(No Model.)

T. F. MACDONALD.

SEWER TRAP.

No. 581,744. Patented May 4, 1897.

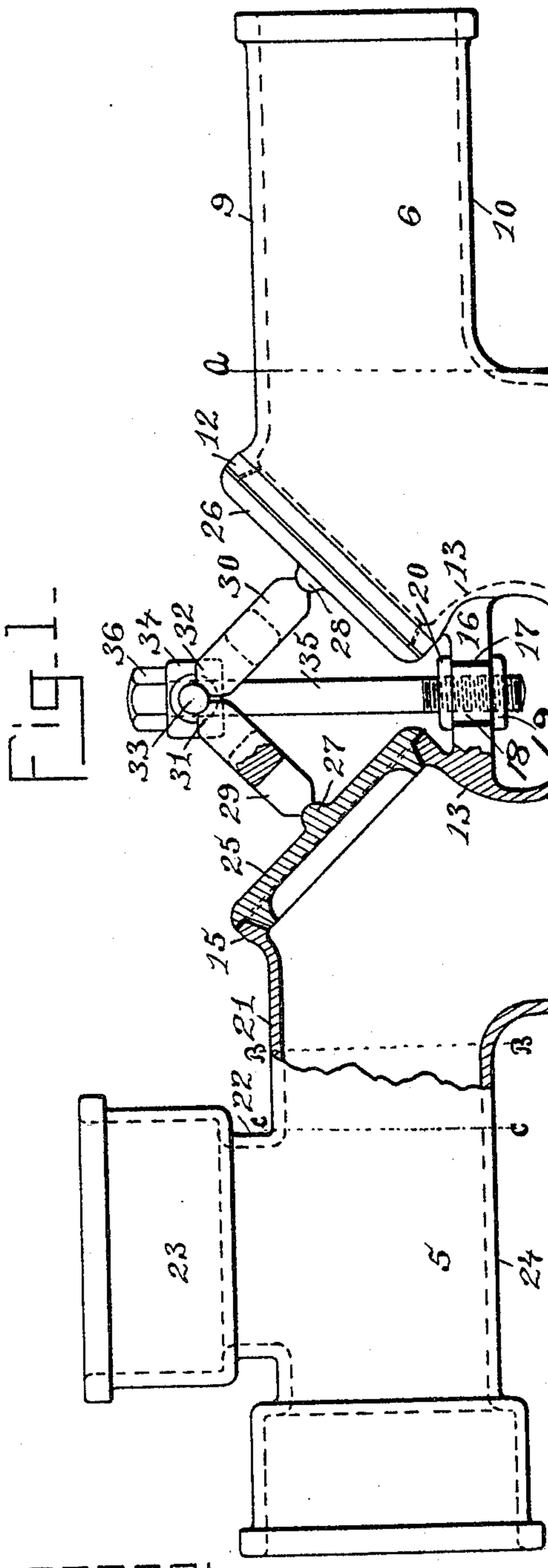

Fig. 1.

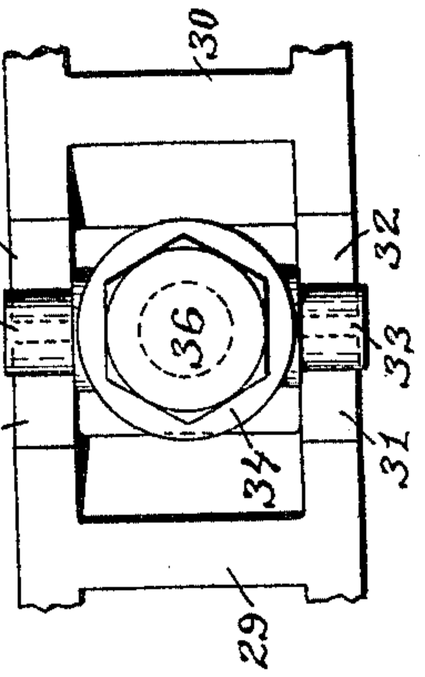

Fig. 2.

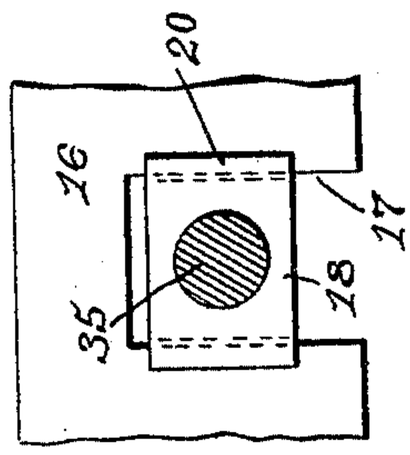

Fig. 3.

WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS F. MACDONALD, OF LYNN, MASSACHUSETTS.

SEWER-TRAP.

SPECIFICATION forming part of Letters Patent No. 581,744, dated May 4, 1897.

Application filed April 9, 1896. Serial No. 586,767. (No model.)

To all whom it may concern:

Be it known that I, THOMAS F. MACDONALD, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Sewer-Traps; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in sewer-traps.

The objects of the invention are to improve the construction of sewer-traps, to render them more accessible for the insertion and securing of testing-plugs, and to provide improved means for securing the hand-hole covers.

The invention consists in the peculiar construction of the trap.

The invention likewise consists in the fastening device for the hand-hole covers.

The invention still further consists in such other novel features of construction and combination of parts as shall hereinafter be more fully described, and pointed out in the claim.

Figure 1 represents an elevation, partly in vertical section, of the improved sewer-trap. Fig. 2 represents a plan view of the yoke and the brass nut-block mounted therein. Fig. 3 represents a plan view of the securing-bolt and parts of the struts.

Similar numbers of reference designate corresponding parts.

Sewer-traps of the nature described are generally located outside of buildings in excavations made in the earth, being connected on one arm with the system of sewerage-pipes in the building and on the other with the system of pipes in the streets. The trap is also generally connected with an air-pipe and is therefore furnished with a branch extending from one arm and termed the "air-inlet." It has heretofore been the custom to locate this air-inlet immediately above some portion of the bend, and when necessary to test the pipes it has been customary to fill the bend with plaster, which was dug out after the testing, making an expensive piece of work. Again, no facilities have been provided for gaining ready access to all parts of the bend and to the arms extending therefrom, while the fastening devices for the hand-holes have not been found equal to the functions imposed on them.

In carrying my invention into practice I construct a sewer-trap with the tubular arms 5 and 6 and the bend 7 for holding liquid to form a water seal between the arms. The upper portion 9 and the lower portion 10 of the arm 6 extend in parallel planes to the line A A, Fig. 1. Thence the lower portion curves downward to form the bottom or outer bend 11 of the bend 7. The upper portion 9, however, is carried along to the axis of the bend 7 to meet the inclined annular lip 12, the lowest edge of which lies somewhat below the axis of the arm 6. The inner portion 13 13 of the bend curves laterally from the lower edge of the lip to provide an easy entrance to the bend, then curves downward to meet the horizontal extension 14, and upward to the inclined annular lip 15. The lips 12 and 15 surround the hand-holes, and between them is the yoke or plate 16, having the slot 17, in which is secured the plate 18 by means of the lips 19 and 20, this plate being generally of brass and threaded with a screw-threaded perforation. The rim 15 corresponds to that marked 12. From this lip the upper portion 21 of the arm 5 extends in a straight line to the vertical wall 22 of the air-inlet 23, this wall extending opposite a point on the lower portion 24 at a considerable distance from the downward curve of the outer wall of the bend, so that between the lines B and C the walls are parallel, and a testing-plug inserted through the rim 15 may be secured in place.

The rims 12 and 15 are furnished with covers 25 and 26, having axially-disposed projections 27 and 28, any suitable packing being used between the covers and lips. As a means for securing these covers in place, I make use of a pair of struts 29 and 30, having concave recesses in their lower ends to receive the projections 27 and 28 of the respective covers, while their upper ends are divided into arms 31 31 and 32 32, having longitudinal concavities for engaging the cross-shaft 33 of the collar 24. This collar loosely fits the bolt 35, which has the wrench-head 36 and a threaded portion adapted to be engaged in the threaded perforation of the block 18.

Like this block, the collar 34 may also be of brass.

The convenience of the fastening device will be better appreciated when it is understood that the trap is located in an excavation in the earth, a simple rotation of the bolt in the one direction or the other serving to increase or diminish the pressure on the struts, while the universality of the action of the struts causes an equal distribution of pressure on the covers, insuring a tight fitting thereof. The shape of the upper portion of the bend facilitates the insertion of a testing-plug, either as above stated or to be located between the wall 14 and the lower portion of the bend, while the position and inclination of the hand-holes with relation to each other and to the axes of the arms makes easy the introduction of a scraper or rod into either arm.

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

The combination in a sewer-trap having the inclined rims 12 and 15, the plate 16 secured between them and a perforated block mounted in the plate, with the covers 25 and 26 seated in said rims, and having the projections 27 and 28, of a bolt working in the perforated block, a collar embracing the bolt, and having laterally-extending shafts or studs and inclined struts engaged at their upper ends by said studs or shafts, and at their lower ends bearing on the projections 27 and 28 as described.

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Witnesses:
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