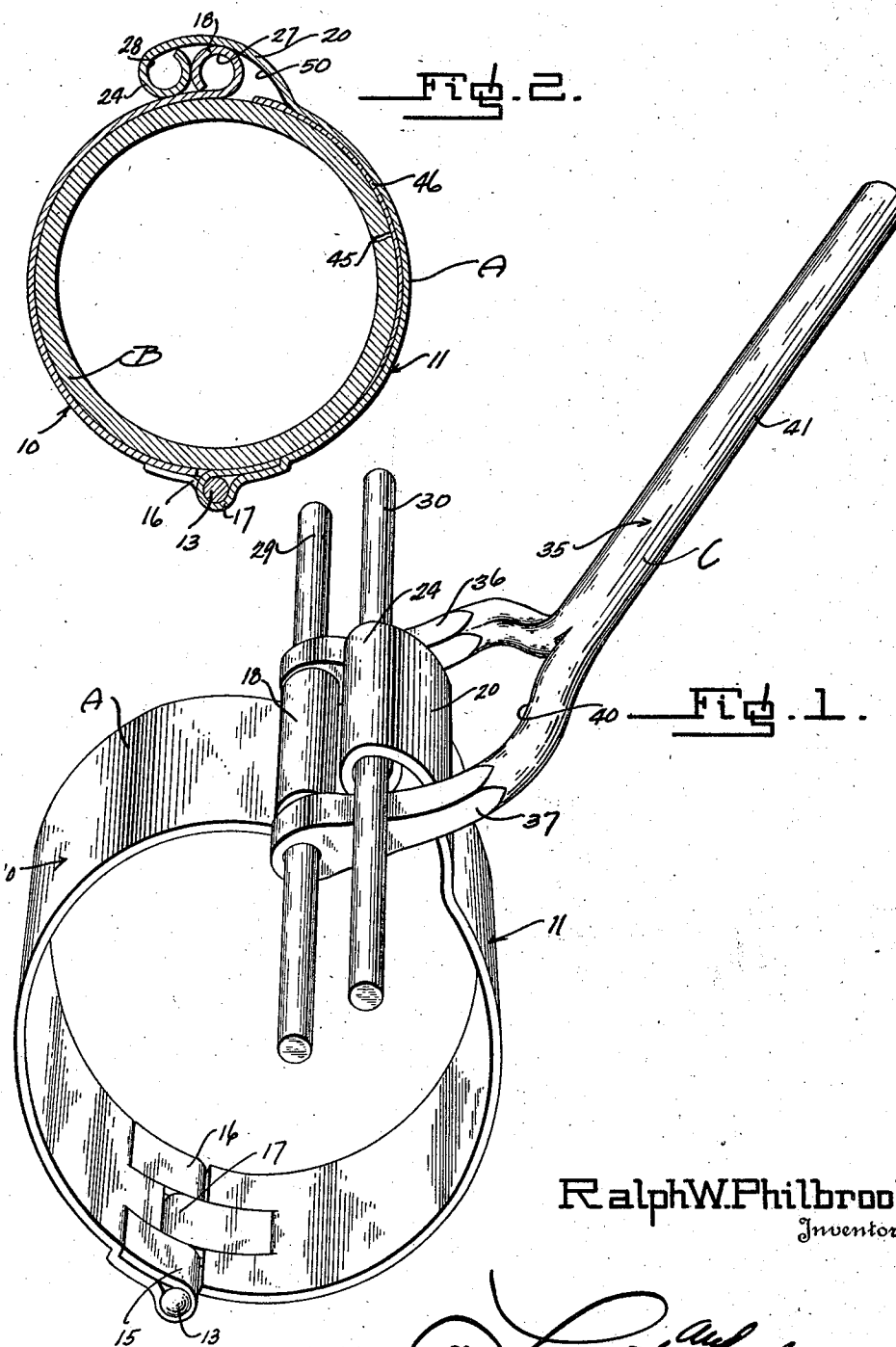


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R. W. PHILBROOK
CLAMP FOR STOPPING LEAKS ON PIPES

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UNITED STATES PATENT OFFICE.

