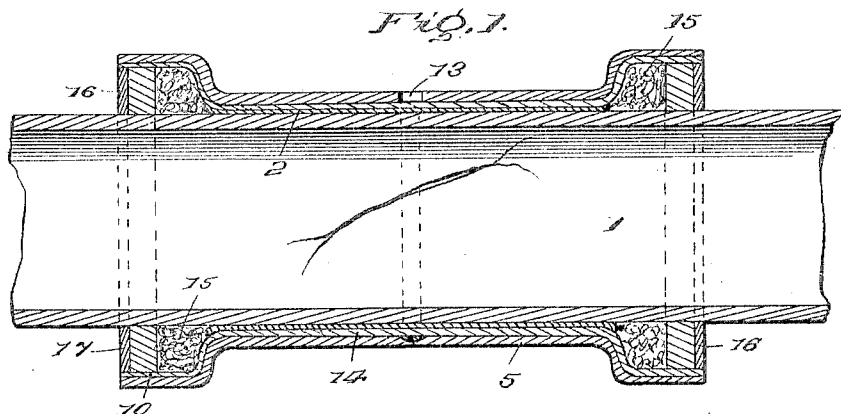
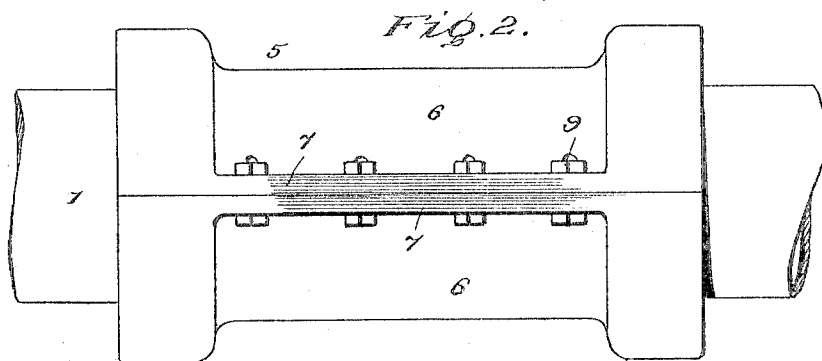
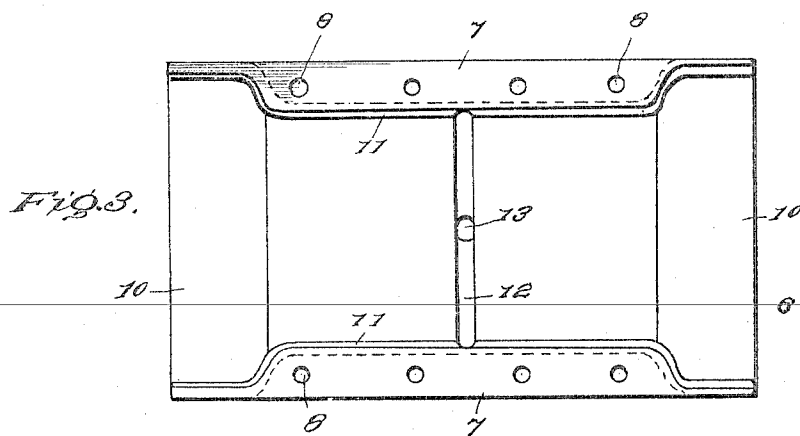


T. P. FITZGERALD.
 DEVICE FOR STOPPING LEAKS IN PIPES.

APPLICATION FILED OCT. 20, 1904.

