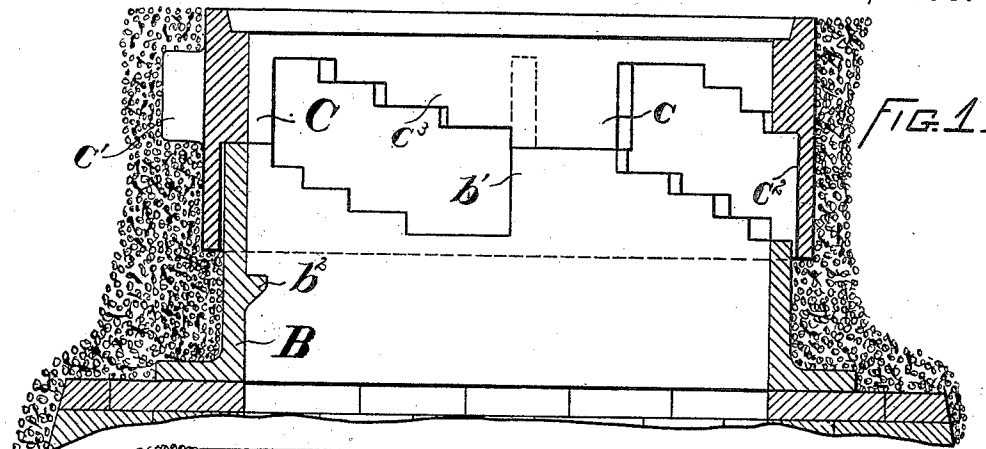
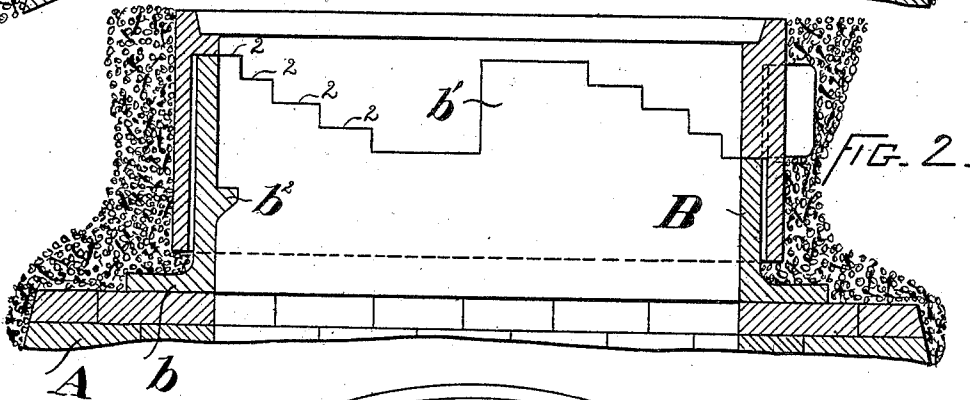
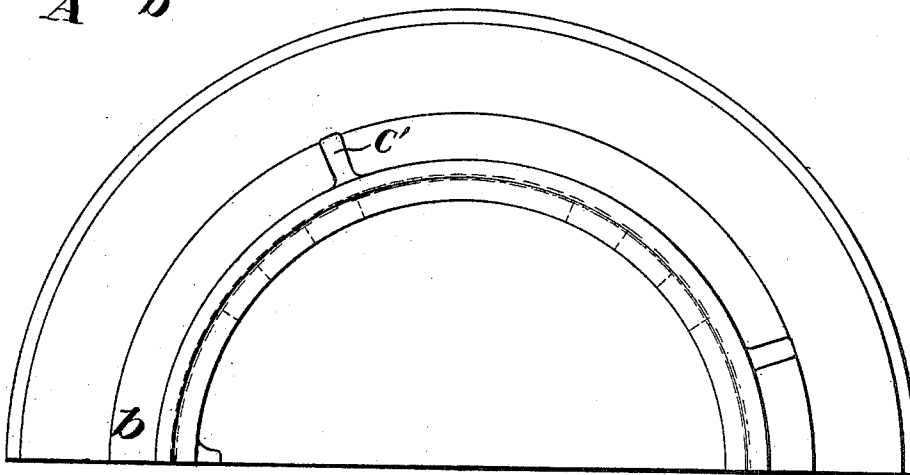


(No Model.)

E. S. DORR.
MANHOLE FRAME.

No. 599,441.

Patented Feb. 22, 1898.



WITNESSES.
Harry O. Robinson.
F. H. Davis

INVENTOR.
Edgar S. Dorr
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UNITED STATES PATENT OFFICE.