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CLAMP FOR STOPPING LEAKS ON PIPES.

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To all whom it may concern:

Be it known that I, RALPH W. PHILBROOK, a citizen of the United States, residing at Sherman, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Clamps for Stopping Leaks on Pipes, of which the following is a specification.

This invention relates to improvements in apparatus for the sealing of leaks in conduits, water mains and the like, to prevent escape of the contents flowing in the same.

The primary object of the invention is the provision of a temporary clamp for the stopping of leaks in water mains, which embodies novel means to facilitate the placing and retention of the same upon the pipe.

A further object of this invention is the provision of an efficient and relatively simple type of clamp of the above described character, which may be detachably positioned upon the pipe in facile manner.

A further object of this invention is the provision of a clamp of the above mentioned character which embodies a simple detachable arrangement to place the same in locked position upon the water main or other pipe to stop a leak therein.

Other objects and advantages of this invention will be apparent during the course of the following detailed description.

In the accompanying drawing, forming a part of this specification, and wherein similar reference characters designate corresponding parts throughout the several views.

Figure 1 is a perspective view of the improved clamp showing details thereof and means to facilitate its attachment upon a pipe.

Figure 2 is a transverse cross sectional view, taken through the improved clamp, showing the same in leak sealing position upon a pipe.

In the drawing, wherein for the purpose of illustration is shown but the preferred embodiment of this invention, the letter A generally designates the improved clamp which is adapted for attachment upon a pipe, conduit, or analogous unit B, to seal a leak therein, having means C detachably associated therewith to facilitate its attachment to said pipe or other unit B.

The clamp A preferably comprises the

arcuate semi-circular sections 10 and 11, of steel, iron, or analogous material hinged together as by means of a pintle 13. The section 10 is preferably provided with the spaced ends 15 and 16 having openings transversely therethrough in aligning relation; while the section 11 is provided with a single extending end 17 on the free end thereof provided with an aperture transversely therethrough; said end 17 being adapted for disposition intermediate the apertured extensions 15 and 16 of the section 10 to receive the pintle 13. It is preferred that the extensions 15, 16 and 17 which receive the pintle 13 be so formed as to provide an unbroken smooth arcuate surface when the clamping device A is in position. The free end of the section 10 is provided preferably with a rolled sleeve portion 18, which extends outwardly or laterally of the convex surface of said section. The section 10 from its hinged end to the rolled end 18 is preferably struck upon a single radius, so that the same will fit snugly about the exterior of the pipe B when applied thereto. The section 11 for its major length from the pintle 13 is preferably struck upon the same radius as the section 10. The portion 20 of the section 11 adjacent the free end thereof is preferably struck upon a relatively small radius, eccentric to the radius from which the major length of the section 11 is struck, so that said portion extends outwardly of the convex surface of the major length of the section 11 and upon its free end is provided with a rolled sleeve 24 altogether similar in size and construction to the rolled sleeve 18 of the section 10, excepting that said rolled sleeve 24 extends toward the center or concave surface of the section 11, in contradistinction to the outward extension of the sleeve 18. The rolled sleeve portions 18 and 24 preferably provide passageways 27 and 28 respectively there-through.

Referring to the attaching or operating means C, the same preferably comprises a pair of straight pins 29 and 30 which are respectively adapted for detachable positioning within the passageways 27 and 28 of the rolled sleeves 18 and 24, so that the ends thereof extend outwardly of the side margins of the band A. An attaching ful-

crum bar 35 is provided as a part of the means C, having one end thereof bifurcated to provide outwardly extending fingers or arms 36 and 37, apertured on their free ends, and adapted to lie in aligning relation upon opposite sides of the sleeve portion 18 of section 10, to detachably receive the pin 29 therethrough. In this position, the free end of the section 11 may extend upwardly or into the opening 30 between the arms 36 and 37, so that the pin 30 extended through the sleeve or rolled portion 24 may rest upon said arms 36 and 37. The lever portion or handle 41 extends outwardly from the bifurcated end of the operating member 35, and it is obvious that when the member 35 is moved toward the section 10, with the axis of the pin 29 as a fulcrum point, the arms 36 and 37 will engage the outwardly extending ends of the pin or bar 30, and will move the free end of the section 11 into overlapping interconnected engagement with the free end of the section 10.