2 SHEETS—SHEET 1.



Inventor

Thomas P. Fitzgerald

By

J. R. Nottingham Attorney

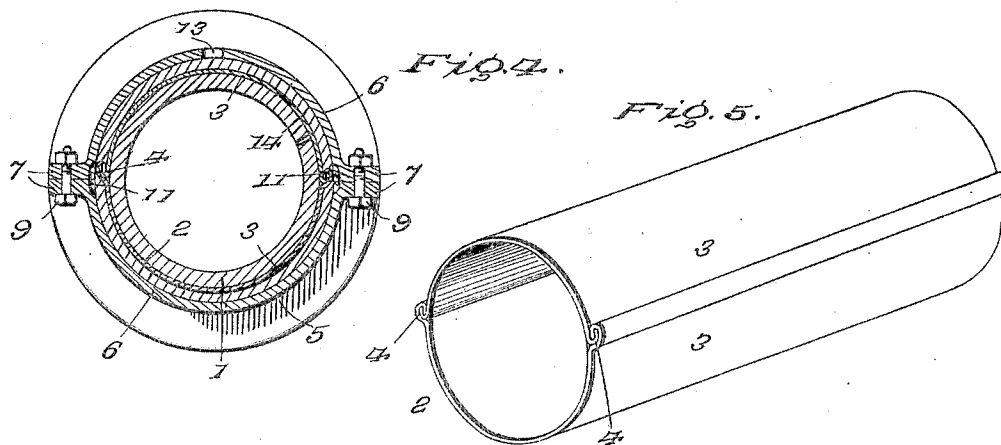
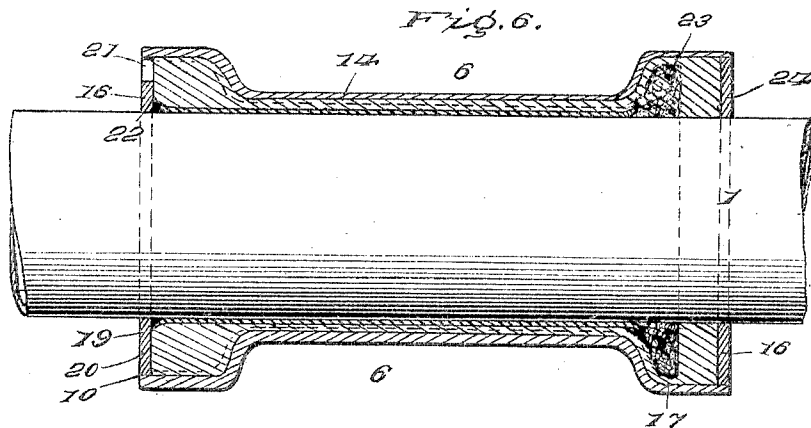
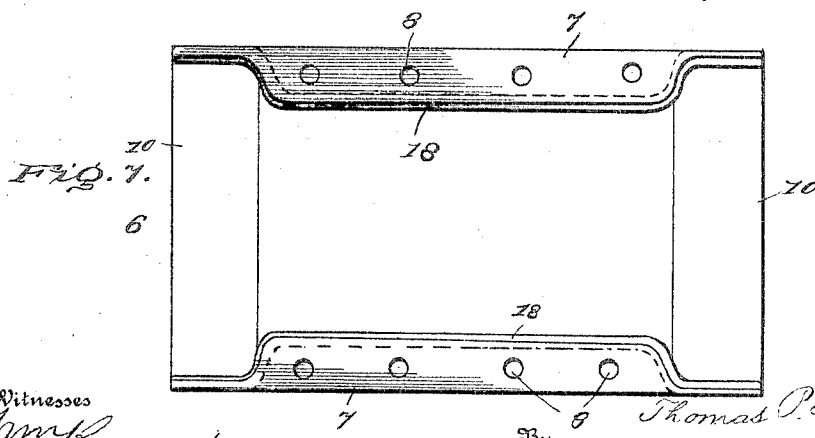
Witnesses

Wm. Kennedy
 C. Whitson,

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2 SHEETS—SHEET 2.



Inventor

Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS P. FITZGERALD, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR OF ONE-THIRD TO WILLIAM KENNEDY, ONE-THIRD TO JULIAN R. NOTTINGHAM, AND ONE-THIRD TO MOSES SINSHEIMER, OF WASHINGTON, DISTRICT OF COLUMBIA.

DEVICE FOR STOPPING LEAKS IN PIPES.

No. 802,276.