EDGAR S. DORR, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO
HENRY W. SANBORN, OF SAME PLACE.

MANHOLE-FRAME.

SPECIFICATION forming part of Letters Patent No. 599,441, dated February 22, 1898.

Application filed May 22, 1896. Serial No. 592,541. (No model.)

To all whom it may concern:

Be it known that I, EDGAR S. DORR, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Manhole-Frames, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

It is customary in building sewers, laying water-pipes, gas-pipes, &c., and in building conduits for electric wires and other purposes to construct at desired intervals manholes which project up to the street-level. The manholes are usually built of concrete or brick masonry and made large enough to allow a man to enter and are provided at the top with an iron frame which is adapted to rest upon and be supported by said concrete or masonry, the top of said frame lying substantially flush with the surface of the street, where it is capped with an iron cover. In localities where heavy teaming is carried on it is with great difficulty that the streets are kept up to the required grade, as they are continually wearing away, leaving the manhole-frames projecting above the street-level and presenting dangerous obstructions, and in some cases the grade of the street has not been accurately determined when the manholes are built, and in other cases the street is not built to grade when the manholes are built, and as a consequence they are left projecting above the street-level under the supposition that the street will be immediately graded, while instead the work will oftentimes be delayed for a long time. With manholes thus constructed their height is varied by bodily lifting the manhole-frame from its foundation and removing a portion of the masonry to lower the frame or adding a portion thereto to raise it.

The object of this invention is to provide an adjustable manhole-frame which may be easily and quickly operated to compensate for the varying elevations of the grade of the street without necessitating the trouble and expense of lifting said frame bodily from its foundation and altering the masonry, as above stated.

In carrying out this invention I construct

a manhole-frame of two ring-like parts or sections arranged one within the other and adapted to be moved one with relation to the other to vary the height, one part or section having seats and the other part having supports which rest upon said seats, and there may be several seats in different elevations or several supports in different elevations to provide for adjustment, or both the seats and supports may be arranged in different elevations. The seats may be formed as the steps of stepped projections formed on one part or section, and the supports may be merely projections or lugs on the other part which project laterally toward the seat-bearing section. In using the steps of stepped projections as the seats I find that I am enabled to use as supports for the other part or section similar stepped projections which project laterally toward the seat-bearing section, and thus obtain a good and sufficient bearing to support a heavy team which may pass over it. The seats may be formed along the upper edge of the lower section, and the supports may be formed on the side wall of the upper section, projecting laterally toward the seat-bearing section, said laterally-projecting supports being upon the inside of said section when it is placed outside of the lower section and being formed upon the outside of said section when it is placed inside of said lower section.

Figure 1 shows in vertical section my adjustable manhole-frame, the parts or sections composing it being extended the full capacity. Fig. 2 shows a similar vertical section of my adjustable manhole-frame, the parts or sections thereof being closed together; and Fig. 3 is a plan view of the adjustable manhole-frame.

A denotes the top of the masonry of a manhole, and B the lower part or section of an adjustable manhole-frame, forming the subject-matter of this invention, it being flanged at *b* to present a good and sufficient bearing, which rests upon and is supported by the top of the masonry A. The upper edge of the side wall of said part or section B is cut away or formed to present seats 2 at different elevations, there being two or more seats disposed at different parts of the sections in each

different elevation, four being herein shown, and there being seats herein shown at four different elevations.

The seats 2 are herein shown as the steps 5 of stepped projections b' , which are formed with one vertical side and one stepped side, and four such stepped projections b' are herein shown, although two or three may be sufficient if properly disposed.

10 The upper ends of all the stepped projections b' lie in the same plane and form seats, and the corresponding steps of each stepped projection b' also lie in the same horizontal plane and form seats, and while I have here-
15 shown each stepped projection as having four steps or seats they could be formed with any other number, if desired. Furthermore, I desire it to be understood that these seats may be formed in numerous ways and by subserv-
20 ing the function as seats will come within the spirit and scope of this invention.

The upper part or section C is made somewhat larger than the part or section B to present an annular flange or rim c^2 , which sur-
25 rounds or incloses the part or section B and serves as a guide to enable the part C to be moved up and down telescopically on or with relation to the part B, and also as a means for closing the gaps between the stepped pro-
30 jections as the part C is raised to prevent the gravel from entering the manhole.

Two or more laterally-projecting supports c are formed within the part or section C, which are so formed and disposed as to rest
35 upon the seats 2 on the part or section B, and as I have shown four seats in each different elevation I herein show four projections c .