The application of the free end of the improved device to the pipe or conduit B to seal an opening 45 therein to prevent escape of fluid therethrough contemplates the provision of a strip of packing 46, which is placed upon the concave surface of one of the sections 10 and 11, and after the sections 10 and 11 have been transversely positioned about the conduit or pipe B, the lever member 35 in connection with the pins 29 and 30 are employed as above described, to draw the free ends of the sections 10 and 11 into proximate engagement. It is obvious that when the rolled end 24 has been drawn to a most forward position to engage the roll 18 of the section 10, the rolled ends or sleeves 18 and 24 cooperate, as interengaging latch parts, to prevent disconnection of the clamp A from the pipe B. Of course, the sections 10 and 11 are clamped in snug engagement with the pipe B to force the packing 46 tightly over the crack or aperture 45. Incident to the fact that the force with which the sections 10 and 11 are tensioned or clamped is circumferential of the pipe B, there will be no liability of accidental disconnection of the interconnected rolled ends 18 and 24. It is to be noted that the portion 20 of section 11 provides a pocket 50, so to speak, into which the rolled end 18 of the section 10 is disposed, when the clamp A is upon a part B to perform the function of stopping a leak.

After the clamp or band A has been positioned upon the pipe or conduit B, the pins 29 and 30 and the fulcrum arm 35 may be removed, so that the band or clamp A may be used as a temporary or permanent seal for the leak 45, according to desire.

The superiority of the improved clamp over ordinary clamps for like purpose is evident in the economy of production and ma-

terial. The device is constructed of stock materials, and is as simple in character as could be, consistent with the purpose for which the same is provided.

Various changes in the shape, size and arrangement of parts may be made to the form of invention herein shown and described, without departing from the spirit of the same or the scope of the claims.

I claim:

1. A device of the class described comprising a clamping band having one free end thereof provided with an outwardly extending projection transversely apertured and with the other and adjacent end thereof provided with an inwardly extending projection transversely apertured, pins for detachable disposition through said apertures so that the ends thereof extend laterally of the sides of said projections, and a lever detachably and pivotally connected to the outwardly extending ends of one of said pins and adapted to engage the outwardly extending ends of the other of said pins whereby the projections of the ends of said band may be brought into engagement with the ends of the band overlapping to enclose said band, said band when in such position permitting detachment of the pins and lever therefrom.

2. As an article of manufacture, a metal clamping member for use in stopping leaks of pipes and the like comprising a pair of concavo-convex metal band sections, means hingedly connecting proximate ends of said sections, one of said sections being struck from a single radius throughout the arcuation thereof and upon its free end having a sleeve rolled laterally of the convex surface thereof, the other section throughout its major arcuation being struck from a radius of the same dimension as the radius of said first section, the second mentioned section adjacent its free end having a portion struck outwardly on a relatively smaller radius eccentric with respect to the radius of the major arcuation thereof, said outwardly extending portion of the second section having the free end thereof rolled to provide a sleeve extending toward the concaved side of said section.

3. A device of the class described comprising a clamping band having the free ends thereof transversely apertured, pins slidably and detachably extending through the apertures at the free ends of said bands to extend laterally of the sides of said band, and a lever member detachably connected to one of said pins and adapted to engage the other of said pins whereby upon movement of said lever member, the ends of said band may be brought into connected engagement.

4. In a device of the class described, the combination of a substantially circular clamping band having transverse apertures

at the free ends thereof, detachable pins carried in said transverse apertures extending laterally of said band at the free ends thereof, a lever member having an end thereof bifurcated for detachably receiving one of said pins therethrough, the other end of said band extending intermediate the bifurcated end of said lever member and the pin thereof engaging said bifurcated end, whereby when the lever member is pivotally swung upon the axis of the pin to which it is connected it may engage the second pin for drawing the ends of said band together. 10

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