(No Model.)

G. W. YOUNG.

CALKING HUB WITH SOLDERING NIPPLE OR FERRULE.

No. 519,372. Patented May 8, 1894.

Fig. 1.

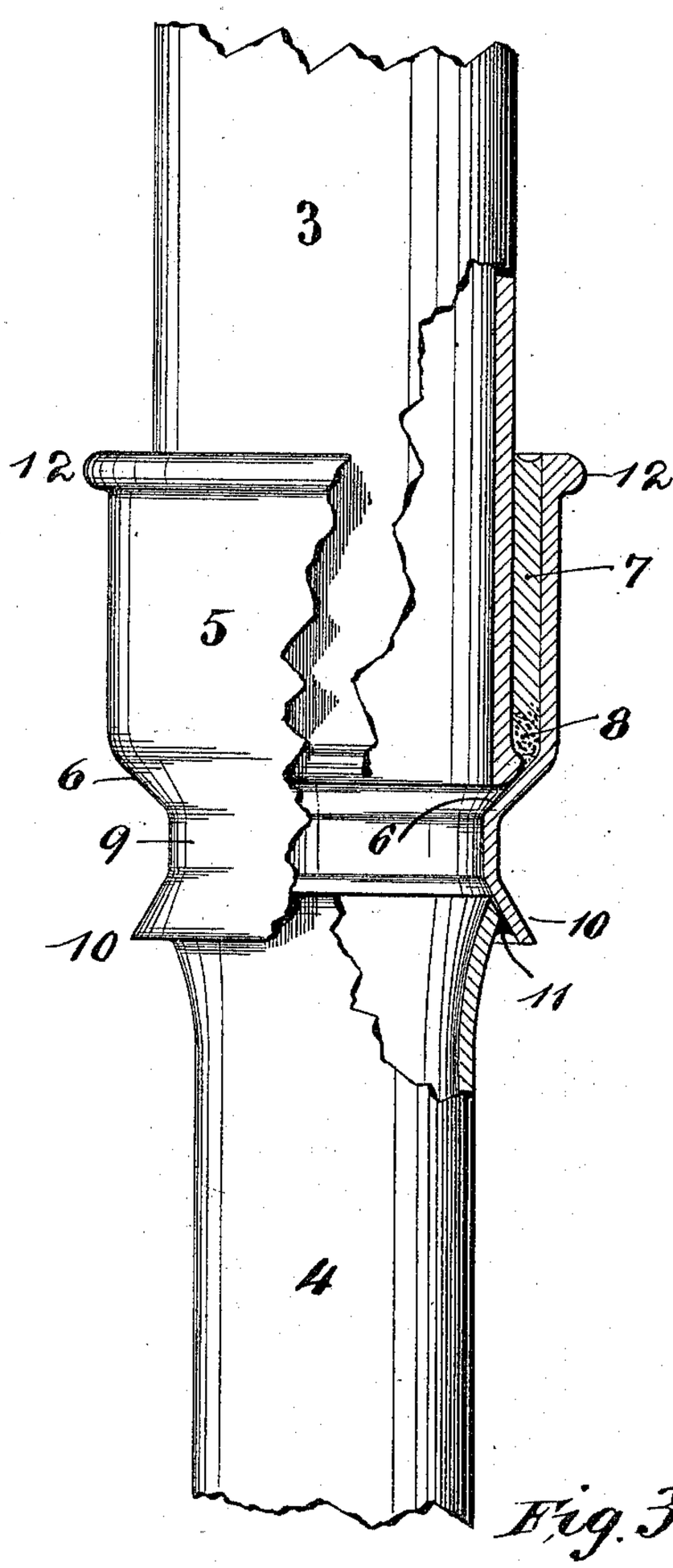


Fig. 2.

