

Nov. 3, 1925.

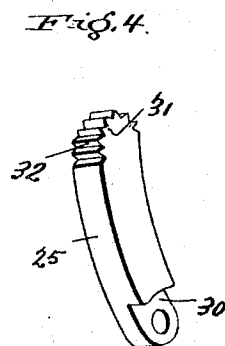
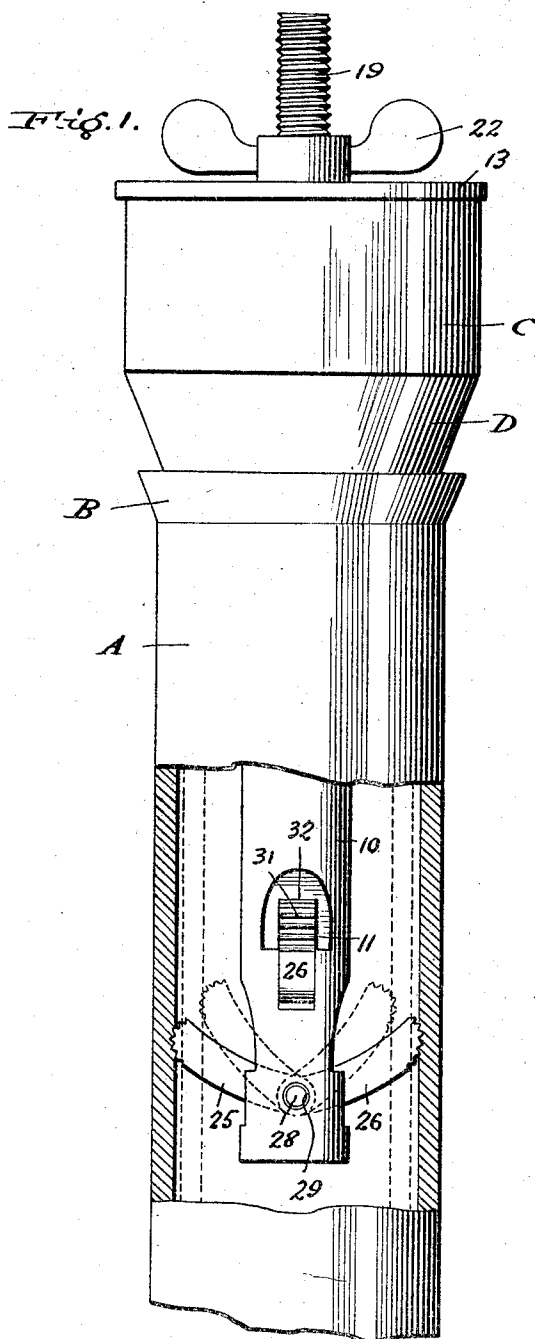
H. C. MARTIN

1,560,280

PLUMBING TOOL

Filed Oct. 20, 1924

2 Sheets-Sheet 1



WITNESS:

Gerald Hemmes

Harry C. Martin

INVENTOR

BY *Victor J. Evans*

ATTORNEY

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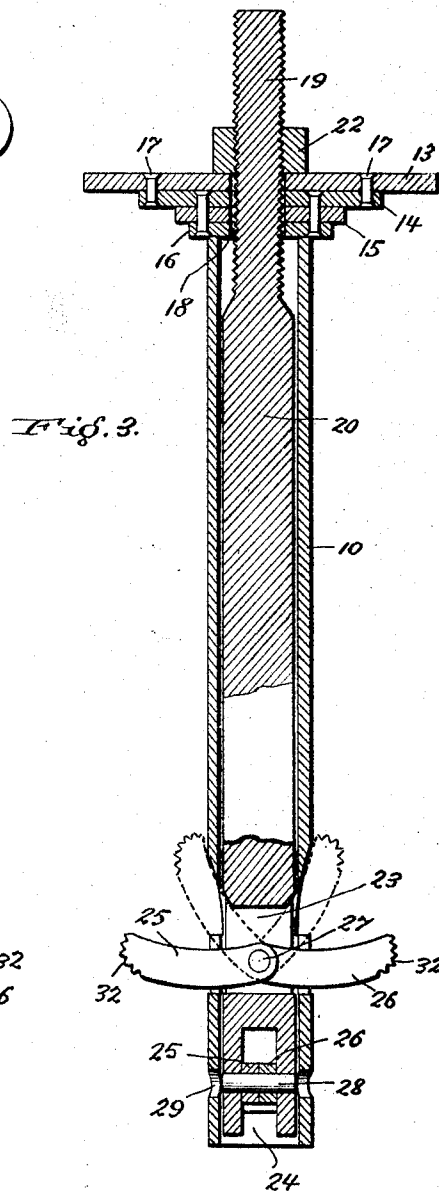
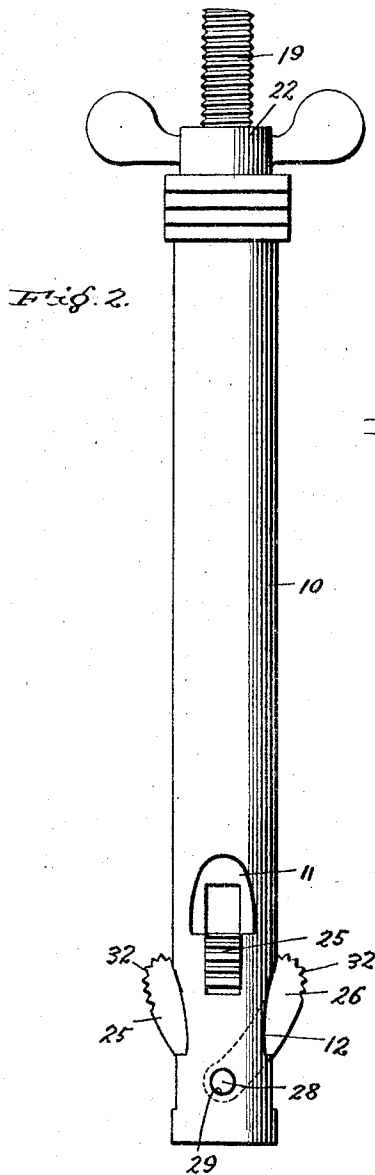
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UNITED STATES PATENT OFFICE.

HARRY C. MARTIN, OF SAN ANTONIO, TEXAS.

PLUMBING TOOL.

Application filed October 20, 1924. Serial No. 744,758.

To all whom it may concern:

Be it known that I, HARRY C. MARTIN, a citizen of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented new and useful Improvements in Plumbing Tools, of which the following is a specification.

This invention relates to tools designed for the use of plumbers or others and has for its object the provision of a novel tool adapted to be inserted within a pipe and acting to clamp in place a tail-pipe or ferrule prior to wiping or soldering the joint.

An important object is the provision of a tool of this character which is so constructed that when inserted within a pipe and operated it will bite against the inner wall thereof and provide an efficient holding means whereby upon movement of an adjusting nut element, pressure will be applied for forcibly urging and clamping the ferrule firmly in position.

An additional object is the provision of a device of this character which will be simple and inexpensive in manufacture, easy to apply in use, positive in action, efficient and durable in service and a general improvement in the art.

With the above and other objects and advantages in view, the invention consists in the details of construction to be hereinafter more fully described and claimed and illustrated in the accompanying drawings in which:

Figure 1 is an elevation, partly in section showing the tool in use for holding a ferrule in place.

Figure 2 is a side elevation of the tool alone or removed from the pipe,

Figure 3 is a longitudinal section through the tool alone, and

Figure 4 is a detail perspective view of one of the jaw members.

Referring more particularly to the drawings, the letter A designates a pipe which is flared as indicated at B and to which it is desired to connect a ferrule C having a tapered end D.

In carrying out the invention I provide a tool which comprises an elongated tubular body 10 open at both ends and formed near its lower end with two pairs of diametrically opposite openings 11 and 12 for a purpose to be described. Above the upper end of this tube is a collar structure of step-like for-

mation including a plurality of elongated strips 13, 14, 15 and 16 of progressively decreasing lengths secured together as for instance by means of rivets or the like. These assembled strip elements are formed with a central opening 18 which extends through all of them so that the assembled structure may be slidably engaged upon the reduced threaded end 19 of a rod 20 which is slidably engaged within the tubular body 10. Screwed on to the reduced extension 19 is a wing or other nut 22 which is adapted to engage the uppermost member 13 for a purpose to be described.

