(No Model.)

P. H. GUNDERMANN.

DETACHABLE COUPLING FOR LEAD PIPES.

No. 597,497. Patented Jan. 18, 1898.

Fig. 1.

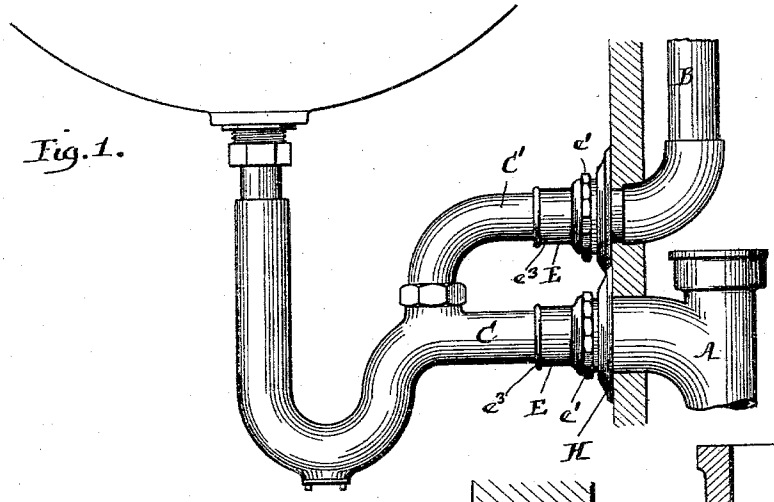


Fig. 2.

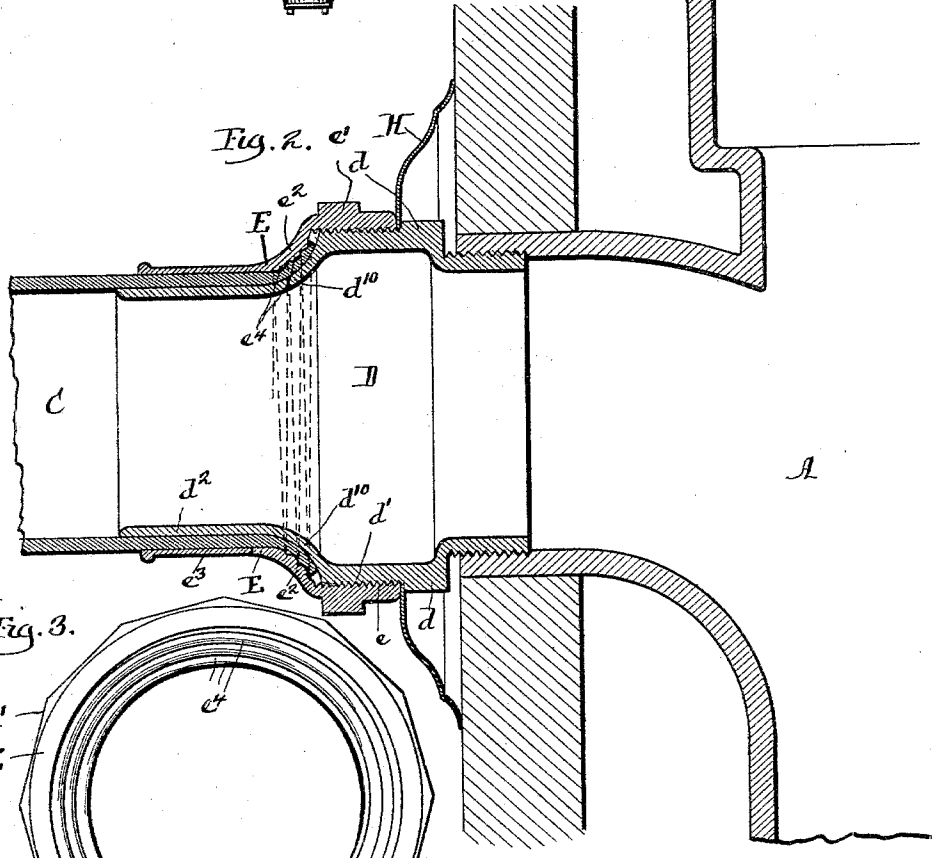


Fig. 3.

Witnesses:
Fred Gale Jr
Alberta Adamick.

Inventor.
P. H. Gundermann
By Peirce & Fisher
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

PHILIP H. GUNDERMANN, OF CHICAGO, ILLINOIS.

DETACHABLE COUPLING FOR LEAD PIPES.

SPECIFICATION forming part of Letters Patent No. 597,497, dated January 18, 1898.

Application filed January 13, 1896. Serial No. 575,292. (No model.)

To all whom it may concern:

Be it known that I, PHILIP H. GUNDERMANN, a citizen of the United States, residing at Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Detachable Couplings for Lead Pipes, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

The present invention has for its object to provide an improved construction of coupling whereby sections of lead pipe may be securely and tightly joined to iron or other hard-metal pipes, the invention being primarily designed to provide an improved detachable connection whereby the lead pipes of closets or basins may be conveniently and tightly joined to waste or vent pipes.