Specification of Letters Patent.

Patented Oct. 17, 1905.

Application filed October 20, 1904. Serial No. 229,282.

To all whom it may concern:

Be it known that I, THOMAS P. FITZGERALD, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Devices for Stopping Leaks in Pipes; and I do hereby 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.

This invention relates to devices for stopping leaks in pipes, particularly water and gas pipes or mains; and it consists, essentially, of a jacket or casing having enlarged ends and a filling of lead between the fractured pipe and the jacket, the lead filling terminating at each end of said jacket in a gasket of lead.

The invention further consists of the novel construction and arrangement of the several parts, as will be hereinafter fully described, and briefly stated in the claims.

One of the principal objects of the invention is to effect a saving of both time and labor in stopping leaks in water and gas pipes and at the same time provide a simple and effective device for the accomplishment of this object.

Other objects will become apparent upon a more complete disclosure of the invention.

In the drawings, Figure 1 is a longitudinal horizontal section of my improved device applied to the fractured section of pipe; Fig. 2, a side elevation; Fig. 3, an inner face view of one of the members or sections composing the outer casing; Fig. 4, a central transverse sectional view; Fig. 5, a perspective view of the inner sleeve-sections; Fig. 6, a longitudinal horizontal section of a modified form of my invention, and Fig. 7 an inner face view of the modified sections.

Referring to the several views, the numeral 1 indicates a section of pipe having therein a crack or fractured place *a*, around which may be closely fitted a metallic sleeve 2, preferably sheet-iron. This sleeve is preferably made in two sections 3 3, the longitudinal edge of each section being bent over to form locking edges 4 4, as shown in Fig. 5. These sections are first placed end to end on the pipe, one on the under side and the other on the

upper side thereof. They are then slid together into locking engagement and the bent-over portions tightly hammered together. It will be evident that the sleeve may be made in one piece and the side edges secured together in any well-known manner.

Placed around the sleeve is a jacket or casing 5, composed of two semitubular sections or members 6 6, each section having longitudinal laterally-extending flanges 7 7, provided with holes 8 8 for the reception of bolts 9 9, by means of which the sections are secured together. The respective ends of each section are preferably enlarged, so that when bolted together they will form bell-shaped mouths 10 10. The inner face or wall of each section along the side edges thereof is preferably provided with longitudinal grooves 11 11, which begin at the center of the sections and gradually increase in width toward each end. These grooves run the entire length of the sections and are intersected at the center by an annular groove 12, and a tap-hole or gate 13, made in the upper section of the jacket, communicates with the annular groove, so that molten lead may be poured into the grooves 11 and 12.

The internal diameter of the jacket is somewhat greater than the external diameter of the inner sleeve 2 or of the pipe 1, so as to provide a sufficient space between the inner sleeve and the jacket or between the pipe and jacket, if the sleeve is not used, for a filling of lead 14.

After the inner sleeve has been fitted around the pipe, covering the break or crack, and the jacket-sections bolted together and properly positioned the bell-mouth at each end of the jacket is partially packed with a suitable packing material 15, care being taken to leave the grooves 11 open and free for the run of the molten lead. A gasket 16, of suitable material, is placed in the extreme outer end of each bell-mouth, leaving a space or recess 17 between the packing and the gasket, into which the molten lead may run to form gaskets, as hereinafter explained. When the molten lead is poured through the gate 13, it runs into grooves 12 and 11 and into the space between the inner sleeve and the jacket, completely filling the same and forming an intermediate sleeve of lead. As the molten lead reaches

each end of the casing it runs over the packing 15 into the space or recess 17, filling said space and forming a gasket of solid lead in the end of each bell-mouth around the pipe.

5 When all the grooves and spaces are filled with the molten lead, it backs up into the gate 13, closing said opening, and when cooled the lead may be hammered down to form an effective plug for said gate or opening.