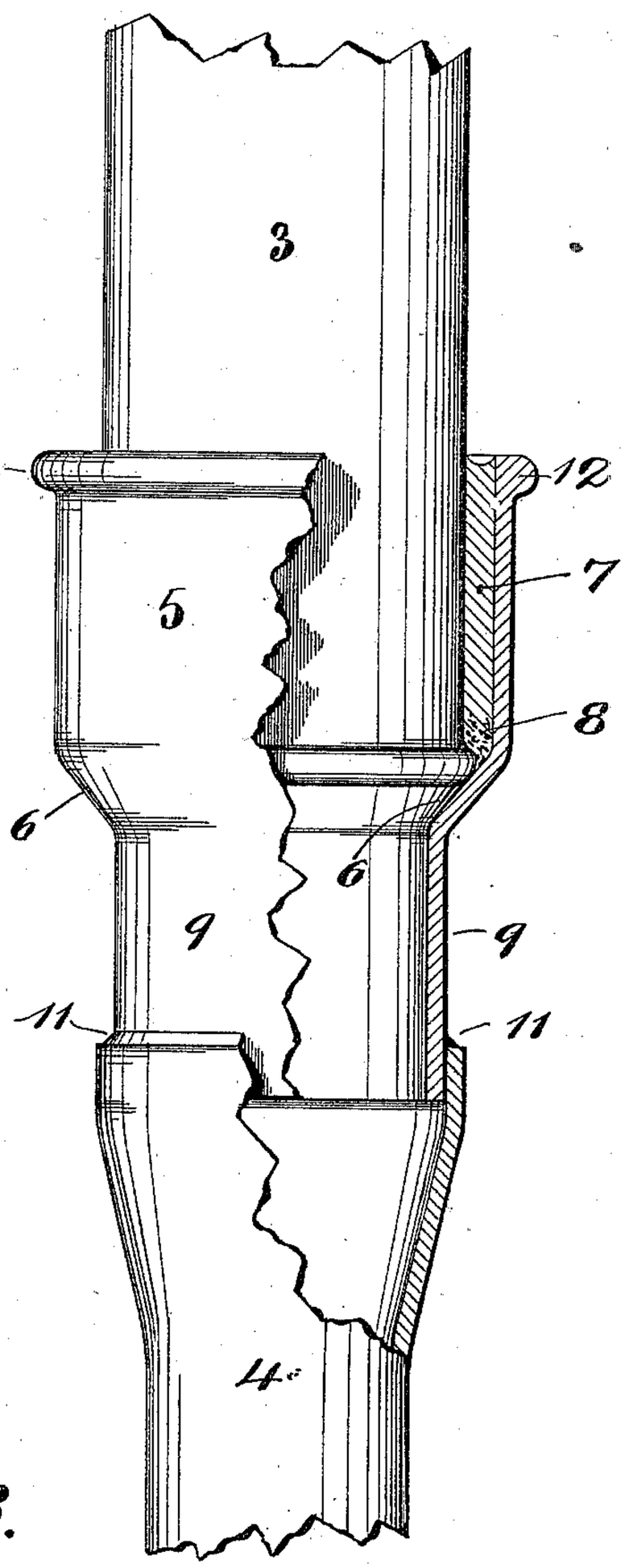
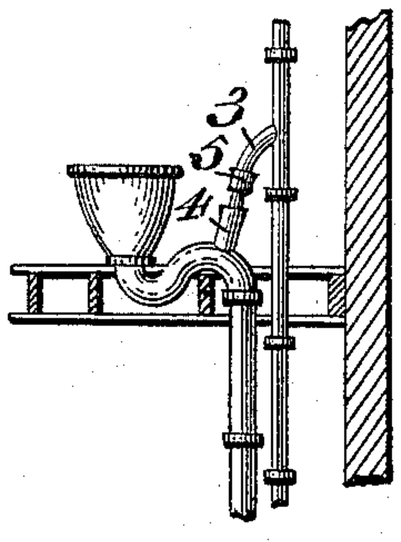


Fig. 3.



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CALKING-HUB WITH SOLDERING NIPPLE OR FERRULE.

SPECIFICATION forming part of Letters Patent No. 519,372, dated May 8, 1894.

Application filed April 17, 1893. Serial No. 470,638. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. YOUNG, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Pipe-Joint, &c., Calking-Hub with Soldering Nipple or Ferrule; and I do 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 the figures of reference marked thereon, which form a part of this specification.

This invention relates to a plumber's joint for the purpose of connecting the traps of sinks, bathtubs and particularly of water-closets, with vent-pipes to carry off bad odors which are usually discharged by these pipes above the houses and through the roofs. The provision of such vent-pipes is a comparatively new innovation in the modern improved sanitary plumbing of houses and created certain complications and requirements with which the plumber had hitherto not to cope. These adverse contingencies are caused by the facts that the branch connection between the traps and the main vent-pipes must be a rising one, in order to readily carry off the rising bad air which brings the connecting ends one above the other, and that the traps and the main vent-pipe consist of different metals, to wit: lead and cast-iron, which are, as is well known, incapable of entering into a connection by a soldering joint generally employed by the plumber. Therefore such couplings are usually of brass to permit soldering to the leaden branch and connect by means of a calking-joint to the cast-iron branch of the main pipe. The fact that the iron pipe is above the leaden one and that molten lead is used for calking-joints, limits the connection to a particular form, which must not only permit the application of a solder-joint, but which also accommodates itself to the location and position of the pipes and to the particular formation of their ends to be joined, so as to permit the molten lead to be poured and hardened. Therefore the object of my invention is to provide such a joint and have a coupling for it which is a practical success by being very simple, to attain cheapness and also constructed in a way to admit it of being applied in a ready and quick manner for the purpose of connecting two pipes, when they are of different metals to wit: cast-iron and lead and when the cast-iron pipe is vertical and above the leaden pipe and which further permits the application of a solder-joint on the leaden branch and the use of a calking-joint on the iron branch which is the usual mode of connection for such pipes. Molten lead being required for the formation of a calking-joint, the construction must be so as to permit such to be used, considering the peculiar contingencies and position of the pipes.