It has been heretofore proposed to form a detachable lead-pipe coupling by forming the interior section of the coupling—that is to say, the section that enters the end of the lead pipe—with an inclined portion over which the end of the lead pipe is expanded, the outer portion of the coupling that sets outside the lead pipe having a reduced inclined portion adapted to clamp the flaring end of the lead pipe against the inclined face of the interior coupling-section. It has also been heretofore proposed to provide the inclined portions of the coupling where they bear upon the flaring end of the lead pipe with annular ribs or teeth in order to more firmly bind the end of the pipe and guard it against slipping. This type of coupling, while effective to a certain extent, is found objectionable, because inasmuch as the outer section of the coupling, being threaded onto the inner section, moves in straight line the annular ribs or teeth cut upon the inclined face of the outer section also move in straight line, and consequently plow into or cut into the lead pipe, becoming embedded therein only in the direction of their straight line of motion. Hence it is that while such annular indentations serve in a measure to form a tighter joint between the flaring end of the lead pipe and its coupling the annular ribs or teeth of the coupling do not as effectively serve to rigidly hold the flaring end of the lead pipe or guard it against withdrawal or make as tight a joint as with my improved construction.

My invention consists in forming the interior face of the abruptly-inclined portion of the outer coupling-section with a screw-thread of such pitch and shape that it will become embedded and form a continuous thread upon the flaring end of the lead pipe as the outer section of the coupling is screwed to place.

Referring to the accompanying drawings, Figure 1 is a view in elevation, showing the manner of applying my invention. Fig. 2 is a detail view, in vertical section, through a portion of a vent-pipe and through a portion of a lead pipe connected to my improved coupling. Fig. 3 is a view in section through the outer coupling, showing the manner of forming the threads thereon.

A designates the waste-pipe, and B the vent-pipe, of a closet.

C designates the section of lead pipe leading from the closet to the waste-pipe, and C′ denotes the section of lead pipe leading to the vent-pipe B. The coupling whereby the section C′ of lead pipe is connected to the vent-pipe B is the same in construction as the coupling whereby the lead pipe C is connected with the waste-pipe A, and a description of one of these couplings will answer for both.

My improved coupling comprises an inner section D, provided, preferably, at one end with a threaded portion adapted to engage with the waste or vent pipe, and adjacent this inner threaded portion the section D of the coupling will be furnished with a polygonal exterior d, whereby the coupling-section may be screwed to place. The outer portion of the coupling-section D will also be formed with a threaded part d', adapted to be engaged by corresponding interior threads e, formed upon the inner face of the enlarged portion of the outer coupling-section E. This enlarged portion of the outer coupling-section E will also be formed with a polygonal rim e', adapted to receive a wrench for uniting the sections of the coupling together. The inner coupling-section D is formed with a reduced abruptly-inclined portion d^{10}, from which preferably leads a straight portion d^2, adapted to enter the end of the lead pipe C for some distance. The outer coupling-section E is

also formed with a reduced abruptly-inclined portion e^2, corresponding to the inclined portion d^{10} of the coupling-section D, and with a straight portion e^3, corresponding with the straight portion d^2 of the inner coupling-section. The inner face of the outer coupling-section E is formed with a continuous screw-thread e^4, which when the coupling-sections D and E are set together over the flaring inner end of the lead pipe C will form a corresponding screw-thread upon the outer face of the flaring end of the lead pipe, and thus firmly embed the threads e^4 in such lead pipe. The screw-thread e^4 is a considerably larger thread than the screw-thread that connects the two sections D and E together, and the crowns of the threads e^4 are preferably rounded, so that as the sections are forced together the threads e^4 will embed themselves into the flaring end of the lead pipe C without plowing into or cutting away and so weakening the pipe. Inasmuch as there can be but comparatively slight movement of the outer coupling-section E after the thread e^4 has come to bear upon the outer face of the flaring end of the lead pipe and to the abrupt incline of the section E, I have found in practice that by forming the screw-thread e^4 considerably larger than the thread e the thread e^4 will embed itself and form a continuous thread upon the outer face of the flaring end of the lead pipe and thus not only serve to make a water and gas tight joint between the lead pipe and the coupling, but will aid in preventing the accidental slipping of the coupling-section E upon the lead pipe notwithstanding any movement of this pipe incident to the shaking of the closet-bowl. It will be understood, of course, that the difference in the size of the thread e^4 will vary according to the size of the couplings, but this thread should be so proportioned that as the coupling-sections are firmly joined together the thread e^4 will be advanced such distance as to firmly embed itself into the outer face of the lead pipe. Preferably a shield H will be slipped over the coupling-section D, adjacent its annular shoulder d, in order to hide the joint between the coupling and the waste or vent pipe, although such shield is no part of my invention.

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

A coupling for lead pipes comprising a section D having formed integral therewith a cylindrical exteriorly-screw-threaded portion d' and a reduced abruptly-inclined forwardly-extending plain portion d^{10}, in combination with the exterior coupling-section E having a cylindrical interiorly-threaded portion to engage the threaded portion d' of the section D and having in piece therewith an abruptly-inclined portion e^2 corresponding with the abruptly-inclined portion d^{10} of the section D and provided upon its interior with a continuous screw-thread adapted to form a spiral thread in a lead pipe interposed between the sections D and E, substantially as described.

PHILIP H. GUNDERMANN.

Witnesses:
GEO. P. FISHER, Jr.,
ALBERTA ADAMICK.