10 Instead of pouring the molten lead through a central gate in the upper section of the jacket it may be poured through a gate arranged at one end of the jacket. In this instance the longitudinal grooves instead of

15 starting from the center of the jacket and running toward each end start from the extreme end of each section thereof and gradually increasing in width terminate at the opposite end, as shown in Fig. 7 at 18 18. In this

20 form of the device one end of the sleeve 2 projects into the bell-mouth, and its end edge is slightly upset or bent outwardly by any convenient tool, so that a ring 19, of any suitable packing material, may be inserted for the

25 purpose of preventing the molten lead from entering between said sleeve and the pipe while the lead is being poured. A gasket 20 abuts against the projecting end of the sleeve and has a gate or opening 21, formed with its

30 upper edge, through which the molten lead may be poured into the groove 18 and the space between the inner sleeve and the jacket. A space or recess 22 is formed between the

35 gasket 20 and the shoulders of the bell-mouth, which space is filled with lead, as hereinafter explained. The opposite bell-mouth end of the jacket is partially filled with a packing 23 and fitted with a gasket 24, as in the form hereinbefore described. The lead being poured

40 through the gate 21 runs along the grooves 18 and into the space between the inner sleeve and the jacket, completely filling the same and forming an intermediate lead sleeve, as heretofore described. As the molten lead

45 reaches the opposite end it runs over the packing 23 into the space 24, filling the space and forming a solid gasket of lead. The molten lead also fills the recess 22, forming a solid gasket in the bell at this end of the jacket.

50 As the sleeve 2 is simply employed to prevent the molten lead from running into the crack or fracture in the pipe, it will be evident that it may be dispensed with and the crack or fracture filled with a putty of clay or other

55 suitable material, and therefore I do not wish to be limited to the use of the sleeve in practicing my invention.

The invention is equally adapted for stopping leaks in soil-pipes, in which case the

60 sleeve is not employed, as the crack or fracture may be readily filled with putty or clay, there being no fluid-pressure in the pipe.

It will be seen that leaks in either water or gas pipes may be effectually stopped by my improved device without removing a section 65 of the pipe and without the employment of skilled labor.

Various modifications or any changes may be made in the detail construction of my invention without limiting the scope thereof. 70

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a device for stopping leaks in pipes, the combination with a pipe, of a jacket or 75 casing having enlarged or bell-shape ends, an intermediate filling of lead, and lead gaskets, cast integral with the lead filling, seated in the enlarged or bell-shape ends of the jacket.

2. In a device for stopping leaks in pipes, 80 the combination with a pipe, of a jacket or casing having enlarged or bell-shape ends, packing in said enlarged ends, an intermediate lead filling or sleeve, and lead gaskets, cast integral with said sleeve, seated in the outer 85 ends of the enlarged ends of the jacket.

3. A device for stopping leaks in pipes, consisting of an inner sleeve, a jacket or casing, an intermediate sleeve or filling of lead, and end gaskets of lead integral with the lead 90 sleeve or filling.

4. A device for stopping leaks in pipes, consisting of an inner sleeve, a jacket or casing having bell-shape ends, an intermediate sleeve or filling of lead, and lead gaskets in the bell 95 ends integral with the lead sleeve.

5. In a device for stopping leaks in pipes, the combination of an inner sleeve, a jacket or casing having bell ends and longitudinal grooves in its inner face, a pouring-orifice, an 100 intermediate sleeve of lead, and end gaskets of lead integral with the lead sleeve.

6. In a device for stopping leaks in pipes, the combination of an inner sleeve, a sectional jacket or casing having enlarged ends and internal 105 grooves running from the center toward each end, a pouring-orifice, an inner sleeve of lead, and end gaskets of lead integral with the lead sleeve.

7. In a device for stopping leaks in pipes, 110 the combination of an inner sleeve, a jacket or casing composed of two sections, each section having enlarged ends and internal longitudinal grooves, an intermediate sleeve of lead, a gasket having a gate therein, and end gaskets 115 of lead integral with the lead sleeve.

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

THOMAS P. ^{his} × FITZGERALD.
mark

Witnesses:

L. M. GOTWALD,
ALBERT MARKS.