To this end my invention consists substantially of a so-called calking-hub, so constructed as to be capable of receiving and retaining the molten lead needed in the connection to the cast-iron pipe above and provided with a so-called soldering-nipple or ferrule which takes the leaden pipe from below, the whole being formed integrally and of a metal which is capable of entering by solder into combination with the leaden pipe, such as brass for instance.

In the following specification is found a full description of my invention, the same being also particularly pointed out in the claim at the end thereof and its construction illustrated in the accompanying drawing, in which—

Figures 1, and 2, show in side-elevations, partly in section, the cast-iron branch of a vent-pipe connected to the leaden branch of a water-closet trap by means of my new plumber's-joint in connection with my improved calking-hub, integrally provided with a soldering-nipple, or ferrule. Fig. 3, shows at a reduced scale, the application of the joint shown in the preceding figures and when connecting a water-closet trap to vent-pipe for the purpose of ventilation.

The branch-pipe connection which leads upwardly from the trap to the main-vent-pipe (see Fig. 3) and unites them, consists of two parts of which one part is integral with the trap, while the other is integral with the main vent-pipe. It is between the ends of these two parts that the final junction has to be made, after they are brought opposite each other.

In the drawings, 4, indicates that part of the branch-connection which forms an integral part of the trap and projects upwardly therefrom. It consists therefore like the first of lead. 3, represents the other part of this branch-connection and forms an integral adjunct of the main vent-pipe, which is generally of cast-iron. Its open end projects downwardly toward the upturned open end of the leaden branch rising upwardly, the two ends being brought opposite each other for final connection. The joint which I furnish for this purpose consists of the calking hub 5, integrally combined with a soldering nipple or ferrule 9. The first takes the downwardly projecting end of the cast-iron branch 3, which reaches into it, while the other is connected to the leaden branch by means of a soldering joint. To permit the use of solder on this latter connection, the whole coupling piece is made of brass which metal readily enters into a union with solder. My improved joint or coupling consists therefore first of the calking-hub 5, the interior diameter of which is large enough to receive from above the cast-iron branch from the main vent-pipe and in addition provides for an annular space to receive the molten lead, 7, which completes the joint and is poured in from above. In order to hold the lead within this space until hardened, the diameter of the calking hub is contracted to form a shoulder at 6, against which the edge of the cast-iron pipe 3, butts and whereby the annular space is completely closed below and formed into a receiving socket for the lead. Before this latter is poured, oakum or cotton-waste 8, is stuffed in to prevent the lead from leaking through before hardened. After hardening, the lead is driven home and the joint made compact and tightened by means of a calking-tool in the well known way. From the under side of this contraction or shoulder 6, in the calking-hub, depends the soldering nipple, or ferrule 9. In the case illustrated in Fig. 1, it is provided with an outwardly flaring lip 10, against which the leaden pipe, 4, rising from below butts, having its outer edge beveled off first, to admit of a complete contact. This joint is completed by the application of solder 11, which by reason of the nipple being of brass, enters into ready combination therewith. On account of the extended opening presented by this outflaring lip 10, lead-pipes of different diameters are readily received and connected.

In the case illustrated in Fig. 2, the nipple or ferrule is straight and the leaden pipe is slipped over it, the solder-joint 11, being applied at the outside. When leaden pipes are smaller than the outer diameter of this ferrule, their ends may be widened to meet this latter.

The calking-hub may be preferably strengthened at its outer edge by a bead 12, at which point it is strained by the pressure of the lead 7, produced when the same is driven in by the calking-tool.

I am aware that there are a number of joints or ferrules in existence for joining leaden to iron pipes, but among them there is not one which permits the formation of such a junction and under the complicated conditions for which my joint is specially intended. They are mostly used on horizontal pipes, or on downwardly projecting branches and in the latter case with the iron pipe below the leaden one. None of them could however be used under the fixed and irreversible conditions here existing, and with the iron pipe above the leaden one, because they make the pouring of the molten lead, required for the calking joint, a physical impossibility.

Having described my invention, I claim as new—

In a pipe-joint for connecting the leaden branch 4, rising up from a water-closet or similar trap, with the cast-iron branch 3, of a main vent-pipe reaching down from above, the combination with these two branches 4, and 3, of the calking-hub 5, which receives the cast-iron branch from above, being of an internal diameter sufficiently in excess of pipe 3, to provide space to receive and retain the molten lead for the calking-joint, a shoulder 6, against which the end of the said iron branch butts, and which forms with it and the receiving end of the calking-hub, the socket or mold which receives the lead and holds it while hardening and the soldering-nipple or ferrule integrally combined with the receiving hub or part of the calking hub, and depending from below the latter to receive the leaden branch rising from below.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. YOUNG.

Witnesses:
CHAS. MCCARTHY,
JOHN FINDEIS.