Near its lower end the rod 20 is formed with a pair of openings 23 and 24 within which are located pairs of jaws 25 and 26, respectively, and which are pivotally mounted on pins 27 and 28, respectively. The lower end of the body 10 is formed with holes 29 registering with the pin 28 for permitting insertion thereof during assembling of the parts. The inner ends of the jaw members 25 and 26 are cut away at opposite sides as shown at 30 in order to permit them to be overlapped when engaged upon their pivots 27 and 28. The outer ends of the jaw members are formed curved as illustrated at 31 and are toothed as shown at 32 so as to be capable of having a biting engagement within the pipe A.

In the use of the device, it is intended that the nut 22 and assembled elements 13 to 16 inclusive be first removed so that the tube 10 can be inserted within the pipe A. The ferrule C is passed over the tube 10 with its tapered end D engaged within the flared end B of the pipe. The assembled elements 13 to 16, are then slipped onto the threaded extension 19 and brought down into engagement with the larger end or top of the ferrule. The purpose of having the strips 13, 14, 15 and 16 of progressively decreasing lengths is to enable them to be engaged properly within a ferrule regardless of the size thereof, it being well known that the size of the ferrule must vary according to the diameter of the pipe with which it is used. The nut 22 is then applied and screwed down and the result will be that the rod 20 is moved upwardly within the tube 10. Owing to the fact that the jaw members 25 and 26 project through the openings 11 and 12, respectively, in the tube 10 it is apparent that when the rod 20 is moved

upwardly the jaw members will be caused to extend outwardly more or less at right angles to the longitudinal axis of the tool so that the curved and toothed ends of the jaw members will bite into the inner periphery of the pipe A and provide an effectual grip. When the turning movement of the nut 22 is continued it is evident that the ferrule C will be forced into the flared end of the pipe A, resulting in a tight joint or firm seat. After wiping of the joint has been accomplished the nut 22 is removed and the assembled guide strip likewise removed so that the device may be withdrawn from the pipe.

From the foregoing description and a study of the drawings it will be apparent that I have thus provided a simply constructed and very inexpensive device which is readily operable for the purpose specified and which will efficiently perform all the functions for which it is intended. Owing to the fewness of the parts and the ruggedness of the construction it is evident that there is very little to get out of order so that the device may have a long life.

While I have shown and described the preferred embodiment of the invention, it should be understood that I reserve the right to make such changes in the construction, form and arrangement of parts as will not depart from the spirit of the invention or the scope of the subjoined claims.

Having thus described the invention, I claim:

1. A tool of the character described comprising an elongated tubular member formed with pairs of openings near one end, said tubular member being adapted for insertion within a pipe and a ferrule to be joined thereto, a rod slidably mounted within said tubular member, and pairs of jaw members pivoted within the rod and extending through said openings, the ends of said jaw members being adapted to engage the inner

periphery of the pipe within which the device is inserted, and means for moving the plunger longitudinally for swinging the jaw members outwardly.

2. A tool of the character described comprising an elongated tubular member formed with pair of openings near one end, said tubular member being adapted for insertion within a pipe and a ferrule to be joined thereto, a rod mounted within said tubular member, and pairs of jaw members pivoted within the rod and extending through said openings, the ends of said jaw members being adapted to engage the inner periphery of the pipe within which the device is inserted, and means for moving the rod longitudinally for swinging the jaw members outwardly, said means comprising an abutment slidable on the rod and engageable with the ferrule, and a nut screwed onto the rod and engaging the abutment member.

3. A tool of the character described comprising an elongated tubular member formed near one end with pairs of openings, a cap member disposable upon the other end of the body and constituting a centering guide, a rod slidable within the body and formed at one end with a reduced threaded extension extending slidably through said centering guide, a nut member threaded upon the reduced extension and engaging said centering guide for moving the rod longitudinally, the tube being insertable within a pipe and a ferrule to be joined thereto, with said guide engaging the ferrule, said rod being formed at the end opposite the threaded extension with pairs of openings, pairs of jaw members pivoted in overlapping relation within said last named openings and projecting through said first named openings, the ends of said jaw members being curved and toothed for biting engagement with the inner wall of the pipe.

In testimony whereof I affix my signature.
HARRY C. MARTIN.