For the purpose of obtaining as large a bearing as possible the laterally-projecting
40 supports c are made as stepped projections, similar to the stepped projections b' , the steps c thereof resting on the seats 2 in the different elevations of the part C. A cover is adapted to fit into the top of said part C, as usual.
45 It is obvious that the rim or flange c^2 could be made to work inside of the part B and the laterally-projecting supports c be formed upon the outside, if desired.

A number of lugs c' project radially out-
50 ward from the part C, against which the paving-blocks may be set to prevent said part C from being easily or accidentally turned, or in lieu of said paving-blocks the material forming the top of the street may be tamped
55 around said lugs, and such axial motion of said part C will likewise be prevented.

The operation of my adjustable manhole-frame is as follows: It being desired to lower
60 said frame to conform to a reduction in the grade of the street, the material or paving-blocks forming the top of said street are first removed from around the frame, so that the upper part C is free to be turned and to settle down, and said part C is then turned and
65 its supports c moved into engagement with the next lower set of seats or steps formed in or by the stepped projections b' . To raise

the part C to a higher plane, the part C will at such time be turned in the opposite direc- 70
tion and its supports c moved into engage-
ment with the next upper set of seats or steps formed in or by the stepped projections b' .

To raise or lower a manhole-frame of com-
mon construction, it is necessary, as has been stated herein, to excavate until the masonry 75
upon which said frame rests is exposed and to then cut away some of the courses of brick or concrete or add extra courses of brick or concrete to bring the top of said frame to the required grade. This work requires the serv- 80
ices of a skilled mechanic and laborer and must be repeated at a heavy expense every time the grade of the street changes, while by the use of my improved adjustable manhole-frame the services of a skilled mechanic are 85
dispensed with, as the foundation of the manhole need not be disturbed, and the excavating necessary, as well as the labor of turning the part C, may be performed by unskilled 90
labor. A boss b^2 is formed upon the inner sur-
face of the lower part and projects inwardly a short distance.

I claim—

1. An adjustable manhole-frame composed of two ring-like sections arranged one within 95
the other, one of which has seats and the other of which has supports which project laterally toward the seat-bearing section, and which are arranged side by side but at differ-
ent elevations, one of said sections adapted 100
to revolve within the other, and the supports of one section adapted to rest on the seats of the other section, thereby providing for two or more adjustments of the movable section from its original position with relation to the 105
other section, substantially as described.

2. An adjustable manhole-frame composed of two ring-like sections arranged one within 110
the other, one of which has seats arranged side by side but at different elevations, and the other of which has supports which project laterally toward the seat-bearing section, one of said sections adapted to revolve within the other, and the supports of one section adapted to rest on the seats of the other sec- 115
tion, thereby providing for two or more adjustments of the movable section from its original position with relation to the other section, substantially as described.

3. An adjustable manhole-frame composed 120
of two ring-like sections arranged one within the other, one of which has seats arranged side by side but at different elevations, and the other of which has supports which project laterally toward the seat-bearing section, 125
and which are arranged side by side but at different elevations, one of said sections adapted to revolve within the other, and the supports of one section adapted to rest on the seats of the other section, thereby providing 130
for two or more adjustments of the movable section from its original position with relation to the other section, substantially as described.

4. An adjustable manhole-frame consisting of two parts or sections telescopically movable one with relation to the other, one of said parts having two or more stepped projections, forming seats arranged side by side but at different elevations, and the other having laterally-projecting supports, one of said sections adapted to revolve within the other, and the supports of one section adapted to rest on the seats of the other section, thereby providing for two or more adjustments of the movable section from its original position with relation to the other section, substantially as described.

5. An adjustable manhole-frame consisting of two parts or sections telescopically movable one with relation to the other, one of said parts having seats, and the other having two or more stepped projections forming supports arranged side by side but at different elevations, which project laterally toward said seats, one of said sections adapted to revolve within the other, and the supports of one section adapted to rest on the seats of the other section, thereby providing for two or more

adjustments of the movable section from its original position with relation to the other section, substantially as described.

6. An adjustable manhole-frame consisting of two parts or sections telescopically movable one with relation to the other, each member having two or more stepped projections arranged side by side but at different elevations, the stepped projections on one section projecting laterally toward the other section, one of said sections adapted to revolve within the other, and the supports of one section adapted to rest on the seats of the other section, thereby providing for two or more adjustments of the movable section from its original position with relation to the other section, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDGAR S. DORR.

Witnesses:

F. H. DAVIS,
B. J. NOYES.