk, substantially as set forth.

3. A pipe having an integral cylindrical plug-forming end cap 11 and an annular groove or weakened part, as shown at 12, at the juncture of the cap and pipe, whereby the cap may be severed without breaking it and then serve as a plug, substantially as set forth.

4. A pipe having a cleaning-chamber provided with a removable cover having a threaded aperture for connection with a test-pipe, a threaded plug for said aperture, an integral end cylindrical plug-forming cap closing one end of the pipe, and an annular groove or weakened part at the juncture of the cap and pipe.

5. In a soil-pipe, the combination, with a pipe having a cleaning-chamber formed near its hub end of essentially the same diameter as the hub and separated therefrom by a flange, and a removable and apertured cover fitted to the chamber, of a detachable plug adapted to close communication between the chamber and one end of the pipe, consisting of a body-section having one threaded extremity and a pivot extremity, a nut, and a disk having a cavity to receive the pivot end of the body-section, substantially as described.

6. A pipe having a cleaning-chamber 13, provided with a lateral opening 14, and annular end shoulders 18 19, and integral cylindrical plug-forming end cap 11, an annular groove or weakened portion 12 at the juncture of the pipe and cap, and a cover for the opening 14, having a screw-threaded opening provided with a threaded plug, substantially as set forth.

ROBERT C. BLACK.

Witnesses:

S. C. L. TITUS,
JOHN STARKEY.